



Alaska Federal Lands Collaborative Long-Range Transportation Plan, 2020-2040

Appendices



Dalton Highway Crossing the Yukon River. BLM photo.



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Appendix A

ANCSA and ANILCA



Alaska Federal Lands
Long Range Transportation Plan

Appendix A
ANCSA and ANILCA Text

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ANCSA Section 17(b)

Sec. 17(b)(1) The Planning Commission shall identify public easements across lands selected by Village Corporations and the Regional Corporations and at periodic points along the courses of major waterways which are reasonably necessary to guarantee international treaty obligations, a full right of public use and access for recreation, hunting, transportation, utilities, docks, and other such public uses as the Planning Commission determines to be important.

(2) In identifying public easements the Planning Commission shall consult with appropriate State and Federal agencies, shall review proposed transportation plans, and shall receive and review statements and recommendations from interested organizations and individuals on the need for and proposed location of public easements: Provided, That any valid existing right recognized by this Act shall continue to have whatever right of access as is now provided for under existing law and this subsection shall not operate in any way to diminish or limit such right of access.

(3) Prior to granting any patent under this Act to the Village Corporation and Regional Corporations, the Secretary shall consult with the State and the Planning Commission and shall reserve such public easements as he determines are necessary.

Source: http://www.blm.gov/ak/st/en/prog/lands_realty/17b_easements/17b_ancsa.html

ANILCA TITLE VIII

SUBSISTENCE MANAGEMENT AND USE FINDINGS

FINDINGS

§801. The Congress finds and declares that--

- (1) the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands and by Alaska Natives on Native lands is essential to Native physical, economic, traditional, and cultural existence and to non-Native physical, economic, traditional, and social existence;
- (2) the situation in Alaska is unique in that, in most cases, no practical alternative means are available to replace the food supplies and other items gathered from fish and wildlife which supply rural residents dependent on subsistence uses;
- (3) continuation of the opportunity for subsistence uses of resources on public and other lands in Alaska is threatened by the increasing population of Alaska, with resultant pressure on subsistence resources, by sudden decline in the populations of some wildlife species which are crucial subsistence resources, by increased accessibility of remote areas containing subsistence resources, and by taking of fish and wildlife in a manner inconsistent with recognized principles of fish and wildlife management;
- (4) in order to fulfill the policies and purposes of the Alaska Native Claims Settlement Act and as a matter of equity, it is necessary for the Congress to invoke its constitutional authority over Native affairs and its constitutional authority under the property clause and the commerce clause to protect and provide the opportunity for continued subsistence uses on the public lands by Native and non-Native rural residents; and
- (5) the national interest in the proper regulation, protection and conservation of fish and wildlife on the public lands in Alaska and the continuation of the opportunity for a subsistence way of life by residents of rural Alaska require that an administrative structure be established for the purpose of enabling rural residents who have personal knowledge of local conditions and requirements to have a meaningful role in the management of fish and wildlife and of subsistence uses on the public lands in Alaska.

POLICY

§802. It is hereby declared to be the policy of Congress that--

- (1) consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated, or expanded by or pursuant to Titles II through VII of this Act, the purpose of this title is to provide the opportunity for rural residents engaged in a subsistence way of life to do so;
- (2) nonwasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources on the public lands of Alaska when it is necessary to restrict taking in order to assure the continued viability of a fish or wildlife population or the continuation of subsistence uses of such population, the taking of such population for nonwasteful subsistence uses shall be given preference on the public lands over other consumptive uses; and

(3) except as otherwise provided by this Act or other Federal laws, Federal land managing agencies, in managing subsistence activities on the public lands and in protecting the continued viability of all wild renewable resources in Alaska, shall cooperate with adjacent landowners and land managers, including Native Corporations, appropriate State and Federal agencies and other nations.

DEFINITIONS

§803. As used in this Act, the term “subsistence uses” means the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade. For the purposes of this section, the term--

(1) “family” means all persons related by blood, marriage, or adoption, or any person living within the household on a permanent basis; and

(2) “barter” means the exchange of fish or wildlife or their parts, taken for subsistence uses--

(A) for other fish or game or their parts; or

(B) for other food or for nonedible items other than money if the exchange is of a limited and noncommercial nature.

PREFERENCE FOR SUBSISTENCE USE

§804. Except as otherwise provided in this Act and other Federal laws, the taking on public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over the taking on such lands of fish and wildlife for other purposes. Whenever it is necessary to restrict the taking of populations of fish and wildlife on such lands for subsistence uses in order to protect the continued viability of such populations, or to continue such uses, such priority shall be implemented through appropriate limitations based on the application of the following criteria:

(1) customary and direct dependence upon the populations as the mainstay of livelihood;

(2) local residency; and

(3) the availability of alternative resources.

LOCAL AND REGIONAL PARTICIPATION

§805. (a) Except as otherwise provided in subsection (d) of this section, one year after the date of enactment of this Act, the Secretary in consultation with the State shall establish--

(1) at least six Alaska subsistence resource regions which taken together, include all public lands. The number and boundaries of the regions shall be sufficient to assure that regional differences in subsistence uses are adequately accommodated;

(2) such local advisory committees within each region as he finds necessary at such time as he may determine, after notice and hearing, that the existing State fish and game advisory committees do not adequately perform the functions of the local committee system set forth in paragraph (3)(D)(iv) of this subsection; and

(3) a regional advisory council in each subsistence resource region. Each regional advisory council shall be composed of residents of the region and shall have the following authority:

- (A) the review and evaluation of proposals for regulations policies, management plans, and other matters relating to subsistence uses of fish and wildlife within the region;
- (B) the provision of a forum for the expression of opinions and recommendations by persons interested in any matter related to the subsistence uses of fish and wildlife within the region;
- (C) the encouragement of local and regional participation pursuant to the provisions of this title in the decision making process affecting the taking of fish and wildlife on the public lands within the region for subsistence uses;
- (D) the preparation of an annual report to the Secretary which shall contain--
- (i) an identification of current and anticipated subsistence uses of fish and wildlife populations within the region;
 - (ii) an evaluation of current and anticipated subsistence needs for fish and wildlife populations within the region;
 - (iii) a recommended strategy for the management of fish and wildlife populations within the region to accommodate such subsistence uses and needs; and
 - (iv) recommendations concerning policies, standards guidelines, and regulations to implement the strategy. The State fish and game advisory committees or such local advisory committees as the Secretary may establish pursuant to paragraph (2) of this subsection may provide advice to and assist, the regional advisory councils in carrying out the functions set forth in this paragraph.
- (b) The Secretary shall assign adequate qualified staff to the regional advisory councils and make timely distribution of all available relevant technical and scientific support data to the regional advisory councils and the State fish and game advisory committees or such local advisory committees as the Secretary may establish pursuant to paragraph (2) of subsection (a).
- (c) The Secretary, in performing his monitoring responsibility pursuant to §806 and in the exercise of his closure and other administrative authority over the public lands, shall consider the report and recommendations of the regional advisory councils concerning the taking of fish and wildlife on the public lands within their respective regions for subsistence uses. The Secretary may choose not to follow any recommendation which he determines is not supported by substantial evidence, violates recognized principles of fish and wildlife conservation, or would be detrimental to the satisfaction of subsistence needs. If a recommendation is not adopted by the Secretary, he shall set forth the factual basis and the reasons for his decision.
- (d) The Secretary shall not implement subsections (a), (b), and (c) of this section if within one year from the date of enactment of this Act the State enacts and implements laws of general applicability which are consistent with, and which provide for the definition, preference and participation specified in, §§803, 804, and 805, such laws unless and until repealed, shall supersede such sections insofar as such sections govern State responsibility pursuant to this title for the taking of fish and wildlife on the public lands for subsistence uses. Laws establishing a system of local advisory committees and regional advisory councils consistent with §805 shall provide that the State rule making authority shall consider the advice and recommendations of the regional councils concerning the taking of fish and wildlife populations on public lands within their respective regions for subsistence uses. The regional councils may present recommendations, and the evidence upon which such recommendations are based to the State rule making authority during the course of the administrative proceedings of such authority. The State rule making authority may choose not to follow any recommendation which it determines is not supported by substantial evidence presented during the course of its administrative proceedings, violates recognized principles of fish and wildlife conservation or would be

detrimental to the satisfaction of rural subsistence needs. If a recommendation is not adopted by the State rule making authority, such authority shall set forth the factual basis and the reasons for its decision.

(e)(1) The Secretary shall reimburse the State, from funds appropriated to the Department of the Interior for such purposes, for reasonable costs relating to the establishment and operation of the regional advisory councils established by the State in accordance with subsection (d) and the operation of the State fish and game advisory committees so long as such committees are not superseded by the Secretary pursuant to paragraph (2) of subsection (a). Such reimbursement may not exceed 50 per centum of such costs in any fiscal year. Such costs shall be verified in a statement which the Secretary determines to be adequate and accurate. Sums paid under this subsection shall be in addition to any grants, payments, or other sums to which the State is entitled from appropriations to the Department of the Interior.

(2) Total payments to the State under this subsection shall not exceed the sum of \$5,000,000 in any one fiscal year. The Secretary shall advise the Congress at least once in every five years as to whether or not the maximum payments specified in this subsection are adequate to ensure the effectiveness of the program established by the State to provide the preference for subsistence uses of fish and wildlife set forth in §804.

FEDERAL MONITORING

§806. The Secretary shall monitor the provisions by the State of the subsistence preference set forth in §804 and shall advise the State and the Committee on Interior and Insular Affairs and on Merchant Marine and Fisheries of the House of Representatives and the Committees on Energy and Natural Resources and Environment and Public Works of the Senate annually and at such other times as he deems necessary of his views on the effectiveness of the implementation of this title including the State's provision of such preference, any exercise of his closure or other administrative authority to protect subsistence resources or uses, the views of the State, and any recommendations he may have.

JUDICIAL ENFORCEMENT

§807. (a) Local residents and other persons and organizations aggrieved a failure of the State or the Federal Government to provide for the priority for subsistence uses set forth in §804 (or with respect to the State as set forth in a State law of general applicability if the State has fulfilled the requirements of §805(d)) may, upon exhaustion of any State or Federal (as appropriate) administrative remedies which may be available, file a civil action in the United States District Court for the District of Alaska to require such actions to be taken as are necessary to provide for the priority. In a civil action filed against the State, the Secretary may be joined as a party to such action. The court may grant preliminary injunctive relief in any civil action if the granting of such relief is appropriate under the facts upon which the action is based. No order granting preliminary relief shall be issued until after an opportunity for hearing. In a civil action filed against the State, the court shall provide relief, other than preliminary relief, by directing the State to submit regulations which satisfy the requirements of §804 when approved by the court, such regulations shall be incorporated as part of the final judicial order, and such order shall be valid only for such period of time as normally provided by State law for the regulations at issue. Local residents and other persons and organizations who are prevailing parties in an action filed pursuant to this section shall be awarded their costs and attorney's fees.

(b) A civil action filed pursuant to this section shall be assigned for hearing at the earliest possible date, shall take precedence over other matters pending on the docket of the United States district court at that time, and shall be expedited in every way by such court and any appellate court.

(c) This section is the sole Federal judicial remedy created by this title for local residents and other residents who, and organizations which, are aggrieved by a failure of the State to provide for the priority of subsistence uses set forth in §804.

PARK AND PARK MONUMENT SUBSISTENCE RESOURCE COMMISSIONS

§808. (a) Within one year from the date of enactment of this Act the Secretary and the Governor shall each appoint three members to a subsistence resources commission for each national park or park monument within which subsistence uses are permitted by this Act. The regional advisory council established pursuant to §805 which has jurisdiction within the area in which the park or park monument is located shall appoint three members to the commission each of whom is a member of either the regional advisory council or a local advisory committee within the region and also engages in subsistence uses within the park or park monument. Within eighteen months from the date of enactment of this Act, each commission shall devise and recommend to the Secretary and the Governor a program for subsistence hunting within the park or park monument. Such program shall be prepared using technical information and other pertinent data assembled or produced by necessary field studies or investigations conducted jointly or separately by the technical and administrative personnel of the State and the Department of Interior, information submitted by, and after consultation with the appropriate local advisory committees and regional advisory councils, and any testimony received in a public hearing or hearings held by the commission prior to preparation of the plan at a convenient location or locations in the vicinity of the park or park monument. Each year thereafter, the commission, after consultation with the appropriate local committees and regional councils, considering all relevant data and holding one or more additional hearings in the vicinity of the park or park monument, shall make recommendations to the Secretary and the Governor for any changes in the program or its implementation which the commission deems necessary.

(b) The Secretary shall promptly implement title program and recommendations submitted to him by each commission unless he finds in writing that such program or recommendations violates recognized principles of wildlife conservation, threatens the conservation of healthy populations of wildlife in the park or park monument, is contrary to the purposes for which the park or park monument is established, or would be detrimental to the satisfaction of subsistence needs of local residents. Upon notification by the Governor, the Secretary shall take no action on a submission of a commission for sixty days during which period he shall consider any proposed changes in the program or recommendations submitted by the commission which the Governor provides him.

(c) Pending the implementation of a program under subsection (a) of this section, the Secretary shall permit subsistence uses by local residents in accordance with the provisions of this title and other applicable Federal and State law.

COOPERATIVE AGREEMENTS

§809. The Secretary may enter into cooperative agreements or otherwise cooperate with other Federal agencies, the State, Native Corporations, other appropriate persons and organizations, and acting through the Secretary of State, other nations to effectuate the purposes and policies of this title.

SUBSISTENCE AND LAND USE DECISIONS

§810. (a) In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the Federal agency having primary jurisdiction over such lands or his designee shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives

which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency--

(1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to §805;

(2) gives notice of, and holds, a hearing in the vicinity of the area involved; and

(3) determines that--

(A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands,

(B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and

(C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

(b) If the Secretary is required to prepare an environmental impact statement pursuant to §102(2)(C) of the National Environmental Policy Act, he shall provide the notice and hearing and include the findings required by subsection (a) as part of such environmental impact statement.

(c) Nothing herein shall be construed to prohibit or impair the ability of the State or any Native Corporation to make land selections and receive land conveyances pursuant to the Alaska Statehood Act or the Alaska Native Claims Settlement Act.

(d) After compliance with the procedural requirements of this section and other applicable law, the head of the appropriate Federal agency may manage or dispose of public lands under his primary jurisdiction for any of those uses or purposes authorized by this Act or other law.

ACCESS

§811. (a) The Secretary shall ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands.

(b) Notwithstanding any other provision of this Act or other law the Secretary shall permit on the public lands appropriate use for subsistence purposes of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation.

RESEARCH

§812. The Secretary, in cooperation with the State and other appropriate Federal agencies, shall undertake research on fish and wildlife and subsistence uses on the public lands, seek data from, consult with and make use of, the special knowledge of local residents engaged in subsistence uses; and make the results of such research available to the State, the local and regional councils established by the Secretary or State pursuant to §805, and other appropriate persons and organizations.

PERIODIC REPORTS

§813. Within four years after the date of enactment of this Act and within every three-year period thereafter, the Secretary, in consultation with the Secretary of Agriculture, shall prepare and submit a report to the President of the Senate and the Speaker of the House of Representatives on the implementation of this title. The report shall include--

- (1) an evaluation of the results of the monitoring undertaken by the Secretary as required by §806;
- (2) the status of fish and wildlife populations on public lands that are subject to subsistence uses;
- (3) a description of the nature and extent of subsistence uses and other uses of fish and wildlife on the public lands;
- (4) the role of subsistence uses in the economy and culture of rural Alaska;
- (5) comments on the Secretary's report by the State, the local advisory councils and regional advisory councils established by the Secretary or the State pursuant to §805, and other appropriate persons and organizations;
- (6) a description of those actions taken, or which may need to be taken in the future, to permit the opportunity for continuation of activities relating to subsistence uses on the public lands;
- (7) such other recommendations the Secretary deems appropriate. A notice of the report shall be published in the Federal Register and the report shall be made available to the public.

REGULATIONS

§814. The Secretary shall prescribe such regulations as are necessary and appropriate to carry out his responsibilities under this title.

LIMITATIONS, SAVINGS CLAUSES

§815. Nothing in this title shall be construed as--

- (1) granting any property right in any fish or wildlife or other resource of the public lands or as permitting the level of subsistence uses of fish and wildlife within a conservation system unit to be inconsistent with the conservation of healthy populations, and within a national park or monument to be inconsistent with the conservation of natural and healthy populations, of fish and wildlife. No privilege which may be granted by the State to any individual with respect to subsistence uses may be assigned to any other individual;
- (2) permitting any subsistence use of fish and wildlife on any portion of the public lands (whether or not within any conservation system unit) which was permanently closed to such uses on January 1, 1978, or enlarging or diminishing the Secretary's authority to manipulate habitat on any portion of the public lands;
- (3) authorizing a restriction on the taking of fish and wildlife for nonsubsistence uses on the public lands (other than national parks and park monuments) unless necessary for the conservation of healthy populations of fish and wildlife, for the reasons set forth in §816, to continue subsistence uses of such populations, or pursuant to other applicable law; or
- (4) modifying or repealing the provisions of any Federal law governing the conservation or protection of fish and wildlife, including the National Wildlife Refuge System Administration Act of 1966 (80 Stat. 927- 16 U.S.C. 668dd-jj), the National Park Service Organic Act (39 Stat. 535, 16

U.S.C. 1, 2, 3, 4), the Fur Seal Act of 1966 (80 Stat. 1091, 16 U.S.C. 1187), the Endangered Species Act of 1973 (87 Stat. 884 16 U.S.C. 1531-1543), the Marine Mammal Protection Act of 1972 (86 Stat. 1027; 16 U.S.C. 1361-1407), the Act entitled "An Act for the Protection of the Bald Eagle", approved June 8, 1940 (54 Stat. 250; 16 U.S.C. 742a-754), the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 703-711), the Federal Aid in Wildlife Restoration Act (50 Stat. 917- 16 U.S.C. 669-669i), the Fishery Conservation and Management Act of 1976 (90 Stat. 331; 16 U.S.C. 1801-1882), the Federal Aid in Fish Restoration Act (64 Stat. 430; 16 U.S.C. 777-777K), or ally amendments to any one or more of such Acts.

CLOSURE TO SUBSISTENCE USES

§816. (a) All national parks and park monuments in Alaska shall be closed to the taking of wildlife except for subsistence uses to the extent specifically permitted by this Act. Subsistence uses and sport fishing shall be authorized in such areas by the Secretary and carried out in accordance with the requirements of this title and other applicable laws of the United States and the State of Alaska.

(b) Except as specifically provided otherwise by this section, nothing in this title is intended to enlarge or diminish the authority of the Secretary to designate areas where, and establish periods when, no taking of fish and wildlife shall be permitted on the public lands for reasons of public safety, administration, or to assure the continued viability of a particular fish or wildlife population. Notwithstanding any other provision of this Act or other law, the Secretary, after consultation with the State and adequate notice and public hearing may temporarily close any public lands (including those within any conservation system unit), or any portion thereof, to subsistence uses of a particular fish or wildlife population only if necessary for reasons of public safety, administration, or to assure the continued viability of such population. If the Secretary determines that an emergency situation exists and that extraordinary measures must be taken for public safety or to assure the continued viability of a particular fish or wildlife population, the Secretary may immediately close the public lands, or any portion thereof, to the subsistence uses of such population and shall publish the reasons justifying the closure in the Federal Register. Such emergency closure shall be effective when made, shall not extend for a period exceeding sixty days, and may not subsequently be extended unless the Secretary affirmatively establishes, after notice and public hearing, that such closure should be extended.

ANILCA TITLE XI

TRANSPORTATION AND UTILITY SYSTEMS IN AND ACROSS, AND ACCESS INTO, CONSERVATION SYSTEM UNITS

FINDINGS

§1101. Congress finds that--

- (a) Alaska's transportation and utility network is largely undeveloped and the future needs for transportation and utility systems in Alaska would best be identified and provided for through an orderly, continuous decision making process involving the State and Federal Governments and the public;
- (b) the existing authorities to approve or disapprove application for transportation and utility systems through public lands in Alaska are diverse, dissimilar, and, in some cases, absent; and
- (c) to minimize the adverse impacts of siting transportation and utility systems within units established or expanded by this Act and to insure the effectiveness of the decision making process, a single comprehensive statutory authority for the approval or disapproval of applications for such systems must be provided in this Act.

DEFINITIONS

§1102. For purposes of this title--

- (1) The term "applicable law" means any law of general applicability (other than this title) under which any Federal department or agency has jurisdiction to grant any authorization (including but not limited to, any right-of-way, permit, license, lease, or certificate) without which a transportation or utility system cannot, in whole or in part, be established or operated.
- (2) The term "applicant" means any public or private person, including, but not limited to, any Federal department or agency.
- (3) The term "Federal agency" means any Federal department or agency that has any function or duty under applicable law.
- (4)(A) The term "transportation or utility system" means any type of system described in subparagraph (B) if any portion of the route of the system will be within any conservation system unit, national recreation area, or national conservation area in the State (and the system is not one that the department or agency having jurisdiction over the unit or area is establishing incident to its management of the unit or area).
- (B) The types of systems to which subparagraph (A) applies are as follows:
 - (i) Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.

(ii) Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.

(iii) Pipelines, slurry and emulsion systems and conveyor belts for the transportation of solid materials.

(iv) Systems for the transmission and distribution of electric energy.

(v) Systems for transmission or reception of radio, television telephone, telegraph, and other electronic signals, and other means of communication.

(vi) Improved rights-of-way for snow machines, air cushion vehicles, and other all-terrain vehicles.

(vii) Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

Any system described in this subparagraph includes such related structures and facilities (both temporary and permanent) along the route of the system as may be minimally necessary for the construction, operation, and maintenance of the system. Such related structures and facilities shall be described in the application required by §1104, and shall be approved or disapproved in accordance with the procedures set forth in this title.

EFFECT OF TITLE

§1103. Except as specifically provided for in this title, applicable law shall apply with respect to the authorization and administration of transportation or utility systems.

PROCEDURAL REQUIREMENTS

§1104. (a) IN GENERAL.--Notwithstanding any provision of applicable law, no action by any Federal agency under applicable law with respect to the approval or disapproval of the authorization, in whole or in part, of any transportation or utility system shall have any force or effect unless the provisions of this section are complied with.

(b)(1) CONSOLIDATED APPLICATIONS.--Within one hundred and eighty days after the date of enactment of this Act, the Secretary, the Secretary of Agriculture, and the Secretary of Transportation, in consultation with the heads of other appropriate Federal agencies shall jointly prescribe and publish a consolidated application form to be used for applying for the approval of each type of transportation or utility system. Each such application form shall be designed to elicit such information as may be necessary to meet the requirements of this title and the applicable law with respect to the type of system concerned.

(2) For purposes of this section, the heads of all appropriate Federal agencies, including the Secretary of Transportation, shall share decision-making responsibility in the case of any transportation or utility system described in §1102(4)(B)(ii), (iii), or (vii); but with respect to any such system for which he does not have programmatic responsibility, the Secretary of Transportation shall provide to the other Federal agencies concerned such planning and other assistance as may be appropriate.

(c) FILING.--Each applicant for the approval of any transportation or utility system shall file on the same day an application with each appropriate Federal agency. The applicant shall utilize the consolidated form prescribed under subsection (b) for the type of transportation or utility system concerned.

(d) AGENCY NOTICE.--(1) Within sixty days after the receipt of an application filed pursuant to subsection (c), the head of each Federal agency with whom the application was filed shall inform the applicant in writing that, on its face--

(A) the application appears to contain the information required by this title and applicable law insofar as that agency is concerned; or

(B) the application does not contain such information.

(2) Any notice provided under paragraph (1)(B) shall specify what additional information the applicant must provide. If the applicant provides additional information, the head of the Federal agency must inform the applicant in writing, within thirty days after receipt of such information, whether the information is sufficient.

(e) ENVIRONMENTAL IMPACT STATEMENT.--The draft of any environmental impact statement required under the National Environmental Policy Act of 1969 in connection with any application filed under this section shall be completed, within nine months from the date of filing, by the head of the Federal agency assigned lead responsibility for the statement. Any such statement shall be jointly prepared by all Federal agencies with which the application was filed under subsection (c). The final environmental impact statement shall be completed within one year from the date of such filing. Such nine-month and one-year periods may be extended for good cause by the Federal agency head assigned lead responsibility for the preparation of such statement if he determines that additional time is necessary for such preparation, notifies the applicant in writing of such determination and publishes notice of such determination, together with the reasons therefor, in the Federal Register. The provisions of §304 of the Federal Land Policy and Management Act of 1976 shall apply to each environmental impact statement under this subsection in the same manner as such provisions apply to applications relating to the public lands referred to in such §304. The Federal agency assigned lead responsibility shall, in conjunction with such other Federal agencies before which the application is pending, hold public hearings in the District of Columbia and an appropriate location in the State on each draft joint environmental impact statement and the views expressed therein shall be considered by all Federal agencies concerned before publication of the final joint environmental impact statement.

(f) OTHER VIEWS.--During both the nine-month period, and the succeeding three-month period plus any extension thereof provided for in subsection (e), the heads of the Federal agencies concerned shall solicit and consider the views of other Federal departments and agencies, the Alaska Land Use Council, the State, affected units of local government in the State, and affected corporations formed pursuant to the Alaska Native Claims Settlement Act, and, after public notice, shall receive and consider statements and recommendations regarding the application submitted by interested individuals and organizations.

(g) AGENCY DECISION.--(1) Within four months after the final environmental impact statement, is published in accordance with subsection (e) with respect to any transportation or utility system each Federal agency shall make a decision to approve or disapprove in accordance with applicable law, each authorization that applies with respect to the system and that is within the jurisdiction of that agency.

(2) The head of each Federal agency, in making a decision referred to in paragraph (1), shall consider, and make detailed findings supported by substantial evidence, with respect to--

(A) the need for, and economic feasibility of, the transportation or utility system;

(B) alternative routes and modes of access, including a determination with respect to whether there is any economically feasible and prudent alternative to the routing of the system through or within a conservation system unit, national recreation area, or national conservation area and,

if not, whether there are alternative routes or modes which would result in fewer or less severe adverse impacts upon the conservation system unit;

(C) the feasibility and impacts of including different transportation or utility systems in the same area;

(D) short- and long-term social, economic, and environmental impacts of national, State, or local significance, including impacts on fish and wildlife and their habitat, and on rural, traditional lifestyles;

(E) the impacts, if any, on the national security interests of the United States, that may result from approval or denial of the application for a transportation or utility system;

(F) any impacts that would affect the purposes for which the Federal unit or area concerned was established;

(G) measures which should be instituted to avoid or minimize negative impacts; and

(H) the short- and long-term public values which may be adversely affected by approval of the transportation or utility system versus the short- and long-term public benefits which may accrue from such approval.

STANDARDS FOR GRANTING CERTAIN AUTHORIZATIONS

§1105. In any case in which there is no applicable law with respect to a transportation or utility system, the head of the Federal agency concerned shall, within four months after the date of filing of any final Environmental Impact Statement, make recommendations for purposes of §1106(b), to grant such authorizations as may be necessary to establish such system, in whole or in part, within the conservation system unit concerned if he determines that--

(1) such system would be compatible with the purposes for which the unit was established; and

(2) there is no economically feasible and prudent alternative route for the system.

AGENCY, PRESIDENTIAL, AND CONGRESSIONAL ACTIONS

§1106. (a)(1) AGENCY ACTION IN CASES OTHER THAN THOSE INVOLVING SECTION 1105 OR WILDERNESS AREAS.--In the case of any application for the approval of any transportation or utility system to which §1105 does not apply or that does not occupy, use, or traverse any area within the National Wilderness Preservation System, if, in compliance with §1104--

(A) each Federal agency concerned decides to approve each authorization within its jurisdiction with respect to that system then the system shall be deemed to be approved and each such agency shall promptly issue, in accordance with applicable law, such rights-of-way, permits, licenses leases, certificates, or other authorizations as are necessary with respect to the establishment of the system; or

(B) one or more Federal agencies decide to disapprove any authorization within its jurisdiction with respect, to that system then the system shall be deemed to be disapproved and the applicant for the system may appeal the disapproval to the President.

(2) If an applicant appeals under paragraph (1)(B), the President, within four months after receiving the appeal shall decide whether to approve or deny the application. The President shall approve the application if he finds, after consideration of the factors set forth in §1104(g)(2), that such approval would be in the public interest and that (1) such system would be compatible with the purposes for which the unit was established; and (2) there is no economically feasible

and prudent alternative route for the system. In making a decision, the President shall consider any environmental impact statement prepared pursuant to §1104(e), comments of the public and Federal agencies received during the preparation of such statement, and the findings and recommendations, if any, of each Federal agency that rendered a decision with respect to the application. The President's decision to approve or deny the application shall be published in the Federal Register, together with a statement of the reasons for his determination.

(3) If the President approves an application under paragraph (2), each Federal agency concerned shall promptly issue, in accordance with applicable law, such rights-of-way, permits, licenses, leases certificates, or other authorizations as are necessary with respect to the establishment of the system.

(4) If the President denies an application under paragraph (2), the applicant shall be deemed to have exhausted his administrative remedies and may file suit in any appropriate Federal court to challenge such decision.

(b) AGENCY ACTION IN CASES INVOLVING SECTION 1105 OR WILDERNESS AREAS.--(1) In the case of any application for the approval of transportation or utility system to which §1105 applies or that proposes to occupy, use, or traverse any area within the National Wilderness Preservation System, each Federal agency concerned shall promptly submit to the President notification whether the agency tentatively approved or disapproved each authorization within its jurisdiction that applies with respect to the system. Such notification shall be accompanied by a statement of the reasons and findings supporting the agency position.

(2) within four months after receiving all notification referred to in paragraph (1) and after considering such notifications, any environmental impact statement prepared pursuant to §1104(e), and the comments of the public and Federal agencies received during the preparation of such Statement, the President shall decide whether or not the application for the system concerned should be approved. If the President denies an application the applicant shall be deemed to have exhausted his administrative remedies, and may file suit in any appropriate Federal court to challenge such decision. If the President approves the application, he shall submit to Congress his recommendation for approval of the transportation or utility system covered, whereupon the Congress shall consider the application as provided in subsection (c). The President shall include with his recommendation to Congress--

(A) the application which is the subject of his recommendation;

(B) a report setting forth in detail the relevant factual background and the reasons for his findings and recommendation;

(C) the joint environmental impact statement;

(D) a statement of the conditions and stipulations which would govern the use of the system if approved by the Congress.

(c) CONGRESSIONAL APPROVAL.--(1) No application for any transportation or utility system with respect to which the President makes a recommendation for approval under subsection (b) shall be approved unless the Senate and House of Representatives approve a resolution described in paragraph (4) within the first period of one hundred and twenty calendar days of continuous session of the Congress beginning on the date after the date of receipt by the Senate and House of Representatives of such recommendation.

(2) For purposes of this subsection--

(A) continuity of session of the Congress is broken only by an adjournment sine die; and

(B) the days on which either House is not in session because of an adjournment of more than three days to a day certain are excluded in the computation of the one-hundred-and-twenty-day calendar period.

(3) This subsection is enacted by the Congress--

(A) as an exercise of the rule making power of each House of the Congress respectively, but applicable only with respect to the procedure to be followed in the House in the case of resolutions described by paragraph (6) of this subsection; and it supersedes other rules only to the extent that it is inconsistent therewith; and

(B) with full recognition of the constitutional right of either House to change the rules (so far as those relate to the procedure of that House) at any time, in the same manner and to the same extent as in the case of any other rule of such House.

(4) For the purposes of this subsection, the term "resolution" means a joint resolution, the resolving clause of which is as follows: "That the House of Representatives and Senate approve the application for (triple tab under title XI of the Alaska National Interest Lands Conservation Act submitted by the President to the Congress on the first blank space therein to be filled in with the appropriate transportation or utility system and the second blank therein to be filled with the date on which the President submits the application to the House of Representatives and the Senate.

(5) Except as otherwise provided in this subsection, the provisions of §8(d) of the Alaska Natural Gas Transportation Act shall apply to the consideration of the resolution.

(6) After an application for a transportation or utility system has been approved under subsection 1106(a), the appropriate Federal agencies shall issue appropriate authorizations in accordance with applicable law. In any case in which an application for a transportation or utility system has been approved pursuant to §1106(b) the appropriate Federal agencies shall issue appropriate authorizations in accordance with title V of the Federal Lands Policy Management Act or other applicable law. After issuance pursuant to this subsection, the appropriate land managing agency shall administer the right-of-way in accordance with relevant management authorities of the land managing agency and title V of the Federal Lands Policy Management Act.

RIGHTS-OF-WAY TERMS AND CONDITIONS

§1107. (a) TERMS AND CONDITIONS.--The Secretary, or the Secretary of Agriculture where national forest wilderness is involved shall include in any right-of-way issued pursuant to an application under this title, terms and conditions which shall include, but not be limited to--

(1) requirements to insure that, to the maximum extent feasible the right-of-way is used in a manner compatible with the purposes for which the affected conservation system unit, national recreation area, or national conservation area was established or is managed;

(2) requirements for restoration, revegetation, and curtailment of erosion of the surface of the land;

(3) requirements to insure that activities in connection with the right-of-way will not violate applicable air and water quality standards and related facility siting standards established pursuant to law;

(4) requirements, including the minimum necessary width, designed to control or prevent--

(A) damage to the environment (including damage to fish and wildlife habitat);

(B) damage to public or private property; and

(C) hazards to public health and safety;

(5) requirements to protect the interests of individuals living in the general area of the right-of-way who rely on the fish, wildlife and biotic resources of the area for subsistence purposes; and

(6) requirements to employ measures to avoid or minimize adverse environmental, social or economic impacts.

(b) **WILD AND SCENIC RIVERS SYSTEM.**--Any transportation or utility system approved pursuant to this title which occupies, uses, or traverses any area within the boundaries of a unit of the National Wild and Scenic Rivers System shall be subject to such conditions as may be necessary to assure that the stream flow of, and transportation on, such river are not interfered with or impeded, and that the transportation or utility system is located and constructed in an environmentally sound manner.

(c) **PIPELINE RIGHTS-OF-WAYS.**--In the case of a pipeline described in §28(a) of the Minerals Leasing Act of 1920, a right-of-way issued pursuant to this title shall be issued in the same manner as a right-of-way is granted under §28, and the provisions of subsections (c) through (j), (l) through (q), and (u) through (y) of such §28 shall apply to rights-of-way issued pursuant to this title.

INJUNCTIVE RELIEF

§1108. No court shall have jurisdiction to grant any injunctive relief lasting longer than ninety days against any action pursuant to this title except in conjunction with a final judgment entered in a case involving an action pursuant to this title.

VALID EXISTING RIGHTS

§1109. Nothing in this title shall be construed to adversely affect any valid existing right of access.

SPECIAL ACCESS AND ACCESS TO INHOLDINGS

§1110. (a) Notwithstanding any other provision of this Act or other law, the Secretary shall permit, on conservation system units national recreation areas, and national conservation areas, and those public lands designated as wilderness study, the use of snowmachines (during periods of adequate snow cover, or frozen river conditions in the case of wild and scenic rivers), motorboats, airplanes, and non-motorized surface transportation methods for traditional activities (where such activities are permitted by this Act or other law) and for travel to and from villages and homesites. Such use shall be subject to reasonable regulations by the Secretary to protect the natural and other values of the conservation system units, national recreation areas, and national conservation areas, and shall not be prohibited unless, after notice and hearing in the vicinity of the affected unit or area, the Secretary finds that such use would be detrimental to the resource values of the unit or area. Nothing in this section shall be construed as prohibiting the use of other methods of transportation for such travel and activities on conservation system lands where such use is permitted by this Act or other law.

(b) Notwithstanding any other provisions of this Act or other law, in any case in which State owned or privately owned land, including subsurface rights of such owners underlying public lands, or a valid mining claim or other valid occupancy is within or is effectively surrounded by one or more conservation system units, national recreation areas, national conservation areas, or those public lands designated as wilderness study, the State or private owner or occupier shall be given by the Secretary such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned land by such State or private owner or

occupier and their successors in interest. Such rights shall be subject to reasonable regulations issued by the Secretary to protect the natural and other values of such lands.

TEMPORARY ACCESS

§1111. (a) IN GENERAL.--Notwithstanding any other provision of this Act or other law the Secretary shall authorize and permit temporary access by the State or a private landowner to or across any conservation system unit, national recreation area, national conservation area, the National Petroleum Reserve Alaska or those public lands designated as wilderness study or managed to maintain the wilderness character or potential thereof, in order to permit the State or private landowner access to its land for purposes of survey geophysical, exploratory, or other temporary uses thereof whenever he determines such access will not result in permanent harm to the resources of such unit, area, Reserve or lands.

(b) STIPULATIONS AND CONDITIONS.--In providing temporary access pursuant to subsection (a), the Secretary may include such stipulations and conditions he deems necessary to insure that the private use of public lands is accomplished in a manner that is not inconsistent with the purposes for which the public lands are reserved and which insures that no permanent harm will result to the resources of the unit, area, Reserve or lands.

NORTH SLOPE HAUL ROAD

§1112. (a) IN GENERAL.--So long as that section of the North Slope Haul Road referred to in subsection (c) is closed to public use, but not including regulated local traffic north of the Yukon River, regulated industrial traffic and regulated high occupancy buses, such regulation to occur under State law, except that the Secretary, after consultation with the Secretary of Transportation, and the Governor of Alaska shall agree on the number of vehicles and seasonality of use, such section shall be free from any and all restrictions contained in title 23, United States Code, as amended or supplemented, or in any regulations thereunder. Prior to executing an agreement pursuant to this subsection, the Secretary and the Governor of Alaska shall consult with the head of any unit of local government which encompasses lands located adjacent to the route of the North Slope Haul Road. The State of Alaska shall have the authority to limit access, impose restrictions and impose tolls, notwithstanding any provision of Federal law.

(b) RELEASE.--The removal of restrictions shall not be conditioned upon repayment by the State of Alaska to the Treasurer of the United States of any Federal-aid highway funds paid on account of the section of highway described in subsection (c), and the obligation of the State of Alaska to repay these amounts is hereby released so long as the road remains closed as set forth in subsection (a).

(c) APPLICATION OF SECTION.--The provisions of this section shall apply to that section of the North Slope Haul Road, which extends from the southern terminus of the Yukon River Bridge to the northern terminus of the Road at Prudhoe Bay.

STIKINE RIVER REGION

§1113. Congress finds that there is a need to study the effect of Government and this Act upon the ability of the Government of Canada to obtain access in the Stikine River region of southeast Alaska. Accordingly, within five years from the date of enactment of this Act, the President shall consult with the Government of Canada and shall submit a report to the Congress containing his findings and recommendations concerning the need, if any, to provide for such access. Such report shall include, among other things, an analysis of the need may result from various forms of access including, but not limited to, a road along the Stikine and Iskut Rivers, or other alternative routes should such access be permitted.

ANILCA TITLE XIII

ADMINISTRATIVE PROVISIONS

MANAGEMENT PLANS

§1301. (a) Within five years from the date of enactment of this Act, the Secretary shall develop and transmit to the appropriate Committees of the Congress a conservation and management plan for each of the units of the National Park System established or to which additions are made by this Act.

(b) NATIONAL PARK SERVICE PLAN REQUIREMENTS.--Each plan for a unit established, redesignated, or expanded by Title II shall identify management practices which will carry out the policies of this Act and will accomplish the purposes for which the concerned National Park System unit was established or expanded and shall include at least the following:

- (1) Maps indicating areas of particular importance as to wilderness, natural, historical, wildlife, cultural, archeological, paleontological, geological, recreational, and similar resources and also indicating the areas into which such unit will be divided for administrative purposes.
- (2) A description of the programs and methods that will be employed to manage fish and wildlife resources and habitats, cultural, geological, recreational, and wilderness resources, and how each conservation system unit will contribute to overall resources management goals of that region. Such programs should include research, protection, restoration, development, and interpretation as appropriate.
- (3) A description of any areas of potential or proposed development, indicating types of visitor services and facilities to be provided, the estimated costs of such services and facilities, and whether or not such services and facilities could and should be provided outside the boundaries of such unit.
- (4) A plan for access to, and circulation within, such unit, indicating the type and location of transportation routes and facilities, if any.
- (5) A description of the programs and methods which the Secretary plans to use for the purposes of (A) encouraging the recognition and protection of the culture and history of the individuals residing, on the date of the enactment of this Act, in such unit and areas in the vicinity of such unit, and (B) providing and encouraging employment of such individuals.
- (6) A plan for acquiring land with respect to such unit including proposed modifications in the boundaries of such unit.
- (7) A description (A) of privately owned areas, if any, which are within such unit, (B) of activities carried out in, or proposed for such areas, (C) of the present and potential effects of such activities on such unit, (D) of the purposes for which such areas are used, and (E) of methods (such as cooperative agreements and issuance or enforcement of regulations) of controlling the use of such activities to carry out the policies of this Act and the purposes for which such unit is established or expanded.
- (8) A plan indicating the relationship between the management of such unit and activities being carried out in, or proposed for, surrounding areas and also indicating cooperative agreements which could and should be entered into for the purpose of improving such management.

(c) CONSIDERATION OF FACTORS.--In developing, preparing, and revising a plan under this section the Secretary shall take into consideration at least the following factors:

(1) The specific purposes for which the concerned conservation system unit was established or expanded.

(2) Protection and preservation of the ecological, environmental, wildlife, cultural, historical, archeological, geological, recreational, wilderness, and scenic character of the concerned unit and of areas in the vicinity of such unit.

(3) Providing opportunities for Alaska Natives residing in the concerned unit and areas adjacent to such unit to continue performing in such unit activities which they have traditionally or historically performed in such unit.

(4) Activities being carried out in areas adjacent to, or surrounded by, the concerned unit.

(d) HEARING AND PARTICIPATION.--In developing, preparing, and revising a plan under this section the Secretary shall hold at least one public hearing in the vicinity of the concerned conservation unit, hold at least one public hearing in a metropolitan area of Alaska, and, to the extent practicable, permit the following persons to participate in the development, preparation, and revision of such plan:

(1) The Alaska Land Use Council and officials of Federal agencies whose activities will be significantly affected by implementation of such plan.

(2) Officials of the State and of political subdivisions of the State whose activities will be significantly affected by implementation of such plan.

(3) Officials of Native Corporations which will be significantly affected by implementation of such plan.

(4) Concerned local, State, and National organizations and interested individuals.

LAND ACQUISITION AUTHORITY

§1302. (a) GENERAL AUTHORITY.--Except as provided in subsections (b) and (c) of this section, the Secretary is authorized, consistent with other applicable law in order to carry out the purposes of this Act, to acquire by purchase, donation, exchange, or otherwise any lands within the boundaries of any conservation system unit other than National Forest Wilderness.

(b) RESTRICTIONS.--Lands located within the boundaries of a conservation system unit which are owned by--

(A) the State or a political subdivision of the State;

(B) a Native Corporation or Native Group which has Natives as a majority of its stockholders;

(C) the actual occupant of a tract, title to the surface estate of which was on, before, or after the date of enactment of this Act conveyed to such occupant pursuant to §14(c)(1) and §149(h)(5) of the Alaska Native Claims Settlement Act, unless the Secretary determines that the tract is no longer occupied for the purpose described in §14(c)(1) or §14(h)(5) for which the tract was conveyed and that activities on the tract are or will be detrimental to the purposes of the unit in which the tract is located; or

(D) a spouse or lineal descendant of the actual occupant of a tract described in subparagraph (C), unless the Secretary determines that activities on the tract are or will be detrimental to the purposes of the unit in which the tract is located--

may not be acquired by the Secretary without the consent of the owner.

(c) EXCHANGES.--Lands located within the boundaries of a conservation system unit (other than National Forest Wilderness) which are owned by persons or entities other than those described in subsection (b) of this section shall not be acquired by the Secretary without the consent of the owner unless prior to final judgment on the value of the acquired land, the owner, after being offered appropriate land of similar characteristics and like value (if such land is available from public lands located outside the boundaries of any conservation system unit), chooses not to accept the exchange. In identifying public lands for exchange pursuant to this subsection, the Secretary shall consult with the Alaska Land Use Council.

(d) IMPROVED PROPERTY.--No improved property shall be acquired under subsection (a) without the consent of the owner unless the Secretary first determines that such acquisition is necessary to the purposes for which the concerned conservation system unit was established or expanded.

(e) RETAINED RIGHTS.--The owner of an improved property on the for himself, his heirs and assigns, a right of use and occupancy of the improved property for noncommercial residential or recreational purposes, as the case may be, for a definite term of not more than twenty-five years, or in lieu thereof, for a term ending at the death of the owner or the death of his spouse, whichever is later. The owner shall elect the term to be reserved. Unless the property is wholly or partially donated, the Secretary shall pay to the owner the fair market value of the owner's interest in the property on the date of its acquisition, less the fair market value on that date of the right retained by the owner. A right retained by the owner pursuant to this section shall be subject to termination by the Secretary upon his determination that such right is being exercised in a manner inconsistent with the purposes of this Act, and it shall terminate by operation of law upon notification by the Secretary to the holder of the right of such determination and tendering to him the amount equal to the fair market value of that portion which remains unexpired.

(f) DEFINITION.--For the purposes of this section, the term "Improved property" means--

(1) a detached single family dwelling, the construction of which was begun before January 1, 1980 (hereinafter referred to as the "dwelling"), together with the land on which the dwelling is situated to the extent that such land--

(A) is in the same ownership as the dwelling or is Federal land on which entry was legal and proper, and

(B) is designated by the Secretary to be necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures necessary to the dwelling which are situated on the land so designated, or

(2) property developed for noncommercial recreational uses together with any structures accessory thereto which were so used on or before January 1, 1980, to the extent that entry onto such property was legal and proper.

In determining when and to what extent a property is to be considered an "improved property"; the Secretary shall take into consideration the manner of use of such buildings and lands prior to January 1 1980, and shall designate such lands as are reasonably necessary for the continued enjoyment of the property in the same manner and to the same extent as existed before such date.

(g) CONSIDERATION OF HARDSHIP.--The Secretary shall give prompt and careful consideration to any offer made by the owner of any property within a Conservation system unit to sell such property. if such owner notifies the Secretary that the continued ownership is causing, or would result in, undue hardship.

(h) EXCHANGE AUTHORITY.--Notwithstanding any other provision of law, in acquiring lands for the purposes of this Act, the Secretary is authorized to exchange lands (including lands within conservation system units and within the National Forest System) or interests therein (including Native selection rights) with the corporations organized by the Native Groups, Village Corporations, Regional Corporations, and the Urban Corporations, and other municipalities and corporations or individuals, the State (acting free of the restrictions of §6(i) of the Alaska Statehood Act), or any Federal agency. Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to equalize the value of the property exchanged, except that if the parties agree to an exchange and the Secretary determines it is in the public interest, such exchanges may be made for other than equal value.

(i)(1) The Secretary is authorized to acquire by donation or exchange, lands (A) which are contiguous to any conservation system unit established or expanded by this Act, and (B) which are owned or validly selected by the State of Alaska.

(2) Any such lands so acquired shall become a part of such conservation system unit.

USE OF CABINS AND OTHER SITES OF OCCUPANCY ON CONSERVATION SYSTEM UNITS

§1303. (a) IMPROVED PROPERTY ON NATIONAL PARK SYSTEM LANDS.--

(1) On public lands within the boundaries of any unit of the National Park System created or enlarged by this Act, cabins or other structures existing prior to December 18, 1973, may be occupied and used by the claimant to these structures pursuant to a renewable, nontransferable permit. Such use and occupancy shall be for terms of five years each: Provided, That the claimant of the structure by application:

(A) Reasonably demonstrates by affidavit, bill of sale or other documentation, proof of possessory interest or right of occupancy in the cabin or structure;

(B) Submits a sketch or photograph of the cabin or structure and a map showing its geographic location;

(C) Agrees to vacate the cabin and to remove all personal property from the cabin or structure upon expiration of the permit; and

(D) Acknowledges in the permit that the applicant has no interest in the real property on which the cabin or structure is located.

(2) On public lands within the boundaries of any unit of the National Park System created or enlarged by this Act, cabins or other structures, the occupancy or use of which commenced between December 18, 1973, and December 1, 1978, may be used and occupied by the claimant of such structure pursuant to a nontransferable, nonrenewable permit. Such use and occupancy shall be for a maximum term of one year: Provided, however, That the claimant, by application:

(A) Reasonably demonstrates by affidavit, bill of sale, or other documentation proof of possessory interest or right of occupancy in the cabin or structure;

(B) Submits a sketch or photograph of the cabin or structure and a map showing its geographic location;

(C) Agrees to vacate the cabin or structure and to remove all personal property from it upon expiration of the permit; and

(D) Acknowledges in the permit that the applicant has no legal interest in the real property on which the cabin or structure is located.

The Secretary may, on a case by case basis, subject to reasonable regulations, extend such permit term beyond one year for such reasons as the Secretary deems equitable and just.

(3) Cabins or other structures not under permit as specified herein shall be used only for official government business: Provided, however, That during emergencies involving the safety of human life or where designated for public use by the Secretary, these cabins may be used by the general public.

(4) The Secretary may issue a permit under such conditions as he may prescribe for the temporary use, occupancy, construction and maintenance of new cabins or other structures if he determines that the use is necessary to reasonably accommodate subsistence uses or is otherwise authorized by law.

(b) IMPROVED PROPERTY ON OTHER UNITS OR AREAS ESTABLISHED OR EXPANDED BY THIS ACT.--The following conditions shall apply regarding the construction, use and occupancy of cabins and related structures on Federal lands within conservation system units or areas not provided for in subsection (a) of this section:

(1) The construction of new cabins is prohibited except as may be authorized pursuant to a nontransferable, five-year special use permit issued by the Secretary. Such special use permit shall only be issued upon a determination that the proposed use construction, and maintenance of a cabin is compatible with the purposes for which the unit or area was established and that the use of the cabin is either directly related to the administration of the unit or area or is necessary to provide for a continuation of an ongoing activity or use otherwise allowed within the unit or area where the permit applicant has no reasonable alternative site for constructing a cabin. No special use permit shall be issued to authorize the construction of a cabin for private recreational use.

(2) Traditional and customary uses of existing cabins and related structures on Federal lands within a unit or area may be and allowed to continue in accordance with a nontransferable, renewable five-year special use permit issued by the Secretary. Such special use permit shall be issued only upon a determination that the traditional and customary uses are compatible with the purposes for which the unit or area was established. No special use permits shall be issued to authorize the use of an existing cabin constructed for private recreational use.

(3) No special use permit shall be issued under subsections (b)(1) or (2) unless the permit applicant:

(A) In the case of existing cabins or structures, reasonably demonstrates by affidavit, bill of sale or other documentation, proof of possessory interests or right of occupancy in the cabin or structure;

(B) Submits a sketch or photograph of the existing or proposed cabin or structure and a map showing its geographic location;

(C) Agrees to vacate the cabin or structure and remove within a reasonable time period established by the Secretary, all personal property from it upon nonrenewal or revocation of the permit; and

(D) Acknowledges in the permit application that the applicant has no interest in the real property on which the cabin or structure is located or will be constructed.

(4) The United States shall retain ownership of all new cabins and related structures on Federal lands within a unit or area specified in this subsection, and no proprietary rights or privileges shall be conveyed through the issuance of the special use permit authorized by paragraphs (1) or (2) of this subsection. Cabins or other structures not under permit shall be used only for official Government business: Provided, however, That during emergencies involving the safety of

human life or where designated for public use by the unit or area manager, such cabins may be used by the general public.

(c) PERMITS TO BE RENEWED FOR LIFE OF CLAIMANT AND IMMEDIATE FAMILY.--

(1) Whenever issuance of a nontransferable renewable five year special use permit is authorized by subsections (a) or (b) of this section, said permit shall be renewed every five years until the death of the last immediate family member of the claimant residing in the cabin or structure, or unless the Secretary has revoked the special use permit in accordance with the criteria established in this section.

(2) Notwithstanding any other provision of this section, the Secretary, after notice and hearing, may revoke a permit provided for in this section if he determines, on the basis of substantial evidence in the administrative record as a whole, that the use under the permit is causing or may cause significant detriment to the principal purposes for which the unit was established.

(d) EXISTING CABIN LEASES OR PERMITS.--Nothing in this Act shall preclude the renewal or continuation of valid leases or permits in effect on the date of enactment of this Act for cabins, homesites, or similar structures on Federal lands. Unless the Secretary, or in the case of national forest lands, the Secretary of Agriculture, issues specific findings following notice and an opportunity for the leaseholder or permittee to respond, that renewal or continuation of such valid permit or lease constitutes a direct threat to or a significant impairment to the purposes for which a conservation system unit was established (in the case of a structure located within a conservation system unit) or the public domain or national forest (in case of a structure located outside conservation system units), he shall renew such valid leases or permits upon their expiration in accordance with the provisions of the original lease or permit, subject to such reasonable regulations as he may prescribe. Subject to the provisions of the original lease or permit, nothing in this Act or subsection shall necessarily preclude the appropriate Secretary from transferring such a lease or permit to another person at the election or death of the original permittee or leasee.

ARCHEOLOGICAL AND PALEONTOLOGICAL SITES

§1304. Notwithstanding any acreage or boundary limitations contained in this Act with respect to the Cape Krusenstern National Monument, the Bering Land Bridge National Preserve, the Yukon-Charley Rivers National Preserve, and the Kobuk Valley National Park, the Secretary may designate Federal lands or he may acquire by purchase with the consent of the owner, donation, or exchange any significant archeological or paleontological site in Alaska located outside of the boundaries of such areas and containing resources which are closely associated with any such area. If any such site is so designated or acquired, it shall be included in and managed as part of such area. Not more than seven thousand five hundred acres of land may be designated or acquired under this section for inclusion in any single area. Before designation or acquisition of any property in excess of one hundred acres under the provisions of this section, the Secretary shall--

(1) submit notice of such proposed designation or acquisition to the appropriate committees of the Congress; and

(2) publish notice of such proposed designation or acquisition in the Federal Register.

COOPERATIVE INFORMATION/EDUCATION CENTERS

§1305. The Secretary is authorized in consultation with other Federal agencies, to investigate and plan for an information and education center for visitors to Alaska on not to exceed one thousand acres of Federal land at a site adjacent to the Alaska Highway, and to investigate

and plan for similar centers in Anchorage and Fairbanks, Alaska. For the purposes of this investigation, the Secretary shall seek participation in the program planning and/or operation of such centers from appropriate agencies of the State of Alaska, and he is authorized to accept contributions of funds, personnel, and planning and program assistance from such State agencies, other Federal agencies, and Native representatives. The Secretary of Agriculture is authorized to investigate and plan for, in a similar manner, an information and education center for visitors to Alaska in either Juneau, Ketchikan, or Sitka, Alaska. No information center shall be developed pursuant to investigations and plans conducted under authority of this section unless and until such development is specifically authorized by Congress.

ADMINISTRATIVE SITES AND VISITOR FACILITIES

§1306. (a) ESTABLISHMENT.--In conformity with the conservation and management plans prepared for each unit and the purposes of assuring the preservation, protection, and proper management of any conservation system unit, the Secretary may establish sites and visitor facilities--

(1) within the unit, if compatible with the purposes for which the unit is established, expanded, or designated by this Act, and the other provisions of this Act, or

(2) outside the boundaries of, and in the vicinity of the unit. To the extent practicable and desirable, the Secretary shall attempt to locate such sites and facilities on Native lands in the vicinity of the unit.

(b) AUTHORITIES OF SECRETARY.--For the purpose of establishing administrative sites and visitor facilities under subsection (a)--

(1) the Secretary and the head of the Federal agency having primary authority over the administration of any Federal land which the Secretary determines is suitable for use in carrying out such purpose may enter into agreements permitting the Secretary to use such land for such purposes;

(2) notwithstanding any other provision of law, the Secretary under such terms and conditions as he determines are reasonable, may lease or acquire by purchase, donation, exchange, or any other method (except condemnation) real property (other than Federal land), office space, housing, and other necessary facilities which the Secretary determines to be suitable for carrying out such purposes; and

(3) the Secretary may construct, operate, and maintain such permanent and temporary buildings and facilities as he deems appropriate on land which is within, or in the vicinity of, any conservation system unit and with respect to which the Secretary has acquired authority under this subsection to use the property for the purpose of establishing an administrative site or visitor facility under subsection (a), except that the Secretary may not begin construction of buildings and facilities on land not owned by the United States until the owner of such land has entered into an agreement with the Secretary, the terms of which assure the continued use of such buildings and facilities in furtherance of the purposes of this Act.

REVENUE-PRODUCING VISITOR SERVICES

§1307. (a) CONTINUATION OF EXISTING VISITOR SERVICES.--Notwithstanding any other provision of law, the Secretary, under such terms and conditions as he determines are reasonable, shall permit any persons who, on or before January 1, 1979, were engaged in adequately providing any type of visitor service within any area established as or added to a conservation system unit to continue providing such type of service and similar types of visitor

services within such area if such service or services are consistent with the purposes for which such unit is established or expanded.

(b) PREFERENCE.--Notwithstanding provisions of law other than those contained in subsection (a), in selecting persons to provide (and in contracting for the provision of) any type of visitor service for any conservation system unit, except sport fishing and hunting guiding activities, the Secretary--

(1) shall give preference to the Native Corporation which the Secretary determines is most directly affected by the establishment or expansion of such unit by or under the provisions of this Act;

(2) shall give preference to persons whom he determines, by rule, are local residents; and

(3) shall, consistent with the provisions of this section, offer to Cook Inlet Region, Incorporated, in cooperation with Village Corporations within the Cook Inlet Region when appropriate, the right of first refusal to provide new revenue producing visitor services within the Kenai National Moose Range or that portion of the Lake Clark National Park and Preserve within the boundaries of the Cook Inlet Region that right to remain open for a period of ninety days as agreed to in paragraph VIII of the document referred to in §12 of the Act of January 2, 1976 (Public Law 94-204).

(c) DEFINITION.--As used in this section, the term "visitor service" means any service made available for a fee or charge to persons who visit a conservation system unit, including such services as providing food, accommodations, transportation, tours, and guides excepting the guiding of sport hunting and fishing. Nothing in this Act shall limit or affect the authority of the Federal Government or the State of Alaska to license and regulate transportation services.

LOCAL HIRE

§1308. (a) PROGRAM.--After consultation with the Office of Personnel Management, the Secretary shall establish a program under which any individual who, by reason of having lived or worked in or near a conservation system unit, has special knowledge or expertise concerning the natural or cultural resources of such unit and the management thereof (as determined by the Secretary) shall be considered for selection for any position within such unit without regard to--

(1) any provision of the civil service laws or regulations thereunder which require minimum periods of formal training or experience,

(2) any such provision which provides an employment preference to any other class of applicant in such selection, and

(3) any numerical limitation on personnel otherwise applicable.

Individuals appointed under this subsection shall not be taken into account in applying any personnel limitation described in paragraph (3).

(b) REPORTS.--The Secretary shall from time to time prepare and submit to the Congress reports indicating the actions taken in carrying out the provisions of subsection (a) of this section together with any recommendations for legislation in furtherance of the purposes of this section.

KLONDIKE GOLD RUSH NATIONAL HISTORICAL PARK

§1309. The second sentence of subsection (b)(1) of the first section of the Act entitled "An Act to authorize the Secretary of the Interior to establish the Klondike Gold Rush National Historical Park in the States of Alaska and Washington, and for other purposes", approved June 30, 1976

(90 Stat. 717), is amended to read as follows: "Lands or interests in lands owned by the State of Alaska or any political subdivision thereof may be acquired only by donation or exchange, and notwithstanding the provisions of subsection 6(i) of the Act of July 7, 1958 (72 Stat. 339, 342), commonly known as the Alaska Statehood Act, the State may include the minerals in any such transaction."

NAVIGATION AIDS AND OTHER FACILITIES

§1310 (a) EXISTING FACILITIES.--Within conservation system units established or expanded by this Act, reasonable access to, and operation and maintenance of, existing air and water navigation aids communications sites and related facilities and existing facilities for weather, climate, and fisheries research and monitoring shall be permitted in accordance with the laws and regulations applicable to units of such systems, as appropriate. Reasonable access to and operation and maintenance of facilities for national defense purposes and related air and water navigation aids within or adjacent to such areas shall continue in accordance with the laws and regulations governing such facilities notwithstanding any other provision of this Act. Nothing in the Wilderness Act shall be deemed to prohibit such access, operation and maintenance within wilderness areas designated by this Act.

(b) NEW FACILITIES.--The establishment, operation, and maintenance within any conservation system unit of new air and water navigation aids and related facilities, facilities for national defense purposes, and related air and water navigation aids, and facilities for weather, climate, and fisheries research and monitoring shall be permitted but only (1) after consultation with the Secretary or the Secretary of Agriculture, as appropriate, by the head of the Federal department or agency undertaking such establishment, operation, or maintenance, and (2) in accordance with such terms and conditions as may be mutually agreed in order to minimize the adverse effects of such activities within such unit.

SCENIC HIGHWAY STUDY

§1311. (a) WITHDRAWAL.--Subject to valid existing rights, all public lands within an area, the centerline of which is the centerline of the Parks Highway from the entrance to Denali National Park to the Talkeetna junction which is one hundred and thirty-six miles south of Cantwell, the Denali Highway between Cantwell and Paxson, the Richardson Highway and Edgerton Highway between Paxson and Chitina, and the existing road between Chitina and McCarthy (as those highways and road are depicted on the official maps of the department of transportation of the State of Alaska) and the boundaries of which are parallel to the centerline and one mile distant therefrom on either side, are hereby withdrawn from all forms of entry or appropriation under the mining laws and from operation of the mineral leasing laws of the United States. Nothing in this section shall be construed to preclude minor road realignment minor road improvement, or the extraction of gravel for such purposes from lands withdrawn or affected by the study mandated herein.

(b) STUDY.--During the three-year period beginning on the date of enactment of this Act, the Secretary shall study the desirability of establishing a Denali Scenic Highway to consist of all or part of the lands described in subsection (a) of this section. In conducting the studies, the Secretary, through a study team which includes representatives of the Secretary of Transportation, the National Park Service, the Bureau of Land Management, the State, and of each Regional Corporation within whose area of operation the lands described in subsection (a) are located, shall consider the scenic and recreational values of the lands withdrawn under this section, the importance of providing protection to those values, the desirability of providing a symbolic and actual physical connection between the national parks in south central Alaska, and the desirability of enhancing the experience of persons traveling between those parks by motor vehicles. Members of the study team who are not Federal employees shall receive from

the Secretary per diem (in lieu of expenses) and travel allowances at the rates provided for employees of the Bureau of Indian Affairs in Alaska in grade GS-15.

(c) COOPERATION NOTICE: HEARINGS.--In conducting the studies required by this section, the Secretary shall cooperate with the State and shall consult with each Village Corporation within whose area of operation lands described in this section are located and to the maximum extent practicable with the owner of any lands adjoining the lands described in subsection (a) concerning the desirability of establishing a Denali Scenic Highway. The Secretary, through the National Park Service, shall also give such public notice of the study as he deems appropriate, including at least publication in a newspaper or newspapers having general circulation in the area or areas of the lands described in subsection (a), and shall hold a public hearing or hearings at one or more locations convenient to the areas affected.

(d) REPORT.--Within three years after the date of enactment of this Act, the Secretary shall report to the President the results of the studies carried out pursuant to this section together with his recommendation as to whether the scenic highway studied should be established and, if his recommendation is to establish the scenic highway, the lands described in subsection (a) which should be included therein. Such report shall include the views and recommendations of all members of the study team. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendations and those of the Governor of Alaska with respect to creation of the scenic highways, together with maps thereof, a definition of boundaries thereof, an estimate of costs, recommendations on administration, and proposed legislation to create such a scenic highway, if creation of one is recommended.

(e) PERIOD OF WITHDRAWAL.--The lands withdrawn under subsection (a) of this section shall remain withdrawn until such time as the Congress acts on the President's recommendation, but not to exceed two years after the recommendation is transmitted to the Congress.

ADMINISTRATION OF THE WHITE MOUNTAINS NATIONAL RECREATION AREA

§1312. (a) The White Mountains National Recreation Area established by this Act shall be administered by the Secretary in order to provide for public outdoor recreation use and enjoyment and for the conservation of the scenic, scientific, historic, fish and wildlife and other values contributing to public enjoyment of such area. Except as otherwise provided in this Act, the Secretary shall administer the recreation area in a manner which in his judgment will best provide for (1) public outdoor recreation benefits; (2) conservation of scenic, scientific, historic, fish and wildlife, and other values contributing to public enjoyment; and (3) such management, utilization, and disposal of natural resources and the continuation of such existing uses and developments as will promote, or are compatible with, or do not significantly impair public recreation and conservation of the scenic, scientific, historic, fish and wildlife, or other values contributing to public enjoyment. In administering the recreation area, the Secretary may utilize such statutory authorities available to him for the conservation and management of natural resources as he deems appropriate for recreation and preservation purposes and for resource development compatible therewith.

(b) The lands within the recreation area, subject to valid existing rights, are hereby withdrawn from State selection under the Alaska Statehood Act or other law, and from location, entry, and patent under the United States mining laws. The Secretary under such removal reasonable regulations as he deems appropriate, may permit the removal of the nonleasable minerals from lands or interests in lands within the recreation area in the manner described by §10 of the Act of August 4, 1939, as amended (43 U.S.C. 387), and he may permit the removal of leasable minerals from lands or interests in lands within the recreation areas in accordance with the mineral leasing laws, if he finds that such disposition would not have significant adverse effects on the administration of the recreation areas.

(c) All receipts derived from permits and leases issued on lands or interest in lands within the recreation area under the mineral leasing laws shall be disposed of as provided in such laws; and receipts from the disposition of nonleasable minerals within the recreation area shall be disposed of in the same manner as moneys received from the sale of public lands.

ADMINISTRATION OF NATIONAL PRESERVES

§1313. A National Preserve in Alaska shall be administered and managed as a unit of the National Park System in the same manner as a national park except as otherwise provided in this Act and except that the taking of fish and wildlife for sport purposes and subsistence uses, and trapping shall be allowed in a national preserve under applicable State and Federal law and regulation. Consistent with the provisions of §816, within national preserves the Secretary may designate zones where and periods when no hunting, fishing, trapping, or entry may be permitted for reasons of public safety, administration, floral and faunal protection, or public use and enjoyment. Except in emergencies, any regulations prescribing such restrictions relating to hunting, fishing, or trapping shall be put into effect only after consultation with the appropriate State agency having responsibility over hunting, fishing, and trapping activities.

TAKING OF FISH AND WILDLIFE

§1314. (a) Nothing in this Act is intended to enlarge or diminish the responsibility and authority of the State of Alaska for management of fish and wildlife on the public lands except as may be provided in Title VIII of this Act, or to amend the Alaska constitution.

(b) Except as specifically provided otherwise by this Act, nothing in this Act is intended to enlarge or diminish the responsibility and authority of the Secretary over the management of the public lands.

(c) The taking of fish and wildlife in all conservation system units; and in national conservation areas, national recreation areas, and national forests, shall be carried out in accordance with the provisions of this Act and other applicable State and Federal law. Those areas designated as national parks or national park system monuments in the State shall be closed to the taking of fish and wildlife, except that--

(1) notwithstanding any other provision of this Act, the Secretary shall administer those units of the National Park System and those additions to existing units, established by this Act and which permit subsistence uses, to provide an opportunity for the continuance of such uses by local rural residents; and

(2) fishing shall be permitted by the Secretary in accordance with the provisions of this Act and other applicable State and Federal law.

WILDERNESS MANAGEMENT

§1315. (a) APPLICATION ONLY TO ALASKA.--The provisions of this section are enacted in recognition of the unique conditions in Alaska. Nothing in this section shall be construed to expand, diminish, or modify the provisions of the Wilderness Act or the application or interpretation of such provisions with respect to lands outside of Alaska.

(b) AQUACULTURE.--In accordance with the goal of restoring and maintaining fish production in the State of Alaska to optimum sustained yield levels and in a manner which adequately assures protection, preservation, enhancement, and rehabilitation of the wilderness resource, the Secretary of Agriculture may permit fishery research, management, enhancement, and rehabilitation activities within national forest wilderness and national forest wilderness study areas designated by this Act. Subject to reasonable regulations permanent improvements

and facilities such as fishways, fish weirs, fish ladders, fish hatcheries, spawning channels, stream clearance, egg planting, and other accepted means of maintaining, enhancing, and rehabilitating fish stocks may be permitted by the Secretary to achieve this objective. Any fish hatchery, fishpass or other aquaculture facility authorized for any such area shall be constructed, managed, and operated in a manner that minimizes adverse impacts on the wilderness character of the area. Developments for any such activities shall involve those facilities essential to these operations and shall be constructed in such rustic manner as to blend into the natural character of the area. Reasonable access solely for the purposes of this subsection, including temporary use of motorized equipment, shall be permitted in furtherance of research, management, rehabilitation and enhancement activities subject to reasonable regulations as the Secretary deems desirable to maintain the wilderness character, water quality, and fish and wildlife values of the area.

(c) EXISTING CABINS.--Previously existing public use cabins within wilderness designated by this Act, may be permitted to continue and may be maintained or replaced subject to such restrictions as the Secretary deems necessary to preserve the wilderness character of the area.

(d) NEW CABINS.--Within wilderness areas designated by this Act the Secretary or the Secretary of Agriculture as appropriate, is authorized to construct and maintain a limited number of new public use cabins and shelters if such cabins and shelters are necessary for the protection of the public health and safety. All such cabins or shelters shall be constructed of materials which blend and are compatible with the immediate and surrounding wilderness landscape. The Secretary or the Secretary of Agriculture, as appropriate, shall notify the House Committee on Interior and Insular Affairs and the Senate Committee on Energy and Natural Resources of his intention to remove an existing or construct a new public use cabin or shelter.

(e) TIMBER CONTRACTS.--The Secretary of Agriculture is hereby directed to modify any existing national forest timber sale contracts applying to lands designated by this Act as wilderness by substituting, to the extent practicable, timber on the other national forest lands approximately equal in volume, species, grade, and accessibility for timber or relevant lands within such units.

(f) BEACH LOG SALVAGE.--Within National Forest wilderness and national forest monuments designated by this Act, the Secretary of Agriculture may permit or otherwise regulate the recovery and salvage of logs from coastlines.

ALLOWED USES

§1316. (a) On all public lands where the taking of fish and wildlife is permitted in accordance with the provisions of this Act or other applicable State and Federal law the Secretary shall permit subject to reasonable regulation to insure compatibility, the continuance of existing uses, and the future establishment, and use, of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to such activities. Such facilities and equipment shall be constructed, used, and maintained in a manner consistent with the protection of the area in which they are located. All new facilities shall be constructed of materials which blend with, and are compatible with, the immediately surrounding landscape. Upon termination of such activities and uses (but not upon regular or seasonal cessation), such structures or facilities shall, upon written request, be removed from the area by the permittee.

(b) Notwithstanding the foregoing provisions, the Secretary may determine, after adequate notice, that the establishment and use of such new facilities or equipment would constitute a significant expansion of existing facilities or uses which would be detrimental to the purposes for which the affected conservation system unit was established, including the wilderness character of any wilderness area within such unit, and may thereupon deny such proposed use or establishment.

GENERAL WILDERNESS REVIEW PROVISION

§1317. (a) Within five years from the date of enactment of this Act, the Secretary shall, in accordance with the provisions of §3(d) of the Wilderness Act relating to public notice, public hearings, and review by State and other agencies, review, as to their suitability or nonsuitability for preservation as wilderness, all lands within units of the National Park System and units of the National Wildlife Refuge System in Alaska not designated as wilderness by this Act and report his findings to the President.

(b) The Secretary shall conduct his review, and the President shall advise the United States Senate and House of Representatives of his in accordance with the provisions of §3(c) and §(d) of the Wilderness Act. The President shall advise the Congress of his recommendations with respect to such areas within seven years from the date of enactment of this Act.

(c) Nothing in this section shall be construed as affecting the administration of any unit of the National Park System or unit of National Wildlife Refuge System in accordance with this Act or other applicable provisions of law unless and until Congress provides otherwise by taking action on any Presidential recommendation made pursuant to subsection (b) of this section.

STATEWIDE CULTURAL ASSISTANCE PROGRAM

§1318. In furtherance of the national policy set forth in the first section of the Act entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes," approved August 21, 1935 (49 Stat. 666), and in furtherance of the need to protect and interpret for the public benefit cultural and archeological resources and objects of national significance relating to prehistoric and historic human use and occupation of lands and waters in Alaska, the Secretary may, upon the application of a Native Corporation or Native Group provide advice, assistance, and technical expertise to the applicant in the preservation, display, and interpretation of cultural resources without regard as to whether title to such resources is in the United States. Such assistance may include making available personnel to assist in the planning, design, and operation of buildings, facilities and interpretive displays for the public and personnel to train individuals in the identification, recovery, preservation, demonstration, and management of cultural resources.

EFFECT ON EXISTING RIGHTS

§1319. Nothing in this Act shall be construed as limiting or restricting the power and authority of the United States or--

- (1) as affecting in any way any law governing appropriation or use of, or Federal right to, water on lands within the State of Alaska;
- (2) as expanding or diminishing Federal or State jurisdiction, responsibility, interests, or rights in water resources development or control; or
- (3) as superseding, modifying, or repealing, except as specifically set forth in this Act, existing laws applicable to the various Federal agencies which are authorized to develop or participate in the development of water resources or to exercise licensing or regulatory functions in relation thereto.

BUREAU OF LAND MANAGEMENT LAND REVIEWS

§1320. Notwithstanding any other provision of law, §603 of the Federal Land Policy and Management Act of 1976 shall not apply to any lands in Alaska. However, in carrying out his duties under §201 and §202 of such Act and other applicable laws, the Secretary may identify areas in Alaska which he determines are suitable as wilderness and may, from time to time,

make recommendations to the Congress for inclusion of any such areas in the National Wilderness Preservation System, pursuant to the provisions of the Wilderness Act. In the absence of congressional action relating to any such recommendation of the Secretary, the Bureau of Land Management shall manage all such areas which are within its jurisdiction in accordance with the applicable land use plans and applicable provisions of law.

AUTHORIZATION FOR APPROPRIATION

§1321. (a) There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act for fiscal years beginning after the fiscal year 1980. No authority to enter into contracts or to make payments or to expend previously appropriated funds under this Act shall be effective except to the extent or in such amounts as are provided in advance in appropriation Acts.

EFFECT ON PRIOR WITHDRAWALS

§1322. (a) The withdrawals and reservations of the public lands made by Public Land Orders No. 5653 of November 16, 1978, 5654 of November 17, 1978, Public Land Orders numbered 5696 through 5711 inclusive of February 12, 1980, Federal Register Documents No. 34051, of December 5, 1978 and No. 79-17803 of June 8, 1979 and Proclamations No. 4611 through 4627, inclusive, of December 1, 1978 were promulgated to protect these lands from selection, appropriation, or disposition prior to the enactment of this Act. As to all lands not within the boundaries established by this Act of any conservation system unit, national conservation area, national recreation area, or national forest addition, the aforesaid withdrawals and reservations are hereby rescinded on the effective date of this Act, and such lands shall be managed by the Secretary pursuant to the Federal Land Policy and Management Act of 1976, or in the case of lands within a national forest, by the Secretary of Agriculture pursuant to the laws applicable to the national forests, unless otherwise specified by this Act. As to the Federal lands which are within the aforesaid boundaries, the aforesaid withdrawals and reservations are, on the effective date of this Act, hereby rescinded and superseded by the withdrawals and reservations made by this Act. Notwithstanding any provision to the contrary contained in any law, the Federal lands within the aforesaid boundaries established by this Act shall not be deemed available for selection, appropriation, or disposition except as expressly provided by this Act.

(b) This section shall become effective upon the relinquishment by the State of Alaska of selections made on November 14, 1978, pursuant to the Alaska Statehood Act which are located within the boundaries of conservation system units, national conservation areas, national recreation areas, and forest additions, established, designated, or expanded by this Act.

ACCESS

§1323. (a) Notwithstanding any other provision of law, and subject to such terms and conditions as the Secretary of Agriculture may prescribe, the Secretary shall provide such access to nonfederally owned land within the boundaries of the National Forest System as the Secretary deems adequate to secure to the owner the reasonable use and enjoyment thereof: Provided, That such owner comply with rules and regulations applicable to ingress and egress to or from the National Forest System.

(b) Notwithstanding any other provision of law, and subject to such terms and conditions as the Secretary of the Interior may prescribe, the Secretary shall provide such access to nonfederally owned land surrounded by public lands managed by the Secretary under the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701-82) as the Secretary deems adequate to secure to the owner the reasonable use and enjoyment thereof: Provided, That such owner comply with rules and regulations applicable to access across public lands.

YUKON FLATS NATIONAL WILDLIFE REFUGE AGRICULTURAL USE

§1324. Nothing in this Act or other existing law shall be construed as necessarily prohibiting or mandating the development of agricultural potential within the Yukon Flats National Wildlife Refuge pursuant to existing law. The permissibility of such development shall be determined by the Secretary on a case-by-case basis under existing law. Any such development permitted within the Yukon Flats National Wildlife Refuge shall be designed and conducted in such a manner as to minimize to the maximum extent possible any adverse effects of the natural values of the unit.

TERROR LAKE HYDROELECTRIC PROJECT IN KODIAK NATIONAL WILDLIFE REFUGE

§1325. Nothing in this Act or the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd) shall be construed as necessarily prohibiting or mandating the construction of the Terror Lake Hydroelectric Project within the Kodiak National Wildlife Refuge. The permissibility of such development shall be determined by the Secretary on a case-by-case basis under existing law.

FUTURE EXECUTIVE ACTIONS

§1326. (a) No future executive branch action which withdraws more than five thousand acres, in the aggregate, of public lands within the State of Alaska shall be effective except by compliance with this subsection. To the extent authorized by existing law, the President or the Secretary may withdraw public lands in the State of Alaska exceeding five thousand acres in the aggregate, which withdrawal shall not become effective until notice is provided in the Federal Register and to both Houses of Congress. Such withdrawal shall terminate unless Congress passes a joint resolution of approval within one year after the notice of such withdrawal has been submitted to Congress.

(b) No further studies of Federal lands in the State of Alaska for the single purpose of considering the establishment of a conservation system unit, national recreation area, national conservation areas or for related or similar purposes shall be conducted unless authorized by this Act or further Act of Congress.

ALASKA GAS PIPELINE

§1327. Nothing in this Act shall be construed as imposing any additional requirements in connection with the construction and operation of the transportation system designated by the President and approved by the Congress pursuant to the Alaska Natural Gas Transportation Act of 1976 (Public Law 94-586; 90 Stat. 2903), or as imposing any limitations upon the authority of the Secretary concerning such system.

PUBLIC LAND ENTRIES IN ALASKA

§1328. (a)(1) Subject to valid existing rights, all applications made pursuant to the Acts of June 1, 1938 (52 Stat. 609), May 3, 1927 (44 Stat. 1364), May 14, 1898 (30 Stat. 413), and March 3, 1891 (26 Stat. 1097), which were filed with the Department of the Interior within the time provided by applicable law, and which describe land in Alaska that was available for entry under the aforementioned statutes when such entry occurred, are hereby approved on the one hundred and eightieth day following the effective date of this Act except where provided otherwise by paragraph (3) or (4) of this subsection, or where the land description of the entry must be adjusted pursuant to subsection (b) of this section, in which cases approval pursuant to the terms of this subsection shall be effective at the time the adjustment becomes final.

(2) Where an application describes land within the boundaries of a unit of the National Park System or a unit of the National Wildlife Refuge System, or a unit of the National Wilderness Preservation System in the Tongass or Chugach National Forests established before the effective date of this Act or by this Act, and the described land was not withdrawn pursuant to §11(a)(1) of the Alaska Native Claims Settlement Act, or where an application describes land which has been patented or deeded to the State of Alaska or which on or before the date of entry was validly selected by tentatively approved, patented, deeded or confirmed to the State of Alaska pursuant to applicable law and was not withdrawn pursuant to §11(a)(1)(A) of the Alaska Native Claims Settlement Act from those lands made available for selection by §11(a)(2) of the Act by any Native Village certified as eligible pursuant to §11(b) of such Act, paragraph (1) of this subsection and subsection (c) of this section shall not apply and the application shall be adjudicated pursuant to the requirements of the Acts referred to in §1328(a)(1) hereof, the Alaska Native Claims Settlement Act and other applicable law.

(3) Paragraph (1) of this subsection and subsection (c) shall not apply and the application shall be adjudicated pursuant to the requirements of the Acts referred to in §1328(a)(1) hereof, if on or before the one hundred and eightieth day following the effective date of the Act--

(A) a Native Corporation files a protest with the Secretary of the Interior (the Secretary) stating that the applicant is not entitled to the land described in the application, and said land is withdrawn for selection by the corporation pursuant to the Alaska Native Claims Settlement Act; or

(B) the State of Alaska files a protest with the Secretary stating that the land described in the application is necessary for access to lands owned by the United States, the State of Alaska, or a political subdivision of the State of Alaska, to resources located thereon, or to a public body of water regularly employed for transportation purposes, and the protest states with specificity the facts upon which the conclusions concerning access are based and that no reasonable alternatives for access exist; or

(C) a person or entity files a protest with the Secretary stating that the applicant is not entitled to the land described in the application and that said land is the situs of improvements claimed by the person or entity; or

(D) the State of Alaska files a protest with the Secretary respecting an entry which was made prior to a valid selection tentative approval, patent, deed, or confirmation to the State of Alaska pursuant to applicable law; or

(E) regarding public land entries within units of the National Wildlife Refuge System established or expanded in this Act, any such entry not properly made under applicable law, or not the subject of an application filed within the time required by applicable law, or not properly maintained thereafter under applicable law shall be adjudicated pursuant to the Act under which the entry was made.

(4) Paragraph (1) of this subsection and subsection (c) shall not apply to any application which was knowingly and voluntarily relinquished by the applicant.

(b) An applicant may amend the land description contained in his or her application if said description designates land other than that which the applicant intended to claim at the time of application and if the description as amended describes the land originally intended to be claimed. If the application is amended, this section shall operate to approve the application or to require its adjudication, as the case may be, with reference to the amended land description only: Provided, That the Secretary shall notify the State of Alaska and all interested parties, as shown by the records of the Department of the Interior of the intended correction of the entry's location, and any such party shall have until the one hundred and eightieth day following the effective date of this Act or sixty days following mailing of the notice, whichever is later, to file

with the Department of the Interior a protest as provided in subsection (a)(3) of this section, which protest, if timely, shall be deemed filed within one hundred and eighty days of the effective date of this Act notwithstanding the actual date of filing: Provided further, That the Secretary may require that all applications designating land in a specific area be amended, if at all, prior to a date certain which date shall be calculated to allow for orderly adoption of a plan or survey for the specified area, and the Secretary shall mail notification of the final date for amendment to each affected applicant, and shall provide such other notice as the Secretary deems appropriate, at least sixty days prior to said date: Provided further, That no application may be amended for location following adoption of a final plan of survey which includes the location of the entry as described in the application or its location as desired by amendment.

(c) Where the land described in application (or such an application as adjusted or amended pursuant to subsection (b) or (c) of this section), was on that date withdrawn, reserved, or classified for powersite or power-project purposes, notwithstanding such withdrawal, reservation, or classification the described land shall be deemed vacant, unappropriated, and unreserved within the meaning of the Acts referred to in §1328(a)(1) hereof, and, as such, shall be subject to adjudication or approval pursuant to the terms of this section: Provided, however, That if the described land is included as part of a project licensed under part I of the Federal Power Act of June 10, 1920 (41 Stat. 24), as amended, or is presently utilized for purposes of generating or transmitting electrical power or for any other project authorized by Act of Congress, the foregoing provision shall not apply and the application shall be adjudicated pursuant to the appropriate Act: Provided further, That where the applicant commenced occupancy of the land after its withdrawal or classification for powersite purposes, the entry shall be made subject to the right of reentry provided the United States by §24 of the Federal Power Act, as amended: Provided further, That any right of reentry reserved in a patent pursuant to this section shall expire twenty years after the effective date of this Act if at that time the land involved is not subject to a license or an application for a license under part I of the Federal Power Act, as amended, or actually utilized or being developed for a purpose authorized by that Act, as amended or other Act of Congress.

(d) Prior to issuing a patent for an entry subject to this section, the Secretary shall identify and adjudicate any record entry or application for title to land described in the application other than the and Alaska Native Claims Settlement Act, the Alaska Statehood Act, or the Act of May 17, 1906, as amended, which entry or application claims land also described in the application, and shall determine whether such entry or application represents a valid existing right to which the application is subject. Nothing in this section shall be construed to affect rights, if any, acquired by actual use of the described land prior to its withdrawal or classification, as affecting National Forest lands.



Appendix B

Visitor Trends Technical Report



Dalton Highway Crossing the Yukon River. BLM photo.

Alaska Federal Lands Long Range Transportation Plan

Visitation Trends Technical Report

May 2019

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1 EXECUTIVE SUMMARY

This report identifies and describes trends in visitation levels and access to Federal public lands in Alaska in a framework of indicators that affect those trends. Trends considered in this report include visitation by Federal Land Management Agency (FLMA), travel modes, seasonal variations, and types of activities visitors engage in on Federal public lands in Alaska. The socio-economic indicators that make up the lens through which visitation is viewed, include economic indicators, such as unemployment rates, and population and demographic trends. The following are findings that this report will expand on:

- Visitation levels to Federal public lands in Alaska are influenced by trends in out-of-state visitation, economic conditions, and shifts in demographics and population.
- Seasonal variation in visitation levels are consistent between lands managed by various Federal public land management agencies as well as visitation to Alaska generally.
- Visitation levels to Alaska, as well as specific regions of the state, are largely dependent on and influenced by the level of access that various transportation modes provide to those areas.
- Visitation levels to Federal public lands rise when national employment levels rise.
- The largest age-group cohort to visit Alaska are comprised of individuals age 55 and older, and the population of the U.S. as a whole is continuing to age.
- Almost all of the most popular activities that out-of-state visitors cite as reasons to visit Alaska are activities that can be done on Federal public lands.

2 INTRODUCTION

This report supports the update to the 2012 [Alaska Federal Lands Long Range Transportation Plan](#) (LRTP) by providing updated visitation and demographic information for Alaska Federal lands. This report is the result of a partnership consisting of National Park Service (NPS); U.S. Fish and Wildlife Service (FWS); U.S. Forest Service (USFS); Bureau of Land Management (BLM); Alaska Department of Transportation and Public Facilities (Alaska DOT&PF); and the Federal Highway Administration (FHWA), Federal Lands Highway Division (FLHD).

2.1 DATA SOURCES AND LIMITATIONS

This report relies on data derived from publically available sources. These sources include the State of Alaska, U.S. Census Bureau, Bureau of Labor and Statistics, and the individual FLMAs addressed herein.

Each FLMA is responsible for collecting and maintaining visitation data on the land it manages. As such, each agency employs its own methodology to collect and organize visitation data. Some of the differences between datasets pertain to the definition of what constitutes a “visit,” how often an agency collects visitation data at any given unit, and the statistical methodology used to estimate total visitation. Because of these variations, it is difficult to collate visitation data from all agencies to analyze common visitation trends across all public lands within Alaska. However, visitation trends can be analyzed agency-by-agency. Looking at each FLMA independently, along with data from the Alaska

Visitors Statistics Program (AVSP), provides a comprehensive perspective of visitation to Federal public lands in Alaska and visitation to Alaska generally.

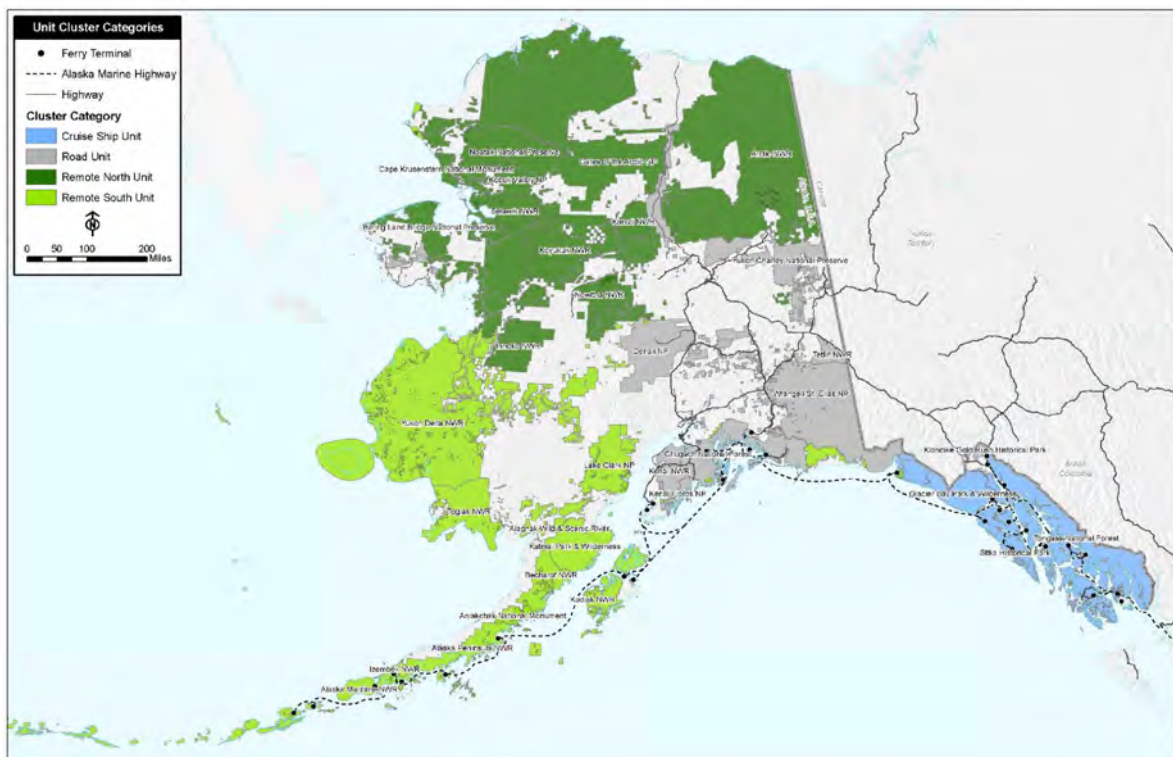
2.2 NATIONAL PARK SERVICE CLUSTERS

As described in the [Alaska Federal Lands LRTP](#), access to Alaska Federal public lands is characterized by different users including out-of-state recreational users, in-state recreational users, in-state subsistence users, through travelers, and commercial users. Visitation levels to Federal public lands vary significantly throughout the state and are heavily influenced by geography and connectivity to the greater statewide transportation system.

NPS categorizes its park units into regions based on both geography and how park units are generally accessed. NPS park units are clustered into four categories (Figure 1) which are defined by the following characteristics:

- **Road Units** – Road Units are characterized by high volumes of visitor and user access by automobiles and buses. These units are generally located near major Alaska DOT&PF roads and receive significant levels of visitation.
- **Cruise Ship Units** – Cruise Ship Units are characterized by high visitation levels and users whose access originates from cruise ships or ferries. Visitation levels are generally high in these units, although, in some cases, travelers on cruise ships may actually never set foot on land within a park unit and only view the scenery from the cruise ship.
- **Remote North Units** – Remote North Units are characterized by their northern geography, the lack of connectivity to the statewide transportation system, and isolation from commercial modes of transportation. The primary modes of access to these park units are diverse and can range from airplane, ship, snowmachine, off-highway vehicle, train, or by foot. Modes used to access Remote North Units vary by season. For example, the primary summer mode of access is plane and river boat while the primary winter mode of access is by snowmachine or winter trail. Remote North Units generally have low levels of visitation.
- **Remote South Units** – Like Remote North Units, Remote South Units are characterized by their geography, lack of connectivity, low visitation levels, and varied modes of access.

Figure 1: NPS Unit Cluster Categories¹



NPS park units with higher visitation levels are accessed by heavily traveled statewide or regional transportation systems such as roads, ferries, and railroad. The highest levels of visitation among NPS park units are in those park units classified as Cruise Ship Units and Road Units, receiving 59 percent and 36 percent of visitation, respectively (Figure 2). Conversely, park units classified as Remote South Units and Remote North Units experience significantly less visitation, receiving two percent each, of visitation to all NPS managed lands in Alaska. The visitation trends of park units within each of the NPS clusters has remained relatively consistent over time as illustrated in Figure 3.

Due to similarities in geography and access, it is reasonable to assume that land of other FLMA's within the geographic boundaries of the four NPS clusters experience similar visitation trends as NPS park units in the same cluster.

¹ Source: Alaska Federal Lands Long Range Transportation Plan, Appendix B, August 2012, Figure 2

Figure 2: Alaska NPS Visitation by Cluster, 2016²

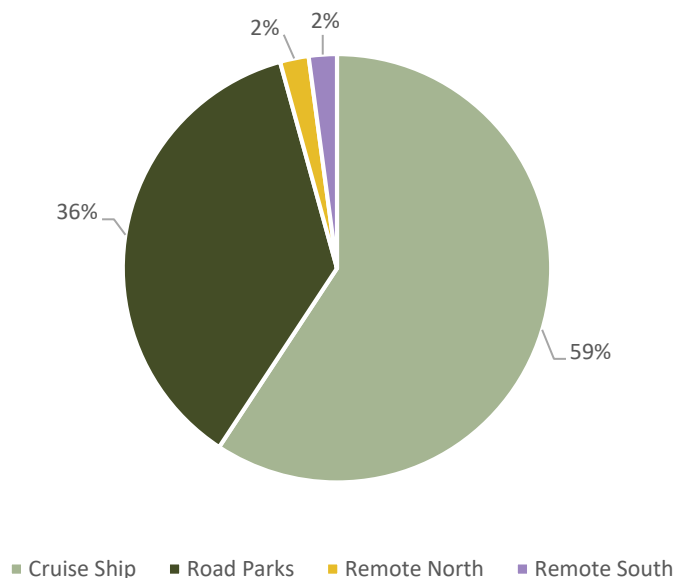
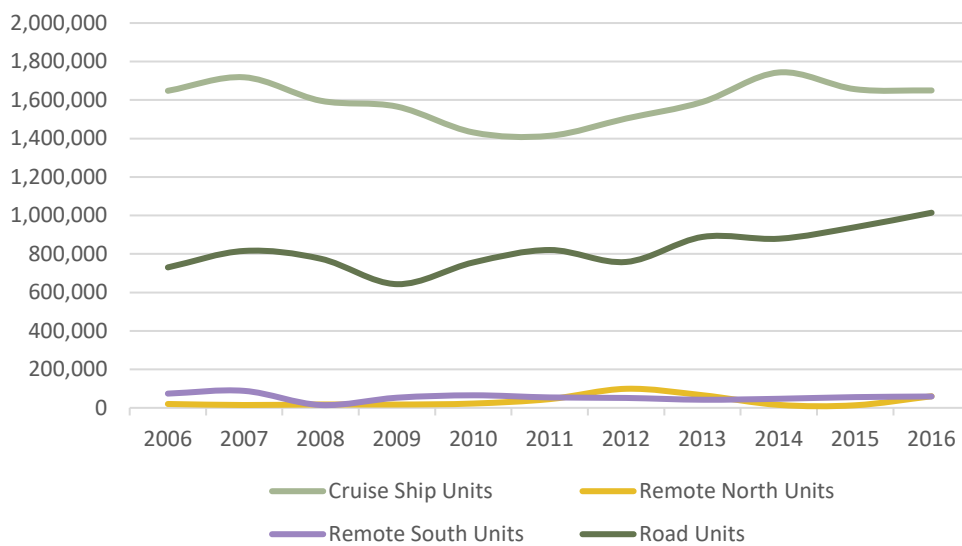


Figure 3: Alaska NPS Visitation by Cluster, 2006 to 2016³



² Source: National Park Service (NPS), Visitor Use Statistics

³ Ibid.

3 VISITATION TRENDS

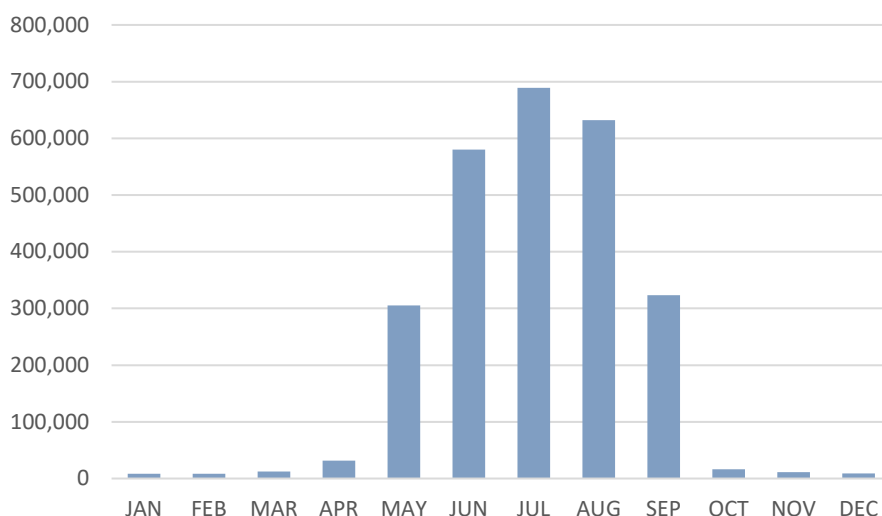
Throughout this report, the term “out-of-state visitation” describes visitation to Alaska by individuals who reside outside of the State of Alaska and “in-state visitation” describes residents of Alaska visiting areas within Alaska. “Federal public lands visitation” is a term used to describe visitation by both out-of-state and in-state visitors to Federal public lands within Alaska.

Trends in out-of-state visits have, and will continue to have, significant impacts on the levels of visitation and use experienced by many of Alaska’s Federal public lands. The dynamics of visitation, economics, demographics, population size, travel modes, and activities both today and in the future will impact access to Alaska Federal public lands and, therefore, FLMA land management strategies.

3.1 SEASONAL VARIATION OF VISITATION TRENDS

One of the primary reasons Alaska FLMAs are unique among FLMAs in other portions of the country is due to climate. While winter months can be quite harsh, summer months are mild and welcoming. The implication of this dynamic is that visitation is not equally distributed over the twelve months of the year. Instead, visitation is concentrated to a few months of high visitation activity during the summer months of May through September, followed by relatively very little visitation during the winter months. This is illustrated in Figure 4 with NPS visitation. NPS is the only FLMA to produce publicly available monthly visitation data for Alaska. May through September have the most visitors with July (approximately 689,000 visitors) being the peak month for visitation. All other non-summer months average approximately 13,800 visitors per month. While specific visitation numbers vary among FLMAs (Section 3.4), the trend of high summer visitation and lower winter visitation is assumed across all Federal public lands in Alaska.

Figure 4: Alaska NPS Lands Average⁴ Monthly Recreation Visits⁵ (2012-2016)



⁴ Note: The visitation for each month is an average over five years (2012-2016)

⁵ Source: National Park Service (NPS), Visitor Use Statistics

Although much less significant than summer seasonal visitation, the shoulder seasons of spring (late March thru mid-May) and autumn (late September thru mid-November) have seen an upswing in visitation. This may be due to a range of factors such as more temperate weather or cruise ship scheduling. During the winter months, while visitation is low, there are a number of notable attractions unique to Alaska that may draw visitors. For example, the aurora borealis (commonly referred to as northern lights) are more visible during the darker winter months and large events such as the annual Iditarod dog sled race contribute to overall visitation. Furthermore, activities that take advantage of winter trails like snowshoeing and cross-country skiing may attract additional visitors as well.

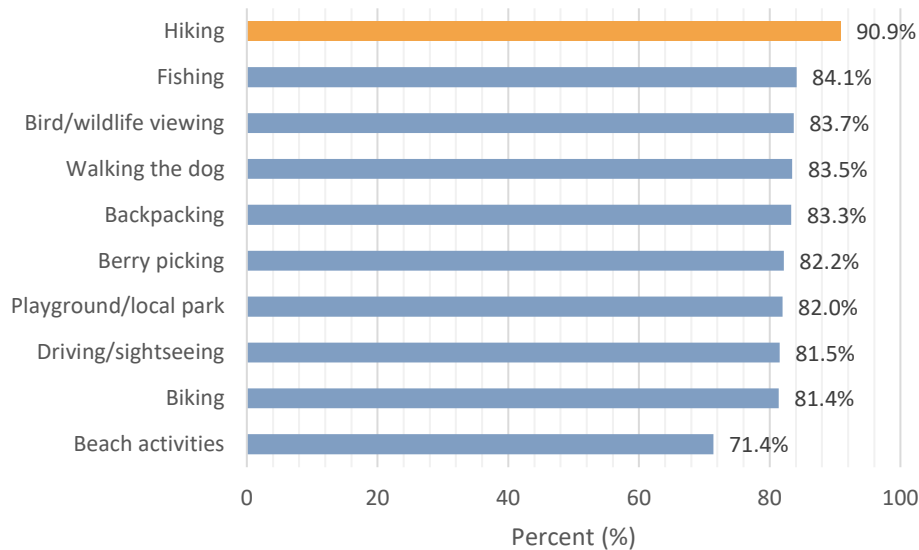
3.2 IN-STATE VISITATION

In-state visitation to Alaska Federal public lands is complex both in terms of the diversity of users as well as a lack of readily available data sources to quantify access and trends of in-state visitation to Federal public lands. In-state Federal public lands access is therefore discussed in terms of the two primary purposes: recreation usage and subsistence usage.

3.2.1 Recreation

The Alaska's Statewide Comprehensive Outdoor Recreation Plan (SCORP) indicates that 96 percent of all in-state respondents to a survey reported that outdoor recreation is important or very important to their lifestyle. The study also surveyed Alaska residents to determine preference and opinions about participation in outdoor activities. Figure 5 includes the top ten outdoor activities in which Alaska residents participate by showing the percent of respondents that participate in each activity. Hiking is the top activity with over 90 percent participation by survey respondents. With the exception of "playground/local park," nine of the top ten activities can be experienced by in-state residents accessing Federal public lands. It is important to note that while Federal public lands provide visitors with a diverse array of experiences, visitors may not be able to experience all of the activities listed in Figure 5 on all types of Federal public lands.

Figure 5: Top Ten Outdoor Activities Alaskans Participate In (by Percent)⁶



3.2.2 Subsistence

In addition to recreational use of Federal public lands, rural Alaskan populations can, through the Federal Subsistence Management Program (FSMP), utilize Federal public lands for subsistence fishing and hunting. Subsistence is a way of life for Alaska’s indigenous population. Passed down from generations, subsistence is a part of the culture of Alaska and remains the chosen way of life for many rural Alaskan populations. According to the Department of Interior, “the state’s rural residents harvest about 18,000 tons of wild foods each year – an average of 295 pounds per person,” with fish making up more than half the statewide harvest.⁷ While subsistence use is an important activity occurring on Federal public lands, it is not classified as a recreational use and, therefore, recreational visitation to Federal public lands described throughout this report does not include subsistence users. In some cases, Federal agencies report subsistence user visits in their non-recreational visits, a classification that may be inclusive of visits for deliveries, visits for people conducting research, and other similar non-recreational visits as determined by each Federal land agency.

3.3 OUT-OF-STATE VISITATION

The next several sections discuss out-of-state visitation trends and its potential influence on Federal public lands access. It is assumed that out-of-state visitation contributes significantly to overall Federal public lands visitation, in part because prime destinations sought by out-of-state visitors are often Alaska’s Federal public lands. Based on the seasonal variation trends in Section 3.1, the majority of out-of-state visitation occurs between the summer months of May to September. Therefore, out-of-state

⁶ Source: State of Alaska, Alaska’s Outdoor Legacy: Statewide Comprehensive Outdoor Recreations Plan (SCORP) 2009 – 2014

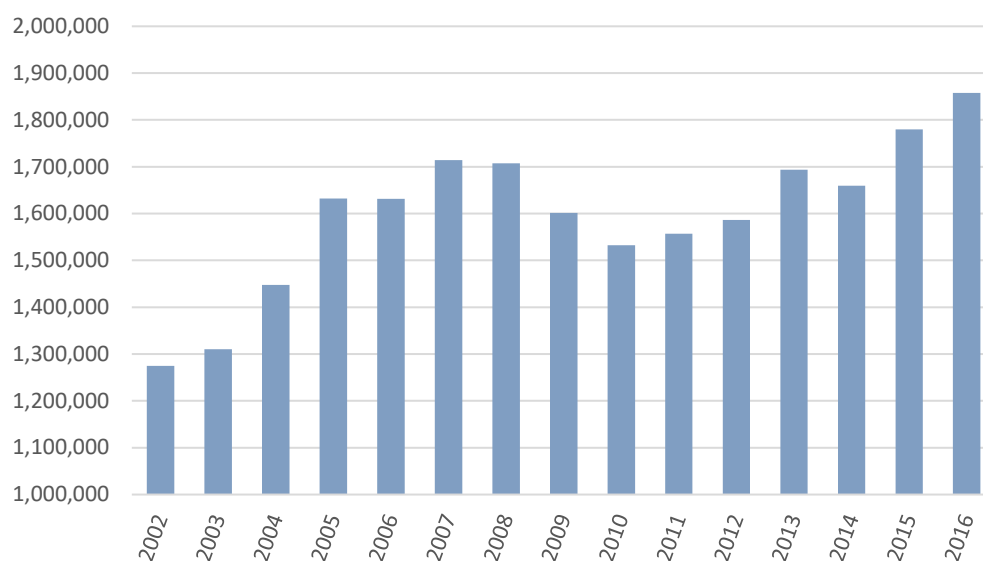
⁷ Source: U.S. Department of the Interior, Federal Subsistence Management Program (FSMP)

summer visitation (Figure 6) is being used as a proxy to represent out-of-state visitation for the entire year when looking at general visitation trends between years.

The following analysis uses data from the Alaska Visitor Statistics Program (AVSP) VI and VII. AVSP is a statewide study conducted periodically, but not annually, for the Alaska Department of Commerce, Community, and Economic Development. The study includes a visitor survey conducted through short in-person interviews of a sample of out-of-state visitors departing all major exit points of the state.

Out-of-state summer visitation to Alaska in 2016 consisted of 1,857,500 visits, reaching record visitation numbers as shown in Figure 6. From 2002 to 2016 visitation to Alaska increased by approximately 46 percent. However, this trend is not purely linear and the effects of the Great Recession is evident in the 2007 peak and subsequent decline of visitation into 2010. As the economy re-strengthened, the number of visitors to Alaska also increased, drawing parallels between overall economic health and visitation to Federal public lands in Alaska. Following the Great Recession, visitation to Alaska did not exceed the 2007 visitation levels until 2015, a full eight years later. Section 3.3.1 looks further at visitation trends and unemployment in the U.S.

Figure 6: Alaska Summer Visitor Volume, 2002 to 2016⁸



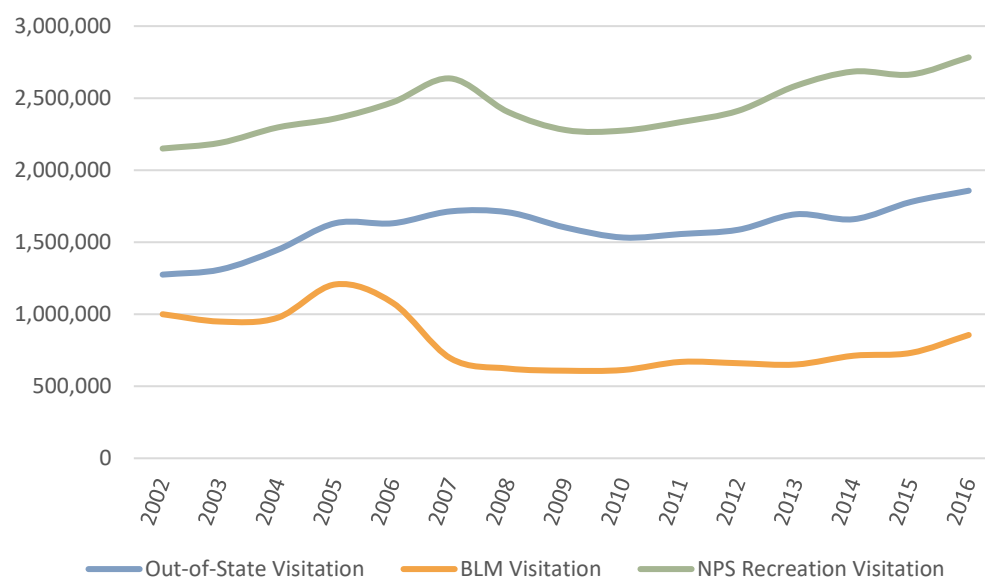
Visitation data from FLMA and AVSP in Figure 7 illustrates that out-of-state visitation trends correlate with visits to Federal public lands and that visitation trends generally correlate with economic trends. This would suggest that one of the primary drivers behind out-of-state visitors coming to Alaska is accessing Federal public lands. Figure 7 includes Alaska NPS and BLM visitation as indicators of Federal public lands visitation trends, and out-of-state visitation data is provided by the AVSP VI and VII reports. NPS and BLM data is used because of the availability of annual visitation from these two Federal public lands agencies. Similarities between the data include near parallel trend in visitation from 2002 to 2016. The data show an increase in both out-of-state and NPS visitation around 2006-2007, then visitation

⁸ Sources: Alaska Visitor Statistics Program VII, p. 3-3, Chart 3.3; Alaska Visitor Statistics Program VI, p. III-3, Chart 3.2

declined into 2010. BLM visitation shows similar trends but with a peak in visitation and subsequent decline occurring a few years earlier. Since 2010, both out-of-state and Federal public land visitation has shown modest increases in visitation.

It is also important to point out that the NPS visitation is much higher than out-of-state visitation in Figure 7. One reason for this is that many out-of-state visitors will visit multiple National Parks on a single visit. This is especially common for cruise ships (the most popular mode by which out-of-state visitors arrive to Alaska Section 5.1), which typically include multiple National Parks in an itinerary. The second reason is that NPS visitation captures both in-state and out-of-state visitors.

Figure 7: Out-of-State and Park Visitation⁹, 2002 to 2016¹⁰



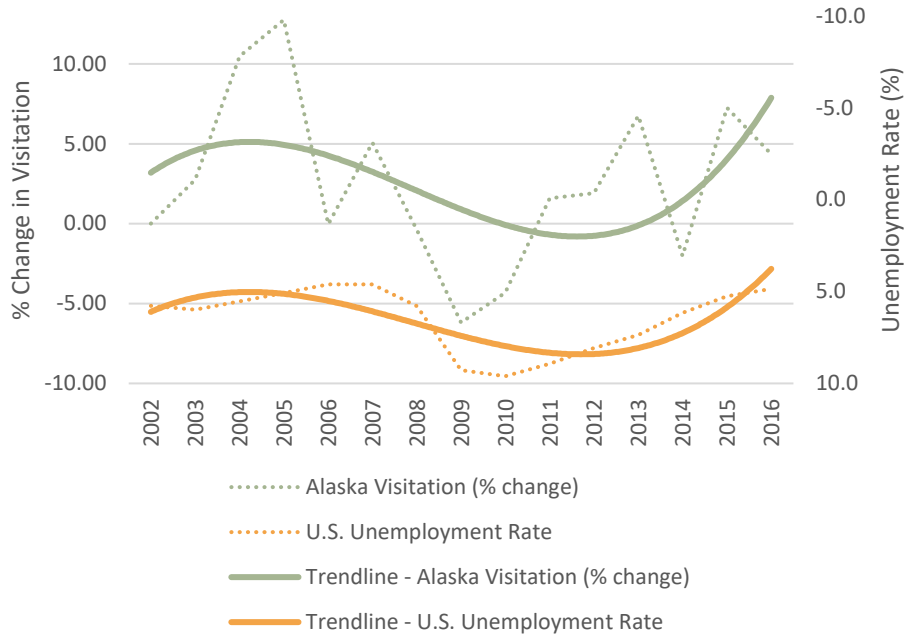
3.3.1 Out-of-State Visitation and Economics

Using Bureau of Labor and Statistics (BLS) data on U.S. unemployment as an indicator of economic condition, trends in U.S. unemployment from 2002 to 2016 are similar to those for out-of-state visitation during those same years. Figure 8 shows a strong correlation between U.S. unemployment rates and out-of-state visitation. They have an inverse relationship where when one increases the other decreases. For example, when unemployment rates increase, out-of-state visitation decreases. This suggests that out-of-state visitors are more likely to visit Alaska when the U.S. economy is healthy, either because they have more disposable income for travel or more confidence in the economy.

⁹ Out-of-state visitation are representative of summer visitation numbers; BLM and NPS numbers are representative of both in-state and out-of-state visitation.

¹⁰ Sources: Alaska Visitor Statistics Program VII, p. 3-3, Chart 3.3; Alaska Visitor Statistics Program VI, p. III-3, Chart 3.2; Bureau of Land Management (BLM), Public Land Statistics, Table 4-1, editions 2002 through 2016; National Park Service (NPS), Visitor Use Statistics

Figure 8: Percent (%) Change of Alaska Out-of-State Visitation and U.S. Unemployment Rate (%), 2002 to 2016¹¹



3.3.2 Out-of-State Visitation Characteristics and Demographics

AVSP VII reports the age of individuals who visited Alaska during three survey years: 2006, 2011, and 2016, as illustrated in Figure 9. One important and notable trend is that visitors to Alaska tend to skew older. Specifically, the two largest age groups to visit Alaska in all three years are individuals 55 to 64 years old and age 65 and older. These two age groups represents approximately half of all visitors to Alaska.

Age demographics of the U.S. as a whole tell a similar story: the very age groups who are most likely to visit Alaska are growing in population across the U. S. Figure 10 illustrates the change in population by age group for the same years which were sampled in AVSP VII. While younger age groups such as individuals age 20 through 34 have grown, so too have the ages groups comprised of individuals age 55 and older. Figure 11 illustrates the change in population for age groups 55 and older, the age range most likely to visit Alaska. The chart shows that every age group 55 and older has grown in population since 2006 drawing parallels between trends in the age of the U.S. population and age of individuals visiting Alaska.

¹¹ Sources: Alaska Visitor Statistics Program VII, p. 3-3, Chart 3.3; Alaska Visitor Statistics Program VI, p. III-3, Chart 3.2; Bureau of Labor and Statistics (BLS), 2002 to 2016 Unemployment Rate

Figure 9: Alaska Visitor Age, 2006, 2011, and 2016¹²

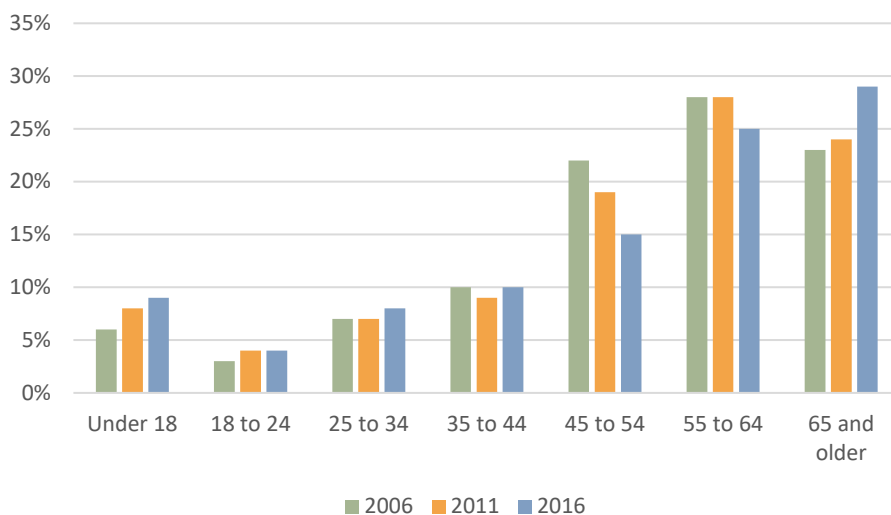
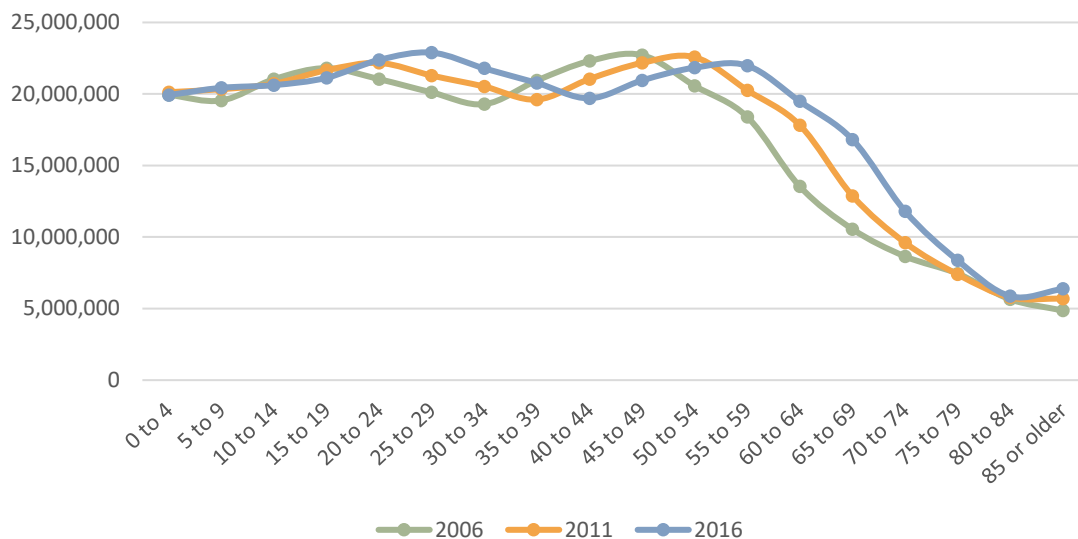


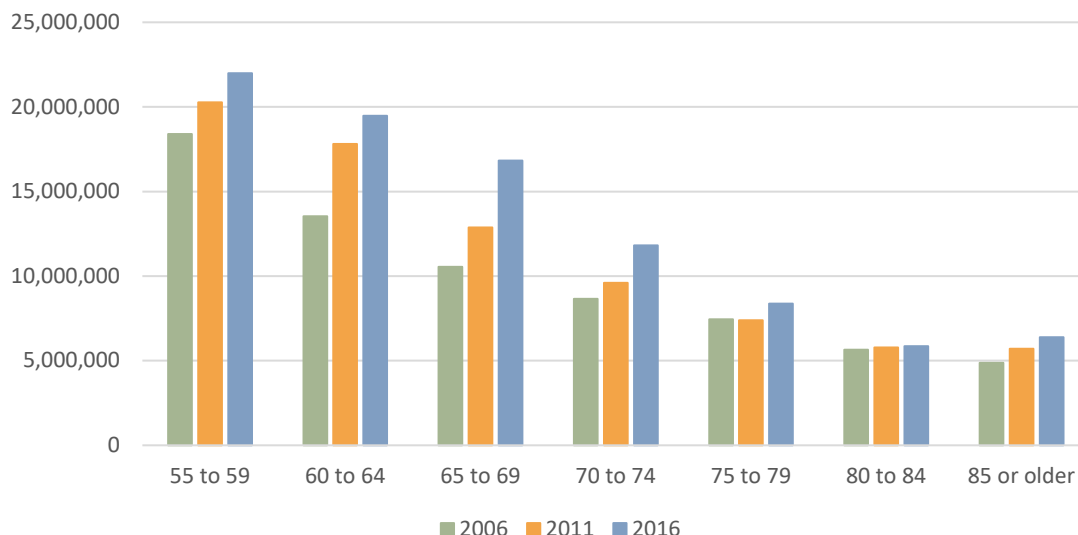
Figure 10: U.S. Population by Age Groups, 2006, 2011, and 2016¹³



¹² Sources: Alaska Visitor Statistics Program VII, p. 1-8, Table 1.14; Alaska Visitor Statistics Program VI, p. IV-42, Table 4.38

¹³ Source: U.S. Census Bureau, Population Estimates, 2006, 2011, and 2016

Figure 11: U.S. Population Age 55 and Older, 2006, 2011, and 2016¹⁴



Visitors to Alaska come from all over the world, however, the majority of visitors (40 percent) come from the western U.S. as illustrated in Figure 12. This is not surprising considering people living in the western U.S. have easier access to cruises departing from the Pacific Northwest ports, shorter flights, and less distance to drive if traveling by vehicle than other locations within the U.S. Approximately 16 percent of visitors to Alaska come from outside the U.S.

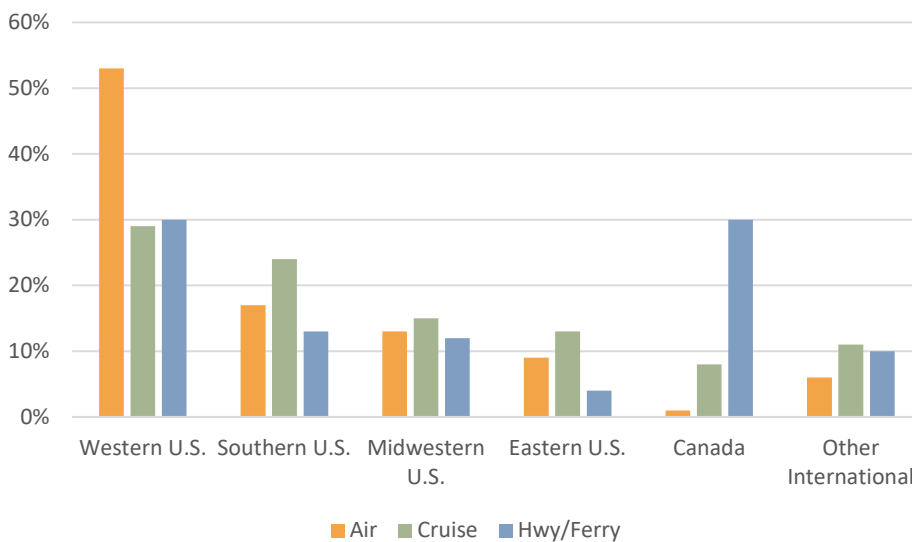
The mode of transportation use to get to Alaska is influenced by visitor’s origin as shown in Figure 13. Visitors originating from the western U.S. are more likely to travel to Alaska by air than cruise or highway/ferry. Visitors from the eastern and southern U.S. are more likely to travel to Alaska by cruise while visitors from Canada are more likely to travel to Alaska by highway/ferry. Geographic location, accessibility to different modes of transportation, and desired travel experience can all influence a visitor’s transportation choice.

¹⁴ Source: U.S. Census Bureau, Population Estimates, 2006, 2011, and 2016

Figure 12: Alaska Visitor's Origin, 2006-2016¹⁵



Figure 13: Mode of Arrival to Alaska by Visitor's Origin, 2006-2016¹⁶

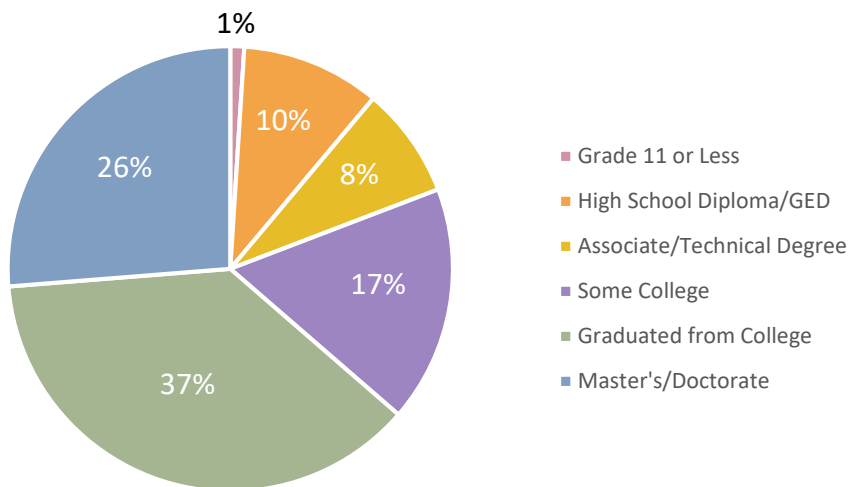


¹⁵Sources: Alaska Visitor Statistics Program VII, p. 7-1, Table 7.1. Notes: Western U.S.: AZ, CA, CO, ID, HI, MT, NV, NM, OR, UT, WA, WY; Southern U.S.: AL, AR, FL, GA, KY, LA, MS, MO, NC, SC, TN, TX, VA, WV; Midwestern U.S.: IL, IN, IA, KS, MI, MN, NE, ND, OH, OK, SD, WI; Eastern U.S.: CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, DC.

¹⁶ Sources: Alaska Visitor Statistics Program VII, p. 7-3, Table 7.2

Visitors to Alaska tend to be highly educated with 88 percent of visitors having pursued education beyond high school and 63 percent of visitors having received a bachelor’s degree or higher. Education level of visitors may have implications on the choices of activities or locations visited, however, there is not enough information to draw specific conclusions at this time.

Figure 14: Alaska Visitor’s Education Level, 2016¹⁷



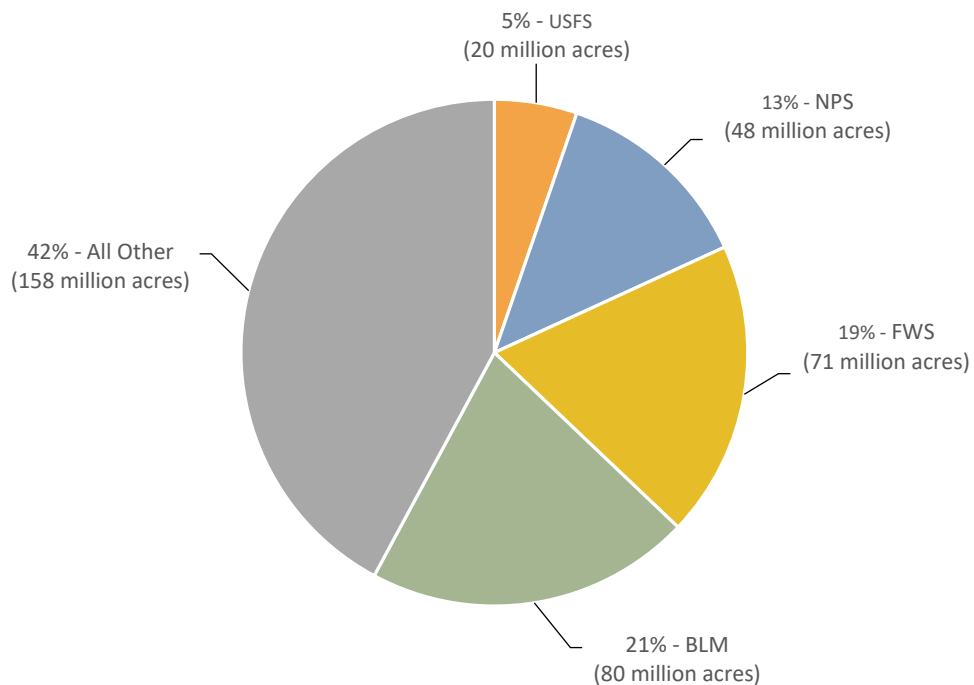
3.4 VISITATION BY AGENCY

Variations in time periods and types of visits FLMAs use to measure and report visitation do not allow for a one-to-one comparison of the different FLMAs on a single chart for comparison. As a result, Sections 3.4.1 through 3.4.4 provide an overview of visitation to each FLMA individually.

There are several challenges FLMAs must contend with to collect visitation data in Alaska. These include the sheer acreage of Federal lands in Alaska (Figure 15), the fact that they are spread across the entire state (Figure 16), are often integrated into local communities, and are typically in remote locations. As a result, monitoring entry at all entrance points is not feasible, and in some cases the reporting FLMA must incorporate estimates or assumptions to determine visitation counts. FLMA visitation volumes across Alaska are reported and summarized in Figure 16.

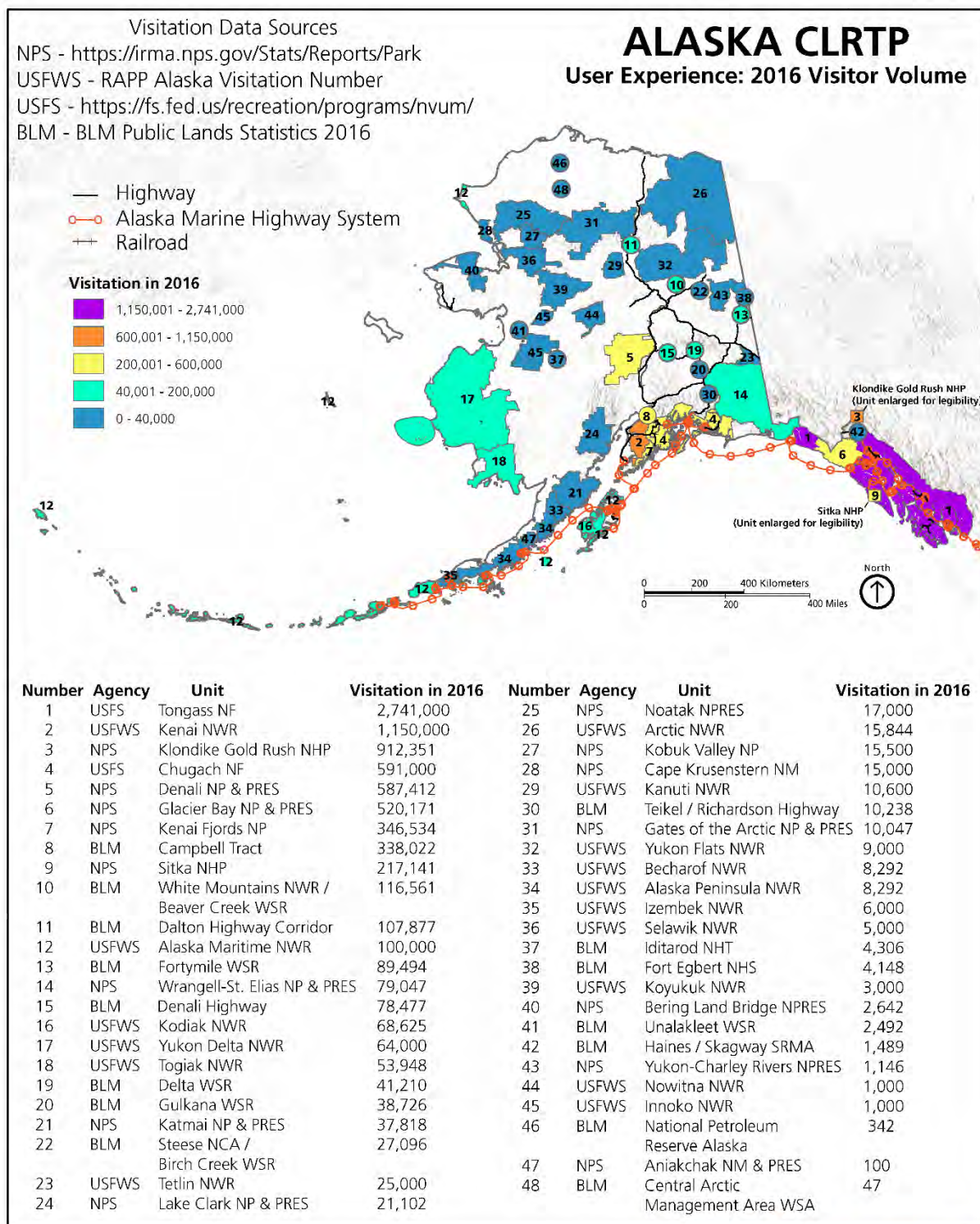
¹⁷ Sources: Alaska Visitor Statistics Program VII, p. 7-12, Table 7.11

Figure 15: Alaska Federal Land Acreage¹⁸



¹⁸ Sources: Bureau of Land Management (BLM), Public Land Statistics 2016, p.7; U.S. Fish and Wildlife Service, 2016 Annual Report of Lands Data Tables, p. 2, Table 1A; National Park Service (NPS), Public Use Statistics, Park Acreage Report for 2017; U.S. Forest Service, About Region webpage

Figure 16: Visitation by FLMA Units, 2016



Produced by National Park Service Denver Service Center Planning Division
 Data sources: NPS, Alaska DOT&PF, FWS, USFS, BLM
 Date: 5/21/2019



3.4.1 National Park Service (NPS)

NPS managed lands are by far the most visited FLMA managed areas in Alaska. However, visitation is not spread evenly across NPS park units with three of the fifteen National Parks within Alaska receiving approximately 73 percent of the visitation. Visitation numbers are based on visitor use counting procedures established for each park unit.¹⁹ The top three most visited NPS park units are Klondike Gold Rush National Historic Park (36 percent), Glacier Bay National Park & Preserve (19 percent), and Denali National Park & Preserve (18 percent). Based on the NPS clusters in Section 2.2, Denali National Park is located in the Road Cluster while Glacier Bay National Park & Preserve and Klondike Gold Rush National Historic Park are located in the Cruise Ship Cluster indicating that access, whether by cruise ship or main roadways, plays an important role in total visitation.

Total visitation is broken down by recreation visits and non-recreation visits in Figure 16. Recreation visits include the regular park visitors while non-recreation visits encompass visits for deliveries, to conduct research, subsistence users, etc. Non-recreation visits account for approximately 25 percent of total visitation.

Figure 17: NPS Alaska Visitation, 2002 to 2016²⁰



¹⁹ NPS visitor use counting procedures accessible through <https://irma.nps.gov/Stats/Reports/Park>.

²⁰ Source: National Park Service (NPS), Public Use Statistics

3.4.2 Bureau of Land Management (BLM)

Visitation to BLM managed lands are classified as one of two types of visit: recreation or dispersed. A recreation site visit is a visit to BLM lands designated as developed recreation sites containing some component of site management. A dispersed area visit constitutes visits to all other BLM lands, which while open to recreational use are not specifically managed or developed for recreational use.

Visitation numbers are from BLM’s Recreation Management Information Systems (RMIS) database which relies on BLM offices for collecting and inputting the data. Visitation to dispersed areas, according to BLM, are estimates based on local knowledge.

As illustrated in Figure 18, recreation site visits and dispersed area visits can vary widely and prior to 2007, the dispersed area visits comprised a majority of the total visits to BLM lands. Recreation visits peaked in 2005 and then declined slowly through 2011. Since then, recreation visits have steadily increased through 2016 reaching just above the number of recreation visits received in 2005.

Figure 18: BLM Alaska Visitation, 2002 to 2016²¹



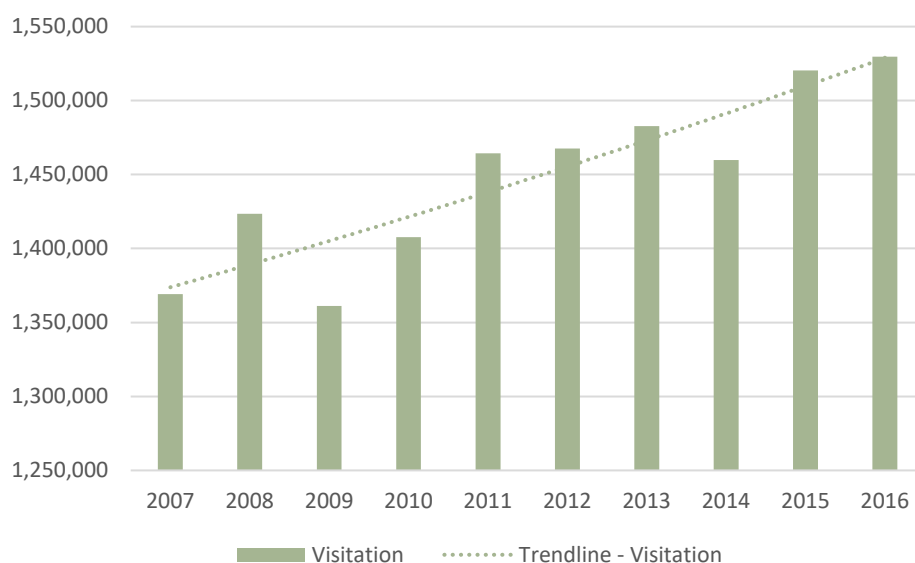
²¹ Source: Bureau of Land Management (BLM), Public Land Statistics, Table 4-1, editions 2002 through 2016

3.4.3 U.S. Fish and Wildlife Service (FWS)

The FWS Refuge Annual Performance Plan (RAPP) collects visitation annually for each refuge. With the exception of 2009 and 2014, there is a general upward trend in visitation to FWS refuges as illustrated in Figure 19. The decrease in visitation during 2009 is likely in response to the Great Recession.

FWS visitation is not spread evenly among the 16 refuges in Alaska. Kenai National Wildlife Refuge accounts for approximately 75 percent of the Alaska FWS refuge visitation. The large proportion of visitation to Kenai National Wildlife Refuge is likely due to both its proximity to the City of Anchorage and its location just off a major state highway – Sterling Highway, part of Alaska Route 1.

Figure 19: U.S. Fish and Wildlife Refuge Alaska Visitation, 2007 to 2016²²

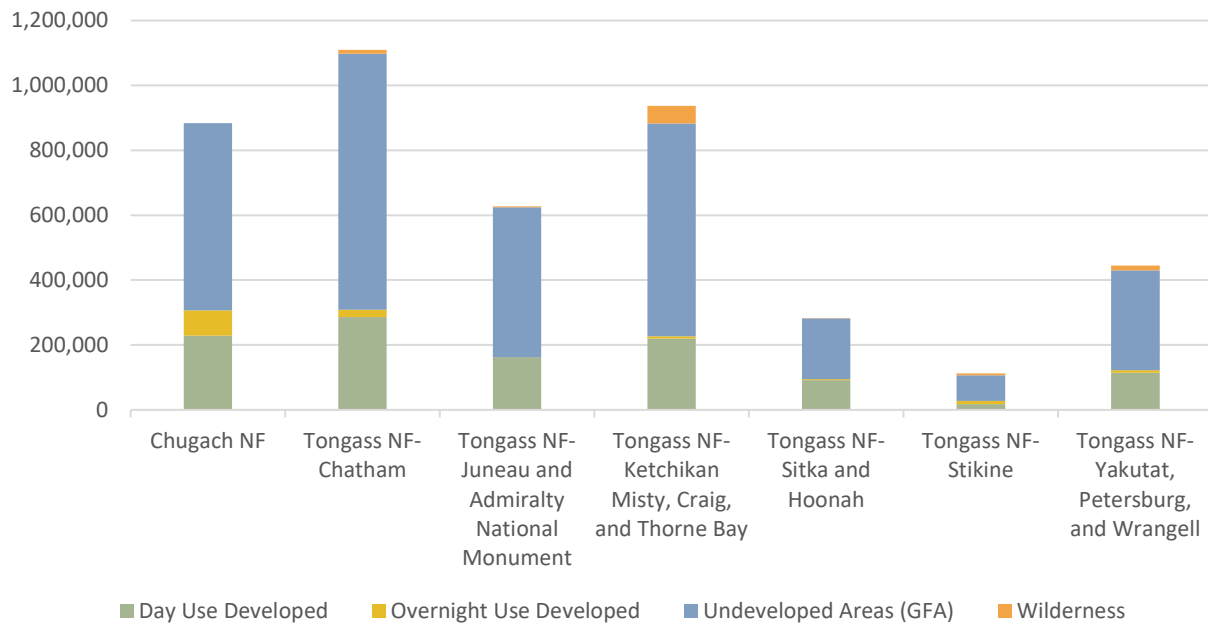


²² Source: U.S. Fish and Wildlife Service (FWS), Refuge Annual Performance Plan (RAPP) Alaska Visitation Number

3.4.4 U.S. Forest Service (USFS)

The USFS National Visitor Use Monitoring (NVUM) collects data once every five years for each National Forest and National Grassland. As a result, visitation can be viewed as a snapshot from a single time period rather than with year to year trends as illustrated in Figure 20. The methodology established for collecting visitation data for USFS managed lands relies on estimates. Based on the confidence interval provided, reported visitation to Chugach National Forest can vary by approximately +/- 30 percent and reported visitation to Tongass National Forest can vary by approximately +/- 17 percent. This illustrates some of the challenges in obtaining accurate visitation counts when working with large areas of land with multiple points of entry. Based on Figure 20, visitation to undeveloped areas is the greatest type of visitation in the Alaskan National Forests, followed by day use of developed areas.

Figure 20: USFS Alaska National Forest Annual Visitation, 2012-2016²³



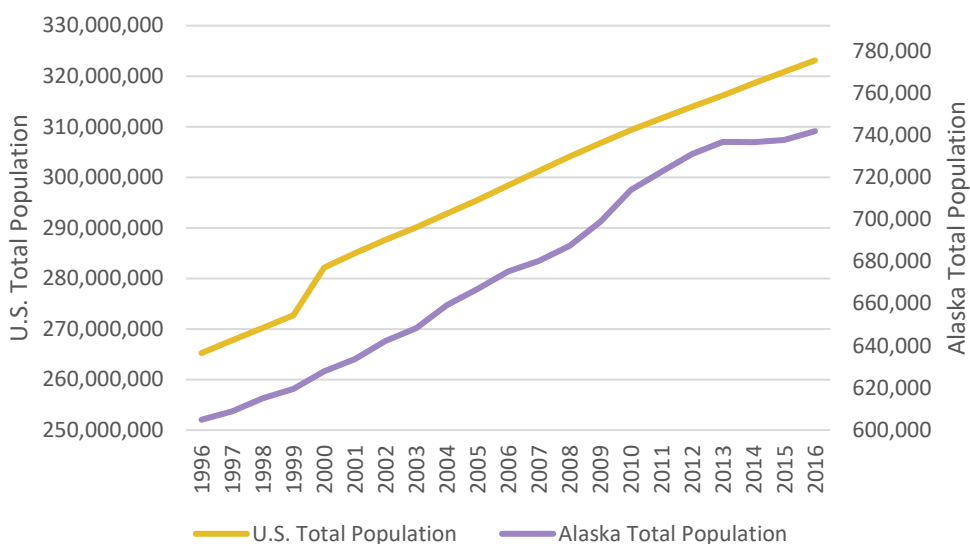
²³ Source: USDA, U.S. Forest Service, Region 10, National Visitor Use Monitoring (NVUM) Data 2012 and 2016

4 DEMOGRAPHIC TRENDS

4.1 DEMOGRAPHICS OF ALASKA

Alaska is the third least populated state with 0.2 percent of the total U. S. population. Over the last 15 years, from 2002 to 2016, the U.S. population grew by 12.3 percent, while the state of Alaska population grew by 15.5 percent. Both the U.S. as a whole and Alaska have seen a positive growth with comparable percentages of increase as illustrated in Figure 21.

Figure 21: U.S. and Alaska Population, 1996-2016²⁴



Alaska tends to have a slightly younger population than the U.S. as a whole with age groups 34 and under (the exception being the age group 15 to 19) exceeding the percentages of the U.S. as a whole (Figure 22). Meanwhile, the U.S. as a whole has an older population with age groups 65 and over exceeding the percentage of these age groups in Alaska. Section 3.3.2 highlighted how visitation to Alaska skews toward the older age groups and an increasingly older U.S. Population (Figure 11). Understanding how the age demographics in Alaska compare to the U.S. a whole and out-of-state visitation can allow for a more holistic planning to meet the needs of both in-state and out-of-state current and potential future users.

Figure 23 compares age group volumes between 1996 and 2016 in Alaska. A shift in population age distribution is evident. The age groups 20 through 24 and 50 through 85 or older gained population while the age groups 35 through 44 lost notable amounts of population. The comparison of age demographics from a 20 year time period illustrates the age wave shift. Age affects both visitor’s decisions and ability to experience Federal public lands. Understanding trends in age can help FLMA’s plan for experiences that can better meet visitor’s needs and abilities.

²⁴ Source: U.S. Census Bureau, Population Estimates, 1996-2016

Figure 22: Alaska and U.S. Population by Age Groups, 2016

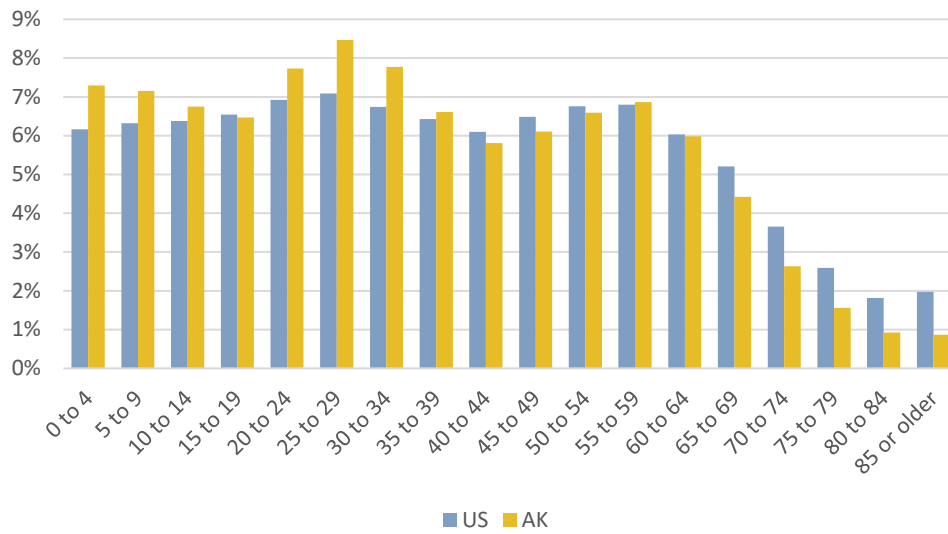
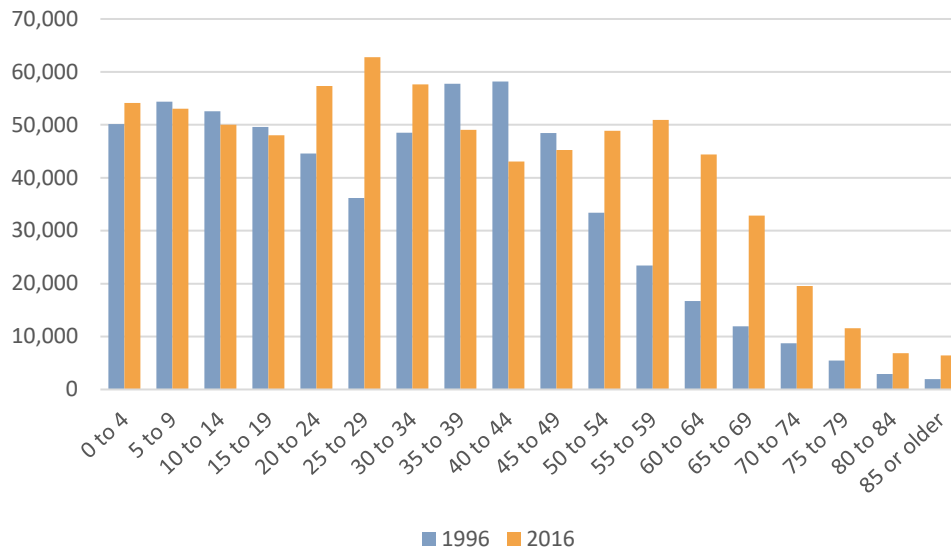


Figure 23: Alaska Population by Age Group, 1996 and 2016



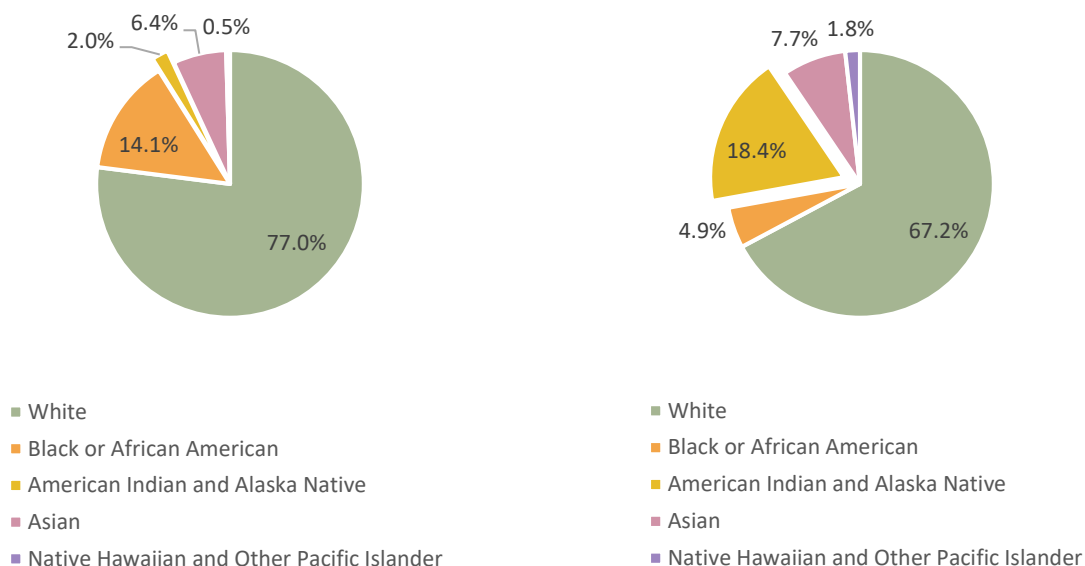
Beyond age distribution, the demographics of Alaska compared to the U.S. as whole are similar in some ways but very different in other ways. For example, the number of owner-occupied homes is about the same, approximately 63 percent, and employment rates are similar with 68 percent of Alaska in the civilian labor force to the U.S.’s 63 percent.²⁵ The median household income in Alaska is 35 percent

²⁵ Source: U.S. Census Bureau, QuickFacts, Alaska (V2016)

higher than the average American household - \$72,515 in Alaska to \$53,889 for the U.S. as a whole.²⁶ The foreign born population in Alaska (7.4 percent) is approximately half of that of the U. S. (13.2 percent).²⁷

Compared to the U.S. as a whole, Alaska has a high proportion of the population that identifies as American Indian and Alaska Native. On average, across the U. S., approximately two percent of the population identified as American Indian or Alaska Native in 2016. This compares to 18.4 percent in Alaska which has implications for the number of potential subsistence users accessing FLMA managed lands. A further breakdown of all races, comparing Alaska to the U. S. as a whole are illustrated in Figure 24 and Figure 25.

Figure 24: U.S. Population by Race, 2016²⁸ Figure 25: Alaska Population by Race, 2016²⁹



5 MODAL TRENDS

Modes of travel are discussed in two categories: travel to Alaska and travel within Alaska. Modes of travel are influencing factors in which Federal public lands are accessed. Understanding travel modes also helps explain how changes in out-of-state travel to Alaska affects visitation to FLMA lands of various types.

²⁶ Source: U.S. Census Bureau, QuickFacts, Alaska (V2016)

²⁷ Ibid.

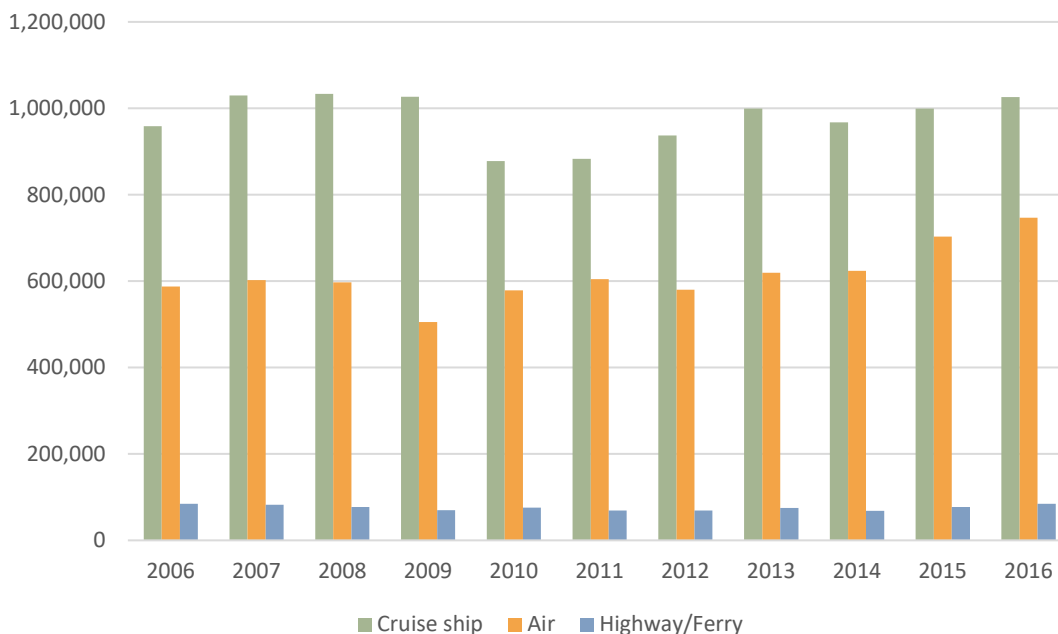
²⁸ Source: U.S. Census Bureau, Population Estimates, 2016

²⁹ Ibid.

5.1 MODES OF TRAVEL TO ALASKA (OUT-OF-STATE VISITORS)

Out-of-state travelers to Alaska typically arrive and depart by cruise ship or air, and to a lesser extent by highway or ferry. Over the past decade, as shown in Figure 26, cruise ship travel has remained the primary form of travel for out-of-state visits to Alaska. Commercial aircraft is also a popular mode of transportation for out-of-state visits to Alaska with about two-thirds the number of trips as by cruise ship. Travel by highway or ferry to Alaska forms the smallest proportion of the three main transportation modes utilized by out-of-state visitors to Alaska. Alaska DOT&PF maintains a unique highway systems that includes the Alaska Marine Highway System, a ferry system that provides a water-based extension of the state’s land-based highway system. Overall, Alaska’s geographic location in the northwestern corner of North America and distance from population centers outside of the state play an important role in visitors’ transportation mode choice in how they travel to Alaska.

Figure 26: Summer Visitors’ Modes of Transportation to Alaska, 2006 to 2016³⁰



The onset of the Great Recession in the late 2000s is also evident in the two main modes of visitor transportation to Alaska with a decline in air travel in 2009 and decline in cruise ship travel in 2010 and 2011.

The general volume of cruise ship travel has considerable visitation impacts to FLMA units that have direct access located near ports or that allow cruise ships to maneuver and stage sightseeing activities in close proximity to FLMA units (such as Klondike Gold Rush National Historical Park). As previously illustrated in Figure 2, NPS units served by cruise ship and ferries receive the highest level of visitation. Changes in operations such as viewing sites from the cruise ship rather than docking at port, changes in

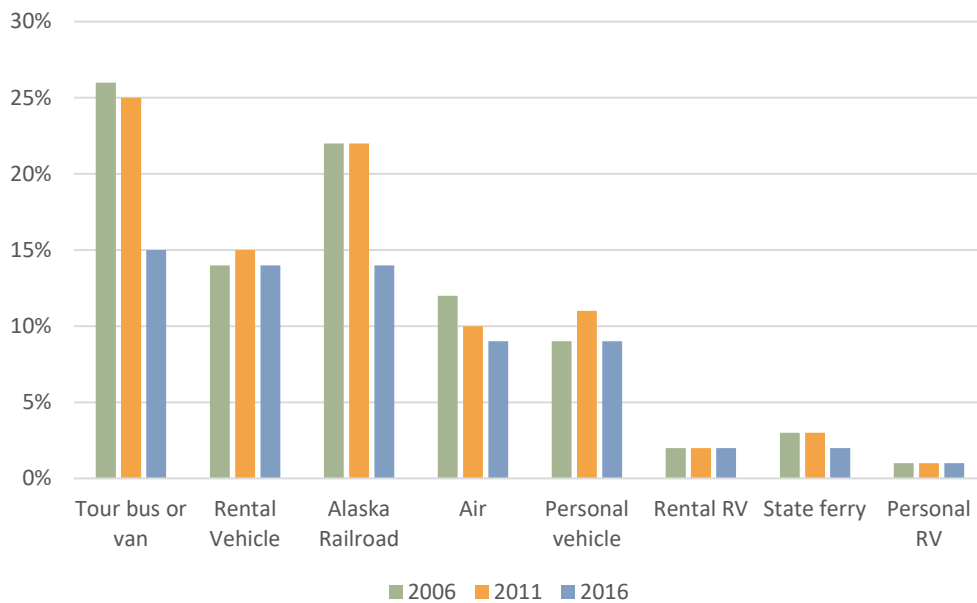
³⁰ Sources: Alaska Visitor Statistics Program VII, p. 3-4, Table 3.2; Alaska Visitor Statistics Program VI, p. III-4, Table 3.3

ports, and duration of time the ship is docked at port may impact both total visitation as well as visitors' modes of transportation between places.

5.2 MODES OF TRAVEL WITHIN ALASKA (OUT-OF-STATE VISITORS)

While it is important to understand how visitors arrive to Alaska, it is also important to understand how visitors travel between sites once they have arrived. Figure 27 illustrates data provided by AVSP and shows the change in popularity of modes of transportation between places in Alaska in five year intervals from 2006 through 2016. The reported percentages for each year to do not sum to 100 percent and may be due to other modes of transportation such as bicycling, walking, or public transportation which were not specifically reported in the table. The AVSP also did not include cruise ship as an option for travel within the state. There is a noticeable decline in the percentage of visitors utilizing “tour bus or van” and “Alaska Railroad” travel modes between communities in 2016 and no other spikes in other the travel modes reported to indicate a transition from one travel mode to another. The AVSP report indicates that a decrease in cross-gulf cruise ship itineraries and changes in survey language may have independently contributed to this significant decline.

Figure 27: Summer Visitors' Modes of Travel between Communities in Alaska, 2006, 2011, and 2016³¹



³¹ Source: Alaska Visitor Statistics Program VII, p. 4-9, Chart 4.8

6 ACTIVITIES

As part of the AVSP VII, Figure 28 shows the top ten activities of people visiting Alaska. Visitors were not limited to selecting one primary activity, but could select all the activities in which they participated while visiting Alaska. Activity trends remained relatively consistent from 2011 to 2016 with the largest shift being a six percent increase of people participating in “hiking/nature walk.”

Although shopping, a typical tourist activity, holds the top spot of Alaska visitor activities, the remaining nine visitor activities can all be done in one or more of the FLMA lands in Alaska. This illustrates the draw of Alaska’s natural areas to visitors and the importance of cultural, recreational, and nature viewing experiences. FLMA lands in Alaska play a significant role in offering visitors the types of activities they are looking for when visiting Alaska.

Figure 28: Top Ten Activities of Visitors to Alaska, 2011 and 2016³²

Rank	Activities	2011 (%)	2016 (%)
1	Shopping	72	75
2	Wildlife viewing	48	45
3	Cultural activities	40	39
4	Day cruises	36	39
5	Hiking/nature walk	28	34
6	Train	36	32
7	City/sightseeing tours	35	31
8	Fishing	19	16
9	Flightseeing	15	13
10	Tramway/gondola	10	13

The ASVP VII report also summarizes the top visitor activities by modes of transportation finding that cruise ship visitors are most likely to engage in shopping and opportunities for sightseeing. Those traveling by air or highway/ferry are most likely to engage in shopping as their top activity, but included more active activities such as hiking/nature walk, fishing, and camping than those traveling by cruise ship.

7 CONCLUSION

Federal public lands need to be managed due to regular shifts in all aspects that affect them; in particular, shifts in users-types, demographics, economic trends, and accessibility are primary drivers behind a need to build and maintain a transportation system that works for all users of Federal public lands. FLMAs would benefit by monitoring the forces that can cause fluctuations in visitation and user-needs and managing the transportation system accordingly.

The lands managed by FLMAs are for everyone to enjoy, and indeed, Federal public lands in Alaska are very popular. While the users themselves are diverse, they can be usefully categorized into three

³² Source: Alaska Visitor Statistics Program VI, p. 1-7, Chart 1.12

primary user-types: out-of-state recreational users, in-state recreational users, and in-state subsistence users. While there may be some overlap with respect to the needs and expectations each user-type has for the transportation system moving them to or through Federal public lands, there may also be quite a difference, as each user-type values various aspects of the transportation system differently. Further, the needs and expectations of each group are not fixed, and may shift over time.

While land management itself can help foster a user experience that makes users want to visit again, visitation volumes to Federal public lands in Alaska can also be affected by forces outside of the control of FLMAs. Shifting demographics, both within the State of Alaska and elsewhere can greatly affect the overall volumes of those using Federal public lands as well as the proportions of user-types. With shifts in demographics, such as a higher volume of older users or younger users, come shifts in the needs, expectations, and priorities of the transportation system.

National and global economic trends are shown to correlate with visitation volumes by out-of-state visitors to Federal public lands in Alaska. As recently as the 2008 economic recession, out-of-state visitation to Alaska dropped noticeably and took almost ten years to recover and surpass pre-recession levels. While FLMAs cannot affect these macro-economic trends, they can plan for scenarios in which the economy ebbs or flows.

Data shows that land that is more accessible by road or by cruise ships see higher visitation levels than those lands without such accessibility, generally those further inland. Changes to either the road network that provides access to the lands, or cruise ship operations and schedules have the ability to affect visitation levels to Federal public lands in Alaska.

Closely monitoring the factors that cause fluctuations in visitation can help FLMAs manage the transportation system more efficiently, but only if the effects of those causes are well understood. Being able to identify emerging trends that may affect visitation as early as possible will allow FLMAs to begin anticipating and reacting to changes in visitation appropriately.

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Appendix C

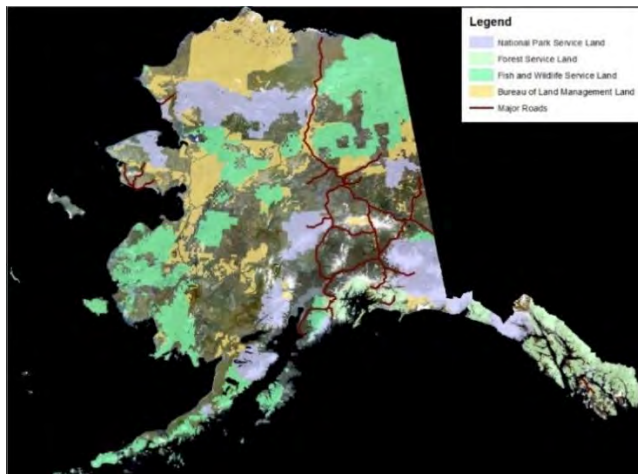
2016 Alaska Collaborative Visitor Transportation Survey (CVTS)





Overview

A survey was administered during summer 2016 at Federal lands in Alaska managed by the Bureau of Land Management (BLM), National Park Service (NPS), US Fish and Wildlife Service (FWS), and US Forest Service (USFS; defined as Federal Land Management Agencies [FLMAs]), Alaska Public Lands Information Centers (APLICs), an inter-agency visitor center (IAVC), and on the Alaska Marine Highway System Ferry. The overall purpose of the survey effort was to collect data on visitors’ transportation-related experiences to inform FLMAs’ long-range transportation planning.



The survey consisted of two parts: an onsite survey and a follow-up survey. The questions were designed to gather information on the following themes:

- Modes of transportation used
- Transportation satisfaction
- Sites visited and activity participation
- Information sources used and their helpfulness
- Infrastructure satisfaction and preferences
- Safety concerns and incidents
- Suggestions for improving travel

Methods

The survey was administered across a large geographic area of Alaska at 20 sites (or units), distributed across FLMAs as follows:

- NPS – 5 sites
- USFS – 5 sites
- FWS – 3 sites
- BLM – 2 sites
- Multiagency (APLIC & IAVC) – 5 sites

Within each site, there were several intercept locations, selected purposively in order to sample a range of visitor types. Each FLMA provided the list of sites and suggestions for specific intercept locations within the site.

The onsite survey was administered via paper or iPad. After the onsite survey was completed, the respondent was asked if they were willing to participate in the follow-up survey, and were given the option of a paper survey or a web-based survey. Residents were mailed/emailed the follow-up survey within a week. Non-residents were asked when they were leaving Alaska, with the follow-up survey mailed/emailed after they left Alaska.

Results

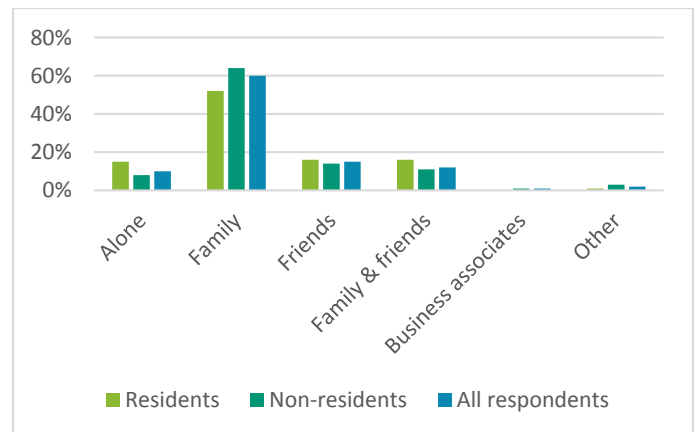
Eighty percent of visitors contacted agreed to participate in the survey. Two thousand seven hundred ninety-six respondents were recreational visitors and 247 were non-recreational visitors (i.e. working or commuting). Five hundred twenty-nine visitors responded to the follow-up survey.

Characteristics of Respondents

Thirty percent (838) of the recreational onsite surveys were completed by residents and 70% (1,958) by non-residents. Of the non-residents, 81% were from the United States, but not Alaska. California was the most often listed state (14% of non-resident visitors from the U.S.) and Canada the most frequently cited country (39% of non-U.S. visitors). Of the recreational visitors, onsite respondents were evenly split between male and female (51% and 50%, respectively) with no significant gender differences between residents and non-residents. Most residents (99%) were traveling independently. Among non-residents, 65% reported traveling independently, 20% as part of a pre-purchased package tour, and 15% both independently and as part of a pre-purchased package tour. Forty-two percent of residents were on a day trip. All non-residents stayed at least one day in Alaska, with 56% staying 3 – 14 nights and 43% staying 15 or more nights.

Traveling Companions

Most visitors were traveling with some combination of family and friends (84% and 89% for residents and non-residents, respectively).

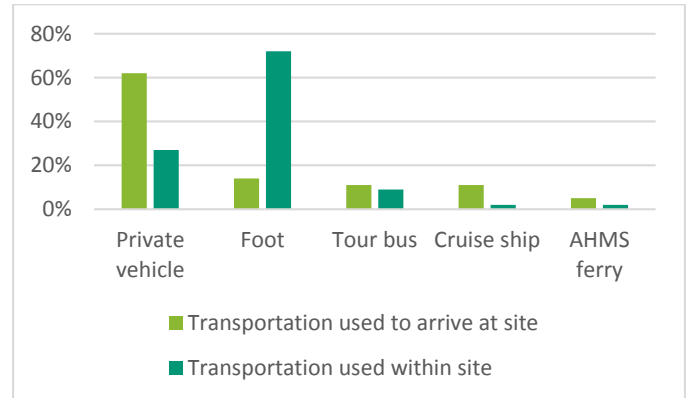
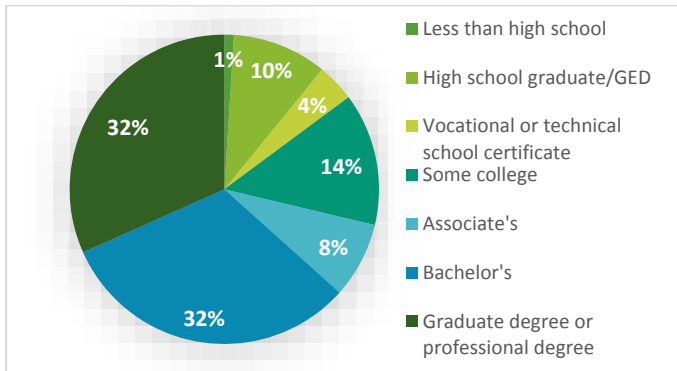


2016 Collaborative Visitor Transportation Survey



Education

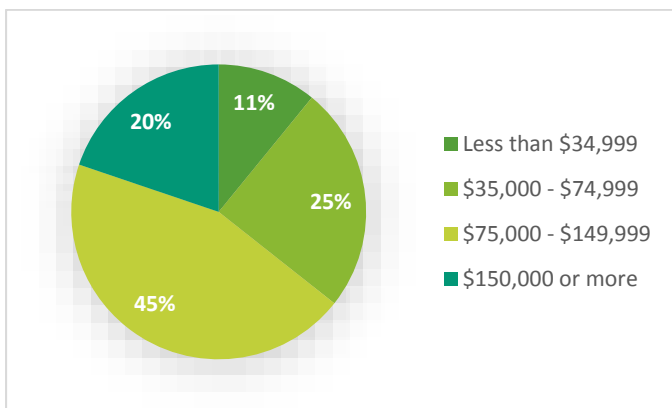
Onsite respondents reported a high education level (i.e., relative to the U.S. population as a whole), with 64% indicating a Bachelor's degree or higher.



Respondents indicated they were satisfied with their travel experience arriving at the site and within the site. In both cases, roughly two-thirds (62% and 65%, respectively) rated the experience as “excellent,” and nearly one-third (32% and 30%, respectively) rated it as “good.”

Income Level

Onsite respondents tended to have a relatively high income. Nearly two-thirds of respondents live in households that earn \$75,000 or more in annual household income, and 20% have household family incomes of \$150,000 or more. Non-residents are more likely than residents to be among the highest income group (13% vs. 5%).



Infrastructure

Respondents were presented with 10 types of transportation/travel-related infrastructure and were asked if they would like to see “less,” “the same,” or “more.” A “no opinion” response option was also provided. “No opinion” was a prevalent response, and was excluded from analysis. Of those expressing a preference, with the exception of trails for all-terrain vehicles, the majority of respondents preferred the current levels. Infrastructure with notable percentages of respondents indicating a preference for “more” included: trails for hiking, biking, and horseback riding (46%); campgrounds (36%); accessible friendly sites and facilities (34%); and directional or wayfinding signs (33%). A plurality of respondents (44%) indicated a preference for “less” trails for all-terrain vehicles, with 16% indicating a preference for “more.”

Visitation

Non-residents were more likely than residents to visit multiple FLMA sites during their trip (80% vs. 55%). On average, residents visited 2.4 FLMA sites and non-residents visited 3.2 FLMA sites. Fifty percent of respondents sampled in the Interior also visited FLMA sites in southcentral Alaska and 27% visited FLMA sites in southeast Alaska. Of those sampled in the Southcentral, 44% visited FLMA sites in the Interior, 27% visited FLMA sites in Southeast, and 24% visited FLMA sites in the Southwest. Eighteen percent of those sampled in the southeast visited FLMA sites in Southcentral and 23% visited FLMA sites in the Interior.

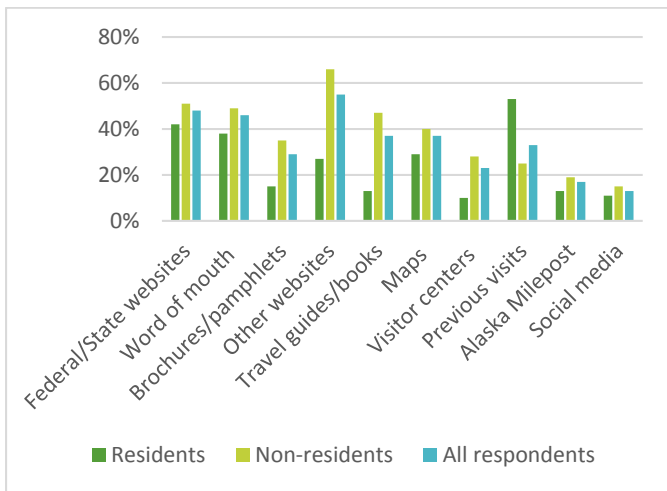
Transportation

Nearly two-thirds of visitors arrived at the site using a private vehicle, but residents were significantly more likely to use this form of transportation than non-residents (92% vs. 49%, respectively). All other forms of transportation used to arrive at the site were used by significantly fewer respondents, with notable differences by residency for a commercial shuttle and tour bus (non-residents were more likely to indicate using those forms of transportation).



Information Sources Used to Plan the Trip

Respondents were presented with a list of 15 information sources and asked which they used to plan their trip. Websites were the most often used information source, with 48% of respondents using Federal or State websites and 55% using other websites. Non-residents were more likely than residents to use most sources, including websites (51% vs. 42% for Federal or State websites and 66% vs. 27% for other websites), word of mouth (49% vs 38%), travel guides and books (47% vs. 13%), and brochures or pamphlets (35% vs. 15%). The notable exception to this pattern being that residents were more likely than non-residents to use previous visits as an information source (53% vs. 25%).



Safety Issues Researched

Thirty-five percent of respondents reported researching safety issues prior to their trip. Non-residents were significantly more likely than residents to do such research (41% vs. 20%).

If respondents indicated they researched safety measures, they were asked to explain what safety measures were researched. One hundred forty-four respondents provided explanations (20 residents and 124 non-residents). Among these respondents, the largest category of safety measures researched related to wildlife (83%), with 65% of residents and 86% of non-residents indicating they researched this issue. Seventeen of the responses related to road conditions (4 of 20 residents and 13 of 124 non-residents) and 12 responses related to communications (4 of 20 residents and 8 of 124 non-residents).

Safety Issues Experienced

When asked if they experienced a safety issue, lack of cell phone coverage was the most frequently cited safety issue experienced (38% of residents and 40% of non-residents). Other issues included:

- Wildlife (11% of residents and 14% of non-residents)
- Bad weather (23% of residents and 14% of non-residents)
- Poor road conditions (13% of residents and 11% of non-residents)

Travel Experience

Respondents were asked to provide additional feedback on their travel experience; 226 respondents (49 residents and 177 non-residents) provided comments. Thirty-one percent the comments expressed satisfaction with the travel experience. Seventy-six responses (17 residents and 59 non-residents) related to travel and/or transportation. Of these 76 responses, 10 (1 of 17 residents and 9 of 59 non-residents) expressed satisfaction with specific travel related issues (e.g., “The roads were better than expected,” “The Denali Highway was pretty rough but that was to be expected”) and 66 (16 of 17 residents and 50 of 59 non-residents) provided feedback on negative conditions (e.g., “poor road maintenance”).

Citation for this this document:

Wedin, A., Fix, P. J., Shaw, J., Petersen, K, & Petrella, M. (2018). Summary of Collaborative Visitor Transportation Survey: Results from Summer 2016 Alaska Survey. Project report for the Alaska Long-Range Transportation Planning Team. Fairbanks, Alaska: School of Natural Resources and Extension, University of Alaska Fairbanks.

Additional information can be found in the full project report:

Fix, P. J., Wedin, A., Shaw, J., Petersen, K, & Petrella, M. (2017). Collaborative Visitor Transportation Survey: Results from Summer 2016 Alaska Survey. Project report for the Alaska Long-Range Transportation Planning Team. Fairbanks, Alaska: School of Natural Resources and Extension, University of Alaska Fairbanks.

2016 Collaborative Visitor Transportation Survey



Interior



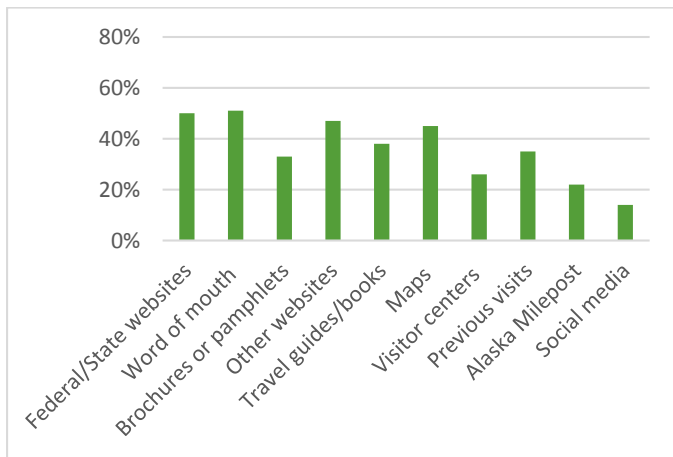
Interior Sites

Sites sampled in this region were Denali National Park, Tetlin National Wildlife Refuge, Tangle/Swede Lakes, White Mountains National Recreation Area, APLIC Fairbanks & Tok, and the Arctic IAVC. There were 983 onsite and 202 follow-up surveys completed in this region.

Tok, and the Arctic IAVC. There were 983 onsite and 202 follow-up surveys completed in this region.

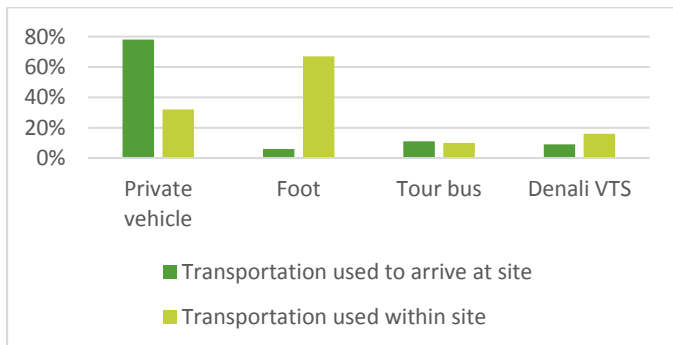
Information Sources Used in Planning the Trip

Interior respondents used a wide variety of information sources in planning their trip. Word of mouth was the most prevalent followed closely by Federal/State websites and other websites.

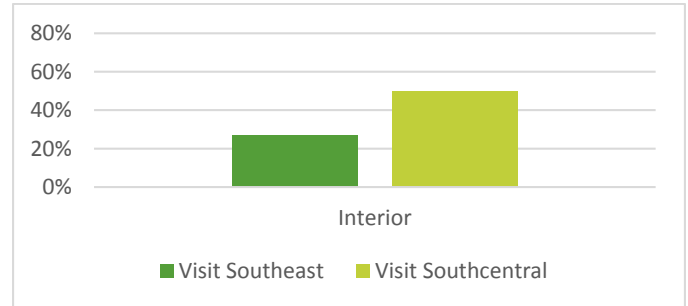


Transportation

Most of the interior respondents arrived at the site by private vehicle and traveled within the site by foot.



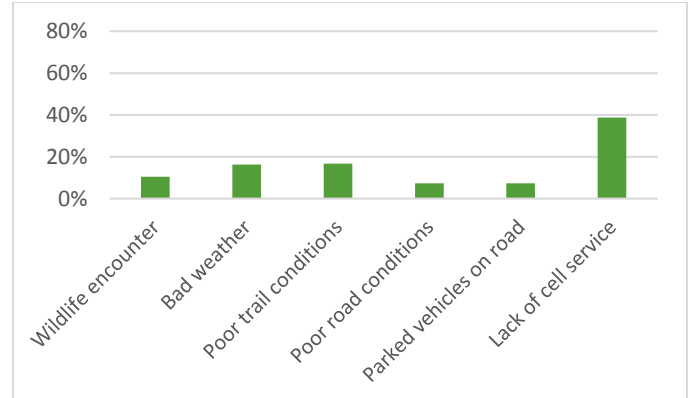
Fifty percent of respondents sampled in the Interior also visited sites in Southcentral Alaska and 27% visited sites in Southeast Alaska.



Safety

Thirty-two percent of the Interior respondents searched for safety measures prior to their trip. When asked about safety concerns experienced, lack of cell service was their top concern.

Safety Concerns Experienced



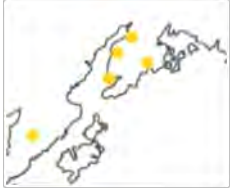
Infrastructure

Respondents were presented with 10 types of transportation/travel-related infrastructure and were asked if they would like to see "less," "the same," or "more." A "no opinion" response option was also provided. "No opinion" was a common response and was excluded from analysis. Of those expressing a preference, with the exception of trails for all-terrain vehicles, the majority of respondents preferred the current levels. Infrastructure with notable percentages of respondents indicating a preference for "more" included: trails for hiking, biking, and horseback riding (47%); campgrounds (44%); accessible friendly sites and facilities (31%); and directional or wayfinding signs (30%). A plurality of respondents (41%) indicated a preference for "the same" amount of trails for all-terrain vehicles, with 36% indicating a preference for "less" and 23% a preference for "more."

2016 Collaborative Visitor Transportation Survey



Southcentral

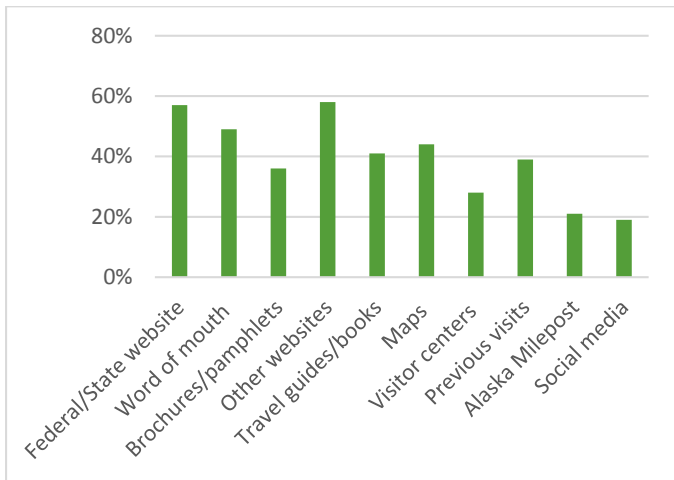


Anchorage and Kenai Peninsula are part of this area. Katmai National Park is also included in this region. In addition to Katmai, key sampling locations included Kenai Fjords National Park, Chugach National Forest, Kenai National Wildlife Refuge, the Alaska Maritime National

Wildlife Refuge visitor center, and the APLIC Anchorage. There were 926 onsite and 174 follow-up surveys completed in this region.

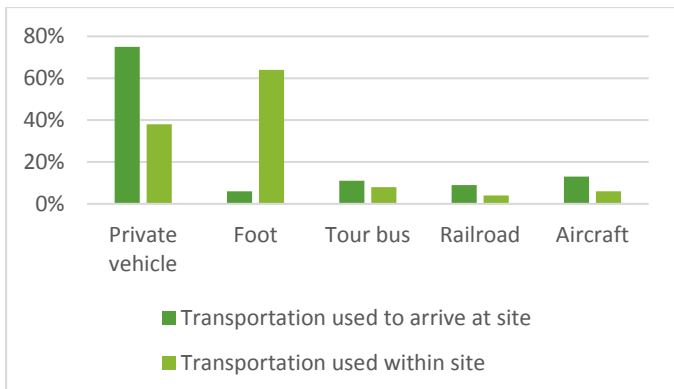
Information Sources Used in Planning the Trip

Southcentral respondents used a wide variety of information sources in planning their trip. Other websites was the most prevalent followed closely by Federal/State websites and word of mouth.

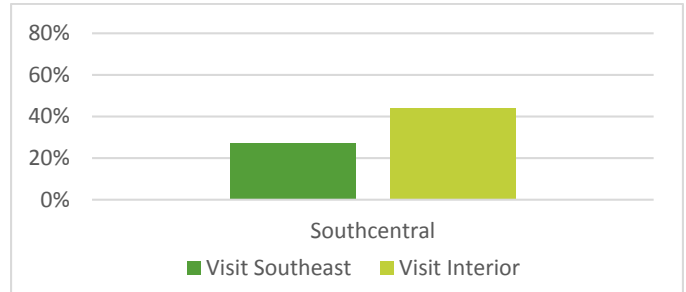


Transportation

Most of the southcentral respondents arrived at the site by private vehicle and traveled within the site by foot.



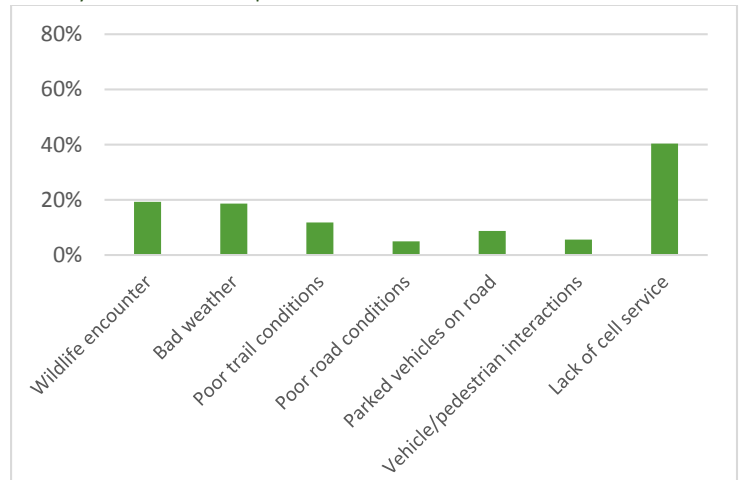
Forty-four percent of respondents sampled in Southcentral also visited sites in the Interior and 27% visited sites in Southeast Alaska.



Safety

Forty-five percent of the Southcentral respondents searched for safety measures prior to their trip. When asked about safety concerns experienced, lack of cell service was their top concern.

Safety Concerns Experienced



Infrastructure

Respondents were presented with 10 types of transportation/travel-related infrastructure and were asked if they would like to see "less," "the same," or "more." A "no opinion" response option was also provided. "No opinion" was a common response and was excluded from analysis. Of those expressing a preference, with the exception of trails for all-terrain vehicles, the majority of respondents preferred the current levels. Infrastructure with notable percentages of respondents indicating a preference for "more" included: trails for hiking, biking, and horseback riding (45%); campgrounds (31%); accessible friendly sites and facilities (34%); and directional or wayfinding signs (34%). A majority of respondents (52%) indicated a preference for "less" trails for all-terrain vehicles, with 8% indicating a preference for "more."

2016 Collaborative Visitor Transportation Survey



Southeast

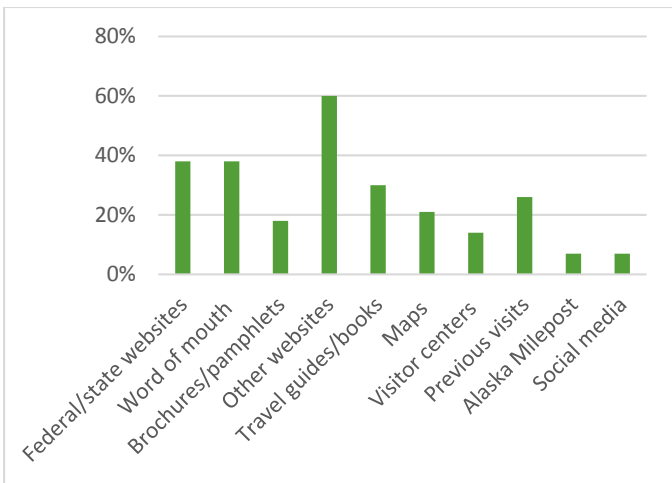


Sites sampled in this region included Klondike Gold Rush National Historic Park, Sitka National Historic Park, the Southeast Alaska Discovery Center, and several sites within the Tongass National Forest: Mendenhall Glacier, trails outside of Juneau and Ketchikan, Hoonah Ranger District, and Prince of Wales Island. There

were 887 onsite and 153 follow-up surveys completed in this region.

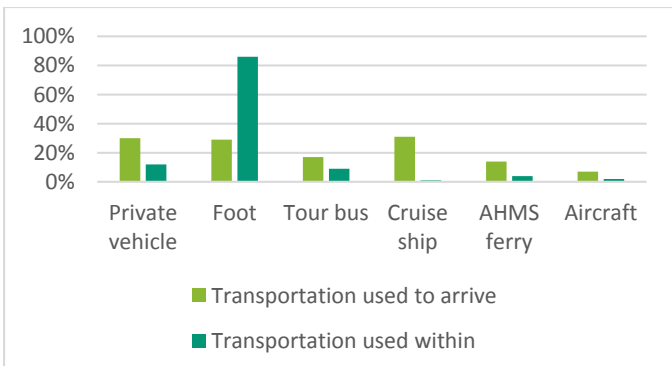
Information Sources Used in Planning the Trip

Southeast respondents used a wide variety of information sources in planning their trip. Other websites was the most prevalent, followed by Federal/State websites and word of mouth.

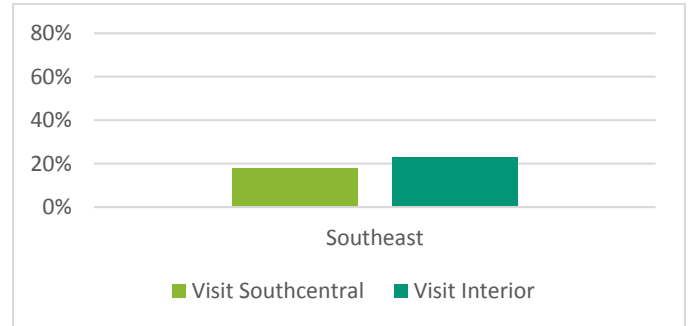


Transportation

The Southeast respondents arrived at the site primarily by private vehicle, foot, or cruise ship, and predominantly traveled within the site by foot.



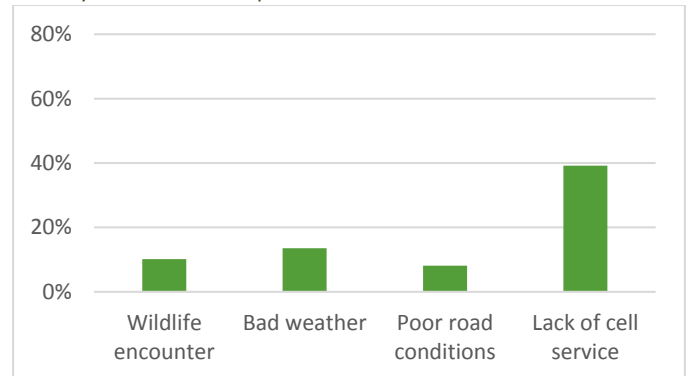
Twenty-three percent of respondents sampled in Southeast also visited sites in the Interior and 18% visited sites in Southcentral.



Safety

Thirty percent of Southeast respondents searched for safety measures prior to their trip. When asked about safety concerns experienced, lack of cell service was their top concern.

Safety Concerns Experienced



Infrastructure

Respondents were presented with 10 types of transportation/travel-related infrastructure and were asked if they would like to see "less," "the same," or "more." A "no opinion" response option was also provided. "No opinion" was a common response and was excluded from analysis. Of those expressing a preference, with the exception of trails for all-terrain vehicles, the majority of respondents preferred the current levels. Infrastructure with notable percentages of respondents indicating a preference for "more" included: trails for hiking, biking, and horseback riding (45%); campgrounds (29%); accessible friendly sites and facilities (40%); and directional or wayfinding signs (36%). A plurality of respondents (49%) indicated a preference for "less" trails for all-terrain vehicles, with 13% indicating a preference for "more."

Collaborative Visitor Transportation Survey: Results from Summer 2016 Alaska Survey

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We would like to thank all the federal lands managers who took the time to assist us with developing a sampling schedule and accommodating our onsite needs. The survey crew deserves special thanks for sticking with the sampling for the summer, regardless of weather conditions. Charly McConaghy and Joshua Benson conducted the sampling in Southeast Alaska; Morgan Piper and John Pullman surveyed in Southcentral Alaska; and Trisha Levasseur, Rachel Garcia, and Kendall Elifrits sampled the sites in Interior Alaska. Rachel Garcia was critical in designing the iPad survey and assisting with various other tasks such as formatting results and coding open-ended responses. Rachel provided valuable assistance in editing the report. Tara Callear also provided assistance in editing. Trisha Levasseur was a reliable assistant for mailing surveys, entering data, coding open-ended comments, conducting a quality check on data entry, and other miscellaneous tasks. Finally, we would like to thank the federal lands visitors who took the time to complete the survey.

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Executive Summary

Overview

A survey was administered at Federal lands in Alaska during summer 2016 to collect data on visitors' transportation-related experiences to inform Federal Land Management Agencies' (FLMAs) long range transportation planning. Eighty percent of visitors contacted agreed to participate in the survey, which consisted of two parts: an onsite survey and a follow-up survey. Two thousand seven hundred ninety-six respondents were recreational visitors and 247 were non-recreational visitors. Five hundred twenty-nine visitors responded to the follow-up survey.

The questions were designed to gather information on the following themes:

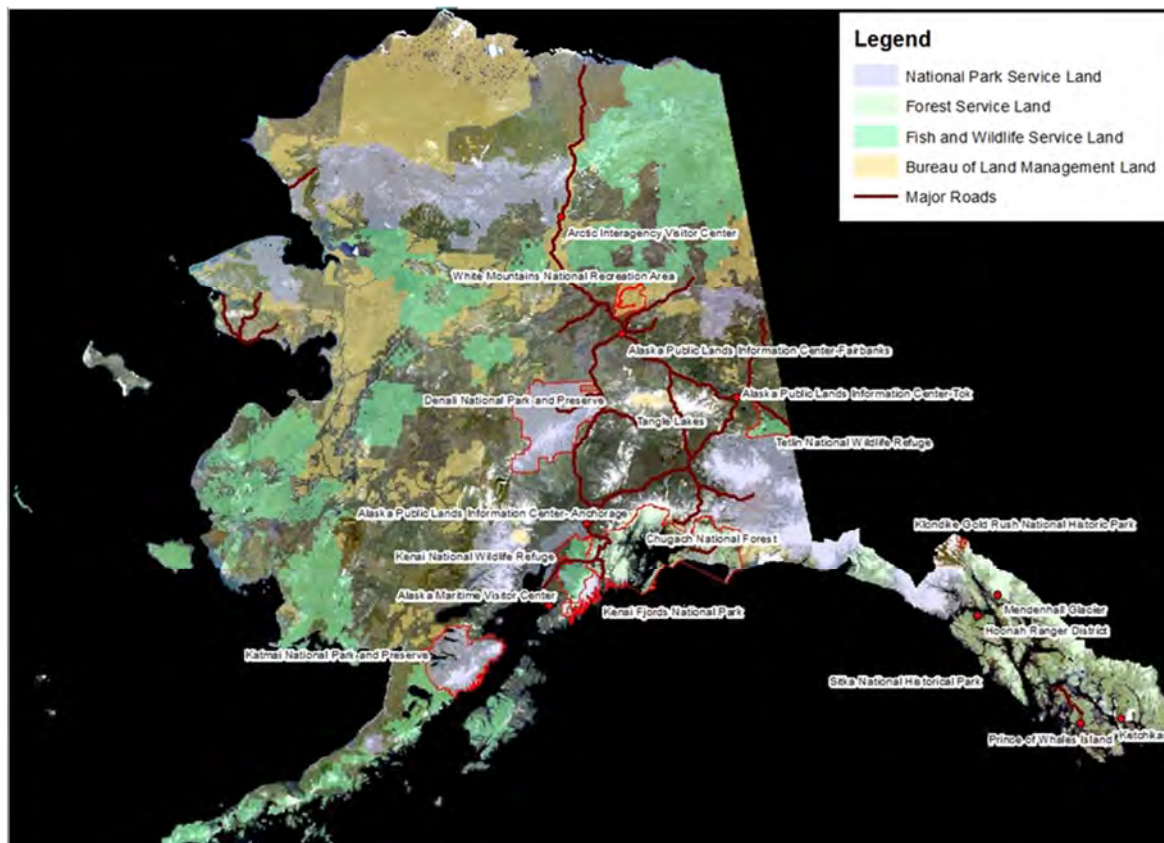
- Modes of transportation used
- Transportation satisfaction
- Sites visited and activity participation
- Information sources used and their helpfulness
- Infrastructure satisfaction and preferences
- Safety concerns and incidents
- Suggestions for improving travel

Methods

The survey was administered across a large geographic area of Alaska, including 20 sites (or units) distributed across FLMAs as follows:

- National Park Service (NPS)—5 sites
- US Forest Service (USFS)—5 sites
- US Fish and Wildlife Service (FWS)—3 sites
- Bureau of Land Management (BLM)—2 sites
- Alaska Public Lands Information Centers (APLICs)—4 sites
- Arctic inter-agency visitor center (AIVC)
- In addition, the Alaska Marine Highway System Ferry

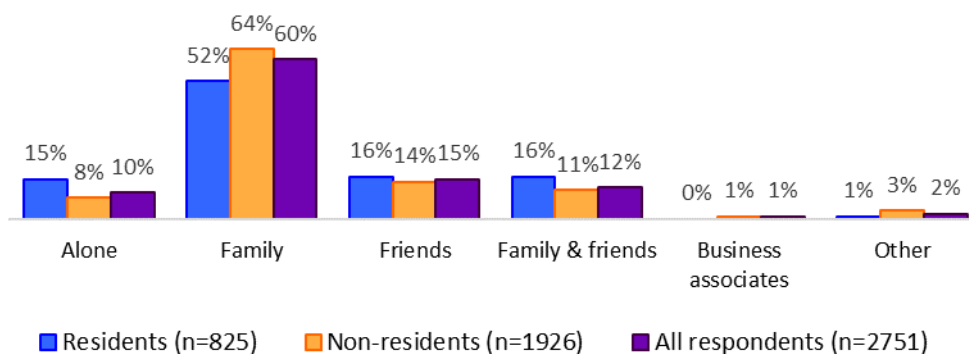
Within each site, there were several intercept locations, selected purposively in order to sample a range of visitor types. The onsite survey was administered via paper or iPad. After the onsite survey was completed, the respondent was asked if they were willing to participate in the follow-up survey, and were given the option of a paper survey or a web-based survey. Residents were mailed/emailed the follow-up survey within a week. Non-residents were asked when they were leaving Alaska, with the follow-up survey mailed/emailed after they left Alaska.



Characteristics of Respondents

- Thirty percent (838) of the recreational onsite surveys were completed by residents and 70% (1,958) by non-residents. Most residents (99%) were traveling independently. Among non-residents, 65% reported traveling independently, 20% as part of a pre-purchased package tour, and 15% both independently and as part of a pre-purchased package tour. Forty two percent of residents were on a day trip. All non-residents stayed at least one day in Alaska, with 56% staying 3–14 nights and 43% staying 15 or more nights.
- Onsite respondents were evenly split between male and female, with no significant gender differences between residents and non-residents. With respect to race, nearly all respondents identified as white (94%). Four percent identified as Hispanic or Latino.
- Respondents reported high education levels, with 64% indicating a Bachelor’s degree or higher and high income (nearly two-thirds earning \$75,000 or more in annual household income, and 20% had household family incomes of \$150,000 or more).
- More than one-half (56%) were traveling with group members who were 45 to 64 years of age, about one-third (36%) with group members 65 or older, and nearly one-third (31%) with children aged 18 or younger. Residents were significantly more likely than non-residents to be traveling with children (53% vs. 24%), whereas non-residents were more likely to be traveling with those aged 65 or older (44% vs. 20%).

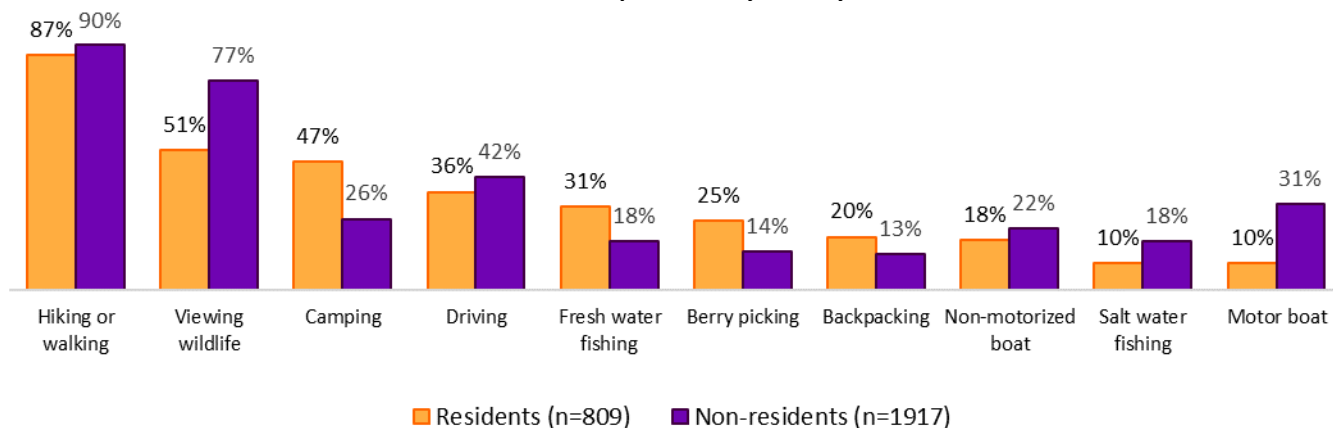
Percent Respondents by Travel Companion



Activities

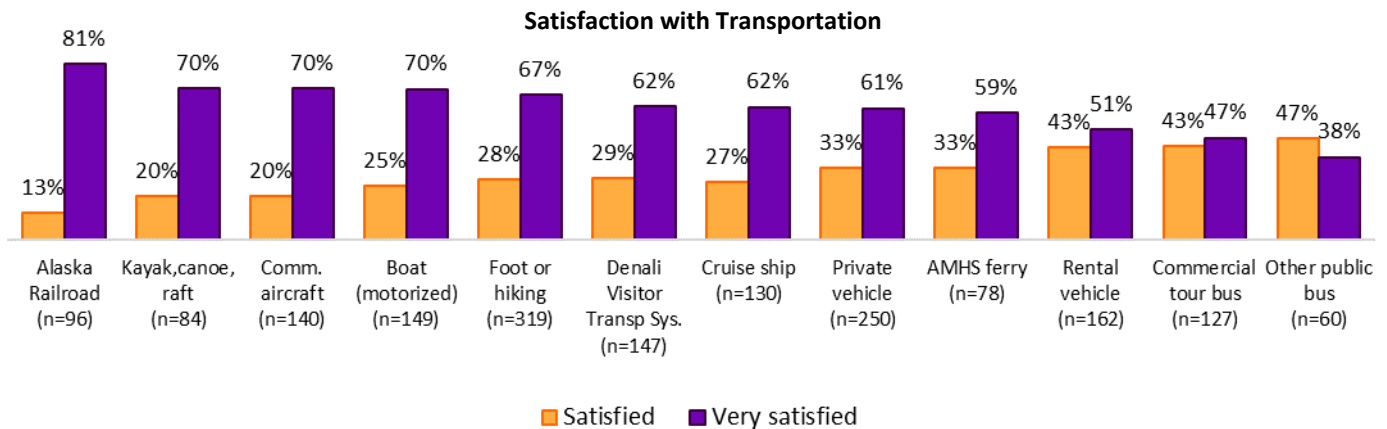
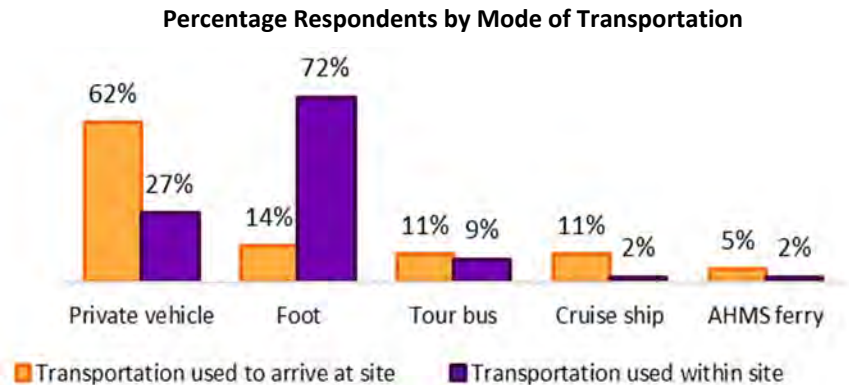
- Residents were more likely than non-residents to engage in camping, fresh water fishing, and berry picking/food gathering, while non-residents were more likely to engage in water travel and salt water fishing.
- Nearly all respondents (88%) reported that they were able to engage in all the activities they had planned. Among those who were not able (12%), key reasons included weather (37%) and not enough time (29%). Fewer respondents cited safety concerns (16%), area closures (11%), or rules/regulations did not allow for the activity (10%).

Percent Respondents by Activity



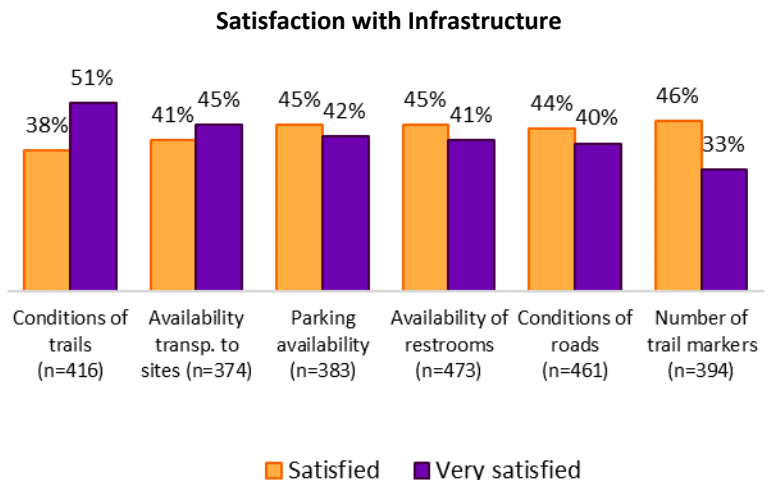
Transportation

- Nearly two-thirds of visitors arrived at the site using a private vehicle, (92% residents vs. 49% non-residents). Non-residents were more likely to indicate using commercial shuttle and tour bus than residents. Compared to non-residents, residents were more likely to travel by private vehicle, a non-motorized water mode, bicycle, and all-terrain vehicle (ATV).
- Within the site, a large majority of respondents traveled by foot (72%), with one-quarter also reporting they traveled by private vehicle (27%).
- Across all forms of transportation used during the trip, most respondents were “satisfied” or “very satisfied.” There were some differences by mode, with respondents indicating higher levels of satisfaction with rail, boat, and air travel, and somewhat lower levels of satisfaction with bus and vehicle travel.
- Nearly three-quarters of respondents indicated that their travel experience was either above their expectations (44%) or significantly above their expectations (28%); one-quarter reported that it met their expectations. Roughly two-thirds rated the overall travel experience as “excellent” and nearly one-third rated it as “good.”
- When asked specifically if they had encountered problems making a connection between different modes of transportation, nearly three-quarters of respondents indicated “no” and 12% said “yes” (15% responded not applicable).



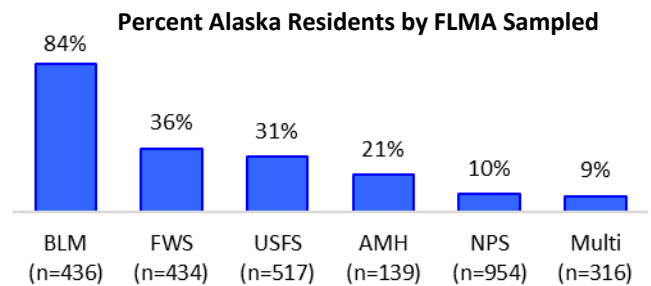
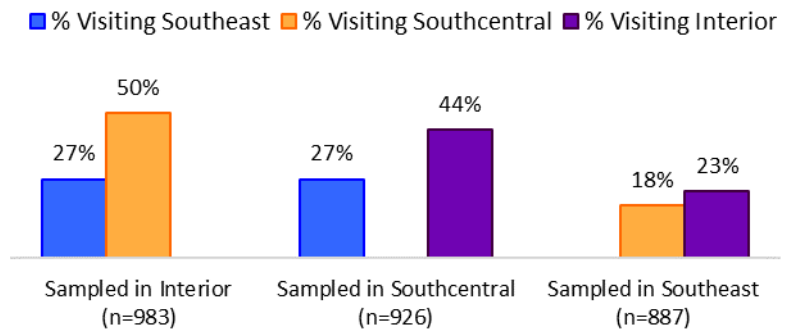
Infrastructure

- Respondents were asked if they would like to see “less,” “the same,” or “more” of 10 types of transportation infrastructure. “No opinion” was a prevalent response and was excluded from analysis. Of those expressing a preference, with the exception of trails for all-terrain vehicles, the majority of respondents (ranging from 54% to 81%) preferred the current levels.
- Eight in ten visitors reported being satisfied or very satisfied with infrastructure.
- Respondents were also asked to rate the extent to which different issues (e.g., traffic congestion, crowding) were a problem. Large majorities indicated the issues were not a problem. About one-quarter had a problem with motor vehicle or aircraft sounds or too many people at scenic overlooks.



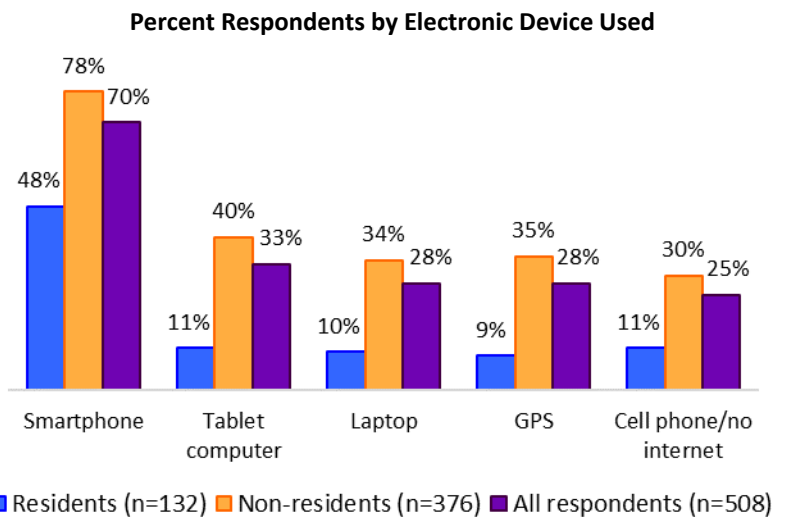
Visitation

- Among non-residents, a majority (61%) reported that this was their first time visiting Alaska. Among the 39% who had made a previous trip in the last ten years, most had either visited Alaska once (40%) or two to three times (31%).
- Non-residents were more likely than residents to visit multiple FLMA sites during their trip (80% vs. 55%). Fifty percent of respondents sampled in the Interior also visited FLMA sites in southcentral and 27% visited FLMA sites in Southeast. Of those sampled in Southcentral, 44% visited FLMA sites in the Interior, 27% in Southeast, and 24% in the Southwest. Eighteen percent of those sampled in the Southeast visited FLMA sites in Southcentral and 23% in the Interior.
- BLM sites received much higher resident visitation (84%) than the other sites. The FWS and USFS sites were similar (36% and 31% residents, respectively), and the NPS had the lowest percent of resident visitors (10%).

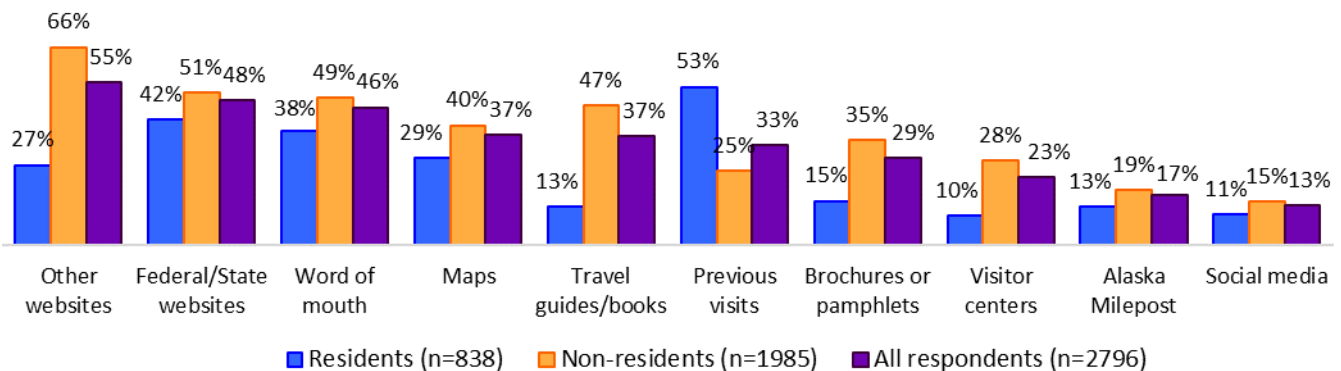


Information Sources Used

- Respondents were asked about electronic devices that they carried with them on their trip. Among those who used an electronic device, 63% experienced a problem, and nearly all cited a lack of Wi-Fi or internet service (96%). Non-residents were significantly more likely to indicate problems using their electronic devices (71% vs. 42%).
- Websites were the most often used information source to plan the trip. Response patterns were similar across residency, but there was an uptick in the use of brochures/pamphlets and visitor bureaus/information centers among non-residents. Residents were more likely to rely on previous visits. Overall, 76% of respondents reported that they received the information needed when planning their trip.
- The sources that were most likely to be perceived as very helpful included previous visits (78%), Alaska Milepost (70%), package tour companies (69%), and visitor bureaus/information centers (68%). Nearly all respondents reported that they received the information needed (94%) during their trip.



Percent Respondents by Information Source Used to Plan Trip



Safety Issues Researched

- Thirty-five percent of respondents reported researching safety issues prior to their trip. Non-residents were significantly more likely than residents to do such research (41% vs. 20%).
- If respondents indicated they researched safety measures, they were asked to explain what safety measures were researched. One hundred forty-four respondents provided explanations (20 residents and 124 non-residents). Among these, the largest category of safety measures researched related to wildlife (83%), with 65% of residents and 86% of non-residents indicating they researched this issue. Seventeen of the responses related to road conditions and 12 responses related to communications.

Safety Issues Experienced

- Lack of cell phone coverage was the most frequently cited safety issue experienced (38% of residents and 40% of non-residents).
- Respondents were asked if they had ever experienced a safety incident or accident on Federal Lands. Only 3% reported that they had.

Travel Experience

- Respondents were asked to provide additional feedback on their travel experience; 226 respondents (49 residents and 177 non-residents) provided comments. Thirty-one percent (n=70) expressed satisfaction with the travel experience and an additional 18% (n=41) indicated they had no problems.
- Forty percent (n=90; 19 residents and 71 non-residents) related to travel and/or transportation. Of these 90 responses, 10 expressed satisfaction with specific travel-related issues (e.g., “The roads were better than expected. The Denali Highway was pretty rough but that was to be expected.”)
- Other transportation/travel-related comments referenced poor road conditions (n=22), issues related to AMHF (n=14) or public transportation (n=8), the cost of transportation (n=8), construction-related delays (n=5), and signage issues (n=4).

Percent Respondents by Safety Issue Experienced (n=500)

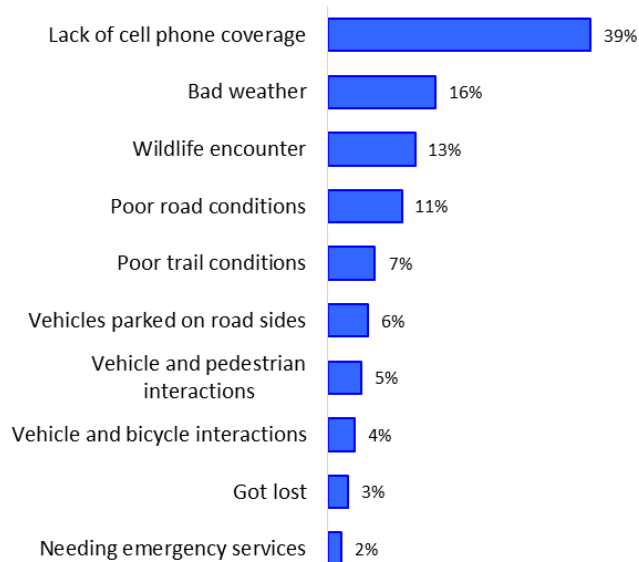


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List of Acronyms

AMHS	Alaska Marine Highway System Ferry
ANILCA	Alaska National Interest Lands Conservation Act
ANCSA	Alaska Native Claims Settlement Act
AIVC	Arctic Interagency Visitor Center
APLIC	Alaska Public Lands Information Center
ARSP	Alaska Residents Statistics Program
ATV	All-terrain Vehicle
AVSP	Alaska Visitor Statistics Program
BLM	Bureau of Land Management
CG	Campground
CVTS	Collaborative Visitor Transportation Survey
DOT	Department of Transportation
FHWA	Federal Highway Administration
FLMA	Federal Land Management Agency
FLPP	Federal Lands Planning Program
FWS	Fish and Wildlife Service
GPS	Global Positioning System
LRTP	Long Range Transportation Plan
NF	National Forest
NHP	National Historic Park
NP	National Park
NP&P	National Park and Preserve
NPR	National Preserve
NPS	National Park Service
NVUM	National Visitor Use Monitoring
NWR	National Wildlife Refuge
OMB	Office of Management and Budget
POW	Prince of Wales
RV	Recreational Vehicle
SC	Southcentral
TIP	Transportation Improvement Program
USDI	United State Department of the Interior
USFS	United States Forest Service
UTV	Utility Task Vehicle
VTS	Visitor Transportation Survey
WMNRA	White Mountains National Recreation Area

Introduction

Overview

The Alaska Collaborative Visitor Transportation Survey (CVTS) is being utilized to inform an update to a multiagency long range transportation plan (LRTP) for Alaska. This plan brings together Alaska Federal Land Management Agencies' (FLMAs) common strategies for transportation planning while taking the individual land management agency's missions into account, as well as partnering with the Alaska Department of Transportation and Public Facilities (AKDOT&PF). The Bureau of Land Management (BLM), United States Forest Service (USFS), United States Fish and Wildlife Service (USFWS), and the National Park Service (NPS) collaborated on this survey. The goal of the survey was to collect user experience data on key metrics related to mobility, traveler information, safety, and transportation related services and conditions.

In advance of administering the survey, the Volpe National Transportation Systems Center (Volpe Center), in support of Federal Highway Administration (FHWA), Western Federal Lands (WFL) Division, assisted in the development of a generic clearance that could be used by FLMAs to streamline the process for obtaining approval from the Office of Management and Budget (OMB). The key purpose of this effort was to encourage FLMAs to collaborate on information collections and to make visitor surveys a more feasible part of the transportation planning process. OMB approved the generic clearance on November 14, 2014¹. The Alaska FLMAs utilized the generic clearance, including the pre-approved set of transportation related questions (Compendium of Questions) for the Alaska survey, and lessons learned from this survey effort will be documented and shared to assist FLMAs in administering future collaborative surveys.

As part of the initial planning efforts for the Alaska survey, each of the participating FLMAs, as well as AKDOT&PF and FHWA WFL Highway Division signed a Memorandum of Understanding (MOU) to establish a framework of cooperation among the agencies for conducting the visitor surveys. More specifically, the MOU described the need and purpose of the Agreement, the scope of the survey effort (including proposed survey sites), project milestones, roles and responsibilities of the different project team members, and projected schedule.

Alaska Context

Alaska is geographically the largest state at 570,374 square miles. Within its borders lies the tallest mountain in North America, Denali at 20,320 feet, and the nation's largest national park, Wrangell-St. Elias at 13.2 million acres (the next three largest parks are in Alaska as well, including Gates of the Arctic, Denali, and Katmai).

Alaska contains significant acreage of federally managed public land. These lands not only provide Alaskans with opportunities for subsistence and recreation, but also have resulted in Alaska becoming an important tourist destination. Information regarding visitors' use, attitudes, preferences, etc. can help guide management in improving the visitor experience.

¹ http://volpe-public-lands.s3-website-us-east-1.amazonaws.com/flma_lrtp_cvts/cvts.htm

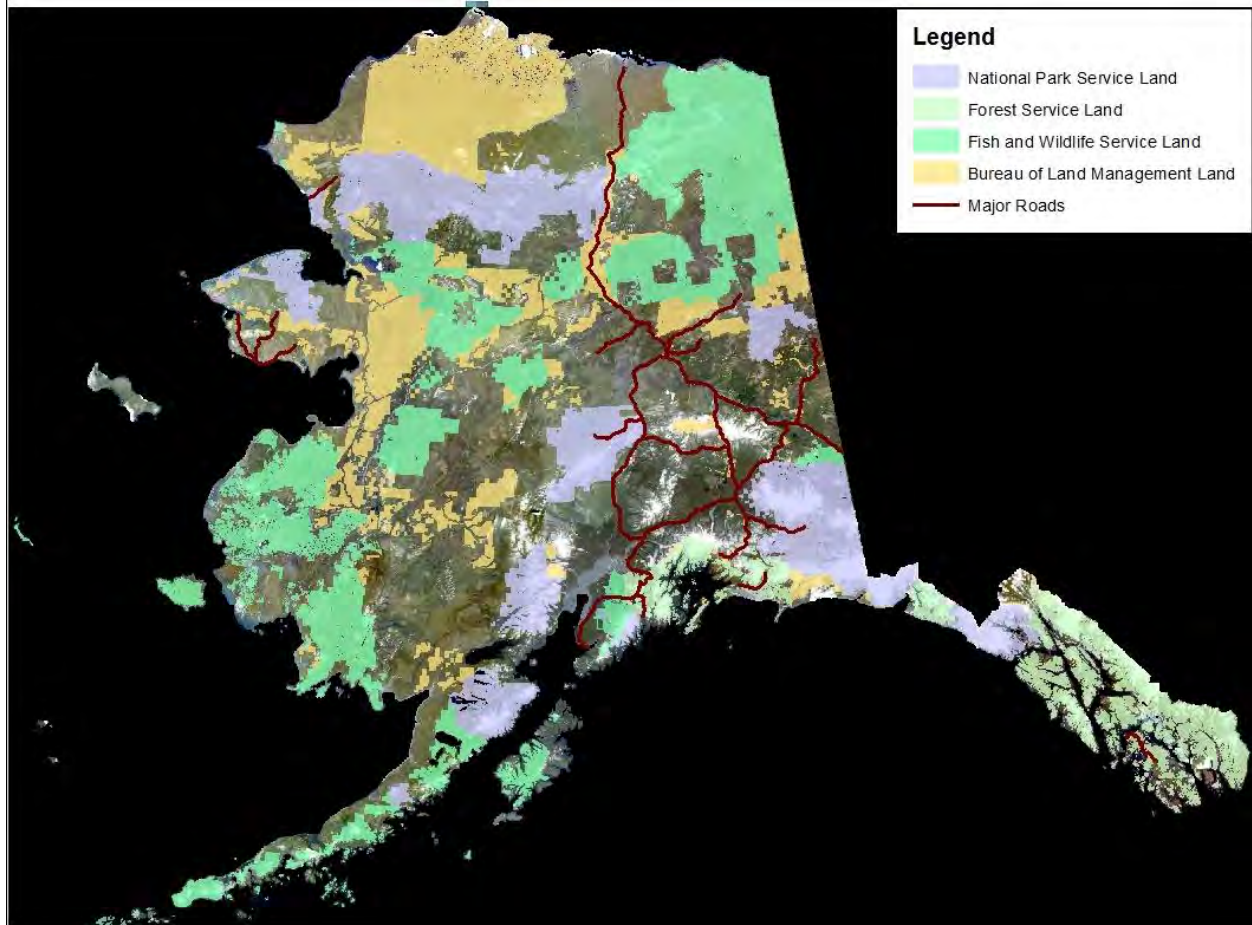


Figure 1. FLMA Units in Alaska.
Map developed by Kendall Elifrits.

Federal Land Management Agencies (FLMAs) in AK

This section includes a brief description of the lands managed by each of the partner FLMAs.

U.S. Bureau of Land Management

The U.S. Bureau of Land Management manages approximately 72 million acres of land in Alaska. BLM has been tasked with transferring lands to the State of Alaska, Alaska Native corporations, and individual Alaska Natives. This is the largest land transfer in U.S. history. When the BLM is finished with the land transfer they will have transferred over 150 million acres of land.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service manages 16 national wildlife refuges in Alaska, totaling 76,774,229 acres. The Alaska refuges account for approximately 85% of the National Wildlife Refuge system.

U.S. Forest Service

The U.S. Forest Service manages the Chugach National Forest and the Tongass National Forest in Alaska. Chugach National Forest is 5.5 million acres that includes portions of Prince William Sound, the Kenai Peninsula and the Copper River Delta. Located in Southcentral Alaska, Chugach National Forest is easily

accessible to the Alaska residents in the most populous region of the state. At roughly 17 million acres, the Tongass National Forest is the nation's largest national forest. It encompasses much of Southeast Alaska including the Inside Passage. There are two National Monuments, Admiralty Island and Misty Fjords within the forest. It contains many remote area public use cabins, hiking trails, campgrounds, and visitor centers.

National Park Service

The National Park Service manages 15 national parks, historic parks, preserves, and monuments in Alaska, encompassing 54 million acres of land in Alaska (and 60% of land managed nationwide by the National Park Service).

Methods

The study utilized an on-site survey with a follow-up survey administered to willing onsite survey respondents.

Survey Development

Onsite Survey

The primary target population for the summer 2016 survey was recreational users of federal lands. However, it was anticipated that some non-recreational users might be intercepted (e.g., those working on or commuting through federal lands), and that it might be useful to obtain their feedback using an abbreviated set of questions. As a result, both a recreation and non-recreation survey were developed. In addition, there were slight differences in the questions asked of Alaska residents versus non-residents. The table below summarizes the different questions that were asked across the different survey populations. See Appendix A for a copy of the survey.

Table 1. Questions Included on the Various Alaska CVTS Survey versions.

Question category	Recreation survey		Non-recreation survey	
	Resident	Non-resident	Resident	Non-resident
Home state/country		X		X
Zip code	X		X	
Seasonal resident of Alaska		X		X
Past visitation to Alaska		X		X
Past visitation to site	X		X	
Forms of transportation to arrive in AK		X		X
Frequency of visits to FLMAs	X		X	
In past 12 months, mode of transportation to FLMAs	X		X	
In past 12 months, satisfaction with mode of transportation to FLMAs	X		X	
Transportation used to/within site	X	X	X	X
Satisfaction with transportation used to/within	X	X	X	X
Specific FLMAs visited during trip	X	X		
Activities during trip	X	X		
Trip planning & information sources	X	X		
Group composition	X	X		
Demographics	X	X	X	X
Travel experience (open-ended)			X	X
Suggestions for travel on FLMA (open-ended)			X	X

Follow-up Survey

The follow-up survey was administered only to recreation visitors. The follow-up survey consisted of 26 questions, with the same questions being administered to both residents and non-residents.

Respondents were asked to consider their entire trip when responding to the questions. Major categories of questions included:

- Length of trip and accommodations used
- Information sources used and helpfulness of those sources (fixed response and open ended)
- Electronic devices used
- Feedback on signage (fixed response and open ended)
- Barriers to reaching sites (fixed response and open ended)
- Barriers to participation in activities (fixed response and open ended)
- Transportation used during trip and satisfaction with transportation (fixed response and open ended)
- Evaluation of trip and specific site conditions
- Preferences for management
- Safety concerns (fixed response and open ended)
- Transportation-related accidents on federal public lands in Alaska (fixed response and open ended)
- Evaluation of trip (open ended)
- Suggestions for how travel can be improved (open ended)

Sampling

The CVTS was administered across a large geographic area of Alaska. At the outset, the CVTS team determined that it would administer the survey at approximately 20 sites (or units), distributed across FLMAs as follows:

- NPS – 5 sites
- USFS – 5 sites
- USFWS – 3 sites
- BLM – 2 sites
- Multiagency – 5 sites (4 Alaska Public Lands Information Centers and the Arctic Interagency Visitor Center)
- In addition, surveys were conducted on the Alaska Marine Highway System (AMHS) ferries.

Within each site, there would be several intercept locations, selected purposively in order to sample a range of visitor types. Each FLMA provided the list of sites and made suggestions for specific intercept locations within the site. Some sites provided by the FLMAs were labeled as “dispersed,” in which case UAF selected dispersed sites. Because of the dispersed sites, there were more than 20 distinct sample sites.

As Alaska is a very large state, it was divided into three regions. With respect to employees and sampling, each region was essentially viewed as a separate study. The regions, along with the sites that were sampled, are described below.

Interior

The Alaska Range forms the southern boundary of this region. It receives less visitation than the other regions. FLMAs sampled in this region were: Denali National Park, Tetlin National Wildlife Refuge, the

White Mountains National Recreation Area, Tangle Lakes/Swede Lakes Trail, the Fairbanks APLIC, the Tok APLIC, and the AIVC. The home base for this region was Fairbanks. The survey sites in this region are also connected by roads. The sites, though, are relatively distant from Fairbanks and sampling trips were up to five days with the employee camping for several days in a row.

Southcentral

This region consists of the Anchorage and Kenai Peninsula area. Katmai National Park is also included in this region. In addition to Katmai, key sampling locations included Kenai Fjords National Park, various sites in the Chugach National Forest, the Kenai National Wildlife Refuge, the Alaska Maritime National Wildlife Refuge visitor center, and the Anchorage APLIC. Aside from Katmai, this area is connected by the road system. Sampling consisted of many day-trips to the sites, with a few overnight trips.

Southeast

This region covers the area from Ketchikan and Prince of Wales Island north to Skagway and the Klondike Gold Rush National Historic Park. Survey sites included Ketchikan (the Southeast Alaska Discovery Center and FS trailheads), Prince of Wales Island, the Hoonah Ranger District, Sitka National Historic Park and surrounding area, Mendenhall Glacier and other Forest Service sites in Juneau, and the Klondike Gold Rush National Historic Park. This region does not have a road system connecting communities. Residents travel throughout the area via the Alaska Marine Highway System Ferry or by flying. In this region, we stationed the employees in student housing on the University of Alaska Southeast Juneau campus. The employees traveled by ferry, and occasionally air, to the survey sites. The employee stayed at the site for up to 9 days (though with two ferry trips on either end, time sampling at each of the sites was shorter), staying in either Forest Service bunkhouses or bed and breakfast/hostel lodgings.

A team of two survey aides were assigned to each region. The sites included in this study are characterized by large travel distances between sites, prohibiting a completely random sample. Thus, a purposeful sample was used. However, the survey team attempted to ensure the data were representative through the following considerations in the sample design.

- Data were gathered at different times throughout the summer to increase representation and ensure the sample was not influenced by temporal events such as extreme rain events, smoke from wildfires, temporary road closures (e.g., a washout or truck accident on the Dalton Highway, road closures due to wildland fire, disabled ferry, etc.).
- Sites were sampled across various days of the week (i.e., each site contained a mix of weekdays and weekend days). Within selected time blocks, sampling occurred across a range of times of the day (i.e., sites sampled in the morning, afternoon, and evening). The number of days each site was sampled was determined by expected use levels, variation in use across the season, and significant events at that site (e.g., salmon fishing on the Russian River, moose hunting in the Nome Creek Valley).

During the days sampled, there was a specific protocol for where and how long to sample, the script to follow when contacting potential respondents, and detailed logs regarding contacts to maintain. The sampling of visitors to FLMAs varied according to visitor use levels. A description of the different use levels is provided, along with the sampling strategy used for each.

- Low use sites: Aside from pulses of visitors, use was sporadic, and there was lots of time to prepare between groups. Every group was surveyed at low use sites.
- Moderate use sites: Many groups were present at once, so it was not possible to sample every group. When there was a steady stream of visitors, a new group was sampled as soon as the previous group completed their survey.
- High use sites: The number of visitors at these sites was overwhelming at times (e.g., multiple cruise ships in a port). If there were pulses of visitors, the surveyor attempted to sample multiple visitors at once. If there was a steady stream of visitors, a new group was sampled as soon as the previous group completed their survey.

Sampling was also tailored, as appropriate, by characteristics of the site or by transportation mode.

- Private vehicles: There were several sites that were primarily waysides or roadside attractions, where visitors would pull up in their vehicle for a short period of time to read an interpretive sign, use the restroom, etc. and then leave (in contrast to people returning to a parking lot after a hike, ATV ride, etc.). In these situations, surveyors sampled vehicles, following the rules prescribed for low, moderate, and high use sites. The locations where this sampling strategy was used included:
 - Interior: Nome Creek, Delta Wild and Scenic River Wayside;
 - Southcentral: Turnagain Pass rest areas, potentially other Forest Service sites where people pull in;
 - Southeast: Prince of Wales Island.
- Small tours: Small tours includes vans and small buses (e.g., 14 passenger). Groups were identified (e.g., when people got off the bus, they often organized into subgroups for pictures, etc.) and sampled according the site use outlined above.
- Large tours: For full size tour buses, the same procedure as small tours was utilized. However, at low use sites, only up to three groups were sampled, so that no single tour bus comprises a disproportionate share of the sample for that site.
- Cruise ships: Various sizes range from intimate, 50 person expedition vessels to 2500 passenger mega-ships. Juneau and Ketchikan can have up to 5 cruise ships in port per day, while Sitka and Hoonah might have only have 1 or 2 at a time, or none. Some of the sampling took place in locations near the ships' berths and large groups of passengers flooded into the survey area all at once. When large groups of passengers flooded the survey area, the surveyor would attempt to randomly select groups of visitors to intercept. The surveyor would wait until the group was completed with the survey before selecting another group. Because of the large number of passengers, only a small proportion of cruise passengers from any one ship were sampled.
- Campgrounds: Several campgrounds are included in the sample. Although the protocol varied slightly depending on whether the campground is associated with some other attraction (i.e., a day-use fishing area), in general, the surveyor walked through the campground in the late morning or early evening and sampled visitors who were outside of their tent or RV. The survey aides distributed the survey throughout the campground, then made a loop to pick up completed surveys.

Table 2 provides a list of the sites sampled, the targeted visitors, and the sampling approach at each site. Figure 2 displays the FLMA units where sampling occurred.

In preparation for survey administration, the FLMA Alaska Regional Transportation Coordinators (NPS, FWS, FS, BLM) were asked to send a letter announcing the survey effort to each of the units (within their FLMA) that were proposed survey sites. The letter described the overall purpose and objective of the survey, introduced the survey manager, Dr. Peter Fix of the University of Alaska-Fairbanks, and provided appropriate contact information if the sites had any questions.

The UAF survey team followed up with phone calls to each site to confirm receipt of the letter, to share initial survey plans, and to obtain input on survey logistics (e.g., specific sampling locations, restrictions on survey dates, etc.). In addition, the units provided UAF with information on any requirements regarding survey administration. Each FLMA had slightly different requirements for obtaining approval to conduct surveys. NPS, for example, required that UAF complete a research application via its Research Permit and Reporting System (RPRS).² Overall, most units were extremely cooperative and did not have any issues or problems regarding the administration of surveys at their sites.

² See <https://irma.nps.gov/rprs/>

Table 2. Specific Sites Sampled, Targeted Visitors, and Sampling Approach.

Region Survey site	Specific sampling locations at site	Targeted visitors	Site description and sampling approach
Interior			
Alaska Public Lands Information Center (APLIC) Fairbanks	Outside building (required)	Cruise Passenger, some Local	High use, randomly selected groups to survey.
APLIC Tok	Mix of inside and outside the building	Non-Resident Independent Traveler	One of first or last stops to/from AK. Had to work around hours the center was open. Attempted to sample all who stopped.
Arctic Interagency Visitor Center (AIVC)³	Inside building, survey administered by AIVC employee	Resident & Non-Resident Independent Traveler	Trained one AIVC staff, who administered survey. Moderate use, selected days to sample, attempted to sample most visitors on those days.
Denali National Park & Preserve (NP&P)	Visitor Center, Wilderness Access Center, Railroad Depot, Savage River Check Station	Resident & Non-Resident Independent Traveler, Cruise Passenger	Rotated through 4 sites; most time spent at Visitor Center and Bus stop. VC, RRD: high use, randomly selected groups to sample. WAC SRCS: Low use, attempted all. Research permit.
Tangle Lakes & Delta Wild & Scenic River (WSR)⁴	Tangle Lakes Campground (south side), Tangle Lakes Waysides (north side), Swede Lake Trailhead	Resident & Non-Resident Independent Traveler	Multi-day trips to the 3 sites; spent time sampling at Swede Lake & Delta Wayside; stayed at campground, sampled people using the campground. Low use, attempted to survey all visitors.
Tetlin National Wildlife Refuge (NWR)	Visitor Center, Deadman Lake and Lakeview campgrounds	Resident & Non-Resident Independent Traveler	First or last stop to/from AK. Added late in summer. Low use, attempted to sample all who stopped at Visitor Center and all at campgrounds.
White Mountain National Recreation Area (WMNRA)	Nome Creek, Cripple Creek Campground, Wickersham Dome Trailhead	Local; Non-Resident Independent Traveler	Stationed at Wickersham Dome Trailhead; parked at US Creek/Nome Creek Rd. junction; trip to Cripple Creek Campground. Moderate use, attempted most visitors.

Table continues

³ BLM classified as Northern; for sampling purposes, this site was classified as Interior and is listed in the report as Interior.

⁴ BLM classified as Southcentral; for sampling purposes, this site was classified as Interior and is listed in the report as Interior.

Table 2. *Continued.*

Region Survey site	Specific sampling locations at site	Targeted visitors	Site description and sampling approach
Southcentral			
Alaska Maritime NWR	Outside Visitor Center, ferry dock based on ferry schedule	Resident & Non-Resident Independent Traveler	High use, randomly selected groups to sample.
APLIC Anchorage	Outside Visitor Center	Non-Resident Independent Traveler, some Local	Moderate use, attempted most visitors.
Katmai NP⁵	Brooks Camp, Lake Camp Boat Launch (not sampled)	Resident & Non-Resident Independent Traveler	Stayed at campground; sampled visitors waiting for bear viewing platform, and other locations at Brooks Camp. High use, but could attempt all visitors at staging for Brooks Falls.
Chugach NF	Whistle Stop; Begich-Boggs Visitor Center; Campgrounds: Bertha Creek, Black Bear, Cooper Landing, Granite Creek, Quartz Creek, Tenderfoot, Williwaw; Trail heads: Canyon Creek, Devil's Creek, Johnson Pass, Primrose, Resurrection Pass, Resurrection River; Turnagain Pass rest areas	Resident Independent Traveler, Local	Rotated around sites, approached visitors at trailheads and campgrounds. Low use, attempted to sample all visitors.
FWS Dispersed	Skilak Lake Visitor Contact Station; campgrounds, trailheads, boat launches in Skilak Lake Rec. Area and along Swanson River Rd; Tustemena Lake	Resident Independent Traveler, Local	Rotated around sites; approached visitors at trailheads, campgrounds, and boat launches. Mix of Low and Moderate use, attempted to sample most visitors.
Kenai Fjords NP	Seward Visitor Contact Station, Exit Glacier Contact Station	Cruise Passenger, Resident & Non-Resident Independent Traveler	Seward: approached visitors entering/exiting Visitor Center; Exit Glacier: approached visitors hiking and entering/exiting Visitor Center. High use, randomly sampled users. Permit required.
Kenai NWR	Kenai Visitor Center in Soldotna	Resident & Non-Resident Independent Traveler	Outside Visitor Center; approached people visitors using trails and those entering Visitor Center. Moderate use, attempted to sample most users.
King Salmon	Outside airport, Visitor Center next to airport	Resident Independent Traveler	Approached people entering airport; surveyed at adjacent NPS Visitor Center. Low use, attempted to sample all users.
Russian River - FWS	Jim's Landing, Russian River Ferry	Resident & Non-Resident Independent Traveler, Local	Approached visitors putting in taking/out. Moderate use, attempted to sample most visitors.
Russian River CG	Russian River Campground, trail to falls	Resident & Non-Resident Independent Traveler	Surveyor approached visitors at trailhead; walked through campground. Moderate use, attempted to sample most visitors.

Table continues

Table 2. *Continued.*

⁵ NPS classified as Southwest; for sampling purposes, this site was classified as Southcentral and is listed in the report as Southcentral.

Region Survey site	Specific sampling locations at site	Targeted visitors	Site description and sampling approach
Southeast			
Alaska Marine Highway System Ferry (AMHS)	On ferry; some on ferry dock	Resident & Non-Resident Independent Traveler, Local	Roamed ferry, sampled people on ferry. Moderate use, varying efforts to sample depending on context (overnight vs day).
Hoonah Ranger District	Cruise ship dock; Icy Strait point	Cruise Passenger, Local	Sampled at cruise ship dock, sampled at Icy Strait Point. Mix of moderate and high use, attempted to sample most visitors.
Juneau Dispersed	VC; Parking lot; Nugget Falls; Photo Point Observation; Cruise ship dock; Perseverance Gold Flume Trail	Cruise Passenger, Local	Sampled cruise passengers at dock, sampled at trailheads. Dock high use, trailheads low use.
Ketchikan Trails	Deer Mtn., Ward Lake, and Rainbird trails	Local	Sampled at trailheads. Low use, attempted to sample all visitors.
Klondike Gold Rush NHP	Cruise Ship Dock Visitor Center Trails Orientation Center (Chilkoot Trail)	Cruise Passenger, Resident & Non-Resident Independent Traveler, Local	Roamed multiple sites, spent time sampling at each site. Moderate use, attempted to sample most visitors. Permit required.
Mendenhall Glacier	VC, Parking lot, Nugget Falls, Photo Point Observation /and Cruise ship dock, Perseverance Gold Flume Trail	Cruise Passenger, Local	Roamed multiple sites, spent time sampling at each site. Moderate use, attempted to sample most visitors.
Prince of Wales	Seaside Park/Coffman Cove, Beaver Falls, El Capitan Cave, Sunnahae Trail, Sarkar Boat Launch, Sandy Beach, Falls Creek, Gravelly Creek, Sarkar River, Thorne River, Whale Pass area	Local	Permission denied at Prince of Wales ferry terminal, so sampled at other locations. Low use, attempted to sample all users.
Sitka National Historic Park	Sitka NHP Russian Bishop's House Did not sample TNF site	Cruise Passenger, Local	Split time between NHP and Russian Bishop's House. Moderate use, attempted to sample most visitors.
Southeast Alaska Discovery Center	Sampled /and Deer Mtn., Ward Lake, & Rainbird trails	Cruise Passenger	Outside the center, sometimes could set up a table. High use, randomly selected groups to sample.

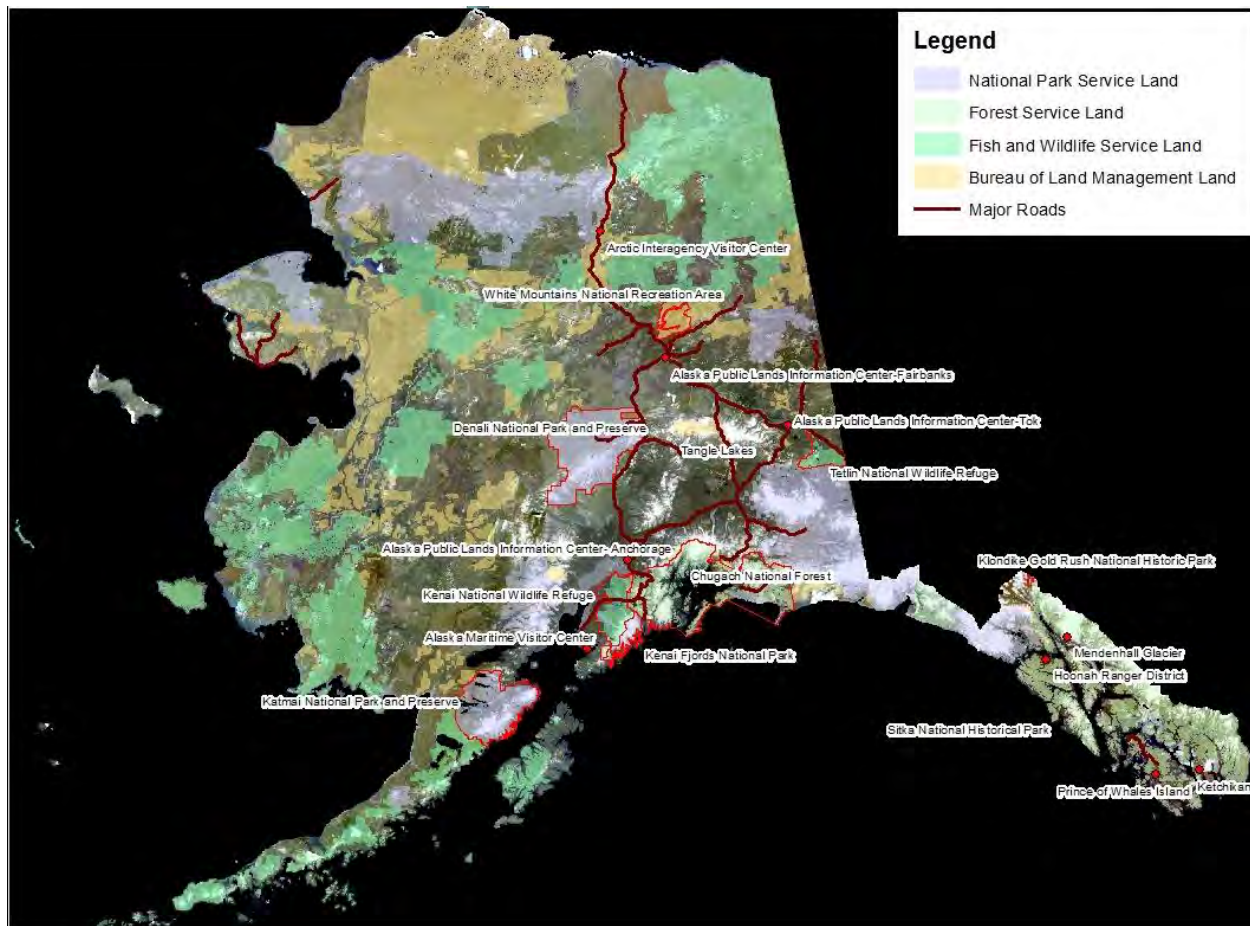


Figure 2. FLMA Units Where Sampling Occurred.

Map developed by Kendall Elifrits.

Survey Administration

Respondents were limited to those 18 years of age or older. The surveyor approached the individual or group to be sampled, introduced themselves, and read the introductory survey script. Those who refused to participate were asked the non-response questions (see next section). When sampling groups that have agreed to participate, to provide randomization, the survey aide asked the person with the most recent birthday to complete the survey. However, if respondents desired to complete the survey as a couple or a group effort (e.g., collaborating on which sites the group visited and which sites they intended to visit), the survey aide allowed them to do so. This should not bias results, as questions essentially pertained to the group (unless group members traveled to different areas or participated in different activities).

The onsite survey was administered via paper or iPad, depending on the situation. In many situations, the paper survey was preferred. Paper surveys were especially appropriate for campgrounds. The iPads, though, were more convenient in the Southeast, where surveyors did not have their own vehicle to transport paper surveys. When the iPad was primarily used, respondents were always given the option of completing the paper version of the survey.

After the survey was completed, the respondent was asked if they were willing to participate in the follow-up survey, and were given the option of a mail-back paper survey or a web-based survey. For those willing, we recorded the name and mailing or email address, as appropriate, attempting to record the name of the person with the most recent birthday. Corresponding to the method of follow-up survey chosen by the respondent, the initial email or mail survey was sent within two weeks, with a reminder email or postcard after one week, and a second/final reminder email or second mailing of the survey after three weeks.

Non-response bias

While administering the survey onsite, the UAF survey aide tracked the number of different surveys that were administered, including recreation (resident and non-resident) and non-recreation (resident and non-resident). The aide recorded observable information for those who were contacted to complete the survey, but refused. This information included group size, mode of transportation (e.g., RV, sedan, bicycle), whether part of an organized tour, and activity (if possible to observe). Other conditions that might have impacted the response were noted (e.g., weather conditions, people in a hurry, etc.). This information allowed a comparison of respondents to non-respondents and was critical in assessing representation. For example, did FLMA visitors who were mountain biking systematically refuse to participate? Was there a lower response rate among those in an organized tour? Did residents refuse to participate at a lower or higher rate?

To further test for nonresponse bias, one or two key questions were selected from the onsite survey and asked to visitors who declined to complete the survey. These questions relate to evaluations of transportation to public lands (e.g., satisfaction with transportation and activities).

Analysis

Most analysis consists of frequencies of the response categories and crosstabulations to compare frequencies of one variable against categories of another variable, typically comparing responses of residents and non-residents, but sometimes comparing responses of independent travelers vs. those on a tour, and regions of the state visited. When comparisons were made using crosstabulations, the chi-square test was conducted. The chi-square test results provide conclusions as to whether difference among the groups being compared are due to chance (i.e., sampling error) or if there is a “statistical difference.” However, when more than two groups are compared, additional testing is required to determine which groups differ (referred to as a post hoc test). We used a post hoc test that was included in the IBM SPSS Statistics⁶ software package; results note when that post hoc test was used along with the findings.

In some cases, the mean level of a variable was compared (e.g., total number of activities participated in between residents and non-residents). When data allowed means to be compared, a t-test was used as the statistical test when two groups were being compared, and a one-way analysis of variance (ANOVA) was used when more than two groups were being compared. ANOVA also required additional testing to determine which groups differed. If required, the results note when a post hoc test was utilized and which groups differed on the variable being compared.

In some cases when comparisons were made, the size of a particular group is small. This is problematic, as results are not representative of the population (i.e., there is a wide margin of error). Stated differently, additional respondents, if different than the previous respondents, could drastically alter the results. For this report, we did not show within-group results or comparisons if the group size was less than 50. Caution should be used in evaluating results based on a sample size of less than 100, as even with 100 responses the margin of error (at the 95% confidence level) would be +/- 10%.

⁶ IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

Results

Final Sample

Throughout summer 2016, from May 26 to September 4, 312 time blocks (i.e., a portion of a day when a surveyor spent time sampling at a site) were sampled, for approximately 1,840 hours of sampling effort (Table 3). As multiple sites were sampled on the same day (either one surveyor surveying multiple sites in a day or different surveyors sampling at different sites on the same day), time blocks do not translate to unique days. During the sampling period, 102 unique days were sampled, which is every day during that period. Effort at individual survey sites varied by use levels (Table 4), as sites with greater use were sampled more frequently.

Table 3. Final Time Blocks Sampled, by Region and FLMA.

Region¹ FLMA	Time blocks sampled²	Hours sampled
Interior	93	565
BLM	42	295
FWS ³	3	20
Multi ⁴	32	123
NPS	16	127
Southcentral	113	672
FWS	40	253
Multi ⁵	11	58
NPS	32	205
USFS	30	156
Southeast	106	603
AMHS	15	37
Multi ⁶	8	37
NPS	39	255
USFS	44	199
Grand Total	312	1840

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

²Time block refers to a period of time when a surveyor spent time sampling at a site. As different sites might have been sampled on the same day, time blocks do not equal unique days.

³This site was Tetlin National Wildlife Refuge. It was not initially selected as a sample location but added late in the season, which resulted in a low number of days sampled.

⁴Alaska Public Lands Information Center Tok and Fairbanks.

⁵Alaska Public Lands Information Center Anchorage.

⁶Southeast Alaska Discovery Center, Ketchikan.

Table 4. Time Blocks Sampled, by Specific Sample Location.

Region¹ Specific site	Time blocks sampled²	Approximate hours sampled
Interior	103	565
APLIC Fairbanks	11	37
APLIC Tok	11	44
AIVC	13	42
Denali NP&P	16	127
Tangle Lakes	16	76
Tetlin NWR	3	20
WMNRA ³	33	219
Southcentral	120	667
Maritime NWR	13	69
APLIC ANC	8	42
Katmai NP	12	67
Chugach NF	25	139
FWS Dispersed	16	69
Kenai Fjords NP	20	138
Kenai NWR	9	60
King Salmon	3	16
Russian River - FWS ⁴	7	50
Russian River CG	7	17
Southeast	113	603
AMHS Ferry	15	60
Hoonah Ranger District	9	52
Juneau Dispersed	13	89
Ketchikan Trails	11	36
Klondike Gold Rush NHP	22	157
Mendenhall Glacier	7	31
Prince of Wales	11	43
Sitka National Historic Park	17	98
Southeast Alaska Discovery Center	8	37
Grand Total	336	1835

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

²Time block refers to a period of time when a surveyor spent time sampling at a site. As different sites might have been sampled on the same day, time blocks do not equal unique days. On several days multiple locations within a FLMA were sampled, thus the totals are higher than in Table 4.

³Consists of survey sites in the Nome Creek Valley, the Cripple Creek Campground, and Wickersham Dome.

⁴Russian River Ferry (crossing on ferry) and Jim’s Landing.

Response Rate

Overall, there were 3,801 contacts. Of those contacts, 3,043 completed the survey, for an 80.1% response rate. Of the 3,043 completed surveys, 2,796 (92%) were recreation surveys and 247 were non-recreation surveys. The overall margin of error for results of the onsite survey was +/-2%, however, the margin of error is larger for subgroups of the data.

Onsite Response Rate by Region and FLMA Type

The response rate varied slightly across the regions, from a high of 88% in the Interior sample region to a low of 72% in the Southeast sample region (Table 5). A few factors might explain this discrepancy. First, low use sites tend to have higher response rates; the Interior had several low-use sites. Second, the White Mountains National Recreation Area received considerable visitation from Fairbanks residents, and they might have been more likely to participate in a survey being administered by “University of Alaska Fairbanks.” Third, the Southeast region had two sample sites with low response rate: the Sitka National Historical Park and the Southeast Alaska Discovery Center (Table 6). The Southeast Alaska Discovery Center was a very high use site and the Sitka National Historic Park had many local visitors who were on a relatively focused visit (e.g., walking through after work).

Table 5. Onsite Surveys Attempted and completed, by Region and FLMA.

Region ¹ FLMA	Contacts	Response rate	Completed surveys		
			All surveys	Recreation	Non-recreation
Interior	1162	88%	1019	983	36
BLM	500	90%	452	436	16
FWS	31	100%	31	30	1
Multi	266	76%	203	190	13
NPS	365	91%	333	327	6
Southcentral	1198	82%	983	926	57
FWS	582	75%	436	404	32
Multi	90	84%	76	71	5
NPS	324	86%	278	267	11
USFS	202	96%	193	184	9
Southeast	1441	72%	1041	887	154
AMHS	188	94%	177	139	38
Multi	102	59%	60	55	5
NPS	618	67%	412	360	52
USFS	533	74%	392	333	59
Grand Total	3801	80%	3043	2796	247

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

Table 6. Onsite Surveys Attempted and Completed, by Region and Site.

Region ¹ Specific site	Contacts	Response rate	Completed surveys		
			All surveys	Recreation	Non-recreation
Interior	1162	88%	1019	983	36
APLIC Fairbanks	128	79%	101	98	3
APLIC Tok	87	78%	68	67	1
AIVC	51	67%	34	25	9
Denali NP&P	365	91%	333	327	6
Tangle Lakes	145	100%	145	143	2
Tetlin NWR	31	100%	31	30	1
WMNRA	355	86%	307	293	14
Southcentral	1198	82%	983	926	57
Maritime NWR	257	74%	191	178	13
APLIC Anchorage	79	89%	70	66	4
Katmai NP	99	89%	88	82	6
Chugach NF – Dispersed	123	96%	118	110	8
FWS Dispersed	153	76%	116	106	10
Kenai Fjords NP	225	84%	190	185	5
Kenai NWR	95	74%	70	64	6
King Salmon	11	55%	6	5	1
Russian River - FWS ²	77	77%	59	56	3
Russian River CG	79	94%	75	74	1
Southeast	1441	72%	1041	887	154
AMHS	188	94%	177	139	38
Hoonah Ranger District	126	75%	94	81	13
Juneau Dispersed	203	63%	127	110	17
Ketchikan Trails	62	87%	54	45	9
Klondike Gold Rush NHP	327	77%	253	228	25
Mendenhall Glacier	94	80%	75	67	8
Prince of Wales	48	88%	42	30	12
Sitka NHP	291	54%	159	132	27
Southeast Alaska Discovery Center	102	59%	60	55	5
Grand Total	3801	80%	3043	2796	247

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

²Russian River Ferry (crossing on ferry) and Jim’s Landing.

Follow-up Survey

Of the 2,796 respondents on recreation trips, 1,203 (43%) agreed to participate in the follow-up survey; 1,068 by email and 135 by mail. Due to occasional delays between the uploading of electronic onsite data and when the follow-up surveys were sent, 983 were emailed the electronic follow-up survey and 134 the mail survey. Ninety-six emails were returned as invalid email addresses, and two mail surveys were returned as undeliverable. Of the 887 valid email addresses 454 completed a survey (response rate = 51%); 75 of the valid 132 mail survey respondents completed a survey (57%). Overall, 529 follow-up surveys were returned, a response rate of 52%.

Table 7. Recreation and Follow-up Surveys, by Region and FLMA.

Region¹ FLMA	Recreation surveys	Follow-up surveys sent	Completed follow-up surveys
Interior	983	454	202
BLM	437	229	100
FWS	29	13	8
Multi	192	68	33
NPS	325	144	61
Southcentral	926	379	174
FWS	404	151	63
Multi	71	26	14
NPS	267	123	63
USFS	184	79	34
Southeast	887	284	153
AMHS	139	59	34
Multi	55	17	9
NPS	360	122	62
USFS	333	86	48
Grand Total	2796	1117	529

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

Table 8. Follow-up Surveys, by Region and Sample Site.

Region¹ Specific site	Recreation surveys	Follow-up surveys sent	Completed follow-up surveys
Interior	983	454	202
APLIC Fairbanks	100	46	22
APLIC Tok	67	21	11
AIVC	25	1	0
Denali NP&P	325	144	61
Tangle Lakes	144	68	32
Tetlin NWR	29	13	8
WMNRA	293	161	68
Southcentral	926	379	174
Maritime NWR	178	66	31
APLIC ANC	66	25	14
Katmai NP	82	46	23
Chugach NF – Dispersed	110	51	22
FWS Dispersed	105	42	14
Kenai Fjords NP	185	77	40
Kenai NWR	64	21	10
King Salmon	5	1	0
Russian River - FWS ²	57	22	8
Russian River CG	74	28	12
Southeast	887	284	153
AMHS	139	59	34
Hoonah Ranger District	81	20	11
Juneau Dispersed	110	22	10
Ketchikan Trails	45	8	6
Klondike Gold Rush NHP	228	75	39
Mendenhall Glacier	67	23	13
Prince of Wales	30	13	8
Sitka National Historic Park	132	47	23
SE Alaska Discovery Center	55	17	9
Grand Total	2796	1117	529

¹Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

²Russian River Ferry (crossing on ferry) and Jim’s Landing.

Representation of Follow-up Responses

Overall, 43% of the recreation respondents agreed to participate in the follow-up survey. Although not reaching the level of statistical significance, the cruise ship arrival type seemed slightly less likely to agree to participate in the follow-up survey, with the airplane arrival type slightly more likely. As for completing the follow-up, again while not reaching the level of statistical significance, residents were slightly less likely to complete the follow-up survey (Table 9).

Table 9. Follow-up Survey Status, by Arrival Type.

Arrival type	All respondents			Those agreeing to follow-up		
	n	Refused follow up	Agreed to follow up / n	n ¹	Did not complete	Completed ²
Resident	838	57%	43% 357	352	60%	40%
Airplane	1000	53%	47% 470	429	48.%	52%
Cruise	558	63%	37% 206	187	51%	49%
Vehicle	318	58%	43% 135	117	52%	48%
AMHS ³	46	59%	41% 19	16	38%	63%
Other ⁴	36	56%	44% 16	16	50%	50%
Total	2796	57%	43% 1203	1117	53%	47%

All respondents chi-square = 15.13, $p = .010$; those agreeing to follow-up chi-square = 13.58, $p = .018$.

¹Number of follow-up surveys sent to each group. See Follow-up Survey section for an explanation of the follow-up surveys that were not sent.

²The completed percent does not account for the undeliverable email/mail addresses. Thus, the overall response rate is lower than the 52% reported in the Follow-up Survey section on page 19.

³Alaska Marine Highway System. Sample size is small, caution should be used when generalizing results.

⁴Notable among the respondent other are 12 respondents who listed train (i.e., White Pass Rail Road) and 5 that listed private boat. (For this analysis, the other category includes only the respondents who selected other and were not classified into one of the other arrival types.)

Representation of FLMA Visitor Population

The intent of this study was to measure patterns of travel to FLMAs and travel-related issues among those FLMAs visitors. As such, this survey differs from a survey conducted with the purpose of generalizing to a specific location. First, the survey team sampled at multiple sites rather than focusing on any one site. Second, and also of concern to a study focusing on a particular site, is whether the data accurately represents volumes of different types of users. For example, cruise ship passengers might arrive in a pulse, whereas independent travelers might be more spaced across time. That could result in cruise passengers being under-represented. For example, if cruise passengers comprise twice the visitation as independent travelers, yet they were sampled at the same rate, statistics summarizing visitor type would consist of a 17% error (Table 10).

Table 10. Hypothetical Example of Visitor Volume Representation.

Visitor Type	Actual (hypothetical)		Sample	
	Total visits	Percent of visits	Number sampled	Percent of visitors
Cruise	1000	67%	250	50%
Independent	500	33%	250	50%
Total visits	1500		500	

To determine the representativeness of CVTS results, several key measures were compared to the National Visitor Use Monitoring (NVUM) program of the USDA Forest Service⁷, as well as the Alaska Visitor Statistics Program (AVSP)⁸.

Residency of CVTS visitors sampled in the Chugach NF was compared to NVUM results from 2013. NVUM attempts to estimate visitor volume to specific forests, and also measures demographic information. The percentage of visitors from Alaska, the United States (excluding Alaska), and foreign countries were within 2.3% for each category. NVUM data for the Tongass were only available for Sitka and Hoonah, so no comparisons were made. CVTS data were not weighted based on NVUM data.

The AVSP comprehensively samples non-residents as they exit the state, and can be taken as population data regarding non-resident visitors. For several reasons, comparisons of AVSP to CVTS data are not exact:

- AVSP measured exit mode, CVTS measured arrival mode;
- AVSP’s scope is limited to non-residents visitors, CVTS included residents;
- AVSP was not focused exclusively on visitation to federal lands; and
- AVSP included business travel.

Despite these differences, the comparison still provides useful insights. When compared to the AVSP data, the CVTS may have underrepresented cruise ship passengers and overrepresented visitors traveling by private vehicle.⁹ As a result, weights were developed and applied to the data, correcting for these potential biases. However, additional analysis showed that applying the weights did not have much effect on the results. Weighting did impact analysis related to regions visited (because cruise passengers are skewed toward the Southeast), but overall it appears cruise ship passengers and non-residents arriving in a private vehicle were similar with regards to activity participation and demographics. For this reason, the decision was made to use unweighted data. In the few cases where weighting changed the results of frequencies by more than 5%, the results with weighted data are also presented (See Appendix B for more details).

⁷ <https://www.fs.fed.us/recreation/programs/nvum/>

⁸ <https://www.commerce.alaska.gov/web/ded/DEV/TourismDevelopment/TourismResearch.aspx>

⁹ At the time of the analysis, the most recent AVSP results (summer of 2016) were not available. The 2011 results were used. After analysis was complete, the 2016 results were released. Compared to 2011 data, air travel exit mode decreased by 9% and cruise ship increased by 9%. This would have the impact of exacerbating differences that are noted in the report. However, given the caveats above, when we note weighted results it is merely for consideration as the two study populations are different. Therefore we did not recalculate the weighted results.

Results of Non-response Bias Test

In a separate analysis, respondents were compared to non-respondents to determine if there were any systematic differences between these two groups. The variables used for the comparison included: travel mode arriving at site, rating of travel experience arriving at site, activity participation, previous site visitation (Alaska residents), previous visitation to Alaska (non-residents), whether with a tour group, and group size. This analysis indicated that there was no systematic bias, and the magnitude of any differences found were small. Non-response bias does not appear to be an issue, so data were not weighted for non-response bias. See Appendix C for complete results of individual comparisons.

Results of Recreational Surveys

Results are included for both the onsite and follow-up survey, and are arranged by topic (e.g., activities, information). The sample size is larger for the onsite survey than for the follow-up survey (2,796 vs. 529, respectively). When a table/figure displays results from the follow-up survey, it is noted below the respective table/figure (i.e., unless noted, results are from the onsite survey).

Characteristics of Visitors

Demographics

Overall, respondents were evenly split between male and female (50.5% and 49.5%, respectively, $n = 2,757$), with no significant differences between residents and non-residents (Chi-square = 3.3, $p = .071$; residents $n = 827$, nonresidents $n = 1,930$).

Respondents reported a high education level (i.e., relative to the US population as a whole), with 64% indicating a Bachelor's degree or higher. While there was a statistically significant difference between residents and non-residents, the magnitude of the difference does not appear to be of practical significance ($\Phi = .10$; Table 11).

Table 11. Education Level of Respondents.

Education	Residents	Non-residents	All respondents
Less than high school	1%	1%	1%
High school graduate/GED	11%	9%	10%
Vocational or technical school certificate	3%	4%	4%
Some college	17%	13%	14%
Associate's degree	10%	7%	8%
Bachelor's degree	30%	33%	32%
Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA)	28%	34%	32%

Residents $n = 817$, non-residents $n = 1921$, all respondents $n = 2738$. Chi-square = 29.29, $p < .001$. The following categories were significantly different at $p = .05$, as indicated by the post hoc test with the Bonferroni correction: Some college, Associate's degree, Graduate or professional degree. In this analysis, weighting changed non-resident results by less than 1%.

In general, visitors tended to have relatively high income levels. Nearly two-thirds of respondents live in households that earn \$75,000 or more in annual household income, and 20% have household family incomes of \$150,000 or more. Non-residents are more likely than residents to be among the highest income group (13% vs. 5.4%), but otherwise there is little difference between residents and non-residents. It should be noted, however, that non-residents had a significantly higher level of non-response to this item (23.7% vs. 12.8%), so comparisons should be made with caution.

Table 12. Income Level of Respondents.

Income	Residents	Non-residents	All respondents
Less than \$24,999	7%	5%	6%
\$25,000 - \$34,999	6%	4%	5%
\$35,000 - \$49,999	8%	9%	8%
\$50,000 - \$74,999	16%	17%	17%
\$75,000 - \$99,999	22%	20%	21%
\$100,000 - \$149,999	26%	23%	24%
\$150,000 - \$199,999	10%	9%	9%
\$200,000 or more	5%	13%	11%
<i>Do not wish to answer</i>¹	13%	24%	20%

Residents n = 702 (103 did not answer), non-residents n = 1436 (445 did not answer), all n = 2138 (548 did not answer). Chi-square (excluding do not wish to answer) = 32.8, $p < .001$. The only category significantly different at $p = .05$, as indicated by the post hoc test with the Bonferroni correction, was \$200,000 or more. In this analysis weighting changed non-resident results by less than 1%.

¹This question had a Do not wish to answer as a response option. The percentages shown in this row are of the overall number of respondents.

The majority of respondents were white (94%) and were non-Hispanic (96%) (Table 13).

Table 13. Ethnicity and Race of Respondents.

Ethnicity Race¹	Residents	Non- residents	All respondents
Hispanic or Latino²	4%	3%	4%
Race³			
American Indian or Alaska Native	7%	2%	3%
Asian	2%	4%	3%
Black or African American	1%	1%	1%
Native Hawaiian or other Pacific Islander	1%	0%	0%
White	93%	95%	94%

¹This question followed the US Census Bureau standards for separately asking Hispanic or Latino as an ethnicity question, then following with a race question.

²Asked as a separate question, with a yes/no response option. Residents n = 815, non-residents n = 1924, all respondents n = 2739.

³Asked as a check all that apply question. Residents n = 779, non-residents n = 1858, all respondents n = 2637.

Residency

Overall, 30% of the recreational visitors were from Alaska, and 70% were non-residents. Among non-resident visitors, 81% (of recreational visitors) were from the United States, with all 50 states represented. California, Washington State, Texas, and Florida were the most frequently cited home states (Table 14).

Table 14. Home State of Respondents from the United States, but not Alaska.

State¹	Non-resident recreational visitors
California	14%
Washington	7%
Texas	6%
Florida	5%
Colorado	4%
Michigan	4%
Oregon	3%
Arizona	3%
Ohio	3%
Minnesota	3%
Wisconsin	3%
Illinois	3%
Pennsylvania	3%
New York	3%
North Carolina	3%
Utah	3%
Massachusetts	2%

n = 1586; n is the number of respondents from the US, but not Alaska, and that provided their state of residence (i.e., 5 respondents did not provide a state). States not shown had less than 2% response.

Among foreign visitors (13% of the recreational visitors), Canada, Australia, and the United Kingdom were the most frequently cited home countries (Table 15).

Table 15. Home Country of Respondents not from the United States.

Country¹	Recreational visitor
Canada	40%
Australia	13%
United Kingdom	10%
Germany	8%
Switzerland	4%
New Zealand	3%
France	3%
The Netherlands	3%

n = 367; n is the number of respondents from countries other than the US.

¹Countries not shown had less than 1.5% response. For recreational visitors this consisted of Mexico and 32 countries located in Europe, Southeast Asia, the Middle East, Central and South America, and Africa.

Residency differed across the sites (Figure 3 to Figure 5). Sites with relatively high resident visitation include the White Mountains National Recreation Area and Tangle Lakes, in the Interior; dispersed Fish and Wildlife Service and National Forest sites in the Southcentral; and Forest Service sites on Prince of Wales Island and outside of Ketchikan. There were differences by FLMA, with the BLM sites receiving much higher resident visitation than the other sites (84%). The FWS and USFS sites were similar (36% and 31% residents, respectively), and the NPS had the lowest percent of resident visitors (10%; Figure 6).

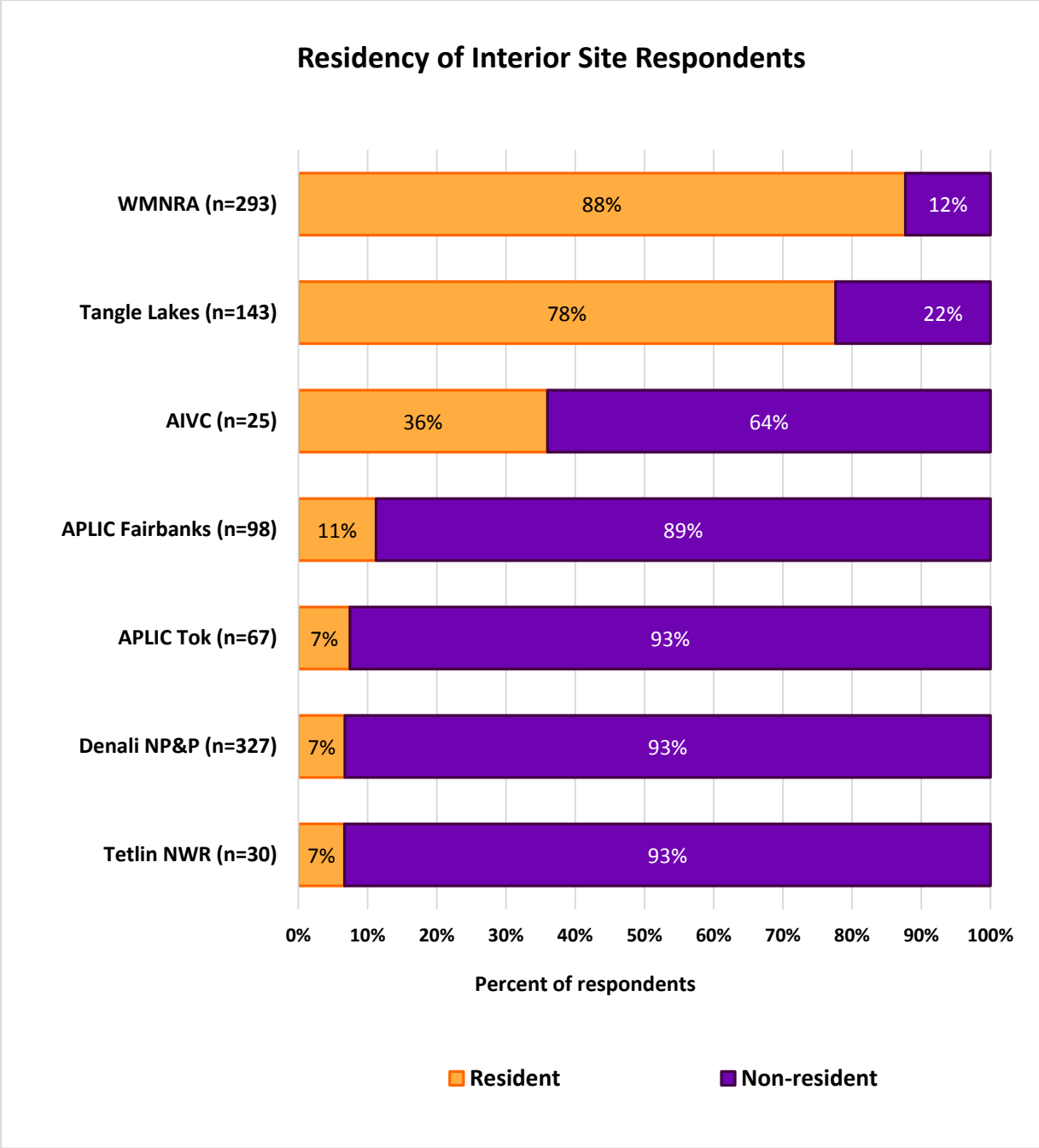


Figure 3. Residency of Interior Site Recreation Respondents.

Residency of Southcentral Site Respondents

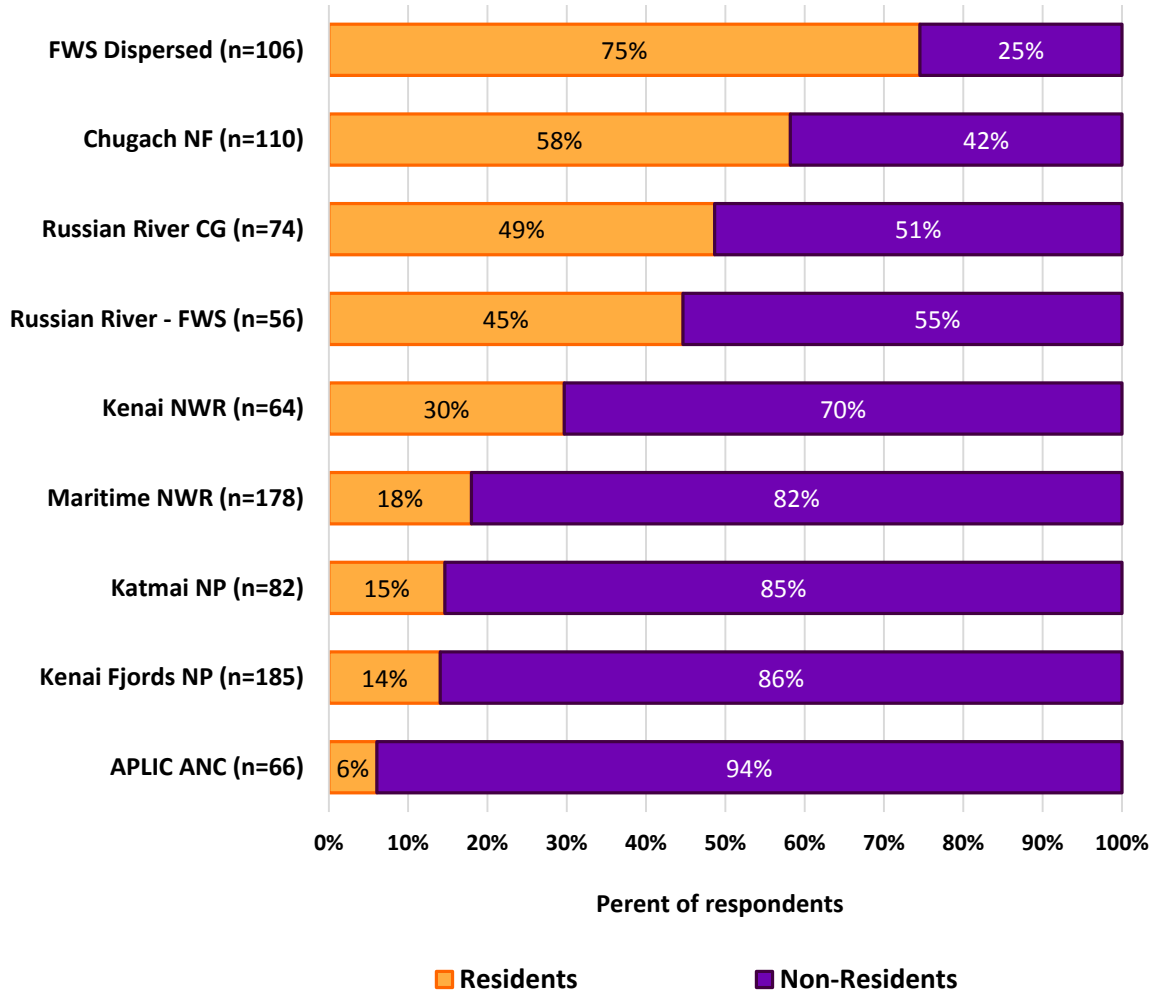


Figure 4. Residency of Southcentral Site Recreation Respondents.

King Salomon airport n = 5, and is not shown. All recreation respondents from the King Salmon Airport were residents.

Residency of Southeast Site Respondents

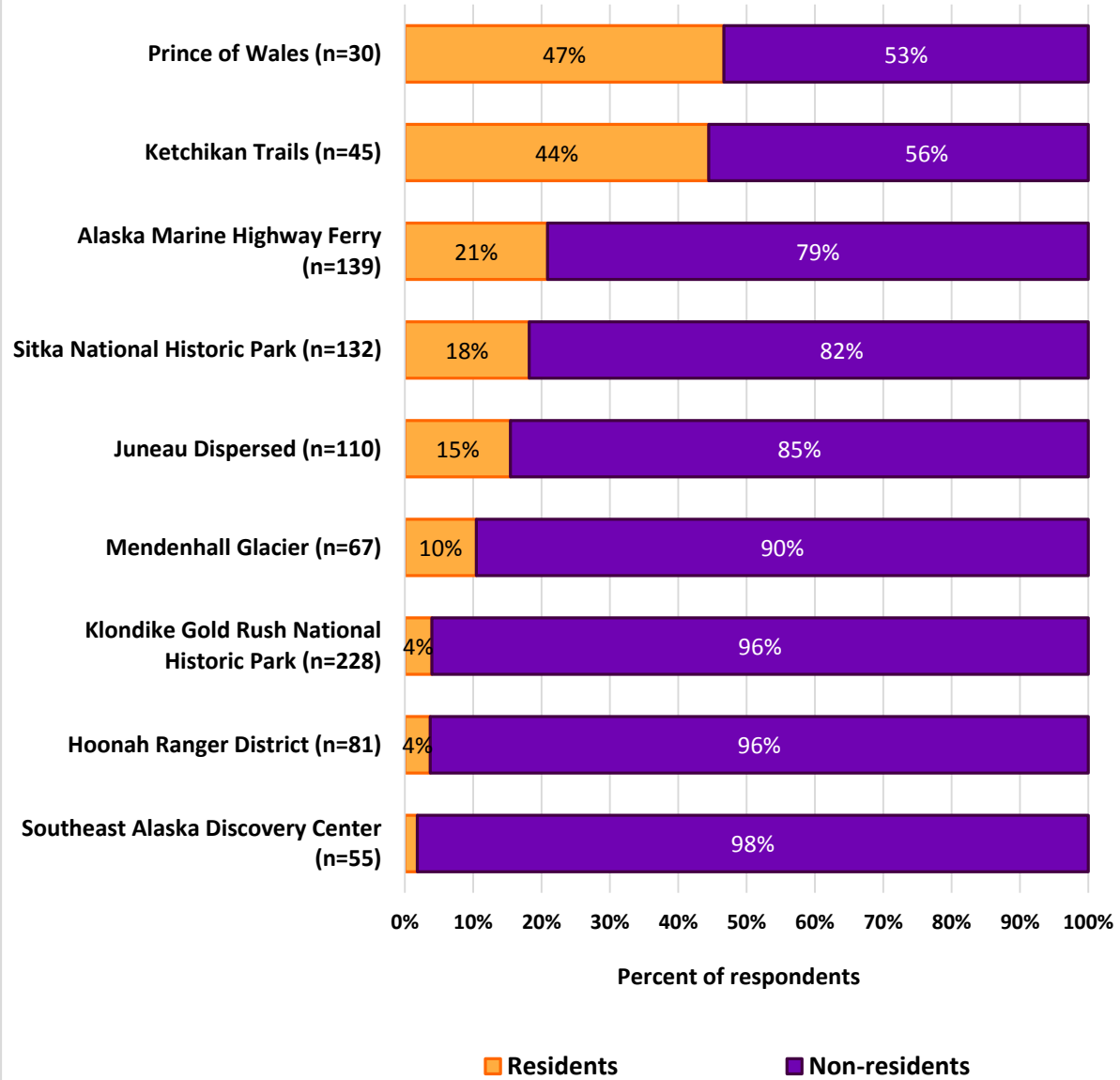


Figure 5. Residency of Southeast Site Recreation Respondents.

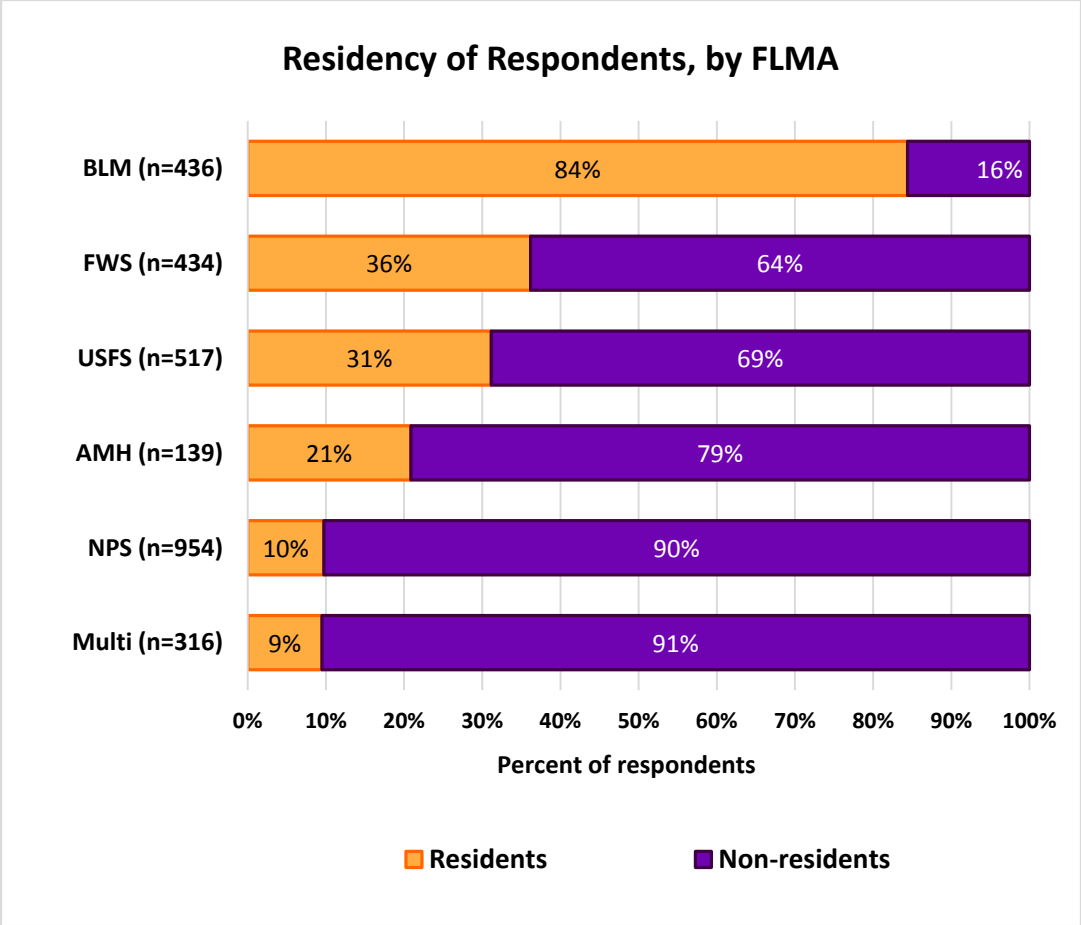


Figure 6. Residency of Recreation Respondents, by FLMA.

Group composition

Overall the majority of respondents were traveling with family (58%), and significantly fewer respondents indicated they were traveling with friends (15%), with family and friends (13.1%), or traveling alone (11.5%). Non-residents were more likely to indicate they were traveling with family than residents, whereas residents were more likely to indicate they were traveling alone (Table 16). It should be noted that 64 (25%) of the 196 of the respondent who checked “alone” in the group composition question provided a number of groups members in a following question that indicated a group size larger than one.

Table 16. Group Composition of Residents and Non-residents.

Group composition	Residents	Non-residents	All respondents
Alone	15%	8%	10%
Family	52%	64%	60%
Friends	16%	14%	15%
Family and friends	16%	11%	12%
Business associates	0%	1%	1%
Other ¹	1%	3%	2%

Resident n = 825, non-resident n = 1926. Chi-square = 65.9, $p < 001$. The friends category did not differ, all other categories differed in the post hoc test with Bonferroni correction. In this analysis weighting the data did not change responses by more than 2%.

¹57 respondents provided an explanation of other. Most mentioned Organized Group/Tour (n=25), followed by Spouse/Significant other (n = 13).

On average, group sizes were relatively small, with 80% of respondents being in groups of 4 or less; residents tended to be in slightly smaller groups than non-residents (77% vs. 91% in groups of 4 or less, respectively). Visitors on pre-packaged tours and traveling with family and friends reported larger group sizes (Table 17).

Table 17. Group Size by Respondent Characteristics.

Group composition	n	Mean	Mean.2	Group size ¹				
				1	2 - 4	5 - 10	11 - 20	20+
All respondents	2642	3.8	3.4	12%	68%	16%	3%	1%
Resident	801	3.7	3.4	16%	61%	20%	2%	1%
Non-resident	1859	3.8	3.4	10%	71%	14%	3%	1%
Alone ²	256	1.6	1.4	75%	21%	2%	2%	0%
Family	1605	3.3	3.2	4%	79%	14%	2%	0%
Friends	385	4	3.3	8%	76%	13%	1%	2%
Family and friends	324	6.9	5.6	3%	46%	38%	8%	5%
Independent	1980	3.3	3.1	14%	69%	15%	2%	1%
Pre-Packaged tour	387	5.6	4.1	5%	65%	20%	6%	4%
Independent & tour	283	4.8	4.3	4%	69%	19%	7%	2%

Mean.2 excludes the 20+ group size. Residency did not differ on mean group size, but the composition of group sizes was different at $p = .05$ as tested by chi-square. For group composition, the means for family and family and friends did not differ; all other combinations were different. For the independent vs. tour question, pre-packaged tour and independent & tour did not differ.

¹Total group size was not directly asked, this variable was the sum of the questions that asked respondents to report the number of group members in pre-defined age categories.

²The group composition question asked with what type of personal group the respondent was traveling. The question asking the respondent to list the number of group members in specific age ranges also referenced the personal travel group. There is some error among the respondents chosen alone for group size, but indicating group sizes greater than one.

In general, the age composition of the groups was skewed toward the older age categories (Figure 7).

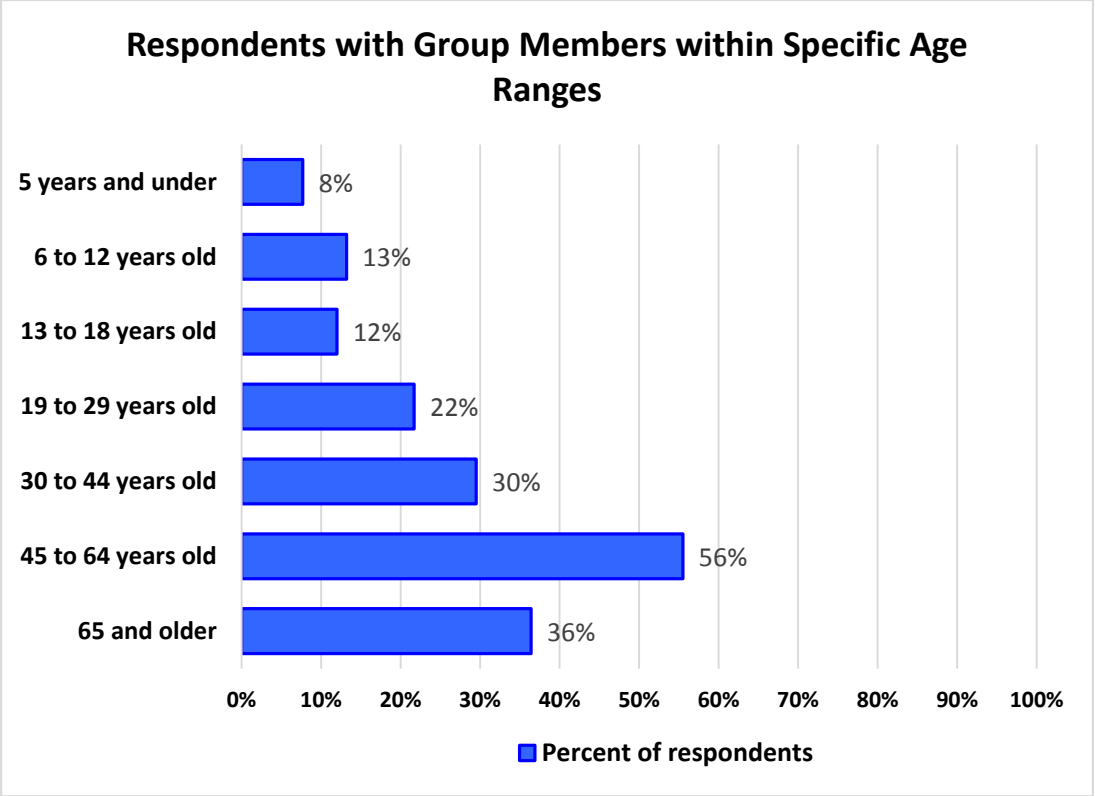


Figure 7. Ages Present within Groups.

Respondents n = 2701. Bars represent the percentage of respondents. Weighting by arrival mode did not impact results.

Compared to residents, a larger share of the non-resident groups had members who were 65 years of age or older (44% vs. 20%). Residents were more likely to include children in their group, as well as group members in the 19 to 29 and 30 to 44 age ranges (Table 18).

Table 18. Age Composition of Group, by Residency.

Group size	Respondents with group members in age range	
	Residents	Non-residents
5 years and under	16%	4%
6 - 12 years old	23%	9%
13 - 18 years old	14%	11%
19 - 29 years old	26%	20%
30 - 44 years old	44%	23%
45 - 64 years old	50%	58%
65 or older	20%	44%

Residents n = 807, non-residents n = 1894. Cell entries are the percent of respondents who indicated they had group members in that age range. All group sizes differed significantly between residents and non-residents at $p = .05$. Weighting the data did influence the non-resident results. See Appendix D for a breakdown by sample site.

Overall, three-quarters of respondents reported traveling independently, and 25% said they participated in a tour package for at least part of their trip (14% were pre-packaged tour only and 11% did both a tour and traveled independently). Almost all resident respondents reported traveling independently (99%), whereas 35% of non-residents were traveling with an organized tour. Very few respondents were with a school group or other similar organized group (Table 19).

Table 19. General Group Composition of CVTS Respondents.

Group characteristic	Resident	Non-resident	All respondents
On a package tour ¹			
Independently	99%	65%	75%
Pre-purchased package tour	1%	20%	14%
Independently and package tour group	1%	15%	11%
With school group ²			
Yes	1%	1%	1%
No	99%	99%	99%
Other organized group ³			
Yes	2%	4%	3%
No	98%	96%	97%

¹Residents n = 823, non-residents n = 1945, all respondents n = 2768. Chi-square = 365.8, p < .001.

²Residents n = 804, non-residents n = 1826, all respondents n = 2630. Chi-square = .63, p = .686.

³Residents n = 805, non-residents n = 1838, all respondents n = 2643. Chi-square = 9.53, p = .002.

Regarding independent travelers versus those traveling as part of a pre-purchased tour, there were differences among sites, with sites in the Southeast less likely to have independent travelers (Table 20). Differences were also evident across agencies with the BLM and FWS consisting of over 90% of independent travelers, while the NPS, USFS, and Multi-agency sites ranged from 66% to 58% (Figure 8).

Table 20. Respondents Traveling Independently or with Tour Group, by Sample Site.

Sample region ¹	Sample site ²	n	Percent of respondents traveling		
			Independently	Pre-packaged tour	Both
Interior Regions					
	APLIC Fairbanks	97	50%	31%	20%
	APLIC Tok	65	89%	5%	6%
	Denali National Park	324	65%	23%	12%
	Tangle Lakes	142	99%	0%	1%
	WMNRA	287	99%	1%	0%
Southcentral					
	APLIC Anchorage	66	53%	21%	26%
	Alaska Maritime NWR	177	83%	8%	9%
	Brooks Camp	82	88%	6%	6%
	Chugach National Forest	110	95%	4%	2%
	FWS Dispersed	105	96%	1%	3%
	Kenai Fjords NP	185	90%	3%	7%
	Kenai NWR Visitor Center	62	90%	7%	3%
	Russian River - FWS	56	96%	0%	4%
	Russian River Campground	74	99%	0%	1%
Southeast					
	AMHS Ferry	139	91%	2%	7%
	Hoonah Ranger District	79	13%	48%	39%
	Juneau Dispersed	107	37%	40%	22%
	Klondike Gold Rush NHP	227	52%	33%	16%
	Mendenhall Glacier	64	47%	30%	23%
	Sitka National Historic Park	132	46%	25%	30%
	Southeast Alaska Discovery Center	55	24%	47%	29%

¹ Classification of sites into the regions differs from initial CVTS site list. For this report, Tangle Lakes was classified as the interior region and Katmai National Park as the southcentral region.

² Sites with n < 50 are not shown (AIVC, Tetlin, Ketchikan trails, Prince of Wales).

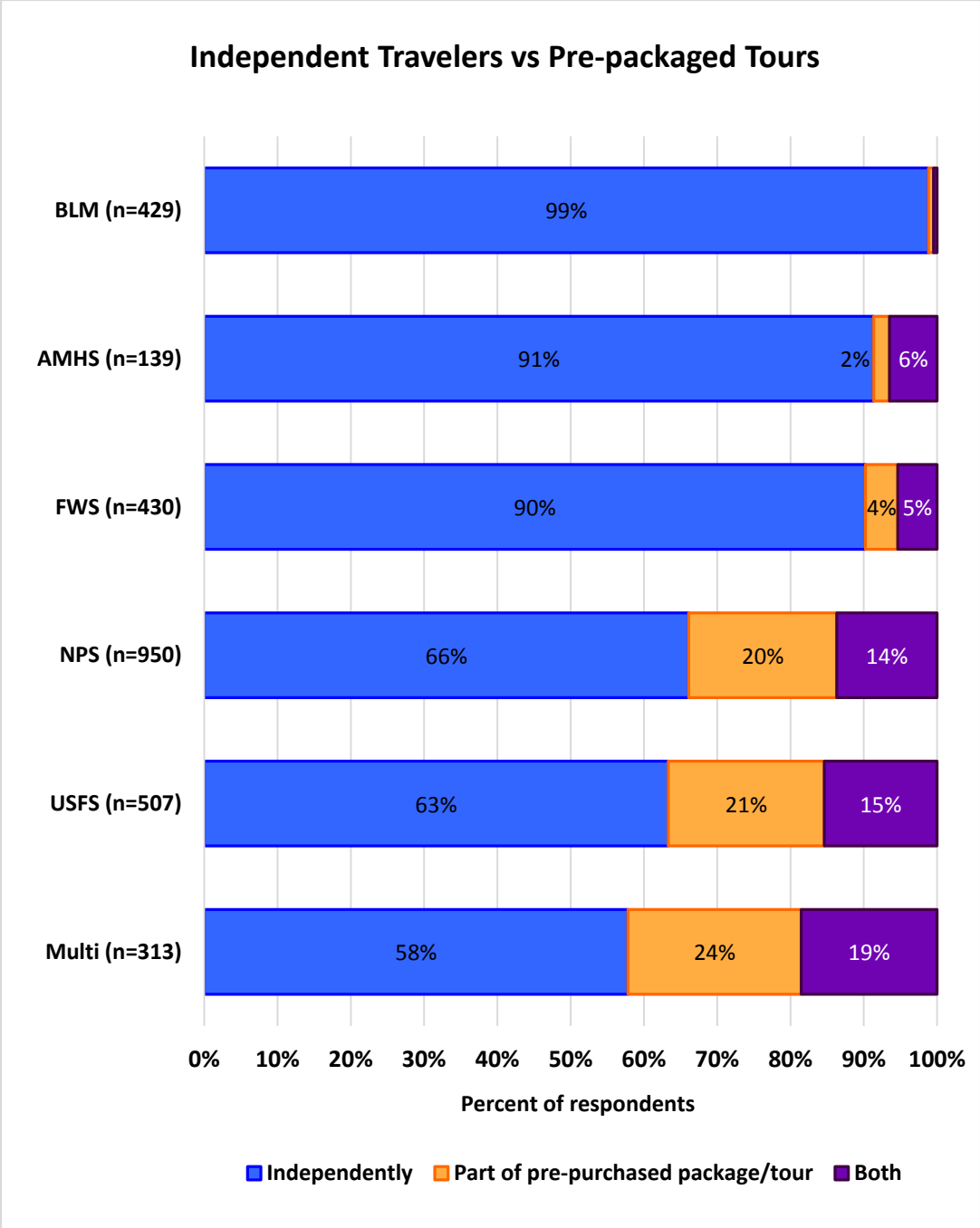


Figure 8. Independent Travelers vs. Pre-purchased Tours, by Agency.
 Chi-square = 331, p <.001. The BLM and FWS differed from the NPS, USFS and Multi on all of the categories.

Accessibility issues

Eleven percent of respondents indicated they had conditions that limited access to services, with non-residents almost twice as likely to indicate such a condition (Table 21).

Table 21. Physical Condition Limiting Access to Services.

Physical condition limiting access to services?	Resident	Non-resident	All respondents
Yes	7%	12%	11%
No	93%	88%	89%

Residents n = 805, non-residents n = 1933, all respondents n = 2757. Chi-square = 18.17, $p < .001$.

Two hundred eighty-five respondents (51 residents, 234 non-residents) provided a written explanation to the open-ended question that asked the respondent what activity or service they had difficulty accessing. The responses were coded into three major categories:

- A service or activity was listed (i.e., that respondent had difficulty accessing);
- A condition or concern that might fall under the Americans with Disabilities Act was mentioned; and
- A personal condition/limitation, such as age, was listed, but an activity was not listed.

Several responses mentioned multiple issues (e.g., an ADA concern and activity, an activity and the personal limitation that makes accessing that activity difficult, etc.). In these cases, the responses were coded in multiple categories. Overall, 67% listed a service or activity they had difficulty accessing, 41% listed a personal condition/limitation, and 22% listed a condition that might fall under ADA (Figure 9).

With respect to the responses that had some mention of services or activities (191 responses; 27 residents, 164 non-residents):

- 158 (83%; 23/27 residents, 135/164 non-residents) mentioned difficulty walking or hiking; and
- 16 (8%; 5/27 residents, 11/164 non-residents) mentioned water-based activities.

For responses that had some mention of personal conditions (117 responses; 24 residents, 93 non-residents):

- 37 (32%; 8/24 residents, 20/93 non-residents) mentioned issues related to knees, legs, or feet;
- 34 (29%; 3/24 residents, 31/93 non-residents) mentioned mobility specifically or in general; and
- 16 (14%; 2/24 residents, 14/93 non-residents) mentioned age.

Of the responses that might have implications for ADA (63 responses; 14 residents, 49 non-residents):

- 35 (56%; 7/14 residents, 28/49 non-residents) related to difficulty with terrain, stairs, and/or the need for ramps/rails;
- 17 (27%; 5/14 residents, 12/49 non-residents) mentioned need for wheelchair access; and
- 2 (3%, both non-residents) related to hearing impairments.

The responses and their codes are found in Appendix E. The responses in Appendix E are arranged by the primary theme (e.g., service or activity, personal condition), the statistics above tally responses across all themes (e.g., a response that is primarily categorized under service or activity, might also contain a secondary theme of personal limitation).

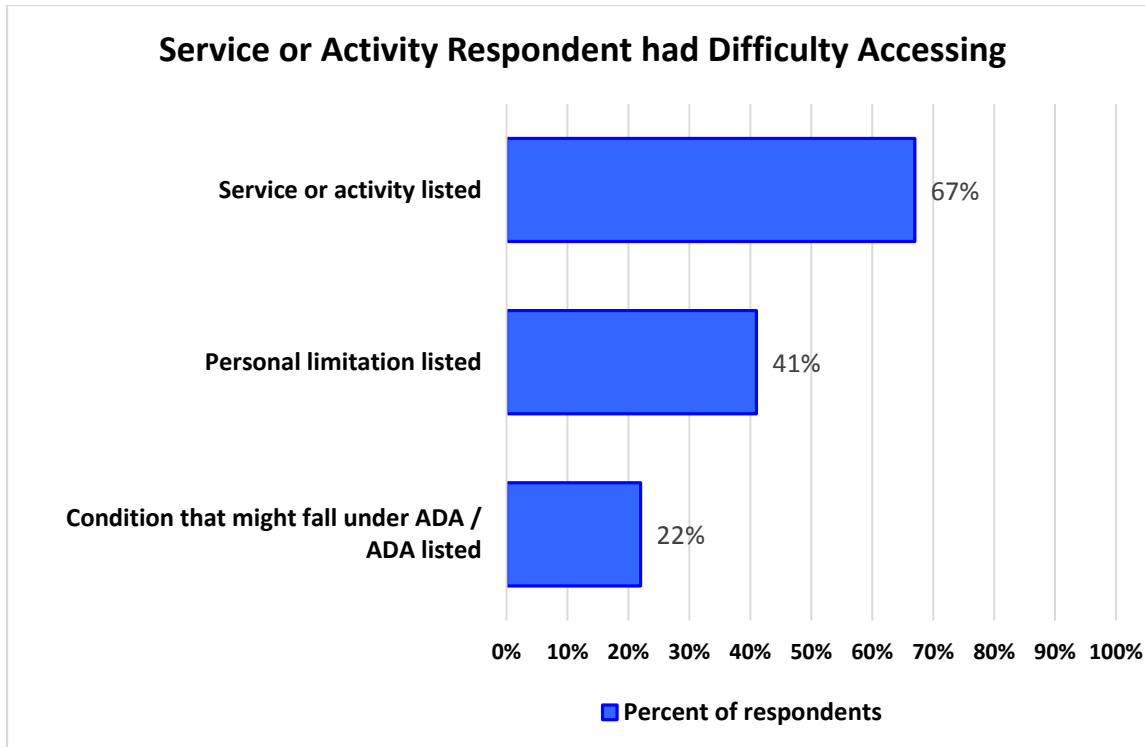


Figure 9. Service or Activity Respondent had Difficulty Accessing, Non-Mutually Exclusive Codes.
n = 285.

Accommodations

A large majority of respondents (89%) spent at least one night away from home on their trip. There were large differences between Alaska residents and non-residents. Whereas 42% of residents said they were not spending any nights away from home, and 23.2% said they were spending only 1 to 2 nights away, essentially all non-residents indicated they were spending the night away from home, and in fact more than one-half of non-residents were spending 3 to 14 nights away from home, and an additional 43% were spending 15+ nights from home (compared to 33% and 1.4%, respectively, for residents; Phi = .75; Table 22).

Table 22. Number of Nights Spent Away from Home.

Number of Nights Away ¹	Resident	Non-resident	All respondents
0 (none)	42%	0%	11%
1 – 2	23%	1%	7%
3 – 14	33%	56%	50%
15+	1%	43%	32%

Residents n = 138, non-residents n = 385, all respondents n = 523. Chi-square = 294, p < .001. All categories differed as indicated by the post hoc test with the Bonferroni correction.

¹Question asked on follow-up survey. The categories listed were the response categories to the question.

Differences in nights spent away from home were evident across the FLMAs where respondents were sampled, with BLM having the highest percentage of visitors on day trips (35%; Figure 10).



Figure 10. Nights Away from Home, by FLMA.

Question asked on follow-up survey. AMHS not shown due to small sample size. Chi-square = 138, $p < .001$.

There were also differences by residency in the types of accommodations that visitors used. Alaska residents were more likely to camp (both RV/trailer and tent camping), while non-residents were more likely to use commercial lodging (e.g., hotels, lodges). No residents listed cruise ship as a lodging category (Figure 11).

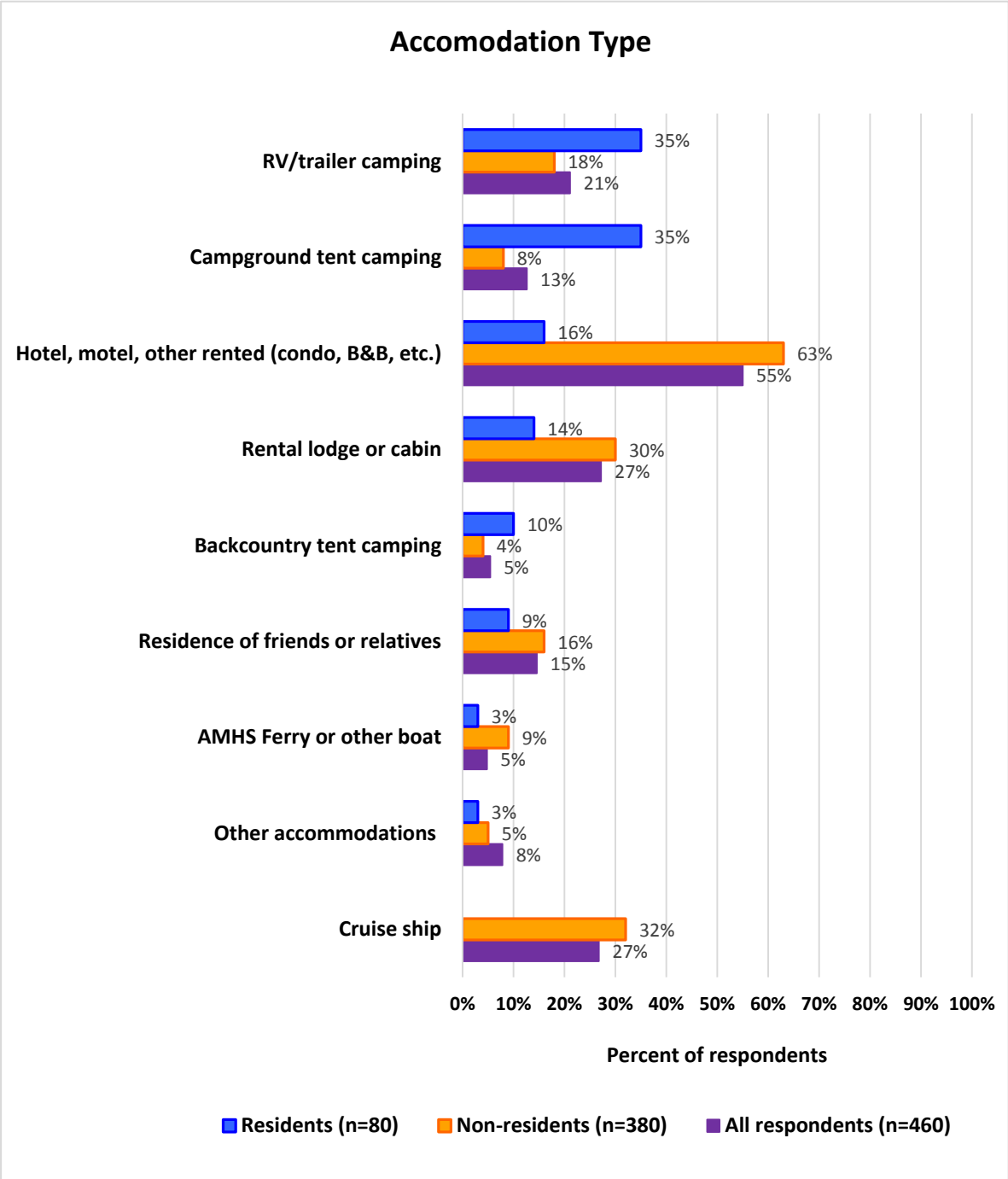


Figure 11. Type of Accommodation, by residency.
 Question asked only on the follow-up survey. Categories were not mutually exclusive. Personal seasonal residence was only used by 1% of residents and non-residents and is not shown. All categories statistically significant at $p = .05$, except residence of friends or relatives. Cruise ship and other not tested.

Transportation Types and Issues

Modes of transportation and satisfaction

Since residents can potentially access FLMA sites on a regular basis, they were asked the frequency with which they used different forms of transportation on federal lands in the past year. For each type used, they were also asked to rate their level of satisfaction. Private vehicle and foot/hiking were the most frequently used forms of transportation (Table 23). Kayak, canoe or raft, bicycle, and cross-country skis/snowshoes were used less often, but about 40% used these forms of transportation at least occasionally.

Table 23. Residents' General Use of Transportation on Federal Lands in the Past Year.

Mode of Transportation¹	Never	Rarely	Occasionally	Often	Always
Private vehicle (n=796)	2%	3%	10%	29%	56%
Foot/hiking (n=736)	9%	8%	29%	40%	15%
Kayak, canoe, raft (n=674)	36%	20%	31%	11%	2%
Bicycle (n=679)	42%	16%	22%	18%	3%
Cross country skis, snowshoes (n=677)	46%	13%	21%	16%	3%
Motorboat (n=678)	54%	18%	15%	12%	2%
ATV (n=677)	55%	13%	15%	13%	4%
Commercial aircraft (n=661)	56%	18%	17%	8%	1%
Snow machine (n=658)	60%	14%	13%	9%	4%
AMHS ferry (n=672)	64%	22%	10%	3%	1%
Train (n=649)	74%	21%	5%	1%	1%
Private airplane (n=654)	78%	13%	7%	2%	1%
Commercial shuttle/tour bus (n=655)	79%	16%	4%	1%	1%
Public bus (n=650)	90%	7%	2%	1%	1%

822 responded to at least one mode of transportation. The difference between 822 and each mode's n might represent an undercounting of "never". Eighteen respondents indicated they used other forms of transportation (three indicated more than one other form); of those 18, six were related to animals (e.g., horses, dog sleds).

¹Question asked only to resident respondents.

For all forms of transportation, a large majority of residents were satisfied, with roughly one-third being very satisfied and another 40% to 50% being satisfied. Satisfaction was highest for non-motorized forms of transportation, including foot/hiking, bicycling, cross country skis/snowshoes, and kayak/canoe/raft. While no form of transportation stands out as having a high level of dissatisfaction among residents, public bus and commercial shuttle had a relatively large percentage of respondents indicating neither dissatisfied nor satisfied (Table 24).

Table 24. Residents’ General Satisfaction with Transportation Used During the Past Year.

Mode of Transportation¹	Very dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
Private vehicle (n=708)	1%	2%	10%	49%	39%
ATV (n=265)	2%	4%	16%	49%	29%
Kayak, canoe, raft (n= 70)	2%	2%	10%	46%	41%
Motorboat (n=254)	2%	3%	13%	45%	37%
AMHS ferry (n=203)	3%	3%	14%	43%	37%
Commercial aircraft (n=245)	1%	2%	19%	51%	27%
Private airplane (n=111)	2%	2%	19%	41%	37%
Commercial shuttle/tour bus (n=109)	6%	1%	26%	44%	24%
Public bus (n=53)	4%	4%	36%	40%	17%
Train (n=140)	3%	1%	19%	47%	30%
Snow machine (n=220)	1%	3%	14%	47%	36%
Cross country skis, snowshoes (n=311)	1%	2%	10%	44%	44%
Bicycle (n=345)	1%	3%	11%	40%	46%
Foot/hiking (n=583)	1%	1%	7%	43%	49%

The *ns* include only those who indicated they used the mode of transportation.

¹Question was asked only to resident respondents.

Alaska non-residents were asked about the modes of transportation they used to arrive in Alaska. The figure below shows both weighted and unweighted data. According to the unweighted data, 54% of visitors arrived by airplane, 29% by cruise ship, and 23% by vehicle. Fewer than 5% of respondents used any other mode to arrive. When the data are weighted, there is an increase in the proportion arriving by cruise ship and a decline in those arriving by vehicle (as previously discussed in the Methods section, the Alaska CVTS survey may have underrepresented cruise ship passengers).

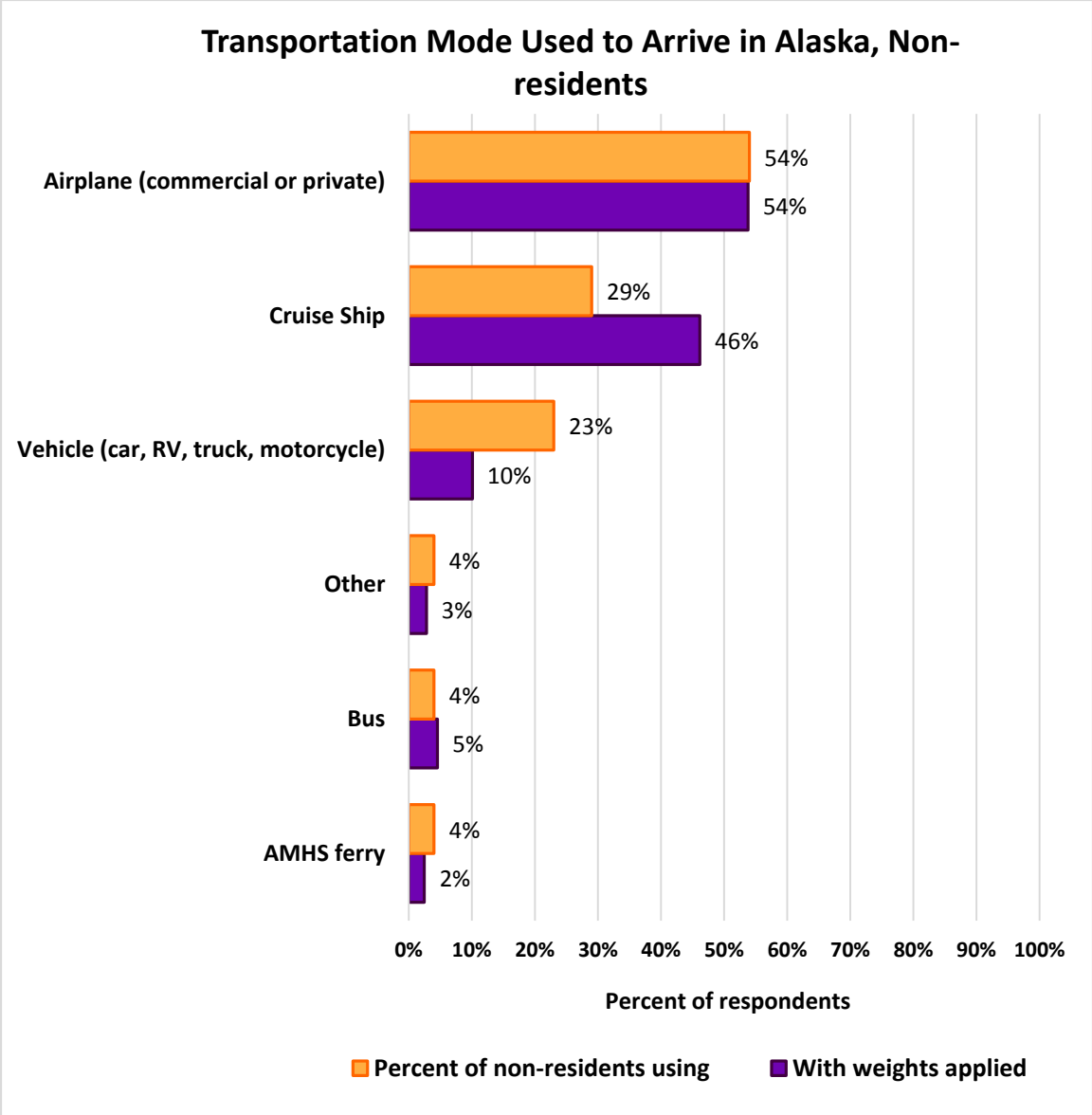


Figure 12. Non-residents’ Method of Arriving in Alaska.
 n = 1958. Categories were not mutually exclusive, thus they sum to greater than 100%. Weights were based on Alaska Visitor Statistic Program data.

In a set of site-specific questions, all visitors were asked about the type of transportation they used to arrive at the site. Nearly two-thirds of visitors used a private vehicle, but residents were significantly more likely to use this form of transportation than non-residents (92% vs. 49%, respectively). All other forms of transportation were used by significantly fewer respondents, with notable differences by residency for commercial shuttle and tour bus (non-residents were more likely to indicate using those forms of transportation; Table 25).

Table 25. Types of Transportation Used to Arrive at Sample Site.

Mode of Transportation¹	Residents	Non-residents	All respondents
Private vehicle (car, truck, motorcycle, RV)** v	92%	49%	62%
Foot/Hiking**	10%	16%	14%
Commercial shuttle/tour bus^{nt}	1%	15%	11%
Cruise ship^{nt ^}	0%	16%	11%
Commercial aircraft (includes air taxi, helicopter)**	3%	7%	6%
Alaska/White Pass Railroad**	2%	7%	5%
AMHS ferry**	3%	5%	5%
Public bus (not including shuttles or trolleys)^{nt}	0%	2%	2%
Private airplane^{nt}	1%	2%	2%
Denali Visitor Transportation System^{nt}	0%	1%	1%
Motorboat	1%	1%	1%
Kayak, canoe, or raft^{nt}	1%	1%	1%
Bicycle^{nt}	2%	1%	1%
Other^{2 nt}	0%	2%	1%
All-terrain vehicle (ATV) or off-road vehicle^{nt}	1%	0%	0%

Residents n = 832, non-residents n = 1911, all respondents n = 2743. *significant difference at $p = .10$. **significant difference at $p = .05$. nt = no test was conducted due to small number of people selecting that form of transportation, violating the minimum cell count of 5 requirement of chi-square.

v ^ when weights were applied for non-residents private vehicle decreased to 36% (all respondents to 53%) and cruise ship increased to 25% (all respondents to 17%).

¹The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

²39 respondents provided an explanation for “other;” public transportation was the most often cited form of transportation (n=9).

See Appendix D for travel to site, by sample site.

Overall, visitors were very satisfied with their experience traveling to the site, as nearly two-thirds (62%) rated the experience as excellent and another third rated it as good (32%). Only 5% indicated their travel experience was fair and 1% rated it as poor or very poor. While nearly all residents were satisfied (rating of excellent or good) with their travel experience to the site, they were less likely than non-residents to give the highest rating of excellent (55% vs. 65%; Table 26). Slight differences existed by tour group type (Table 27) and FLMA (Table 28).

Table 26. Satisfaction with Travel Experience Arriving at Sample Site.

Travel rating of experience arriving at site	Residence of respondent		
	Resident	Non-resident	All respondents
Excellent	55%	65%	62%
Good	36%	30%	32%
Fair	7%	4%	5%
Poor	1%	1%	1%
Very Poor	0%	0%	0%

Resident n = 831, non-resident n = 1942, all respondents n = 2773. Chi-square = 29.2, $p < .001$. Results of post hoc test with Bonferroni correction revealed residents and non-residents did not differ on the poor and very poor responses. Applying the weights for arrival type did not change the results. See Appendix D for a breakout by sample site.

Table 27. Satisfaction with Travel Experience Arriving at Sample Site, by Tour Group Type.

Travel rating of experience arriving at site	Tour group type		
	Resident independent	Non-resident independent	Non-resident tour only
Excellent	55%	63%	72%
Good	37%	30%	26%
Fair	7%	5%	2%
Poor	1%	1%	0%
Very Poor	0%	0%	0%

Resident independent n = 810, non-resident independent n = 1242, non-resident tour only n = 392. Chi-square = 40.8, $p < .001$. Results of post hoc test with Bonferroni correction revealed all groups differ on the excellent rating, residents differ from the non-residents on the good rating, and non-resident tour only differ from the independent travelers on the fair rating.

Table 28. Satisfaction with Travel Experience Arriving at Sample Site, by FLMA.

Travel rating of experience arriving at site	FLMA				
	BLM	FWS	Multi	NPS	USFS
Excellent	50%	59%	60%	65%	71%
Good	40%	31%	31%	31%	25%
Fair	7%	8%	8%	3%	4%
Poor	2%	1%	0%	0%	0%
Very Poor	0%	1%	1%	0%	

BLM n = 434, FWS n = 431, Multi n = 310, NPS n = 949, USFS n = 515. Cells with 0% were rounded from less than .5; blank cells indicate no respondents selected the response category. Chi-square = 83.7, $p < .001$. Applying the weights for arrival type did not change the results. See Appendix D for a breakout by sample site.

Within the site, 72% of both residents and non-residents traveled by foot/hiking; notable differences include water-based travel (both motorized and non-motorized), bicycle, and ATV, with residents more likely to select those forms of transportation (Table 29).

Table 29. Types of Transportation Used Within Sample Site.

Mode of Transportation¹	Resident	Non-resident	All respondents
Foot/hiking	72%	72%	72%
Private vehicle (car, truck, motorcycle, RV)**^v	31%	26%	27%
Commercial shuttle/tour bus**	3%	12%	9%
Kayak, canoe, or raft**	17%	4%	8%
Denali Visitor Transportation System**	2%	9%	7%
Bicycle**	11%	3%	5%
Other² nt	2%	6%	5%
All-terrain vehicle (ATV) or off-road vehicle**	11%	1%	4%
Motorboat**	7%	2%	4%
Alaska/White Pass Railroad nt	2%	4%	3%
Public bus (not including shuttles or trolleys)^{nt}	2%	2%	2%
AMHS ferry nt	2%	2%	2%
Cruise ship nt	2%	2%	2%
Commercial aircraft (includes air taxi, helicopter) nt	2%	2%	2%
Private airplane (includes ultralights) nt	2%	1%	1%

Resident n = 631; non-resident n = 1418. *significant difference at $p = .10$. **significant difference at $p = .05$. nt = no test was conducted due to small number of people selecting that form of transportation. The number of non-residents who answered this question is lower than the number responding to the mode of transportation used to arrive at the site. This might be due to not knowing which forms of transportation they would use within the FLMA.

^v Applying weights decreased non-residents' use of private vehicle to 19% (all respondents to 22%).

¹The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

²104 respondents provided an explanation of "other." The most often cited form of transportation was train (n = 33), followed by public transportation (n = 16).

See Appendix D for travel to site by sample site.

Ratings of transportation experience *within* the site are very similar to the ratings respondents gave about their travel to the site. That is, nearly all respondents gave a rating of "excellent" (65%) or "good" (30%; Table 30). Responses were similar across tour group types (Table 31) and FLMA (Table 32).

Table 30. Satisfaction with Travel Experience Within Sample Site.

Travel rating within site	Residence of respondent		
	Resident	Non-resident	All respondents
Excellent	63%	66%	65%
Good	30%	31%	30%
Fair	6%	3%	4%
Poor	1%	0%	0%
Very Poor		0%	0%

Resident n = 733 (49 had not traveled within site yet), non-resident n = 1785 (245 had not traveled within site yet), all respondents n = 2518. Cells with 0% were rounded from less than .5; blank cells indicate no respondents selected the response category. Chi-square = 13.1, $p = .011$. Results of post hoc test with Bonferroni correction revealed a difference between resident and non-resident independent travelers on the fair rating. Applying weights based on arrival type did not impact results. See Appendix D for results by sample site.

Table 31. Satisfaction with Travel Experience Within Sample Site, by Tour Group Type.

Travel rating within site	Tour group type		
	Resident independent	Non-resident independent	Non-resident tour only
Excellent	63%	66%	66%
Good	30%	31%	29%
Fair	6%	3%	4%
Poor	1%	0%	0%
Very Poor		0%	0%

Resident independent n = 706, non-resident independent n = 990, non-resident tour only n = 298. Cells with 0% were rounded from less than .5; blank cells indicate no respondents selected the response category. Chi-square = 14.2, $p = .077$. Results of post hoc test with Bonferroni correction revealed a difference between resident and non-resident independent travelers on the fair rating.

Table 32. Satisfaction with Travel Experience Within Sample Site, by FLMA.

Travel rating of experience within site	FLMA				
	BLM	FWS	Multi	NPS	USFS
Excellent	61%	65%	66%	67%	67%
Good	31%	29%	32%	29%	29%
Fair	6%	6%	2%	4%	3%
Poor	1%	1%		0%	1%
Very Poor				0%	0%

BLM n = 361, FWS n = 368, Multi n = 235, NPS n = 768, USFS n = 422. Cells with 0% were rounded from less than .5; blank cells indicate no respondents selected the response category. Chi-square = 19.6; $p = .237$. Applying the weights for arrival type did not change the results. See Appendix D for analysis by sample site.

The follow-up survey asked respondents about travel modes used during the entire trip. Foot/hiking and private vehicle were the most frequently used forms of transportation, however there were differences between residents and non-residents. Non-residents were more likely to use rental vehicles, Denali Visitor Transportation Services bus, commercial aircraft, and the Alaska and White Pass Railroads. Residents were more likely to use private vehicles and ATVs (Table 33).

Table 33. Type of Transportation Used During Entire Trip.

Type of Transportation Used ¹	Alaska Resident	Non-resident of Alaska	All respondents
Foot/hiking*	56%	65%	63%
Private vehicle (car, truck, motorcycle, RV)**	91%	34%	49%
Rental vehicle (car, truck, motorcycle, RV) **	3%	42%	32%
Boat (motorized) ² **	8%	37%	30%
Denali Visitor Transportation System (shuttle bus) **	3%	38%	29%
Commercial aircraft (includes air taxis, helicopters) **	10%	34%	28%
Commercial tour bus ^{nt}	3%	34%	26%
Cruise ship ^{nt}	2%	34%	26%
Alaska Railroad ^{nt}	2%	25%	19%
Kayak, canoe, or raft**	11%	19%	17%
AMHS Ferry **	8%	18%	15%
Other public bus ^{nt}	3%	15%	12%
White Pass Railroad ^{nt}	2%	15%	12%
Bicycle	8%	10%	9%
All-terrain vehicle (ATV) or off-road vehicle**	14%	5%	7%
Private airplane (includes ultralights)	2%	5%	4%
Other	3%	4%	4%

Resident n = 133, Non-resident n = 380, All respondents n = 513. *significant difference at $p = .10$. **significant difference at $p = .05$. nt = no test was conducted due to small number of people selecting that form of transportation.

¹Data are from follow-up survey and asked about transportation used at any point during the trip. Responses are not mutually exclusive, thus the columns sum to > 100%.

²Although cruise ship was intended to be distinct from motorized boat (i.e., with motorized boat referring to a relatively small craft), respondents might have interpreted a cruise ship as a motorized boat.

For each form of transportation used during their trip, respondents were asked to rate their satisfaction using a five-point scale (very dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied, very satisfied). Across all forms of transportation, most respondents were satisfied or very satisfied (Figure 13). Respondents were most satisfied with rail, aircraft, and watercraft. The only forms of transportation with sufficient sample sizes to compare residents to non-residents were foot/hiking and private vehicles. No differences were found for satisfaction levels in foot/hiking; residents and non-residents did differ statistically on private vehicle satisfaction ratings, but the difference was not of practical significance.

Satisfaction with Transportation

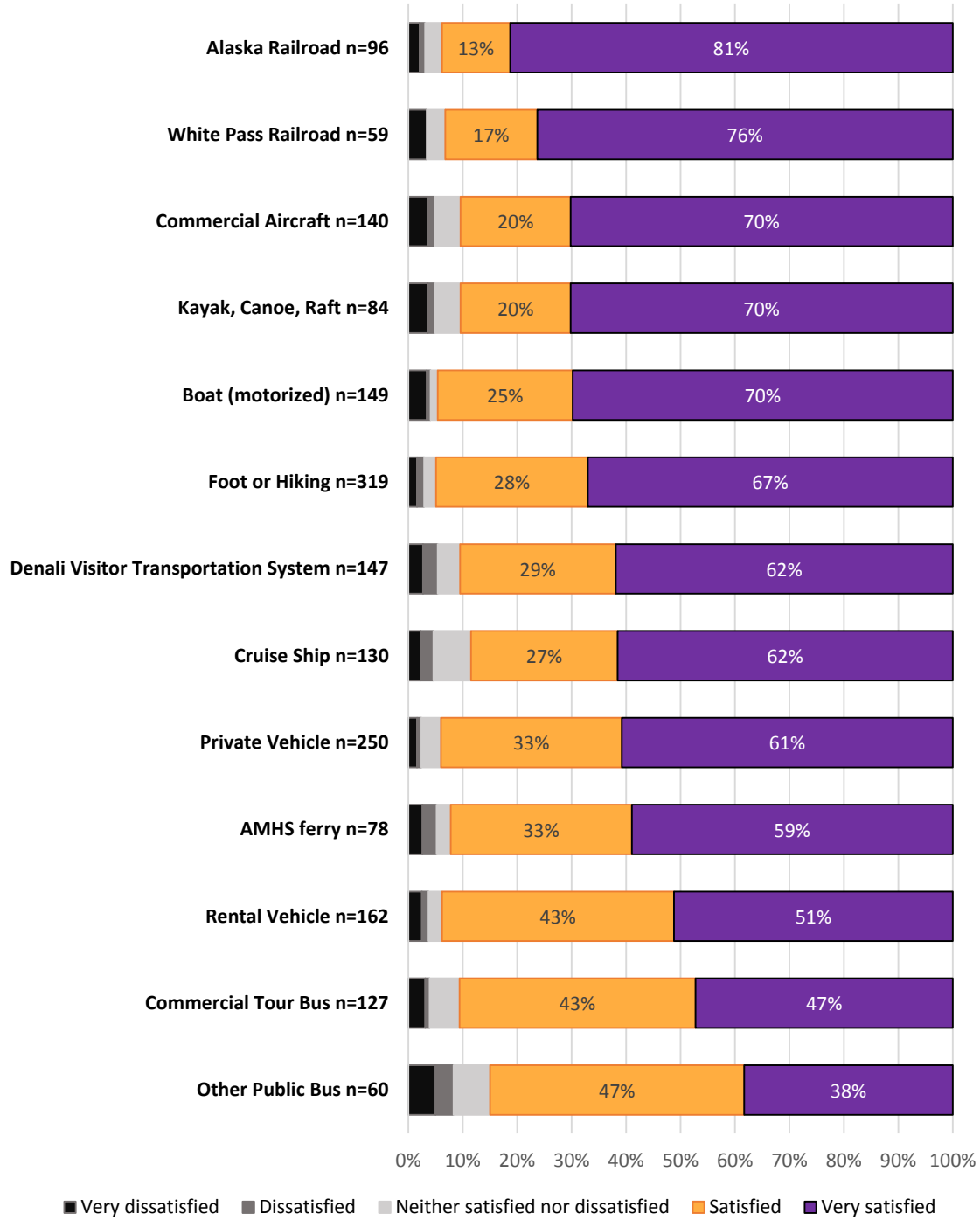


Figure 13. Satisfaction with Transportation Used During Trip.

Data from follow-up survey.

Twenty-seven respondents provided an explanation as to why they were dissatisfied with their trip. Given the diversity of types of transportation used, themes do not become apparent. However, three comments were specific to Denali. Comments are provided below.

- Alaska seaplanes lost our luggage. Only had four people on the plane...as a result we had to go glacier bay without our cameras and heavy coats.
- As for 9+10: unable to arrange (affordable) charter flights (spoke to 3 operators--one left for holiday at the critical week).
- As stated earlier in this survey, our goal is to ride the motorized trail from Wickersham Trailhead to US Creek. As far as can be determined on available maps there is a non-motorized section that interrupts the existing trail.
- At Denali visit the bus was uncomfortable, the windows could not close at back of the bus. we could not hear the tourist guide. so noisy!
- Awful, NPS needs to revisit master plan for Denali. NOT worth visiting currently. And there was a lack of information.
- Bus/shuttle driver was a bit of curmudgeon. He was not friendly, did not seem very happy to have a baby aboard. Complained a lot about passengers.
- Busses were too crowded and cramped; White Pass RR border crossing did not go quick.
- Closed to UTV.
- Fairbanks was hard to find. Cruise ship experience had limited on ship activities. Denali shuttle windows were extremely hard to open. Buses/vehicles seemed backlogged in Denali. Due to lack of bus pull-off spots, we sometimes couldn't stop to see wildlife, yet, we hate to think of the area being ruined by widening roads.
- My friend injured her knee while visiting one of our sites and the ship personnel did not offer any help in getting her back to ship. Alaska itself more than lived up to expectations.
- No problem w/transportation or driver- some passengers very unruly.
- Not enough guided hiking trails--only in Denali--needed more throughout AK.
- Not enough trails for 4 wheelers.
- Park regulations prohibited use.
- Rain 18 of 19 days in Alaska resulted in some very wet, gray hikes
- Rental car rates too expensive.
- Rude(!) bus drivers in Juneau. Public bus driver uninterested in helping tourist. Public bus didn't go to the Mendenhall Glacier, when it easily could have had a stop at the NPS visitor center. Does the Mob run Juneau?
- Some of the roads were in very much need of repair.
- speed of train...slow; concerned about the overall safety on stretch from Denali to Fairbanks (going thru the canyon).
- The bicycles looked fancy, but were not very good.
- the cruise very expensive for activities...way too many jewelry stores everywhere...wish towns had more to do besides shop and eat.
- The Dalton Highway is very bad.
- They screwed up our reservations.
- Took a flight seeing trip out of lake hood. Pilot talked us into a different flight plan and it was a up charge. Once in the air we were told he couldn't fly where we had planned due to the forest fire. The we couldn't fly to the glacier out of Eagle River due to the turbulence, so we ended up flying over flat land out by big lake, not impressed! Felt we were scammed. Plus, pilot was not at the plane on time and had to prep the plane while we watched our time tick away.

- Tour bus to arctic circle seats were hard stiffed and not adjustable, spent 2 hours at restaurant, 60-90 minutes was enough.
- We had a wonderful trip, but wished there were more hiking trails, and more hiking trails that allow dogs.
- We took the Wilderness tour in Denali. There were too many buses at all the stops and we were rushed from stop to stop. Particularly disappointing was at the turn around point for the tour, when we had the best view of Mt Denali. We were given very little time to appreciate what we had traveled so far to see. We were rushed back onto the bus in about 15 minutes. Everyone I spoke with on the tour expressed the same complaint.

Travel expectations and problems with connections

Nearly three-quarters of respondents indicated their trip was either above their expectations (44%) or significantly above expectations (28%). The majority of non-residents stated their travel expectations were exceeded; residents were essentially split as to whether travel experiences only met versus exceeded their expectations (Table 34). That is, approximately eight in ten non-residents indicated that the trip was either above or significantly above their expectation (47% and 32%, respectively), contrasting with the 50% of residents who felt the same way. As for the 20 respondents who indicated the travel experience was below expectations, 15 (4 residents, 11 non-residents) provided an explanation. Four of the explanations related to weather, three related to issues with flightseeing tours/air shuttles, two related to a lack of wildlife, and two related to regulations (motorized restrictions, obtaining permits).

Table 34. Comparison of Travel Experience to Expectations.

Comparison to Expectations¹	Residents	Non-residents	All respondents
Significantly below my expectations	1%	1%	1%
Below my expectations	2%	3%	3%
Met my expectations	47%	18%	25%
Above my expectations	34%	47%	44%
Significantly above my expectations	16%	32%	28%

Residents n = 132, non-residents n = 378, all respondents n = 508. Chi-square = 45.62, $p < .001$. Significantly below and below expectations did not differ by residency as indicated by the post hoc test with the Bonferroni correction.

¹Data from follow-up survey.

Fifteen respondents provided an explanation as to why the travel experience fell below their expectations. The reasons varied and are provided below.

- Already stated...
- Bad weather.
- Did not see any wildlife, not even roadkill. Saw wildlife in Northern BC, but not in Alaska. Too much emphasis on motorized activities.
- Expected to see more wildlife in Denali park excursion and along the way. It was sad to see so few moose, bears, elks [SIC] etc.
- Explained in previous answers.

- Float plane office was very rude. Pilots were great!
- Mostly activities were less than expected. TV has a much better depiction of Alaska
- One of the party became ill and we could not do the things we planned and had to cut the trip short.
- Park regulations didn't allow sufficient number of boating permits for local residents
- Rain primarily.
- The party culture in Skagway was not really to my taste - as an alpine/rock climber, I had a lot of trouble finding partners.
- The pen air flight was cancelled and we had to wait 5 hours, without any information in king salmon 's airport.
- We did not get to do all we had planned. I understand we can't control the weather. However, that is why it was below my expectations. Two of 3 ports were washouts due to rain.
- We were unable to locate what we were looking for, either by car or foot.
- Weather was an issue and lack of things to do in Fairbanks.

Overall, 12% of respondents had a problem making a transportation connection on their trip. Non-residents were more likely to have travel situations requiring connections between different forms of transportation (i.e., 8% of non-residents indicated not applicable to this question, compared to 34% of residents). Among those in which travel connections were applicable, non-residents were more likely to have a problem (Table 35). As for the 60 who indicated that they experienced delays or problems making connections:

- 18 listed delay with air travel (4 of these specifically mentioned Delta computers);
- 13 experienced delays due to weather;
- 11 related to the AMHS ferry or other water-based transportation delays;
- 7 listed ground transportation (buses, taxis, shuttles) issues; and
- 6 had delays due to road construction or poor road conditions (see Appendix E for the individual responses).

Table 35. Delays or Problems making Connections between Forms of Transportation.

Any delays or problems making connections between forms of transportation ¹	Resident	Non-resident	All respondents
Yes²	3%	15%	12%
No	63%	77%	73%
Not applicable	34%	8%	15%

Residents n = 129, non-residents n = 373, all respondents n = 502. Chi-square = 56.6, $p < .001$. All categories differed as indicated by the post hoc test with the Bonferroni correction.

¹Data from follow-up survey.

²The difference between residents and non-residents remains when the not applicable is excluded (5% vs. 16%; chi-square = 7.07, $p = .006$).

FLMA Visitation Patterns

General FLMA visitation in past 12 months (residents only)

Residents were asked how often they used Alaskan federal public lands during the previous twelve months, separating responses by summer and winter. Response options included five levels of frequency ranging from “never” to “more than once per week,” as well as a “don’t know” option. A consistent percentage of respondents stated they “did not know” whether they used a particular public land or that they “never” used it (Table 36). For all public lands, use was generally greater in the summer months compared to the winter months. Relative to other public lands, users were somewhat more likely to regularly use (once a week or more often) national forests, however, in general, there were few differences in the use of different federal public lands.

Table 36. Residents’ Use of FLMAs in Previous Twelve Months.

Agency	Don't know	Never	Less than monthly	About once per month	About once per week	More than once per week
U.S. Bureau of Land Management						
Winter n = 802	13%	28%	27%	19%	8%	6%
Summer n = 753	11%	13%	21%	28%	17%	9%
U.S. Fish and Wildlife Service						
Winter n = 790	14%	32%	28%	16%	4%	5%
Summer n = 747	15%	13%	22%	25%	16%	9%
U.S. National Park Service						
Winter n = 803	9%	31%	34%	15%	6%	5%
Summer n = 767	7%	10%	29%	30%	14%	10%
U.S. Forest Service						
Winter n = 812	11%	27%	26%	18%	8%	10%
Summer n = 762	10%	12%	20%	26%	17%	15%

There were 838 resident respondents, three completely skipped this question. Of the 835 who responded to at least one FLMA in a particular season, some did not respond for particular FLMAs, and hence the n varies by FLMA. The difference between 835 and each FLMA’s n might represent an undercounting of “never” or “don’t know”.

Questions about winter months were asked first on the survey. This question was asked only to residents.

Frequency of visitation to survey sites by residents

As part of the onsite survey, Alaska residents were asked whether they had visited the site before and for those who had, how often they had visited in the past year. Of the 829 resident respondents who answered this question, 69% indicated they had visited the site before. Among these previous visitors, the majority had visited the site either once (28%) or two to three times (30%) in the past 12 months, while 22% were heavy users of the site, making more than 10 trips in the last 12 months (Figure 14).

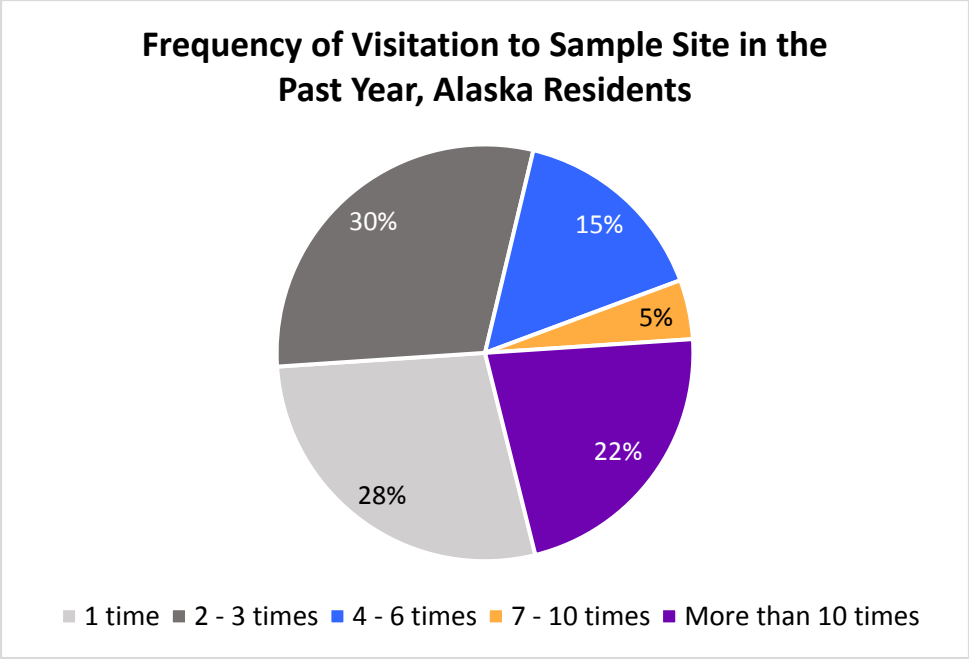


Figure 14. Alaska Residents’ Frequency of Previous Visitation to the Site in the Past Year. n=564. Overall, 69% of 827 resident respondents indicated they previously visited the site (i.e., 568 respondents, 4 did not indicate how often they visited).

While FLMAs did not differ on whether respondents had visited before, with all FLMAs relatively close to 70% (Figure 15), there were differences in how often visitors had visited in the past 12 months. Visitors to the BLM-managed areas had fewer respondents visiting 10 or more times in the past 12 months than visitors to lands managed by the NPS and USFS (13% vs. 36% and 32%, respectively; Figure 16).

Visitation to Sample Site in Previous 12 Months, by FLMA

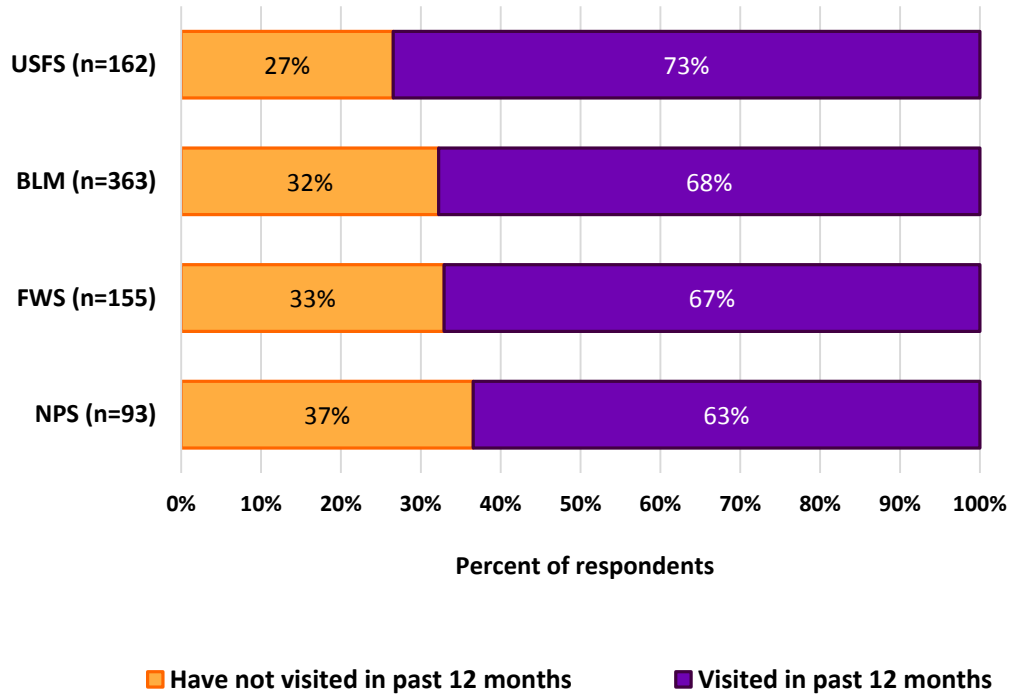


Figure 15. Visitation to sample site in Past 12 Months, by FLMA.
Question only asked of residents. Chi-square = 3.2, $p = .368$.

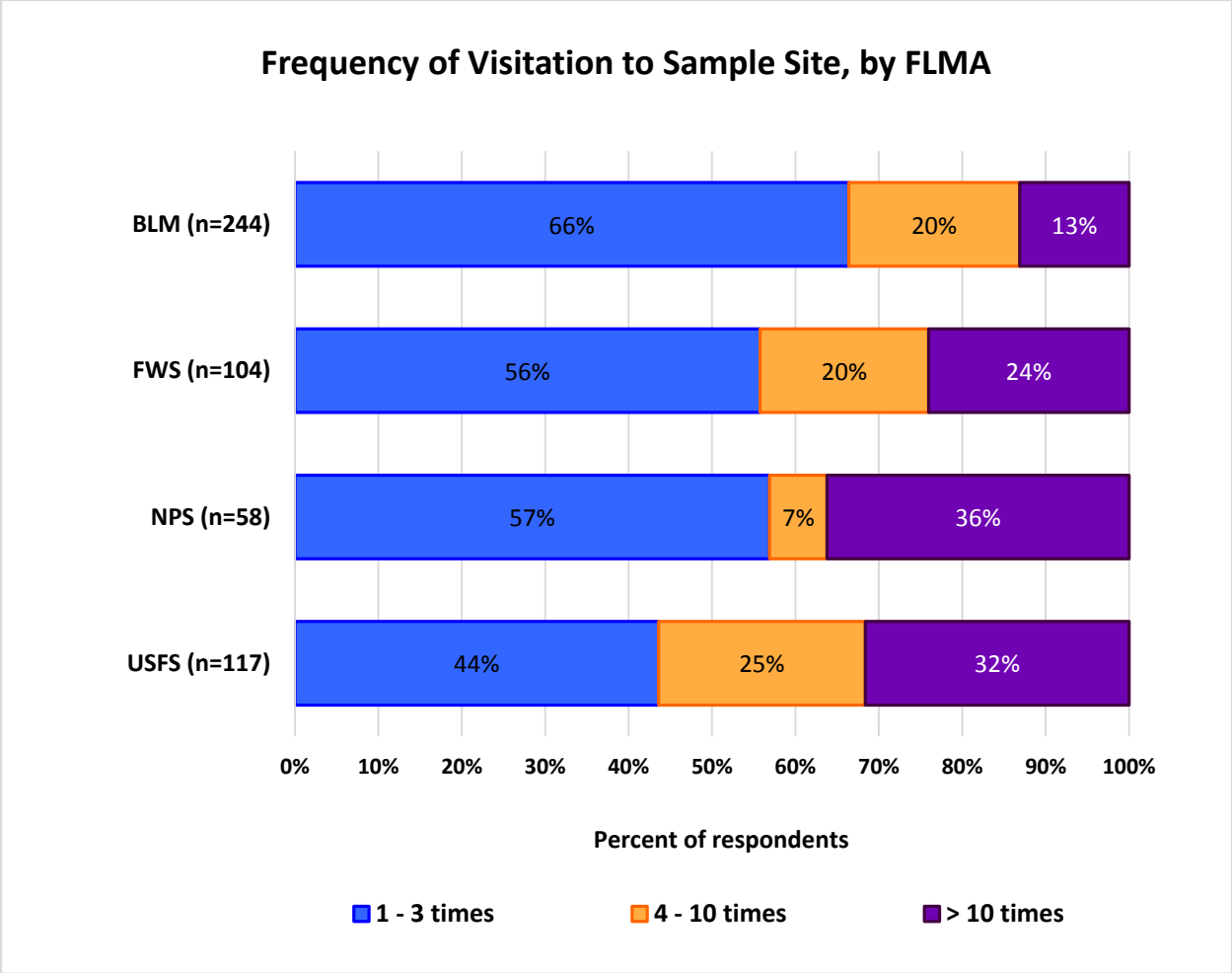


Figure 16. Frequency of Visitation to Site in Past 12 Months, by FLMA.
 Question asked visitation in categories of 1 time, 2 – 3 times, 4 – 6 times, 7 – 10 times, and > 10 times. Data were collapsed into the ranges shown in the figure. Chi-square = 32.8, $p < .001$. The post-hoc test with Bonferroni correction revealed the following differences. 1 to 3 times: USFS < BLM; 4 to 10 times: NPS < USFS; > 10 times: BLM < NPS & USFS.

Previous visitation to Alaska by non-residents

When non-residents were asked if they had previously visited Alaska, a majority (61%) had not, while 39% indicated that they had. Among these previous visitors, 40% had visited one time in the past 10 years, and approximately 3 of 10 had previously visited 2 to 3 times in the past 10 years (Figure 17).

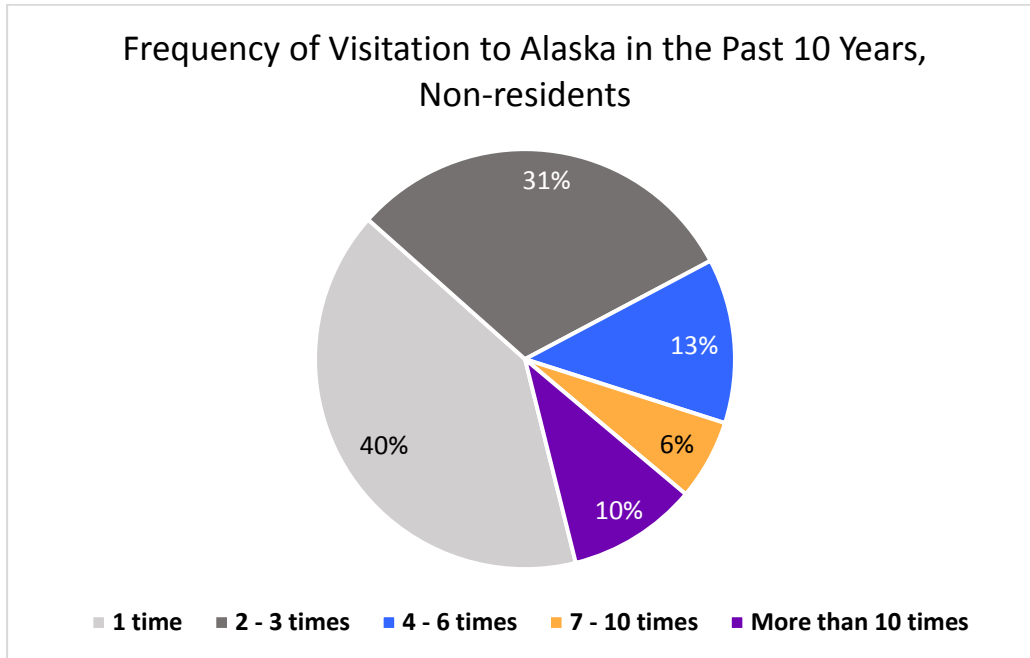


Figure 17. Non-residents' Frequency of Visitation to Alaska in the Last 10 years.

n=763. 1956 responded to the question as to whether they previously visited Alaska, and 763 (39%) indicated they had. Applying weights for arrival mode did not impact results.

Site visitation

As part of the onsite survey, respondents were presented a list of sites and asked to indicate:

- the site(s) they had already visited,
- the site they intended to visit next, and
- other sites they planned to visit during the trip.

The same list was presented to all respondents regardless of where they were sampled. First it should be noted, if a respondent did not check the site at which they were sampled, during data entry and/or cleaning, the site was coded as visited (though that might have skewed results toward sample locations). In general, visitation patterns follow what would be expected based on various agencies' use statistics (e.g., sites such as the White Mountains National Recreation Area, Tangle Lakes Wild and Scenic River having greater resident visitation; national parks and preserves such as Glacier Bay and Denali having more non-resident visitation; the Kenai National Wildlife Refuge and Chugach National Forest being approximately equal in terms of residency of visitors; and sites in the north and southwest having lower visitation than other regions). Of note, Denali National Park and Preserve was selected most often; this might be due to the recognition of Denali NP&P and certainty over whether the site will be visited (as opposed to a site like the Chugach National Forest of which visitors who just arrived in Seward might not be aware that they are visiting). Visitation levels to several of the sites change when weights for arrival

type were applied (Table 37). It should also be noted that 72 respondents selected 15 or more sites, with 41 of those selecting all sites; it would be difficult to visit all the sites in one trip. They might have interpreted the question as “ever visited” or “would like to visit.”

There was also an open-ended “other” federal sites visited/intended to visit question. Although 119 respondents provided a destination, only 32 were federal lands or would have crossed federal lands (Chugach NF = 7, Tongass NF = 5, BLM sites = 5, Klondike Gold Rush NHP = 4). Eighty-seven listed sites other than federal public lands; 34 appear to be cruise itineraries, 32 were urban areas in Alaska, 11 were State sites, 6 were locations in Canada, and 4 were rural areas in Alaska. Those 87 respondents might not be aware of what an FLMA is, or might have skipped the instructions regarding federal lands in the question.

Table 37. Visitation to Specific FLMAs in Alaska.

Site	Visited + Next Destination + Other Dest. ¹		
	Resident	Non-resident	All respondents
SOUTHEAST REGION			
Glacier Bay National Park and Preserve** ^	13%	30%	25%
Klondike Gold Rush National Historical Park**	9%	27%	22%
Sitka National Historical Park**	12%	16%	15%
Tongass National Forest** ^	18%	41%	34%
SOUTHCENTRAL REGION			
Alaska Maritime National Wildlife Refuge	12%	12%	12%
Gulkana Wild and Scenic River**	8%	4%	5%
Kenai Fjords National Park** v	21%	34%	30%
Kenai National Wildlife Refuge** v	28%	24%	25%
Chugach National Forest	30%	32%	31%
Campbell Tract (Anchorage) **	12%	7%	9%
Tangle Lakes and Delta Wild and Scenic River**	23%	4%	10%
Wrangell-St. Elias National Park and Preserve	12%	10%	11%
SOUTHWEST REGION			
Kodiak National Wildlife Refuge**	8%	5%	6%
Katmai National Park and Preserve	8%	8%	8%
Lake Clark National Park and Preserve**	6%	3%	4%
INTERIOR REGION			
Denali National Park and Preserve** v	26%	52%	44%
Fortymile Wild and Scenic River**	9%	3%	5%
Steele National Conservation Area**	11%	3%	5%
Tetlin National Wildlife Refuge	7%	7%	7%
White Mountains National Recreation Area**	36%	4%	14%
NORTHERN REGION			
Yukon-Charley Rivers National Preserve**	7%	4%	5%
Bering Land Bridge National Preserve**	5%	1%	2%
Cape Krusenstern National Monument**	4%	1%	2%
Gates of the Arctic National Park and Preserve**	8%	3%	5%
Kobuk Valley National Park**	5%	1%	2%
Noatak National Preserve**	5%	1%	2%
Dalton Highway**	12%	6%	8%
Arctic National Wildlife Refuge**	8%	3%	5%

Residents n = 822, non-residents n = 1931, all respondents n = 2753.

**Indicates results for residents and non-residents were statistically different at $p = .05$.

^ Indicates weighted results increased by a magnitude $\geq 5\%$. For non-residents, Glacier Bay increased to 35% and Tongass National Forest increased to 50%.

v Indicates weighted results decreased by a magnitude $\geq 5\%$. For non-residents, Kenai Fjords NP decreased to 29%, Kenai NWR to 19%, and Denali to 46%.

¹The question provided respondents the list of sites shown in the table. They were asked to indicate which sites they visited, which site was their next destination and which sites were among other destinations they planned to visit. During data entry and data cleaning, if the respondent did not check the site at which they were sampled, the surveyor marked that they visited that site. That might have increased the representation of the sample sites (e.g., Denali, Kenai National Wildlife Refuge) relative to the non-sample sites (e.g., Wrangell St. Elias NP&P). 72 respondents checked more than 15 sites, with 41 of those selecting all the sites on the list (28 sites).

When examining the number of sites visited, non-residents were more likely than residents to visit multiple sites, visitors sampled in the southeast were more likely to visit 2 to 4 sites than visitors sampled in other regions, and visitors sampled in the interior and southcentral regions were more likely to visit 5 to 9 sites (Table 38).

Table 38. Total Number of Sites Visited.

Number of sites visited or intended to visit	By residency		By region where intercepted			All respondents
	Residents	Non-residents	Interior	Southcentral	Southeast	
1	55%	20%	40%	22%	28%	30%
2 thru 4	26%	60%	40%	50%	61%	50%
5 thru 9	10%	18%	15%	21%	10%	16%
10 thru 15	3%	2%	3%	3%	1%	2%
15 thru 27	3%	1%	1%	2%	0%	1%
All sites selected	3%	1%	1%	3%	0%	2%

Residents n = 821, non-residents n = 1929, Interior n = 962, southcentral n = 921, southeast n = 867, all respondents n = 2750. Three who checked “other” sites did not check any of the sites listed on the survey (they were where sampled at APLICs) and are excluded. Residency: Chi-square = 428, $p < .001$. All categories differed as indicated by the post hoc test with the Bonferroni correction. Region: (Chi-square test excludes the 15 – 27 and all sites selected categories due to the low n for southeast) Chi-square = 135, $p < .001$. Interior did not differ from southcentral on the 10 - 15 category, all other region-by-number-of sites combinations differed as indicated by the post hoc test with the Bonferroni correction.

The average number of sites visited for both residents and non-residents differed across the three sampling regions (Table 39). When only one site was selected, the Tongass National Forest and White Mountains National Recreation were the most often designated sites (Table 40).

Table 39. Average Number of Sites Visited, by Residency and Sample Region (limited to total sites < 16).

Residence of respondent	Region sampled	n¹	Mean²
Resident			
	Interior	395	2.2
	Southcentral	268	2.9
	Southeast	112	1.9
	Total	775	2.4
Non-resident			
	Interior	544	3.3
	Southcentral	610	3.6
	Southeast	749	2.7
	Total	1903	3.2
All respondents			
	Interior	939	2.9
	Southcentral	878	3.4
	Southeast	861	2.6
	Total	2678	3.0

AIVC and Tangle Lakes were classified as Interior, Katmai was classified as Southcentral.

All data: Resident vs. non-resident (testing the number of sites visited): $t = -7.8, p < .001$. Within residents (testing across region): $Welch = 9.7, p < .001$. Post hoc tests indicated Interior Sampling Region was not statistically different from the Southeast Sampling Region; all other combinations of sites were statistically different at $p = .05$. Within non-residents (testing across region): $Welch = 36.7, p < .001$. Post hoc tests indicated Interior Sampling Region was not statistically different from the Southcentral Sampling Region; all other combinations of sites were statistically different at $p = .05$.

¹Excludes respondents that listed 16 or more sites; also excludes the three that did not visit any of the sites listed.

²Average number of sites visited by respondents sampled in that region (i.e., all respondents sampled at interior sample sites). It is important to note that any visitor sampled in a region can visit other regions.

Table 40. Sites Selected when Only One Site was Selected as Visited or Planned to Visit.

Site	Residents	Non-residents	All respondents
Tongass National Forest	12%	28%	20%
White Mountains National Recreation Area	35%	2%	20%
Denali National Park and Preserve	3%	26%	14%
Tangle Lakes and Delta Wild and Scenic River	21%	1%	12%
Kenai National Wildlife Refuge	11%	5%	9%
Chugach National Forest	10%	4%	8%
Klondike Gold Rush National Historical Park	1%	13%	7%
Katmai National Park and Preserve	2%	6%	4%
Sitka National Historical Park	2%	2%	2%
Alaska Maritime National Wildlife Refuge	1%	3%	2%
Kenai Fjords National Park	0%	3%	2%
Glacier Bay National Park and Preserve	0%	2%	1%
Tetlin National Wildlife Refuge	0%	2%	1%

Residents n = 450, non-residents n = 382, all respondents n = 832. Sites not shown were not selected among respondents that selected one site. All of these locations were sample sites (and in cases when the respondent did not check the sample site, data were corrected to indicate they visited the sample site).

Although not subject to statistical testing due to the large number of comparisons, and resulting difficulty in controlling the family-wise error rate, it appears visitors sampled in the Interior and Southcentral were more likely to visit other regions of Alaska than visitors sampled in southeast Alaska (Figure 18).

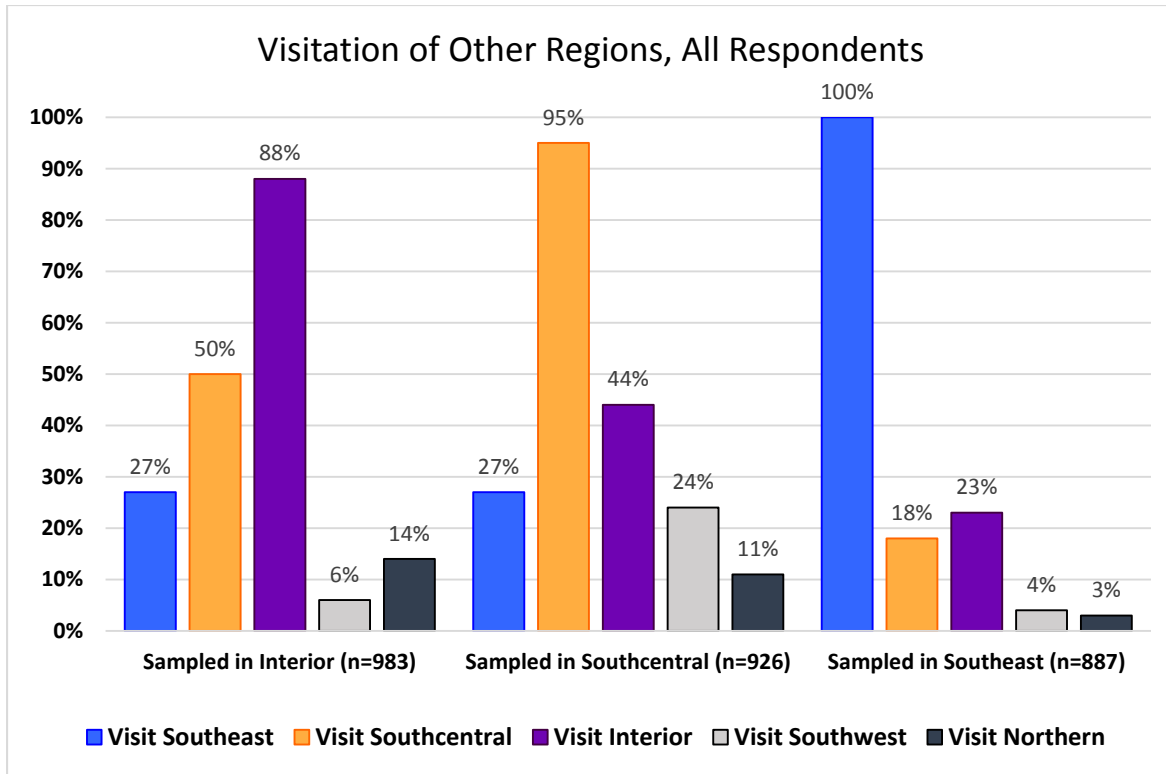


Figure 18. Visitation of Other Regions of Alaska, by Sample Region.

AIVC and Tangle Lakes were classified as Interior Sampling Region, and Katmai was classified as Southcentral Sampling Region, thus the bars for visiting interior and visiting southcentral do not sum to 100 for those sampled in the Interior and Southcentral, respectively. Given the large number of comparisons, and the consequent difficulty in controlling the family-wise error rate, a statistical test was not conducted.

On average, the number of other regions visited was 2 or less (Table 41), with non-residents appearing to be more likely to visit multiple regions (Table 42).

Table 41. Average Number of other Regions Visited, by Sample Region.

Regions where respondent was sampled ¹	n	Average number of regions visited
Interior	983	1.84
Southcentral	926	2.00
Southeast	887	1.49
Total	2796	1.78

¹AIVC and Tangle Lakes were classified as Interior Sampling Region, Katmai was classified as Southcentral Sampling Region. $F = 62.0, p < .001$, post hoc test revealed all regions were statistically different from each other at $p = .05$. Note, weighting the data by arrival type does not change results by more than .1.

Table 42. Visitation to Other Regions of Alaska, by Residency and Sample Region.

Residence of respondent	n	Region visited				
		Region sampled ¹	Southeast	Southcentral	Interior	Southwest
Resident						
Interior	417	11%	44%	75%	5%	15%
Southcentral	297	22%	97%	29%	21%	14%
Southeast	124	100%	12%	10%	5%	7%
Total	838	28%	58%	49%	11%	14%
Non-resident						
Interior	566	38%	54%	98%	7%	13%
Southcentral	629	29%	94%	51%	25%	9%
Southeast	763	100%	19%	26%	4%	3%
Total	1958	59%	53%	55%	12%	8%
All respondents						
Interior	983	27%	50%	88%	6%	14%
Southcentral	926	27%	95%	44%	24%	11%
Southeast	887	100%	18%	23%	4%	3%
Total	2796	50%	55%	53%	11%	10%

¹AIVC and Tangle Lakes were classified as Interior, Katmai was classified as Southcentral, thus the cells highlighted in yellow for visiting Southcentral and the Interior do not sum to 100 for those sampled in the southcentral and interior, respectively. Cell entries are the percent of respondents, sampled in a particular region, who indicated they visited a site in the respective column. Categories are not mutually exclusive and do not sum to 100. Given the large number of comparisons, and the consequent difficulty in controlling the family-wise error rate, a statistical test was not conducted.

Ability to Visit All the Federal Public Lands Sites Planned

For both residents and non-residents, approximately 90% of respondents were able to reach their desired destinations (Figure 19). For those not able to reach sites (n = 55), the most frequently cited reasons were time (combining “not enough time” [51%] and “didn’t realize how long it would take to travel to” [15%]), weather (24%), and cost (13%). As for reasons that could be influenced by management, area/road closures (9%) and transportation not available (7%) were cited, although it does appear as if information on travel times and expenses could alleviate some issues (Table 43).

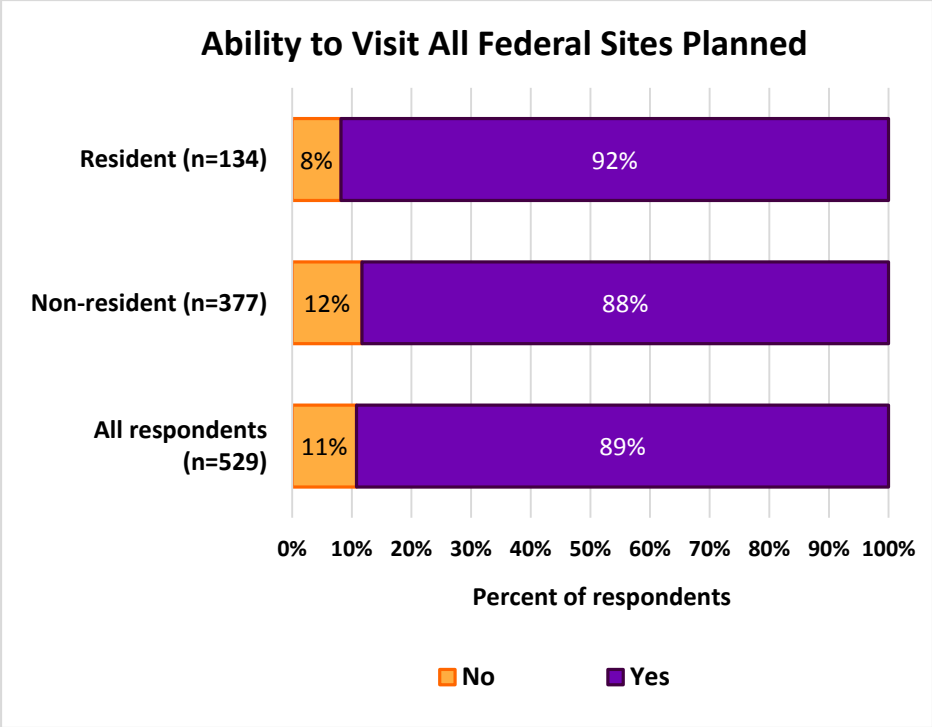


Figure 19. Ability to Visit all the Federal Public Land Sites Planned.
 Question asked only on the follow-up survey. Chi-square = 1.2, $p = .267$. 41 respondents provided comments as to the site they could not visit, 7 were for Denali, 6 Glacier Bay, 3 Gates of the Arctic, 3 Wrangle-St. Elias, and 2 were unable to visit Skagway.

Table 43. Reasons Preventing Site Visitation.

Reasons preventing site visitation	Residents	Non-residents	All respondents
Not enough time	45%	52%	51%
Bad weather	27%	23%	24%
Didn't realize how long it would take to travel to destination(s)	9%	16%	15%
Transportation to/from the destination was too costly	18%	11%	13%
Area was closed/road closure	9%	9%	9%
Transportation to/from the destination was not available	9%	7%	7%
Transportation to/from the destination was not frequent enough/convenient	0%	5%	4%
Transportation related mechanical problems	9%	2%	4%
Other	36%	14%	18%

Residents n = 11, non-residents n = 44, all respondents n = 55. Statistical tests not conducted due to low sample size. No clear pattern emerged in the “other” category. The 10 responses included delay at customs, ferry break down, injury, lack of fuel, lack of information (2x), transportation didn’t accommodate small children, water level low, and limited time. Question asked on the follow-up survey.

Cross-site Visitation Patterns

Regarding the pattern of sites visited on the same trip, as expected, sites in the same region of Alaska were more likely to have common visitors. Denali was perhaps the exception, with the site being visited among sites across many other regions (Table 44). However, slightly different patterns do emerge for residents and non-residents, with residents typically being on shorter trips. When examining non-residents, patterns emerge such as visitation to Tangle Lakes/Delta Wild and Scenic River and Wrangell St. Elias National Park and Preserve (Table 45). When examining next destination, again sites within the same region as where the respondent was sampled dominate, and cruise itineraries might be evident (as an example of potential cruise itineraries, Denali National Park and Preserve was the next destination of 78% of visitors to APLIC Fairbanks); however, patterns do emerge (Table 46). For example, only 15% of respondents sampled at Maritime National Wildlife Refuge listed Denali National Park and Preserve as their next destination, whereas 52% of respondents sampled at Alaska Maritime National Wildlife Refuge also visited Denali (i.e., either they already visited Denali, or they planned to visit other sites before reaching Denali).

Table 44. Cross-site Visitation, All Respondents, by Sample Site.

Site listed as visited	Other sites visited when sites listed in the rows or columns were visited																		
	Glacier Bay NP&P	Klondike Gold Rush NHP	Sitka NHP	Tongass NF	AK Maritime NWR	Kenai Fjords NP	Kenai NWR	Chugach NF	Campbell Tract	Tangle Lakes / Delta WSR	Wrangell St. Elias NP&P	Kodiak NWR	Katmai NP&P	Denali NP&P	Steese NCA	Tetlin NWR	WMNRA	Dalton Hwy.	
Southeast																			
Glacier Bay NP&P	621	36%	30%	58%	10%	31%	19%	24%	7%	3%	10%	6%	6%	51%	2%	5%	5%	6%	
Klondike Gold Rush NHP		539	15%	68%	5%	22%	17%	24%	7%	2%	11%	3%	3%	39%	2%	6%	3%	6%	
Sitka NHP			342	74%	12%	22%	14%	20%	5%	4%	8%	13%	5%	28%	3%	3%	4%	4%	
Tongass NF				871	5%	13%	10%	17%	4%	*	6%	4%	3%	28%	*	2%	2%	3%	
Southcentral																			
AK Maritime NWR					258	53%	52%	50%	16%	4%	17%	19%	8%	52%	6%	7%	6%	9%	
Kenai Fjords NP						759	50%	63%	14%	8%	20%	7%	10%	72%	5%	9%	7%	10%	
Kenai NWR							625	62%	16%	8%	20%	6%	8%	55%	4%	10%	6%	8%	
Chugach NF								797	17%	7%	18%	5%	8%	59%	4%	8%	5%	10%	
Campbell Tract									176	16%	28%	11%	11%	66%	6%	16%	9%	14%	
Tangle Lakes & Delta WSR										209	26%	3%	5%	43%	11%	11%	11%	12%	
Wrangell St. Elias NP&P											234	8%	12%	84%	13%	20%	15%	21%	
Southwest																			
Kodiak NWR												103	25%	51%	7%	5%	10%	10%	
Katmai NP&P													147	56%	3%	7%	5%	5%	
Interior and North																			
Denali NP&P														1144	6%	9%	11%	11%	
Steese NCA															88	23%	64%	42%	
Tetlin NWR																130	15%	22%	
WMNRA																	320	15%	
Dalton Hwy.																		154	

Data are from the question included on the onsite survey that asked the respondents to indicate what sites they had visited and which they intended to visit. The rows indicate how many respondents visited the site (cell shaded in orange; visited consisted of had visited, next destination, or other destinations) and what percentage of those respondents visited the sites in the columns. For example, 621 respondents indicated they visited Glacier Bay NP&P. Of those 621, 36% visited Klondike Gold Rush NHP, 58% the Tongass NF, and 31% Kenai Fjords NP. Data were screened to respondents who indicated they visited 15 or fewer sites. Sites visited by fewer than 75 respondents are not included.

*indicates less than 2% respondents visited.

Table 45. Cross-site Visitation, Non-residents, by Sample Site.

Site listed as visited	Other sites visited when sites listed in the rows or columns were visited																
	Glacier Bay NP&P	Klondike Gold Rush NHP	Sitka NHP	Tongass NF	AK Maritime NWR	Kenai Fjords NP	Kenai NWR	Chugach NF	Campbell Tract	Tangle Lakes / Delta WSR	Wrangell St. Elias NP&P	Kodiak NWR	Katmai NP&P	Denali NP&P	Tetlin NWR	WMNRA	Dalton Hwy.
Southeast																	
Glacier Bay NP&P	553	37%	29%	58%	5%	28%	16%	21%	5%	2%	9%	6%	5%	52%	5%	2%	4%
Klondike Gold Rush NHP		495	13%	68%	3%	21%	16%	23%	6%	2%	10%	2%	3%	40%	6%	2%	5%
Sitka NHP			276	78%	*	21%	12%	18%	4%	2%	8%	14%	4%	29%	3%	*	3%
Tongass NF				724	*	13%	10%	19%	4%	*	6%	4%	2%	31%	2%	*	2%
Southcentral																	
AK Maritime NWR					89	72%	62%	57%	16%	4%	26%	12%	13%	72%	16%	6%	11%
Kenai Fjords NP						611	49%	60%	11%	6%	20%	6%	10%	76%	9%	4%	9%
Kenai NWR							424	66%	14%	7%	24%	5%	9%	66%	12%	4%	8%
Chugach NF								579	15%	4%	18%	4%	8%	66%	9%	3%	8%
Campbell Tract									116	9%	25%	9%	11%	70%	17%	3%	10%
Tangle Lakes / Delta WSR										64	44%	2%	9%	84%	25%	11%	17%
Wrangell St. Elias NP&P											176	6%	13%	86%	22%	6%	15%
Southwest																	
Kodiak NWR												80	24%	48%	5%	5%	6%
Katmai NP&P													115	59%	9%	3%	3%
Interior and North																	
Denali NP&P														971	9%	5%	8%
Tetlin NWR															109	9%	19%
WMNRA																60	25%
Dalton Hwy.																	95

Data are from the question included on the onsite survey that asked the respondents to indicate what sites they had visited and which they intended to visit. The rows indicate how many respondents visited the site (cell shaded in orange; visited consisted of had visited, next destination, or other destinations) and what percentage of those respondents visited the sites in the columns. For example, 553 respondents indicated they visited Glacier Bay NP&P. Of those 553, 37% visited Klondike Gold Rush NHP, 58% the Tongass NF, and 38% Kenai Fjords NP. Data were screened to respondents who indicated they visited 15 or fewer sites. Sites visited by fewer than 50 respondents are not included.

*indicates less than 2% respondents visited.

Table 46. Next Destination, All Respondents, by Sample Site.

Survey region	Sample site	n	Next destination of respondents who completed survey at sampling site in the respective row																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
			Glacier Bay NP&P	Klondike Gold Rush NHP	Sitka NHP	Tongass NF	AK Maritime NWR	Gulkana WSR	Kenai Fjords NP	Kenai NWR	Chugach NF	Campbell Tract	Tangle Lakes / Delta WSR	Wrangell St. Elias NP&P	Kodiak NWR	Katmai NP&P	Lake Clark NP&P	Denali NP&P	WMNRA	Yukon-Charley Rivers NPres.	Arctic NWR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Interior																						APLIC Fairbanks	37	3%	3%				3%			3%		5%			3%	78%	3%	3%	3%		APLIC Tok	22	9%	5%			9%	9%		5%	5%		5%				45%		5%	9%		Denali National Park	92	25%	4%	4%	*	*	2%	37%	13%	8%	*	7%	3%	*	*	7%	2%	2%			Tangle Lakes	19		5%						11%	11%	11%	5%	11%			58%	5%				WMNRA	58	3%		2%			2%	2%			7%	5%				45%	5%	2%	7%	Southcentral																						Alaska Maritime NWR	74	3%	*	9%		3%	*	12%	8%	8%		3%	41%	3%		15%					APLIC Anchorage	33	6%	3%		3%		3%	21%	9%	30%	12%					27%					Brooks Camp	26	8%		4%			4%	31%	12%	19%		12%		4%		31%					Chugach NF	32	3%					3%	16%	19%	28%	9%	3%	3%	6%	3%	16%					FWS Dispersed	28	4%						25%		50%		4%				14%	4%	4%			Kenai Fjords NP	81	7%	2%	2%		4%	2%	21%	11%	19%	2%	4%	2%	2%	*	35%					Kenai NWR VC	21	5%		5%		19%		19%	10%	29%				5%		10%					Russian River - FWS	21	5%					5%	38%	24%	10%	5%				14%	14%					Russian River CG	30	10%	3%			3%	3%	37%	20%	10%	10%	7%	3%	7%		17%				Southeast																						AMHS ferry	65	40%	6%	28%	20%			2%	3%	5%					2%	2%	11%				Hoonah Ranger District	36	8%	14%	17%	64%					3%			11%			3%					Juneau Dispersed	37	27%	38%	11%	22%			3%	5%			3%		3%							Klondike Gold Rush NHP	118	25%	5%	3%	75%				*	3%		*			*	9%					Mendenhall Glacier	23	48%	39%	13%	9%			9%		4%						13%					Sitka NHP	30	47%	3%	7%	53%											3%					SE AK Discovery Center	16	19%	38%	31%	44%			6%								6%			
	APLIC Fairbanks	37	3%	3%				3%			3%		5%			3%	78%	3%	3%	3%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	APLIC Tok	22	9%	5%			9%	9%		5%	5%		5%				45%		5%	9%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Denali National Park	92	25%	4%	4%	*	*	2%	37%	13%	8%	*	7%	3%	*	*	7%	2%	2%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	Tangle Lakes	19		5%						11%	11%	11%	5%	11%			58%	5%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	WMNRA	58	3%		2%			2%	2%			7%	5%				45%	5%	2%	7%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Southcentral																						Alaska Maritime NWR	74	3%	*	9%		3%	*	12%	8%	8%		3%	41%	3%		15%					APLIC Anchorage	33	6%	3%		3%		3%	21%	9%	30%	12%					27%					Brooks Camp	26	8%		4%			4%	31%	12%	19%		12%		4%		31%					Chugach NF	32	3%					3%	16%	19%	28%	9%	3%	3%	6%	3%	16%					FWS Dispersed	28	4%						25%		50%		4%				14%	4%	4%			Kenai Fjords NP	81	7%	2%	2%		4%	2%	21%	11%	19%	2%	4%	2%	2%	*	35%					Kenai NWR VC	21	5%		5%		19%		19%	10%	29%				5%		10%					Russian River - FWS	21	5%					5%	38%	24%	10%	5%				14%	14%					Russian River CG	30	10%	3%			3%	3%	37%	20%	10%	10%	7%	3%	7%		17%				Southeast																						AMHS ferry	65	40%	6%	28%	20%			2%	3%	5%					2%	2%	11%				Hoonah Ranger District	36	8%	14%	17%	64%					3%			11%			3%					Juneau Dispersed	37	27%	38%	11%	22%			3%	5%			3%		3%							Klondike Gold Rush NHP	118	25%	5%	3%	75%				*	3%		*			*	9%					Mendenhall Glacier	23	48%	39%	13%	9%			9%		4%						13%					Sitka NHP	30	47%	3%	7%	53%											3%					SE AK Discovery Center	16	19%	38%	31%	44%			6%								6%																																																																																																																																	
	Alaska Maritime NWR	74	3%	*	9%		3%	*	12%	8%	8%		3%	41%	3%		15%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	APLIC Anchorage	33	6%	3%		3%		3%	21%	9%	30%	12%					27%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Brooks Camp	26	8%		4%			4%	31%	12%	19%		12%		4%		31%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Chugach NF	32	3%					3%	16%	19%	28%	9%	3%	3%	6%	3%	16%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	FWS Dispersed	28	4%						25%		50%		4%				14%	4%	4%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	Kenai Fjords NP	81	7%	2%	2%		4%	2%	21%	11%	19%	2%	4%	2%	2%	*	35%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Kenai NWR VC	21	5%		5%		19%		19%	10%	29%				5%		10%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Russian River - FWS	21	5%					5%	38%	24%	10%	5%				14%	14%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Russian River CG	30	10%	3%			3%	3%	37%	20%	10%	10%	7%	3%	7%		17%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Southeast																						AMHS ferry	65	40%	6%	28%	20%			2%	3%	5%					2%	2%	11%				Hoonah Ranger District	36	8%	14%	17%	64%					3%			11%			3%					Juneau Dispersed	37	27%	38%	11%	22%			3%	5%			3%		3%							Klondike Gold Rush NHP	118	25%	5%	3%	75%				*	3%		*			*	9%					Mendenhall Glacier	23	48%	39%	13%	9%			9%		4%						13%					Sitka NHP	30	47%	3%	7%	53%											3%					SE AK Discovery Center	16	19%	38%	31%	44%			6%								6%																																																																																																																																																																																																																																																																																																																																																			
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	Hoonah Ranger District	36	8%	14%	17%	64%					3%			11%			3%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Juneau Dispersed	37	27%	38%	11%	22%			3%	5%			3%		3%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	Klondike Gold Rush NHP	118	25%	5%	3%	75%				*	3%		*			*	9%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	Mendenhall Glacier	23	48%	39%	13%	9%			9%		4%						13%																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Data were screened to respondents who listed two or fewer next destinations. The n is the number of respondents at that sample site that listed one or two next destinations. Cell entries in the next destination columns are the percent of respondents (use the listed n as the base) that listed the site as the next destination.

Activity Participation

The most frequently participated in activities for all visitors were hiking or walking (89% of respondents), followed by viewing wildlife (70% of respondents). Activities also appear to differ in how many times a respondent participates. For example, 29% of respondents appear to be hiking multiple times during their trip, whereas gold panning appears to be a one-time activity (Figure 20). The number of activities participated in might be influenced by the length of trip. However, trip length was not asked on the onsite survey.

After the top two activities, the order of activity participation (i.e., ranked lowest to highest with respect to participation) within residency differs. Regardless of the order, most activities exhibited a difference by residency in the percentage of participants (Figure 21).

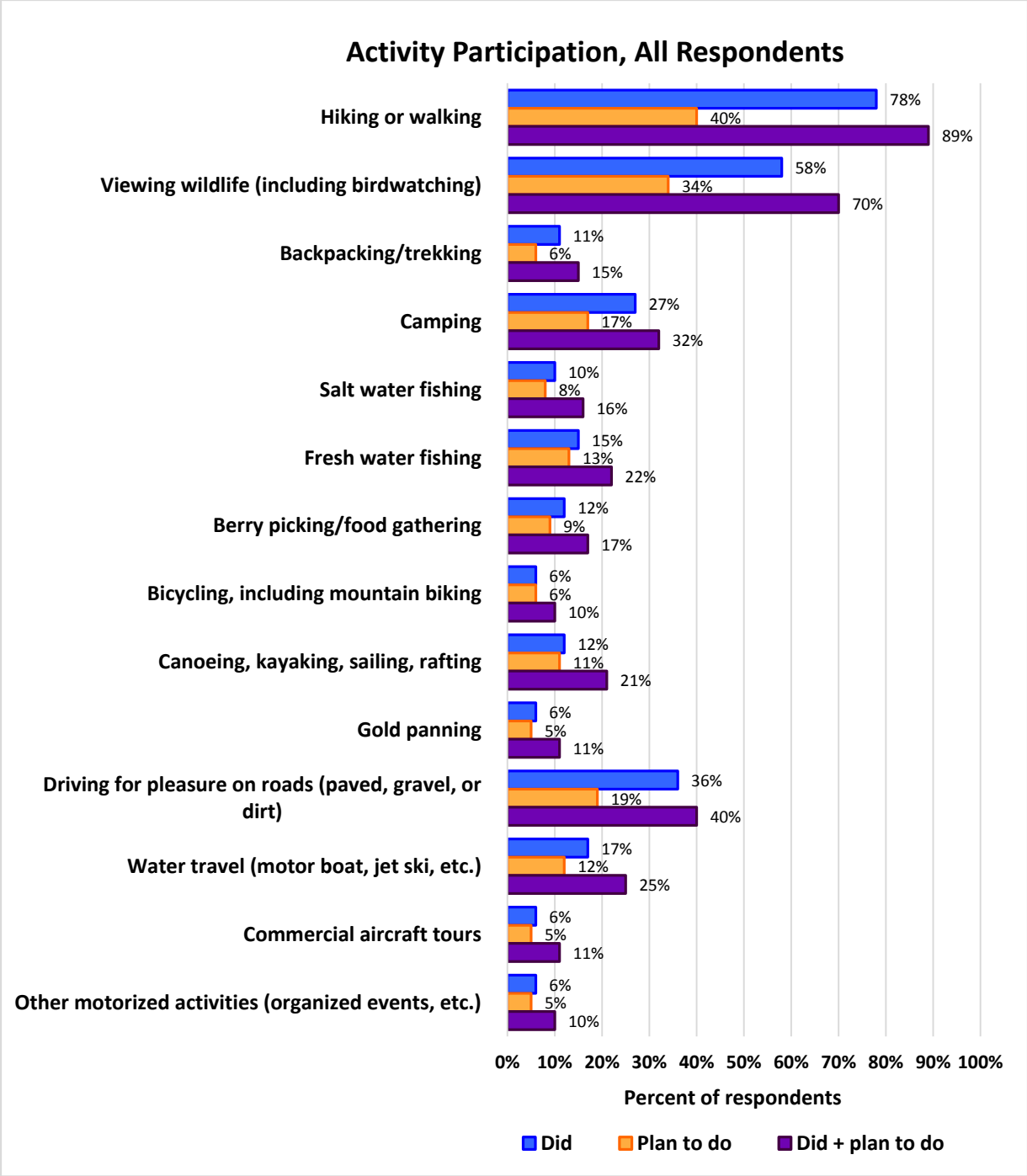


Figure 20. Activity Participation, All Respondents. n = 2726. Excluded activities “did+planned to do” <10% (i.e., climbing/mountaineering, hunting, horseback riding, other non-motorized activities, riding in designated off-road areas). The difference between the “did+planned to do” and “did” is the percent of respondents who have not yet participated in the activity. For example, 11% of respondents had not walked or hiked, but planned to. Also, subtracting that difference from the “plan” provides the percentage of respondents that participate in the activity multiple times (e.g., 29% of respondents will participate in walking or hiking multiple times). See Appendix C for a comparison of resident and non-residents and all activities.

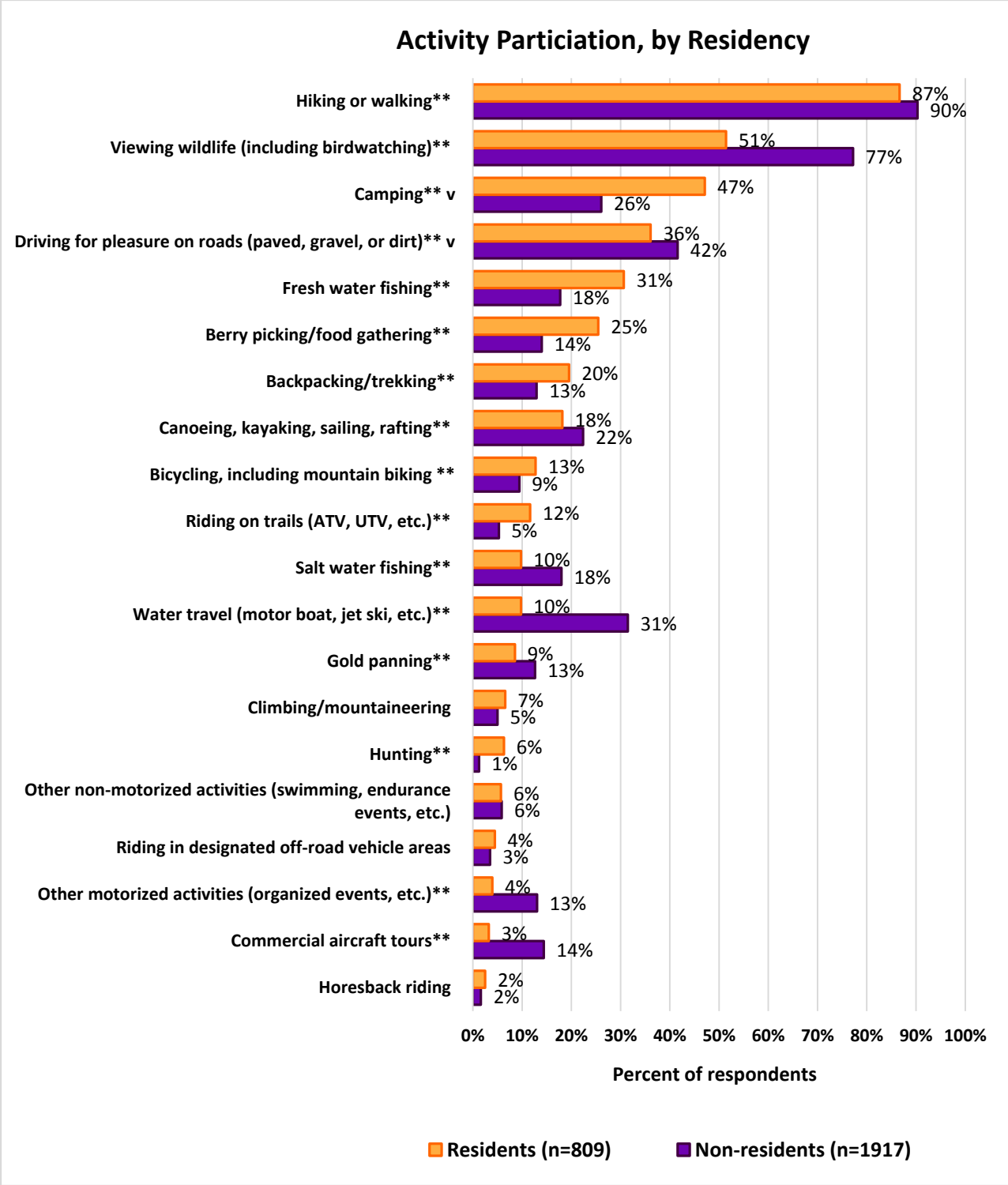


Figure 21. Activity Participation, by Residency.

Combines responses to “participated in the activity” and “plan to participate in the activity.”

**Indicates residents and non-residents were significantly different at $p = .05$.

v When weighted for arrival type, for non-residents, camping decreased to 10% and driving for pleasure decreased to 34%.

When compared across the region in which the respondents were sampled, the Interior and Southcentral Sampling Regions stood out as having a higher percentage of respondents participating in camping, freshwater fishing, berry picking/food gathering, and driving for pleasure. This is likely due to the cruise ship influence of the southeast respondents (Table 47). It should be noted the region where the respondent was sampled is not necessarily the region where they participated in the activity. Table 48 limits the analysis to respondents who visited only one region, there is a decline in activities in the Interior such as viewing wildlife, saltwater fishing (which would not be available in the Interior), and motorized water travel.

Table 47. Activity Participation, by Sample Region.

Activity	Region where respondents were sampled		
	Interior	Southcentral	Southeast
Hiking or walking	85%	90%	93%
Viewing wildlife (including birdwatching)	62%	78%	69%
Backpacking/trekking	16%	19%	10%
Climbing/mountaineering	5%	8%	4%
Camping	42%	37%	16%
Hunting	4%	4%	1%
Salt water fishing	9%	23%	15%
Fresh water fishing	23%	32%	8%
Berry picking/food gathering	24%	16%	11%
Horseback riding	2%	3%	1%
Bicycling, including mountain biking	10%	14%	8%
Canoeing, kayaking, sailing, rafting	19%	27%	17%
Gold panning	17%	10%	7%
Other non-motorized activities (swimming, endurance events, etc.)	4%	6%	8%
Driving for pleasure on roads (paved, gravel, or dirt)	44%	49%	26%
Riding on trails (ATV, UTV, etc.)	12%	6%	2%
Riding in designated off-road vehicle areas	5%	5%	2%
Water travel (motor boat, jet ski, etc.)	22%	31%	21%
Commercial aircraft tours	10%	11%	12%
Other motorized activities (organized events, etc.)	6%	10%	16%

Interior n = 958, Southcentral n = 912, Southeast n = 856. Cell entries are the percent of respondents indicating they did the activity or planned to do the activity. Note, many respondents visited multiple regions. AIVC and Tangle Lakes were classified as Interior Sampling Region, Katmai was classified as Southcentral Sampling Region. All activities were significantly different among the regions at $p = .05$, except commercial aircraft tours.

Table 48. Activity Participation, by Sample Region, Respondents who Visited Only One Region.

Activity	Region where respondents was sampled		
	Interior	Southcentral	Southeast
Hiking or walking	81%	86%	93%
Viewing wildlife (including birdwatching)	48%	70%	63%
Backpacking/trekking	11%	16%	9%
Climbing/mountaineering	2%	7%	3%
Camping	41%	40%	11%
Hunting	4%	2%	1%
Salt water fishing	3%	23%	14%
Fresh water fishing	25%	41%	7%
Berry picking/food gathering	27%	14%	9%
Horseback riding	1%	2%	1%
Bicycling, including mountain biking	6%	12%	6%
Canoeing, kayaking, sailing, rafting	13%	24%	15%
Gold panning	10%	6%	4%
Other non-motorized activities (swimming, endurance events, etc.)	2%	6%	8%
Driving for pleasure on roads (paved, gravel, or dirt)	36%	44%	18%
Riding on trails (ATV, UTV, etc.)	14%	4%	2%
Riding in designated off-road vehicle areas	2%	3%	2%
Water travel (motor boat, jet ski, etc.)	10%	24%	19%
Commercial aircraft tours	3%	4%	8%
Other motorized activities (organized events, etc.)	3%	7%	14%

Interior n = 444, Southcentral n = 379, Southeast n = 603. Cell entries are the percent of respondents indicating they did the activity or planned to do the activity. AIVC and Tangle Lakes were classified as Interior Sampling Region, Katmai was classified as Southcentral Sampling Region. All activities were significantly different among the regions at $p = .05$, except commercial aircraft tours.

Nearly one-half of respondents participated in two to four activities and 35% participated in 5 to 10 activities (Table 49).

Table 49. Total Number of Activities Listed.

Number of activities listed	Alaska resident	Non-resident of Alaska	All respondents
1	18%	8%	11%
2 – 4	49%	54%	52%
5 – 10	30%	37%	35%
11 - 19	2%	1%	1%
20	1%	0%	1%

Residents n = 809, non-residents n = 1917, all respondents n = 2726.

Ability to Do All Activities Planned

Respondents were also asked whether they were able to participate in all the activities they had planned (Figure 22). Nearly all respondents (88%) confirmed that they were able to participate in activities as planned, and there were no differences between residents and non-residents on this measure.

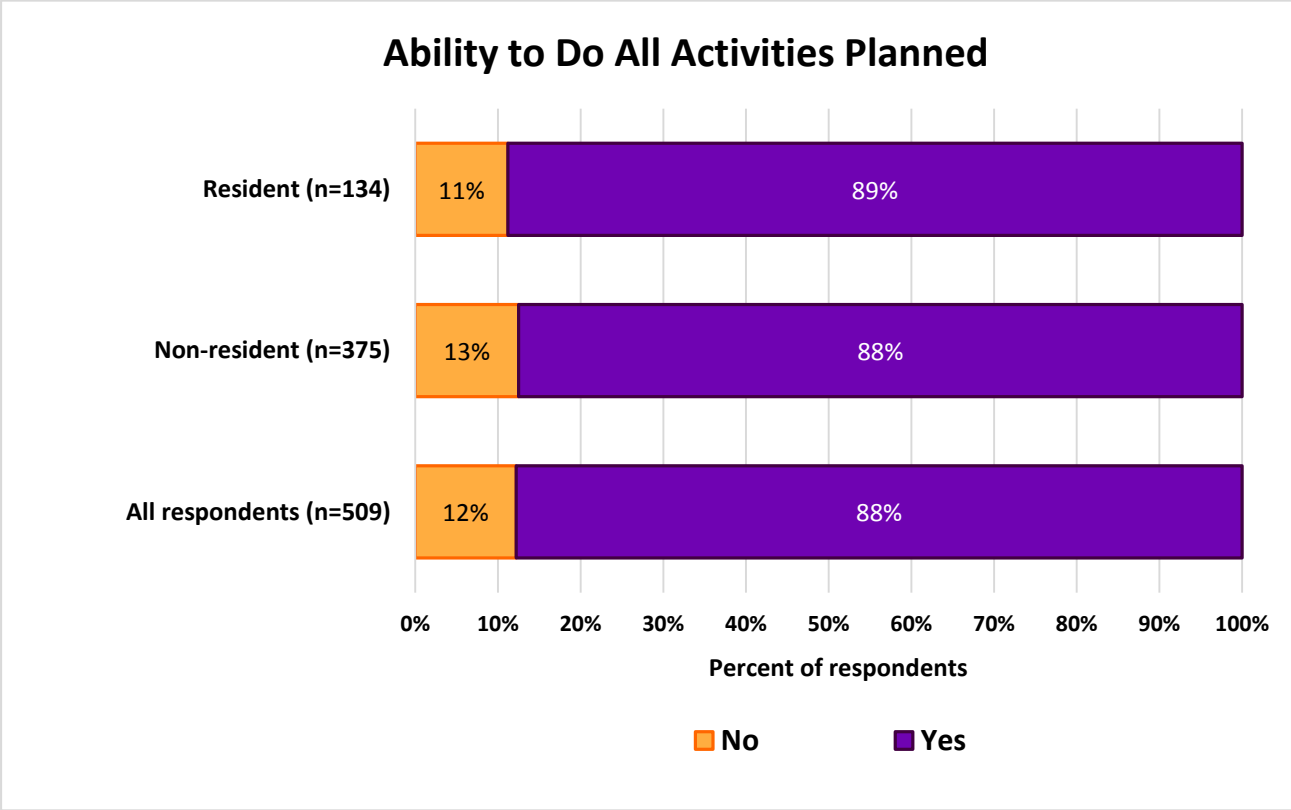


Figure 22. Ability to Do All Activities Planned.
 Questions asked on follow up survey. Chi-square = .166, $p = .684$.

There were 60 people who provided an explanation for the activities they were unable to participate in. Of those, 6 mentioned boating, 10 flightseeing, 3 sightseeing, 7 fishing, 12 hiking, 3 mentioned camping and 20 mentioned specific places for the activities.

For the 12% (62 respondents) who were not able to participate in all planned activities, a variety of reasons were listed. Weather was cited most often, by residents and non-residents alike (33% and 38%, respectively). Nearly three-in-ten reported that they did not have enough time, with non-residents being significantly more likely than residents to cite this reason (34% vs. 13%). Sixteen percent also cited safety concerns and 11% mentioned that an area was temporarily closed to the public. Rules or regulations were cited more often by residents, as compared to non-residents (20% vs. 2%). Likewise, non-residents were more likely to indicate that they did not have enough information about the planned activity (27% vs. 4%), a finding that potentially could be addressed by management.

Table 50. Reasons Respondents Were Not Able to do Planned Activities.

Able to do activities planned	Residents	Non-residents	All respondents
Bad weather	33%	38%	37%
Not enough time	13%	34%	29%
Safety concerns	13%	17%	16%
Area was temporarily closed to public	7%	13%	11%
Not enough information about the activity**	27%	4%	10%
Rules or regulations did not allow for activity**	20%	2%	6%
Too crowded	7%	4%	5%
Could not get a reservation	0%	6%	5%
Difficult road or trail access	0%	6%	5%
No road or trail access**	13%	0%	3%
Unsatisfactory conditions of facilities	0%	4%	3%
Resource damage due to overuse	0%	2%	2%
Wildlife/other natural hazard	0%	13%	10%
Other	27%	19%	21%

Residents n = 15, non-residents n = 47, all respondents n = 62. **Residents and non-residents significantly different at $p < .05$. Question asked on follow-up survey. As for the 12 respondents who did not engage in an activity due to a circumstance not listed, 3 were due to a lack of information, 2 were due to a mechanical issue.

Information Sources

Among the information sources used to plan the trip, web sites (general websites and state/federal), word of mouth, and travel guides/books were popular among non-residents (66%, 51%, 49%, and 47%, respectively), whereas previous visits were an often-cited information source among residents (53%; Figure 23). Differences emerged among tour type, with non-resident independent travelers more likely to use information sources than resident independent travelers and non-residents on a package tour (Figure 24).

Information Sources Used to Plan Trip

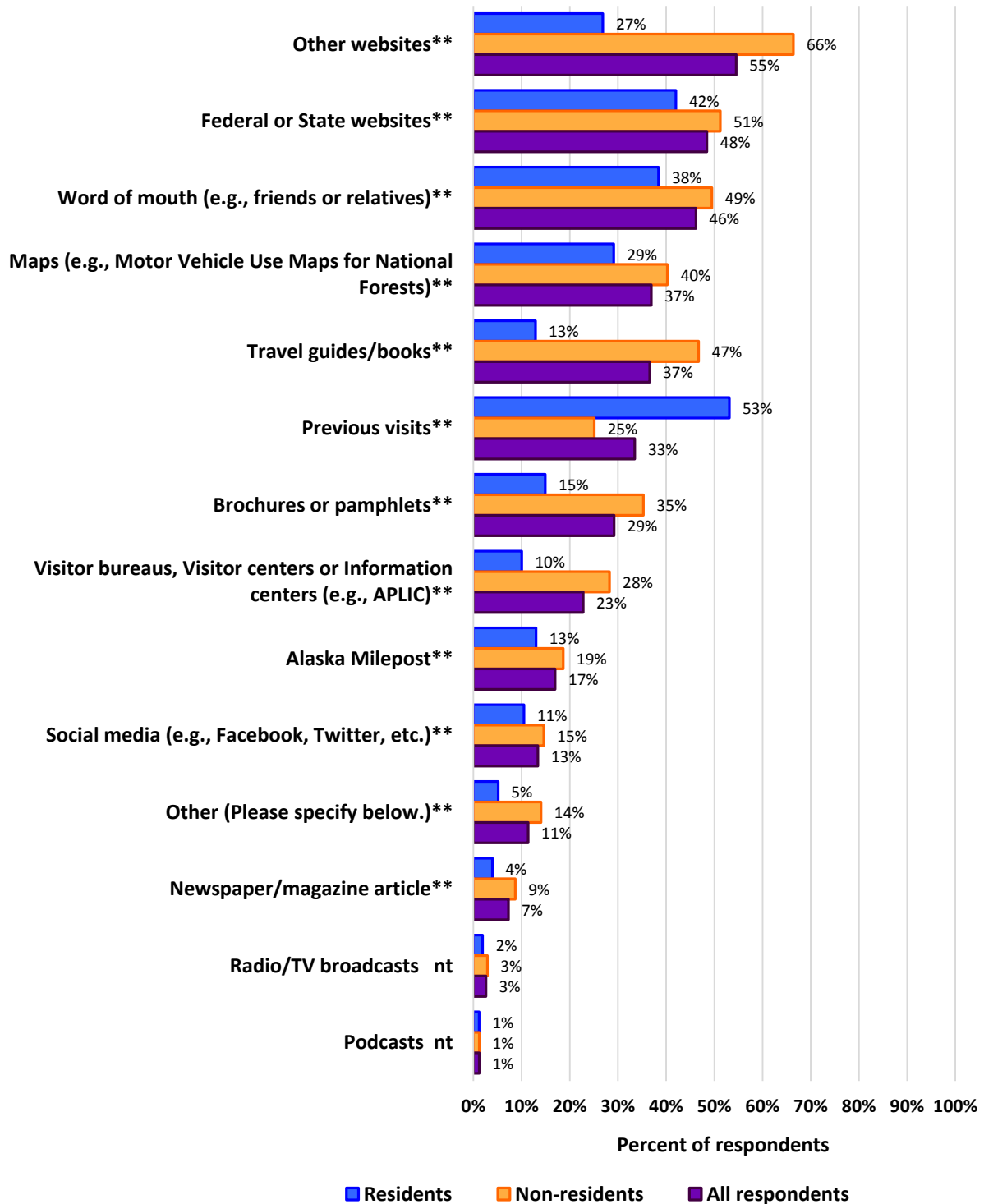


Figure 23. Sources of Information used to Plan Trip.

Residents n = 838, non-residents n = 1985, all respondents n = 2796. **significant difference at $p = .05$. nt = not tested due to low number of respondents selected the option and a violation of the chi-square requirement of a minimum cell count of 5.

Information Sources Used to Plan Trip, by Tour

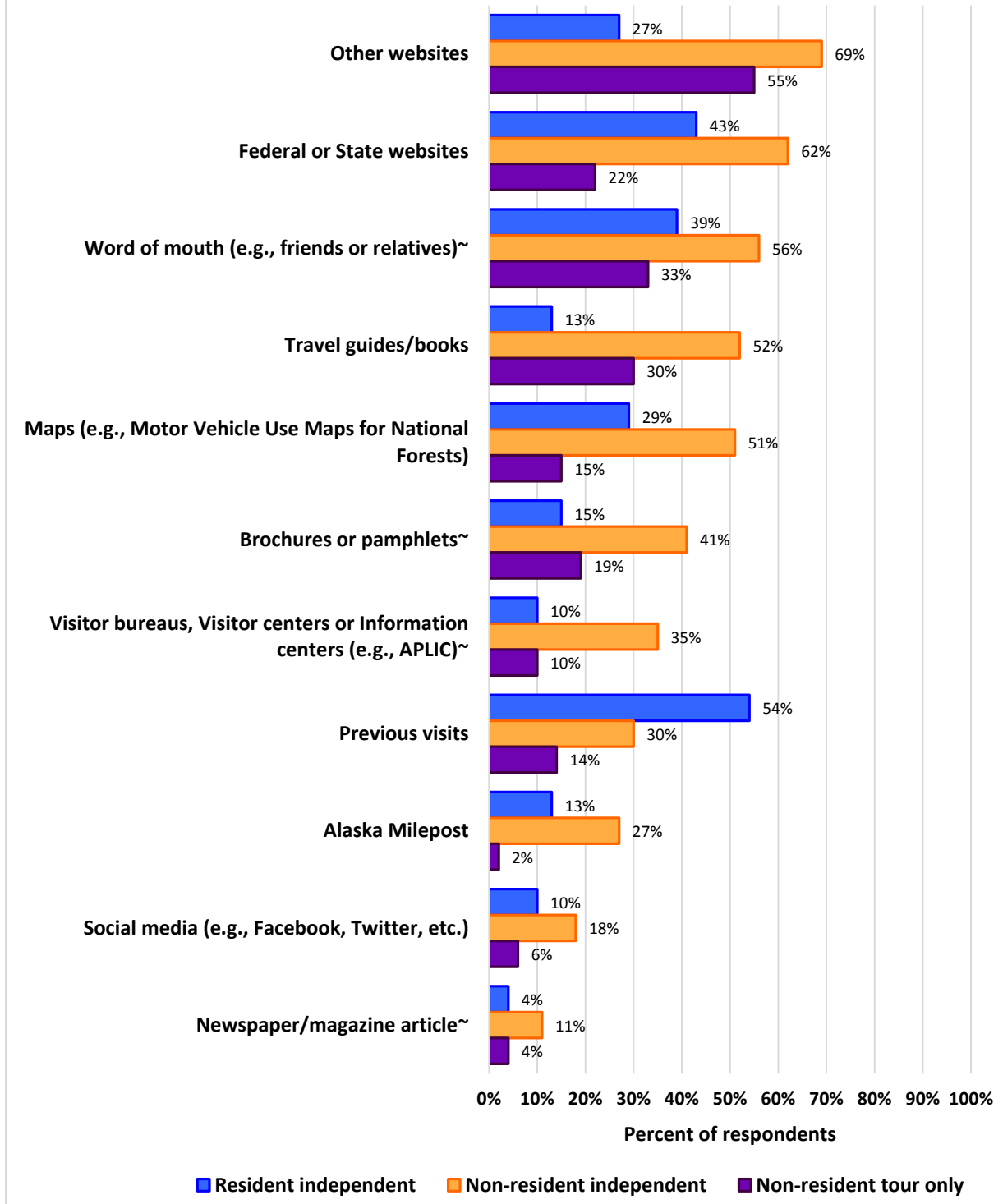


Figure 24. Information Sources Used to Plan Trip, By Tour Type.

Resident independent n = 815, non-resident independent n = 1254, non-resident tour only n = 395. All differed at $p = .05$, unless noted with ~ the post hoc test revealed all groups differed. ~resident independent and non-resident tour only did not differ. Podcast and radio/TV broadcast not tested due to low number of respondents selecting that information source.

The onsite survey asked respondents if there was information they needed, but were not able to find. Three hundred twenty-three respondents (12%) replied “yes;” 320 (89 residents, 231 non-residents) provided a response to the open-ended question asking what information was needed but not available. Responses were coded into the following major themes:

- Basic information about cities or town
- Recreation information
- Travel-related concerns
- Communications

Several responses fit into multiple themes. Within each major theme more refined codes were applied (as described below). For example a comment might have related to the Alaska Marine Highway Ferry System’s website being difficult to use. This comment would appear under the major themes of travel-related concerns (with the sub-code of AMHS Ferry) and communications (with the sub-code of web info). Appendix E contains the responses arranged by theme and the codes; reading through the responses can provide additional context.

- 112 responses (35%) related to recreation information (44 residents, 68 non-residents). Specific topics that emerged were:
 - Trails n = 40 (18/44 residents, 22/68 non-residents)
 - Maps n = 26 (11/44 residents, 15/68 non-residents)
 - Campgrounds/Cabins/RV parks n = 21 (10/44 residents, 11/68 non-residents)
 - General logistics n = 11 (2/44 residents, 9/68 non-residents)
 - Denali National Park n = 9 (1/44 residents, 8/68 non-residents)
 - Fishing n = 9 (2/44 residents, 7/68 non-residents)
- 69 responses (21%) related to travel-related concerns (6 residents, 63 non-residents). Specific topics that emerged included:
 - General/Other Travel n = 14 (all non-residents)
 - Maps and signage n = 14 (5/6 residents, 9/63 non-residents)
 - Alaska Marine Highway System Ferry n = 13 (all non-residents)
 - Shuttles n = 10 (1/6 residents, 9/63 non-residents)
 - Public transportation n = 9 (all non-residents)
 - Customs n = 4 (all non-residents)
- 52 responses (16%) related to basic information about cities/towns (9 resident, 43 non-residents). Specific topics that emerged were:
 - General logistics n = 21 (2/9 residents 19/43 nonresidents)
 - Maps n = 15 (4/9 residents, 11/43 non-residents)
 - Facility hours and closures n = 13 (3/9 residents, 10/43 non-residents)
 - Pricing n = 4 (all non-residents)
 - Denali n = 2 (all non-residents)
- 29 responses (9%) related to communications (7 residents, 22 non-residents). Specific topics that emerged were:
 - Web info n = 20 (6/7 residents, 14/22 non-residents)
 - Wi-Fi n = 6 (all non-residents)
 - Phone service n = 3 (all non-residents)
 - Emergency contact n = 2 (1 each residents and non-residents)

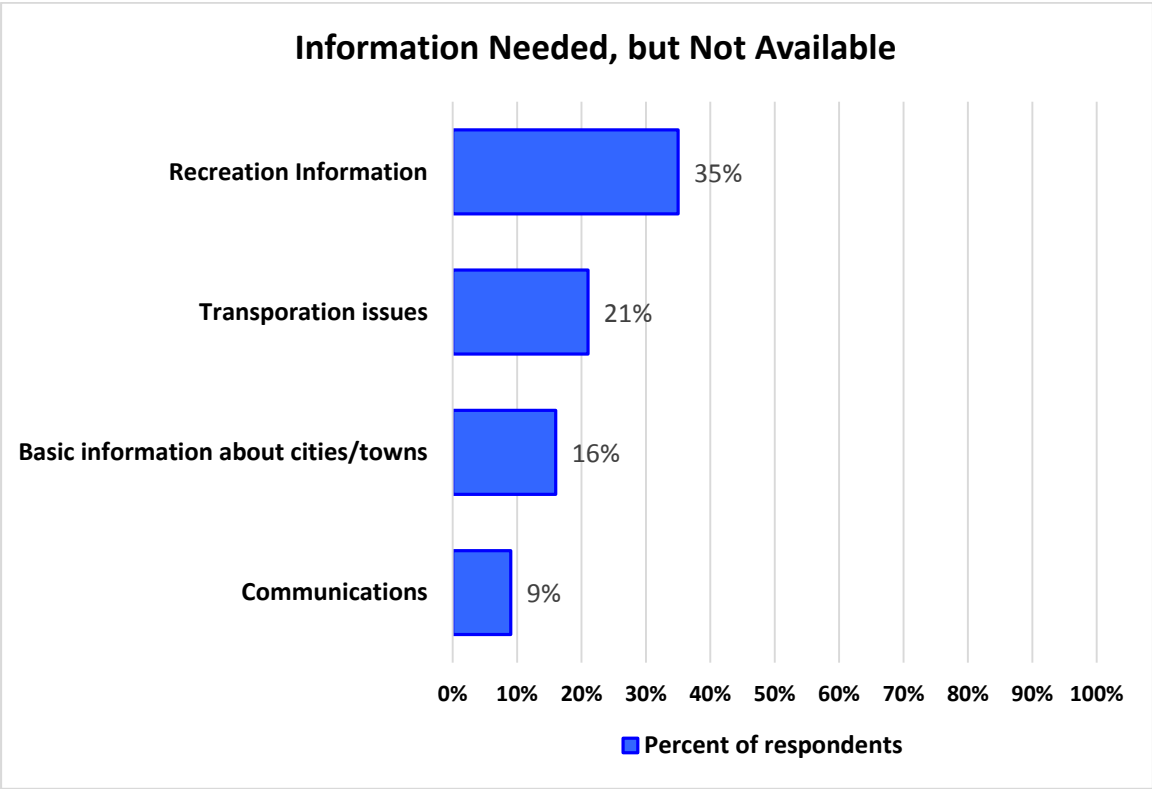


Figure 25. Major Themes for Information Needed, but Not Available.
 320 responses were provided. Categories are not mutually exclusive.

The information sources most commonly used during the trip were federal or state websites (56%), word of mouth from friends or relatives (45%), brochures or pamphlets (44%), other websites (43%), and travel guides or books (42%). However, non-residents were less likely to use those information sources. In contrast, previous visits was the most-often cited information source among residents (47%; Figure 26).

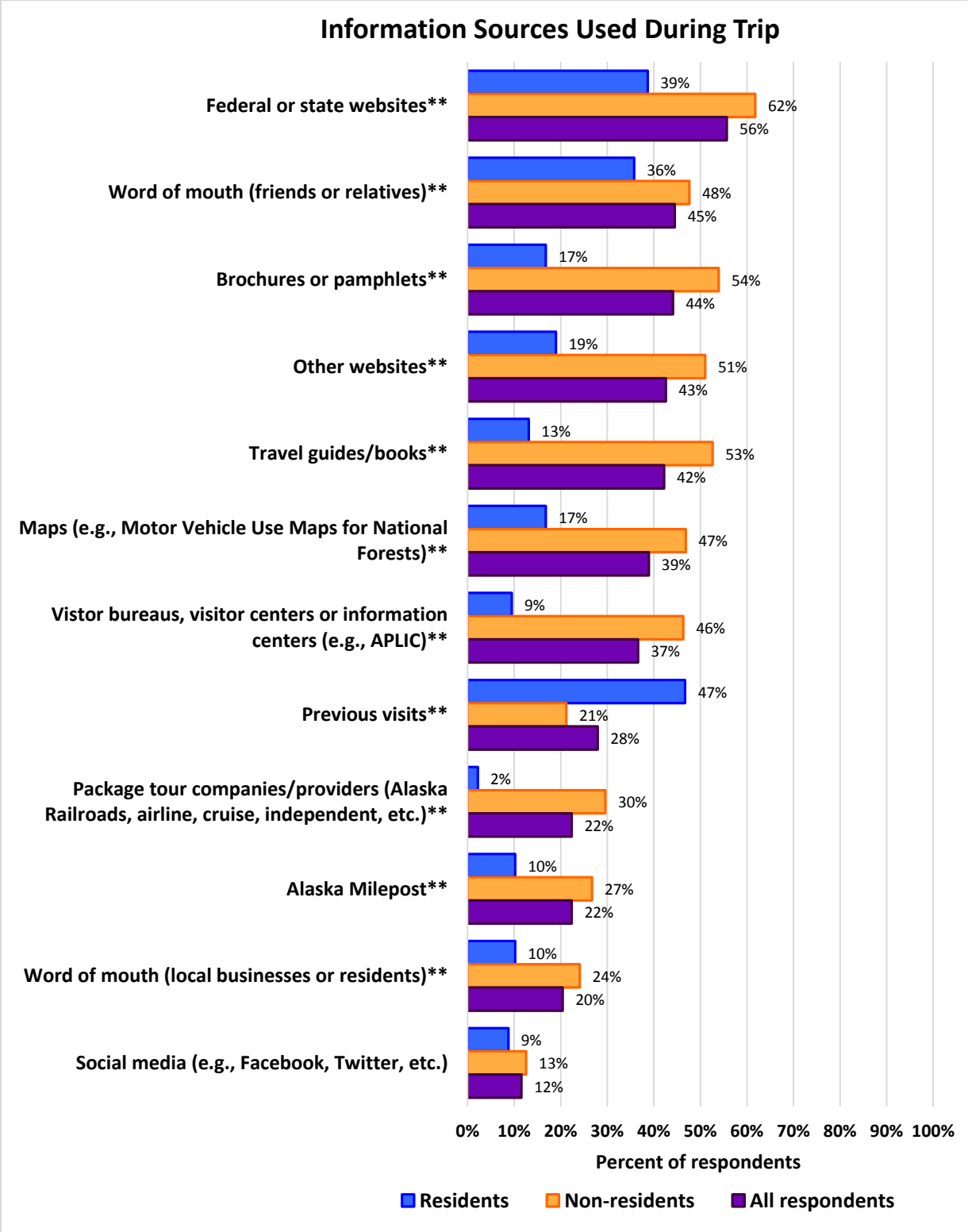


Figure 26. Information Sources Used During Trip. Residents n = 137, non-residents n = 382, all respondents n = 519. **significant difference at $p = .05$. Question asked on follow-up survey. Newspaper/magazine articles, radio/TV broadcasts, podcasts, did not use any, and other were cited by less than 10% or respondents and are not shown.

For each information source used, respondents were asked to rate the helpfulness of the information (very helpful, moderately helpful, slightly helpful, not at all helpful). For most sources, a majority of respondents indicated the information was “very helpful”. Information sources rated as “very helpful” by a high percentage of respondents included previous visitation (78%), the Milepost (70%), tour companies (69%), and visitor centers (68%). Other websites, brochures and pamphlets, and social media was rated as “very helpful” by less than 50% of respondents (Figure 27).

Alaska Helpfulness of Information Source, All Respondents

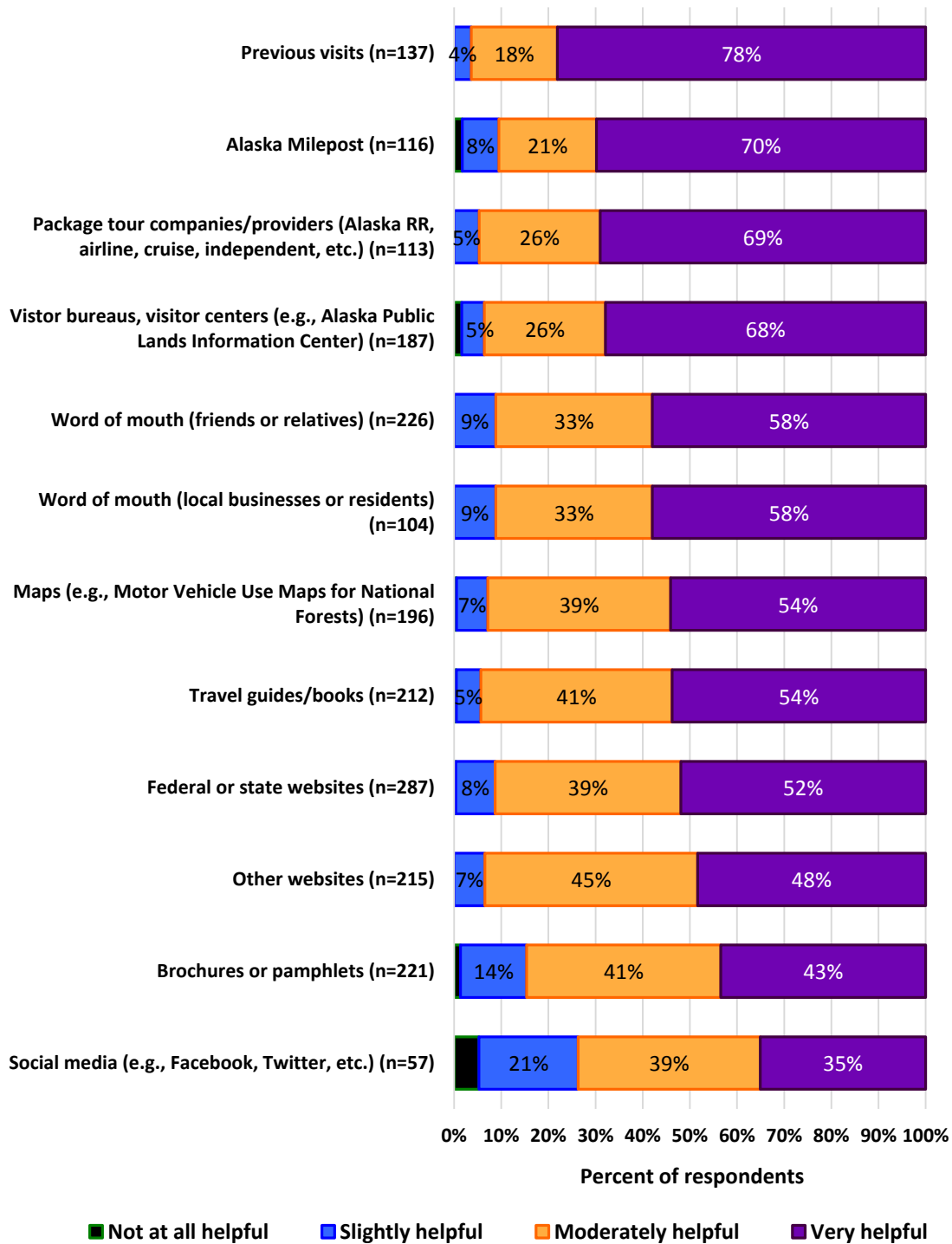


Figure 27. Helpfulness of Information Sources, All respondents.

If n<50, then the information source was excluded. Comparisons between residents and non-residents were not conducted due to small n of residents. Question asked on follow-up survey.

When asked whether they received the information they needed from the sources consulted, 94% of visitors indicated that they had, with non-residents being somewhat more likely than residents to respond in the affirmative (96% vs. 89%).

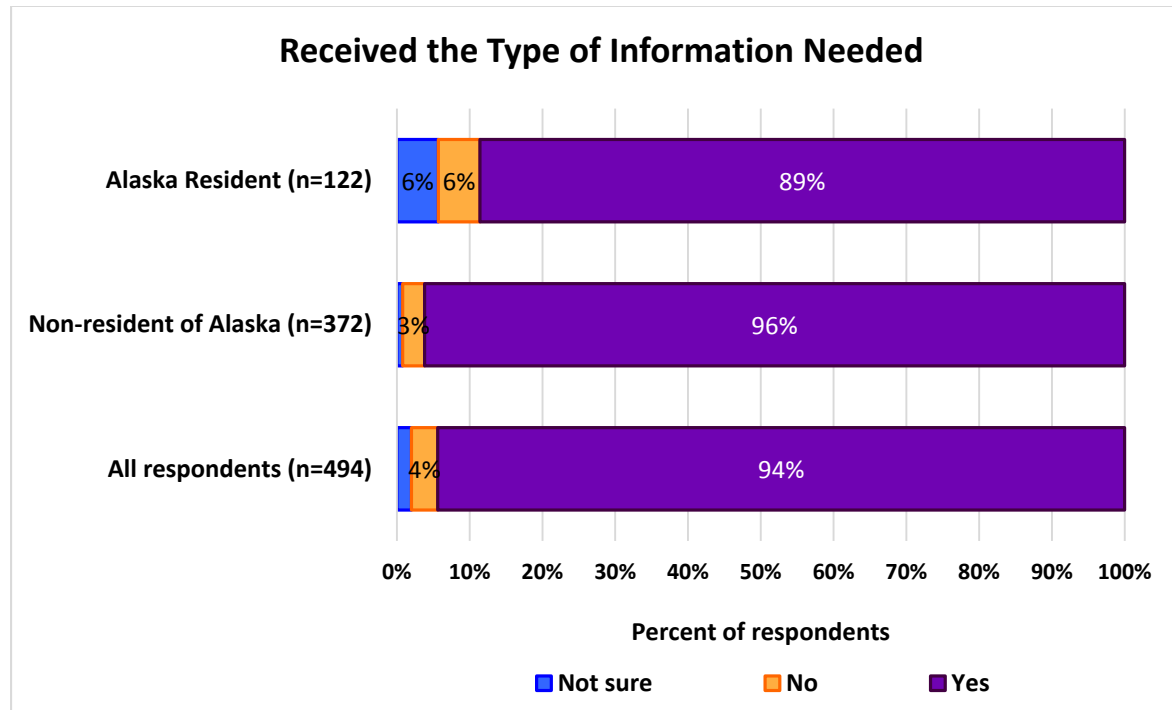


Figure 28. Received the Type of Information Needed.
 Chi-square = 13.6, $p = .001$. Question asked on follow-up survey.

Respondents who did not receive the information they needed were asked to elaborate. Of the 16 who provided a response, 7 had difficulties with cell or internet service, 2 had Wi-Fi problems, and 2 responses indicated that their GPS lacked maps for Alaska.

Electronic Devices

Respondents were also asked about the electronic devices that they used during their trip, in order to understand the different ways in which travelers might access information. Seven-in-ten visitors (70%) used their smartphone, but significantly fewer visitors used other devices. Between one-quarter and one-third of visitors used a tablet (33%), laptop (28%), GPS (28%), or cellphone (without internet) (25%) during their trip. Three percent used a marine/aircraft radio. As Table 51 illustrates, non-residents were significantly more likely than residents to use a smartphone (78% vs. 48%), a tablet (40% vs. 11%), GPS (35% vs. 9%), laptop (34% vs. 10%), and cell phone without internet (30% vs. 11%).

Table 51. Electronic Devices Used.

Electronic devices used	Residents	Non-residents	All respondents
Smartphone (e.g., iPhone, Android)**	48%	78%	70%
Tablet computer (e.g., iPad)**	11%	40%	33%
Laptop**	10%	34%	28%
Global Positioning System (GPS)**	9%	35%	28%
Cell phone/text (without internet)**	11%	30%	25%
Marine/Aircraft radio	2%	3%	3%
Other portable electronic device(s)	1%	2%	2%

Residents n = 132, non-residents n = 376, all respondents n = 508. **significant difference at $p = .05$. Question asked on follow-up survey. As for the 9 respondents who indicated they used a device for travel other than the ones listed, 5 were some type of satellite device and three had no communication available.

In addition to the use of devices, respondents were asked if they had any problems when trying to obtain information on their devices (the responses to these two questions are combined in Figure 29). Nearly two-thirds of visitors experienced an issue or problem using their device. Residents were more likely than non-residents to report that they did not use a device (25% vs. 5%) and that they did not experience a problem (Figure 29).

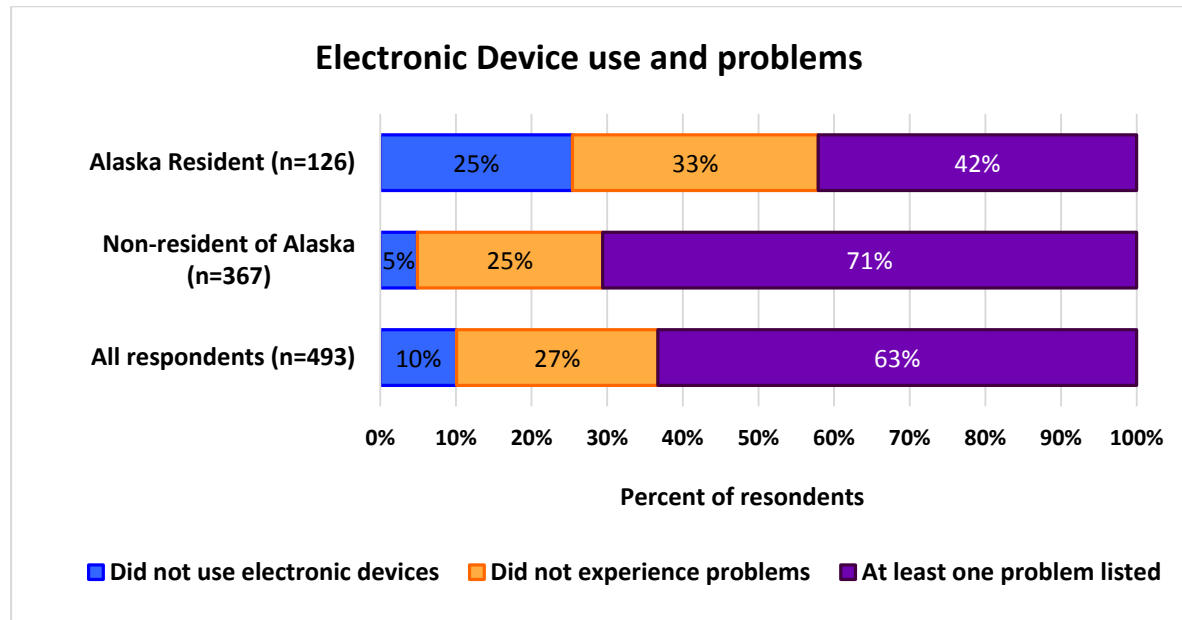


Figure 29. Electronic Devices: If Used and If Experienced Problems.

Question asked on follow-up survey. Due to the inclusion of the “did not use” category, caution should be used in interpreting the percentage experiencing problems vs. not. See Figure 30 for a comparison of problem vs. not for just those who used.

When the analysis is based only on those using a device (i.e., those not using a device are excluded), the findings remain consistent, with non-residents being somewhat more likely than residents to experience such problems (74% vs. 56%). Residents may be familiar with areas where there is no Wi-Fi service, so it is possible that they did not try to use their devices in such instances.

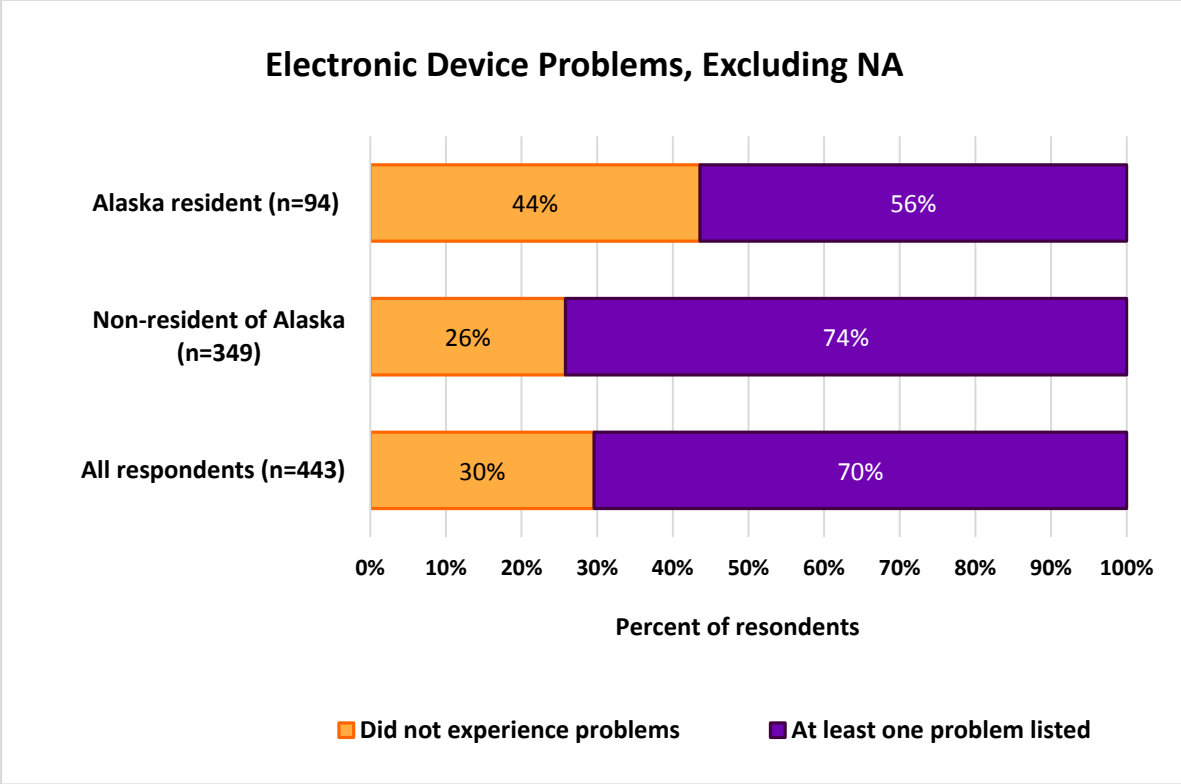


Figure 30. Problems with Electronic Devices, Excluding Did Not Use.
 Chi-square = 11.3, $p < .001$. Question asked on follow-up survey.

The issue with electronic devices cited most often was a lack of service (96%). Very few respondents reported that the information was incomplete or not detailed enough (15%) or that they could not find the information they were seeking (7%). Responses were similar for residents and non-residents.

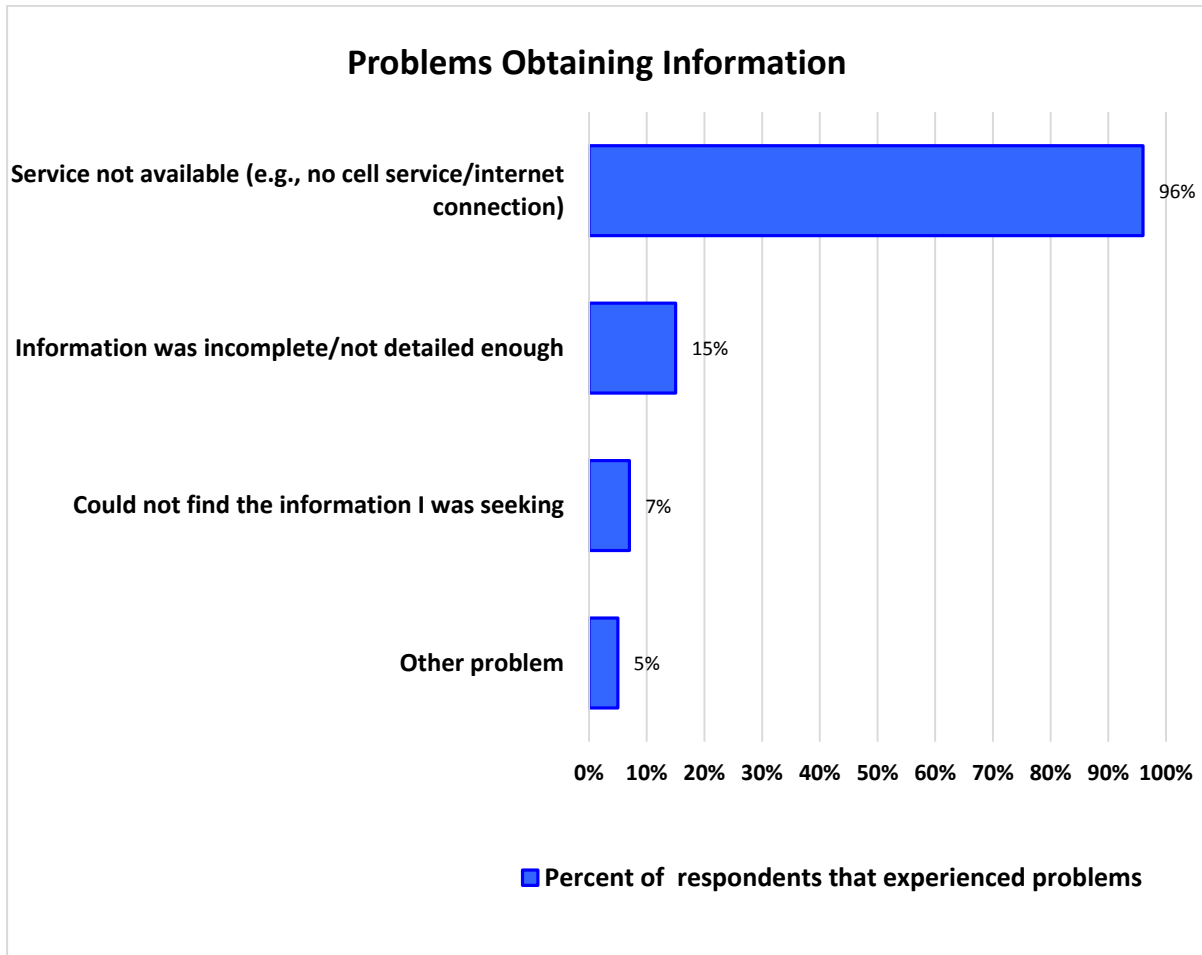


Figure 31. Problems Obtaining Information. n = 312. In this analysis residents (n = 53) and non-residents (n = 259) were essentially identical. The only percentage that differed was “could not find the information I was seeking,” with 4% and 7% of residents and non-residents citing this, respectively. Question asked on follow-up survey.

Signage

As part of the series of questions on traveler information, respondents were asked if the signage at specified locations (state highways, inside federal lands, trails, communities, ferry terminals or docks, and airports) was adequate. The question allowed for respondents to indicate they did not use the signs. For three of the items -- signs at airports, signs at ferry terminals or docks, and signs at railroad stations - a significant proportion responded “not applicable” (39%, 50% and 69%, respectively; Figure 32).

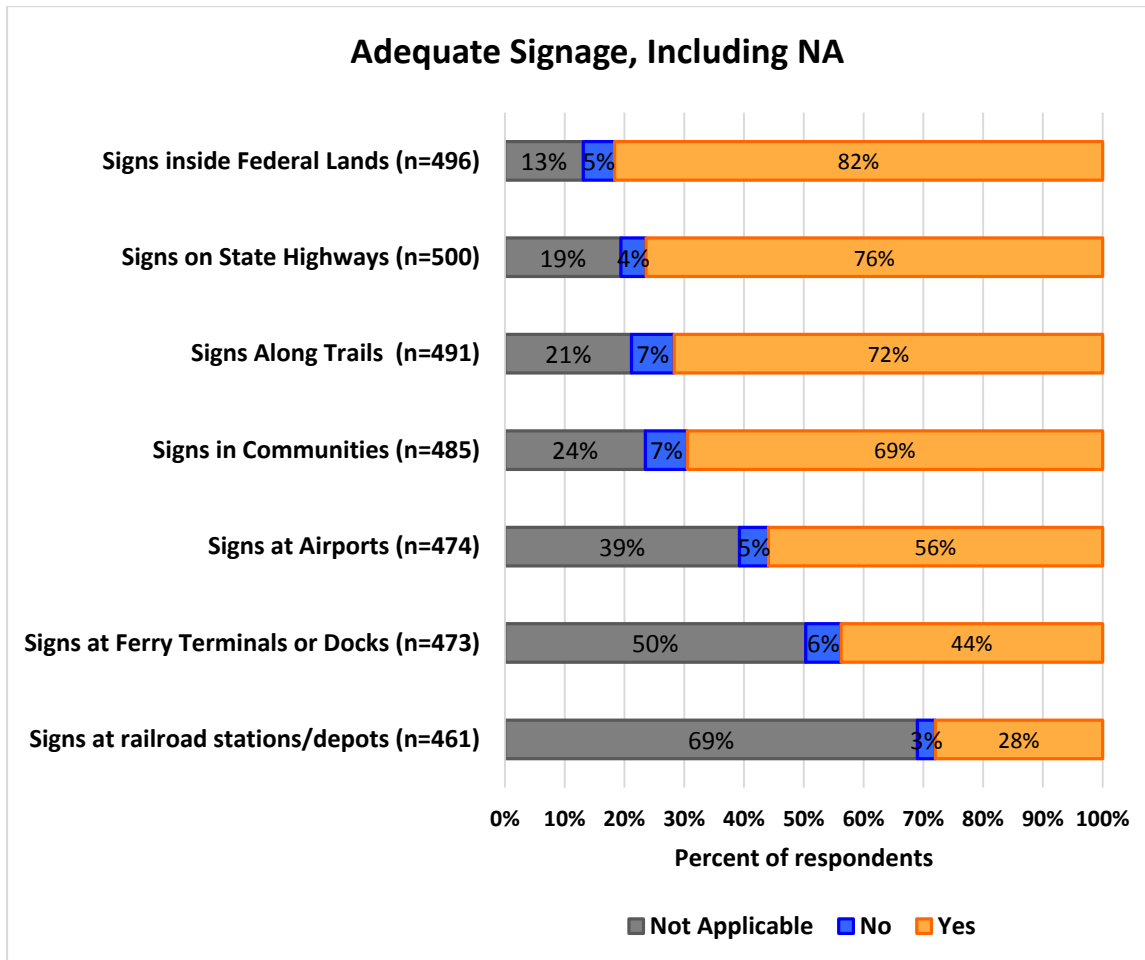


Figure 32. Adequacy of Signage, All Respondents.

Question asked on follow-up survey. Caution should be used when interpreting the % no/yes; see Figure 33 for the rating of sign adequacy excluding the “not applicable” responses.

When excluding the “not applicable” responses, only 5% to 12% of respondents indicated that the signs were not adequate. In most cases, a large majority of respondents indicated that the signs were adequate (Figure 33).

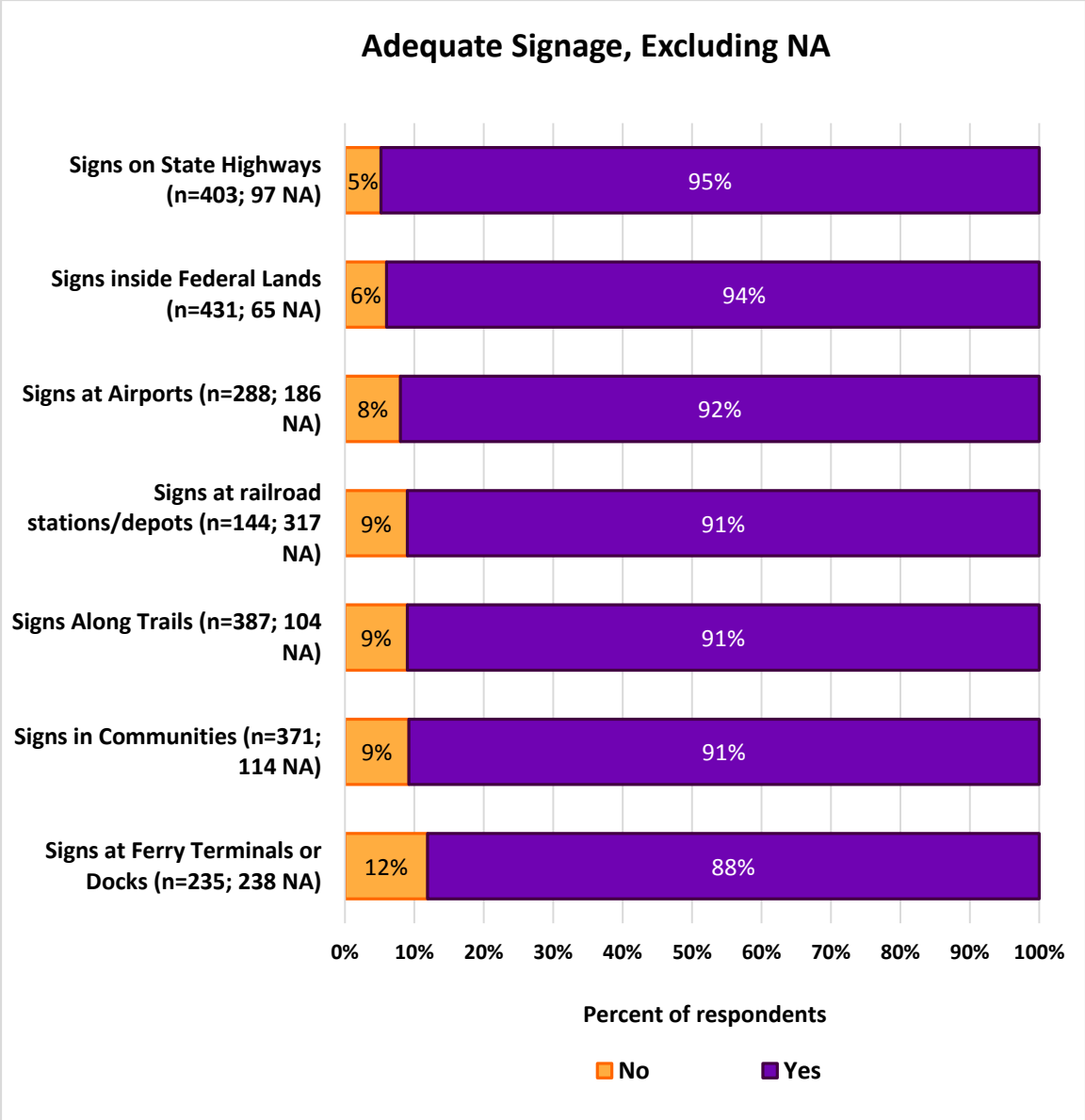


Figure 33. Adequacy of Signage, Excluding "Not Applicable" Responses.
 Question asked on follow up survey. The n excludes "not applicable" responses. See Figure 32 for the percentage of "not applicable" responses.

Residents were slightly less likely than non-residents to rate signs inside federal lands and signs in communities as adequate, however the difference is of a small magnitude (Table 52).

Table 52. Adequacy of Signage, by Residency.

Signage	Not applicable n / %	Adequacy (applicable only)		
		n	No	Yes
Signs on state highways				
Resident (n=131)	18 / 14%	113	7%	93%
Non-resident (n=369)	79 / 21%	290	5%	96%
Signs inside federal lands**				
Resident (n=127)	19%	103	12%	88%
Non-resident (n=369)	11%	328	4%	96%
Signs along trails				
Resident (n=127)	34 / 27%	93	12%	88%
Non-resident (n=364)	70 / 19%	294	8%	92%
Signs in communities**				
Resident (n=120)	56 / 47%	64	17%	83%
Non-resident (n=365)	58 / 16%	307	8%	93%
Signs at ferry terminals or docks				
Resident (n=117)	96 / 82%	21	--	--
Non-resident (n=356)	142 / 40%	214	10%	90%
Signs at airports				
Resident (n=115)	98 / 85%	17	--	--
Non-resident (n=359)	88 / 25%	271	6%	94%
Signs at railroad stations/depots				
Resident (n=116)	103 / 89%	13	--	--
Non-resident (n=345)	214 / 62%	131	7%	91%

The % of “not applicable” is the percent of all respondents who provided an answer for that infrastructure type. The n listed under “adequacy (applicable only)” is the n with the “not applicable” excluded. Percentages not shown for facilities with an n of ≤ 50 with the respective group, nor was the chi-square test conducted. *significant difference at $p = .10$. ** significant difference at $p = .05$. Chi-square test excludes the “not applicable” responses. Question asked on follow-up survey.

Satisfaction with Infrastructure

Respondents were asked to rate their satisfaction with various forms of infrastructure, with the option to state the particular infrastructure was not applicable to their trip. Overall, a majority of respondents were satisfied with the different infrastructure. The percent of respondents indicating “not applicable” ranged from a low of 5% for “availability of restrooms” to a high of 24% for “availability of transportation to the sites they wanted to visit” (Figure 34).

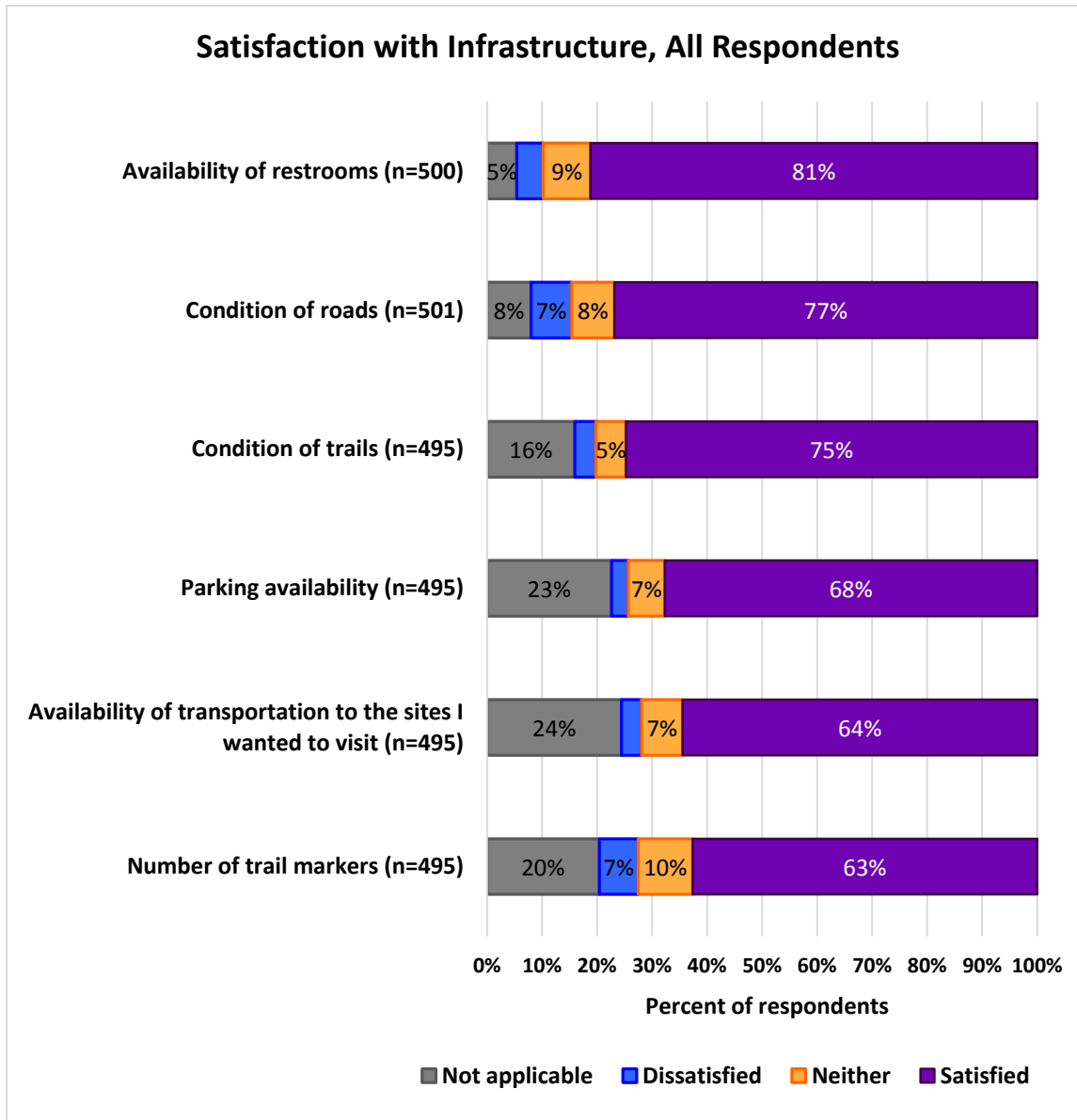


Figure 34. General Satisfaction with Infrastructure, All Respondents.

See Figure 35 for the specific levels of satisfaction excluding the “not applicable” responses. Question asked on follow-up survey.

When excluding the “not applicable” responses, approximately eight in ten visitors reported being satisfied with the infrastructure, with slight differences in the percent responding very satisfied (ranging from 33% for the number of trail markers to 51% for conditions of trails; Figure 35).

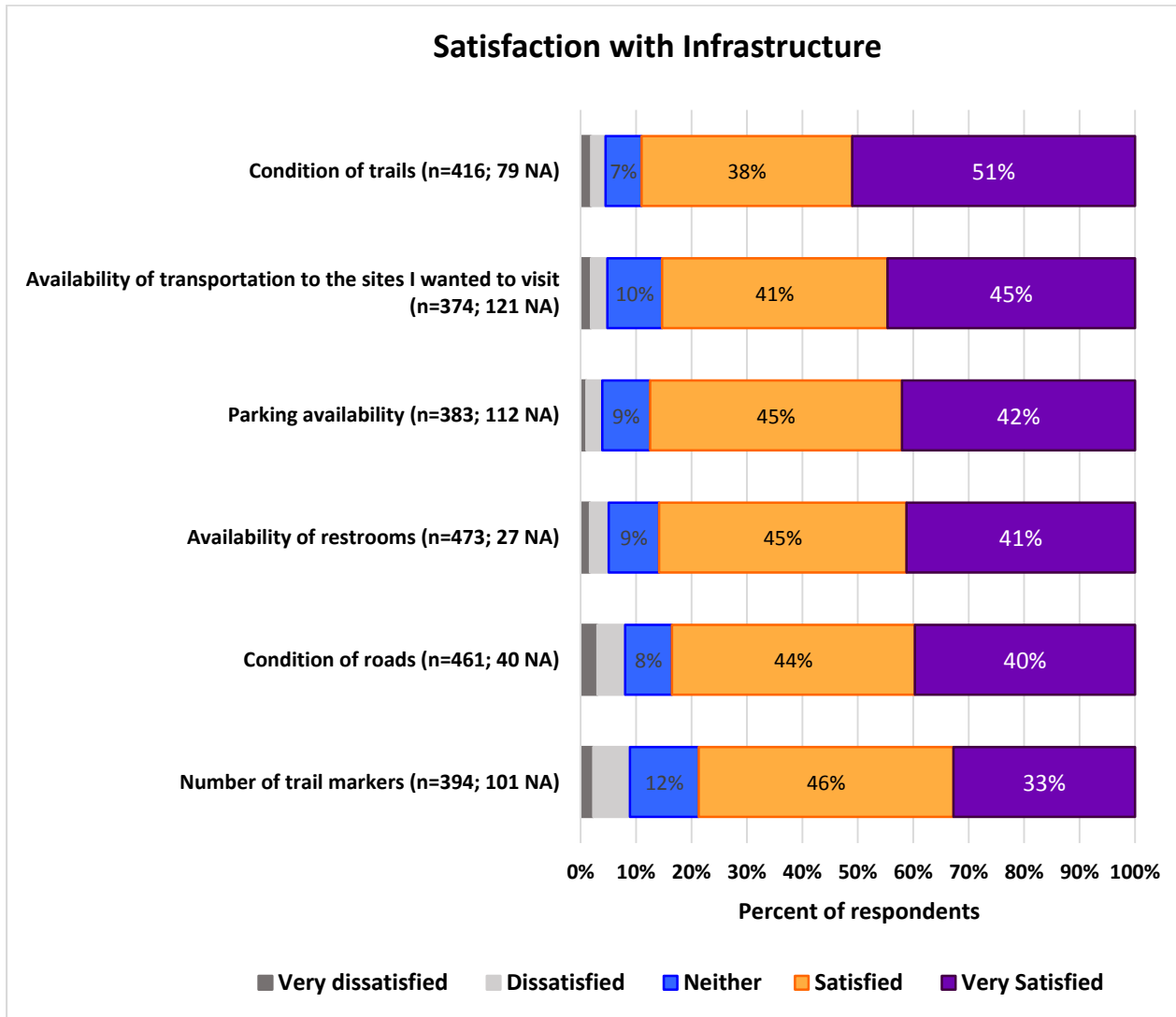


Figure 35. Specific Satisfaction with Infrastructure, Excluding "Not Applicable."

The n excludes the respondents who answered “not applicable.” See Figure 34 for the percent of respondents who answered “not applicable.” Question asked on follow-up survey.

Residents were slightly more likely to indicate dissatisfaction with availability of restrooms, number of trail markers, and conditions of trails; residents were also more likely to indicate “neither satisfied or dissatisfied” for the ability of transportation to the sites they wanted to visit (Table 53).

Table 53. Satisfaction with Infrastructure, by Residency.

Type of infrastructure	Not applicable	Satisfaction (applicable only)					
	n / %	n	Very dissatisfied	dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
Availability of restrooms**							
Resident (n=128)	7 / 6%	121	0%**	7%**	13%	41%	39%
Non-resident (n=372)	20 / 5%	352	2%	2%	8%	46%	42%
Availability of transportation to the sites I wanted to visit *							
Resident (n=126)	50 / 40%	76	0%	3%	18%*	38%	41%
Non-resident (n=369)	71 / 19%	298	2%	3%	8%	41%	46%
Parking availability							
Resident (n=128)	13 / 10%	115	0%	2%	12%	48%	38%
Non-resident (n=367)	99 / 27%	268	2%	3%	7%	44%	44%
Number of trail markers**							
Resident (n=126)	23 / 18%	103	0%	15%**	16%	45%	25%
Non-resident (n=369)	78 / 21%	291	3%	4%	11%	46%	35%
Condition of trails**							
Resident (n=127)	15 / 12%	112	1%	6%**	10%	47%**	36%**
Non-resident (n=368)	64 / 17%	304	2%	1%	5%	35%	57%
Condition of roads							
Resident (n=129)	16 / 12%	113	3%	6%	12%	44%	35%
Non-resident (n=372)	24 / 7%	348	3%	5%	8%	44%	41%

The % of not applicable is the percent of all respondents who provided a “not applicable” answer for that infrastructure type. The n listed under “satisfaction (applicable only)” is the n with the “not applicable” excluded. Chi-square test excludes the “not applicable” responses. *significant difference at $p = .1$. **significant difference at $p = .05$. The * or ** attached to the percentages indicate which of the specific satisfaction ratings differed by residency. Question asked on follow-up survey.

Issues Perceived as Problems

Respondents were presented with a list of situations and asked to what degree they felt the situation was a problem, with an option to state they had “no opinion.” Relatively few respondents had “no opinion” (too few regulations was the highest at 12%) and, overall, none of the issues were rated as a big problem (Figure 36).

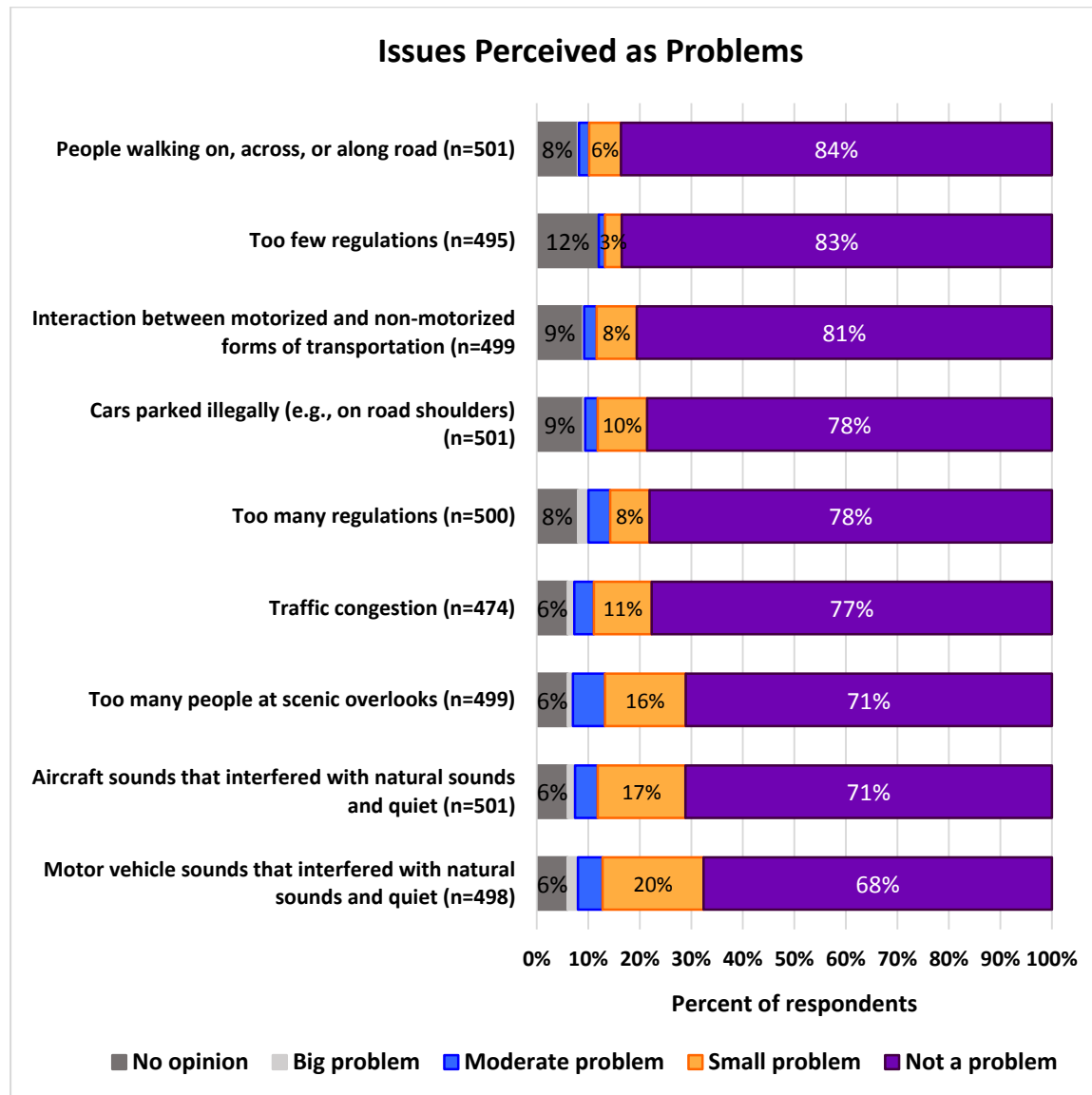


Figure 36. Perception of Issues as Problems.

Because the “no opinion” response is included, caution must be used in interpreting the degree to which the issues were problems and making comparisons across issues. See Figure 37 for the problem ratings with “no opinion” excluded. For the 26 respondents who had problems other than those listed, 7 were about road conditions or construction, 3 had problems with facilities, and 2 had issues with off leash dogs and their waste. Question asked on follow-up survey.

Excluding the “no opinion” responses, more than seven-in ten respondents reported that issues were not a problem. About one-quarter indicated that aircraft sounds that interfered with natural sounds and quiet (23%), too many people at scenic overlooks (24%), and motor vehicle sounds that interfered with natural sounds and quiet (26%) were a small or moderate problem (Figure 37).

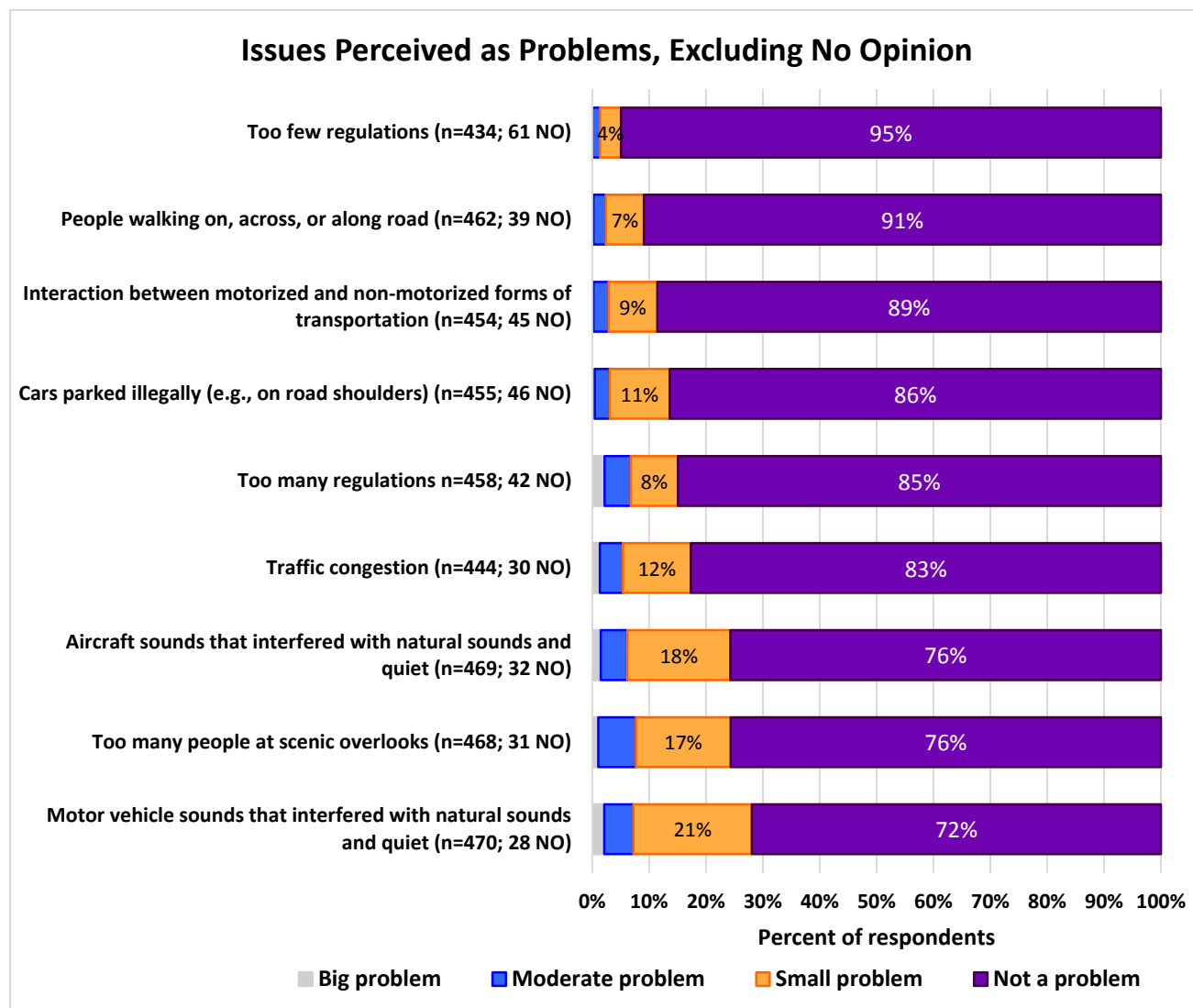


Figure 37. Issues Perceived as Problems, Excluding No Opinion. Question asked on follow-up survey. NO = “no opinion.” See Figure 36 for the percentage of “no opinion” responses.

Residents were more likely to rate too many people at scenic overlooks, motor vehicle sounds that interfered with natural sounds and quiet, and traffic congestion as “not a problem,” and for those same issues, non-residents were more likely to rate them as “a small problem.” Residents were more likely to rate too many regulations as a “big problem,” but the magnitude was small, as 5% of residents indicated it was a “big problem” (Table 54).

Table 54. Issues Perceived as Problems, by Residency.

Type of infrastructure	No opinion	Degree of problem				
	n / %	n	Big	Moderate	Small	No
People walking on, across, or along road						
Resident (n=128)	14 / 11%	114	0%	2%	3%	96%
Non-resident (n=373)	25 / 7%	348	0%	2%	8%	89%
Interaction between motorized and non-motorized forms of transportation						
Resident (n=129)	13 / 10%	116	0%	3%	8%	89%
Non-resident (n=370)	32 / 9%	338	0%	2%	9%	89%
Too many people at scenic overlooks**						
Resident (n=129)	15 / 12%	114	0%	3%**	7%**	90%**
Non-resident (n=370)	16 / 4%	354	1%	8%	20%	71%
Motor vehicle sounds that interfered with natural sounds and quiet**						
Resident (n=128)	9 / 7%	119	3%	8%	11%**	79%**
Non-resident (n=370)	19 / 5%	351	2%	4%	24%	70%
Aircraft sounds that interfered with natural sounds and quiet						
Resident (n=128)	11 / 9%	117	1%	5%	11%	83%
Non-resident (n=373)	21 / 6%	352	2%	5%	21%	73%
Cars parked Illegally (e.g., on road shoulders)						
Resident (n=128)	12 / 9%	116	1%	3%	8%	89%
Non-resident (n=373)	34 / 9%	339	0%	3%	12%	86%
Too many regulations*						
Resident (n=128)	9 / 7%	119	5%*	3%	8%	85%
Non-resident (n=372)	33 / 9%	339	1%	5%	9%	85%
Too few regulations						
Resident (n=128)	14 / 11%	114	0%	2%	5%	93%
Non-resident (n=367)	47 / 13%	320	0%	1%	3%	96%
Traffic congestion**						
Resident (n=129)		113	2%	1%**	6%**	91%**
Non-resident (n=372)		331	1%	5%	14%	80%

The % of no opinion is the percent out of all respondents who provided a “no opinion” answer for that issue type. The n listed under “Degree of problem” is the n with the “no opinion” excluded. Chi-square test excludes the “no opinion” responses.

*significant difference at $p = .10$. **significant difference at $p = .05$. The * or ** attached to the percentages indicate which of the specific satisfaction ratings differed by residency. Question asked on follow-up.

Infrastructure Preferences

Respondents were presented with infrastructure and asked if their preference was “less,” “the same,” or “more,” with an option for “no opinion.” Across all types of infrastructure presented, 24% or more of respondents did not have an opinion. The types of infrastructure with the lowest percent of respondents indicating no preference were trails for hiking, biking, or horseback riding (24%), directional or wayfinding signs (26%), and passenger vehicle roads (26%; Figure 38).

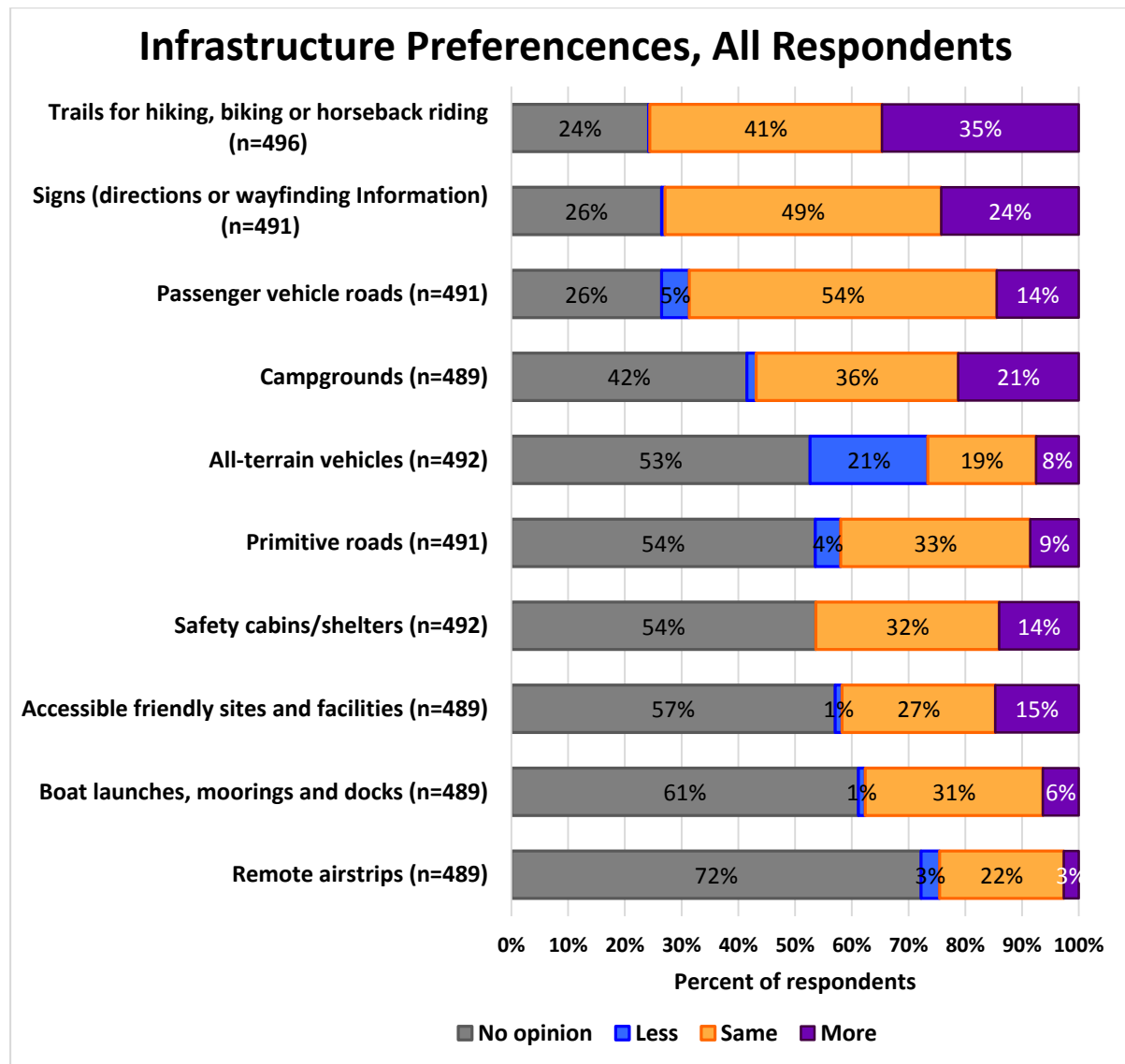


Figure 38. Preferences for Infrastructure, All Respondents.

Due to the inclusion of “no opinion,” caution should be used in interpreting the preferences for “less/same/more.” See Figure 38 for preferences excluding the “no opinion” response. Among the 12 who marked other, 3 respondents had comments about roads (roadside pullouts, maintenance, safe surfaced roads), 2 wanted more access for off road motorized vehicles. Question asked on follow-up survey.

When excluding the “no opinion” responses, almost half of the respondents indicated they would prefer more trails for hiking, biking and horseback riding, and approximately one-third reported wanting more campgrounds (36%), more accessible friendly sites and facilities (34%), more signs (for wayfinding) (33%) and more safety cabins/shelters (30%; Figure 39). On the other end of the scale, trails for all terrain vehicles stands out with 44% of respondents indicating they would prefer less.

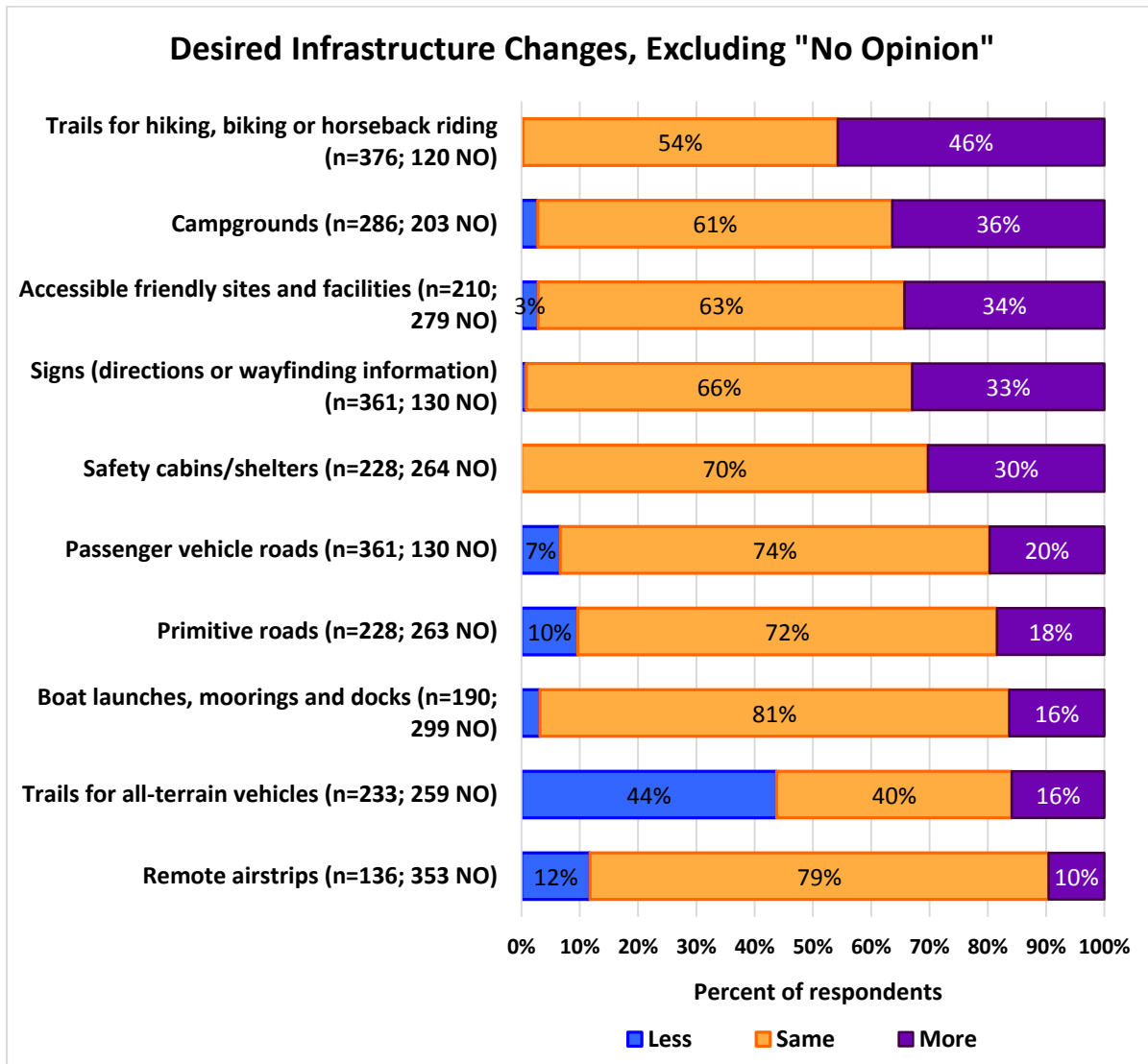


Figure 39. Preferences for Infrastructure, Excluding No Opinion.

NO = no opinion. See Figure 38 for the percentages of the no opinion. Question asked on follow-up survey.

There were few differences in infrastructure preference by residency. Notable, though, is that residents were less likely than non-residents to indicate a preference for less ATV trails (35% vs 50%) and were also more likely to indicate a preference for more ATV trails (24% vs. 10%). Residents were less likely than non-resident to prefer more passenger vehicle roads (12% vs. 23%; Table 55).

Table 55. Preferences for Infrastructure, by Residency.

Infrastructure	No opinion n / %	Preference (excludes no opinion)			
		N	Less	Same	More
Accessible-friendly sites and facilities					
Resident (n=125)	43 / 34%	82	1%	65%	34%
Non-resident (n=364)	236 / 65%	128	4%	62%	34%
Boat launches, moorings, and docks					
Resident (n=124)	46 / 37%	78	1%	80%	19%
Non-resident (n=365)	253 / 69%	112	5%	81%	14%
Remote airstrips					
Resident (n=124)	61 / 49%	63	13%	76%	11%
Non-resident (n=365)	292 / 80%	73	11%	81%	8%
Safety cabins / shelters*					
Resident (n=126)	31 / 25%	95	0%	63%	37%
Non-resident (n=366)	233 / 64%	133	0%	74%	26%
Signs that include directions or wayfinding information					
Resident (n=125)	20 / 16%	105		73%	27%
Non-resident (n=366)	110 / 30%	256	1%	63%	36%
Campgrounds					
Resident (n=126)	13 / 10%	113	3%	58%	39%
Non-resident (n=363)	190 / 52%	173	3%	62%	35%
Primitive roads					
Resident (n=125)	39 / 31%	86	13%	66%	21%
Non-resident (n=366)	224 / 61%	142	8%	75%	17%
Passenger vehicle Roads**					
Resident (n=124)	24 / 19%	100	10%	78%	12%**
Non-resident (n=367)	106 / 29%	261	5%	72%	23%
Trails for all-terrain Vehicles**					
Resident (n=127)	30 / 24%	97	35%**	41%	24%**
Non-resident (n=365)	229 / 63%	136	50%	40%	10%
Trails for hiking, biking, or horseback riding					
Resident (n=127)	15 / 12%	112	1%	51%	48%
Non-resident (n=369)	105 / 29%	264	0%	55%	45%

The % of no opinion is the percent out of all respondents who provided an answer for that infrastructure type. The n listed under “preference (excludes no opinion)” is the n with the no opinion excluded. Chi-square test excludes the no opinion responses. *significant difference at $p = .10$. **significant difference at $p = .05$

The * or ** attached to the percentages indicate which of the specific satisfaction ratings differed by residency. For safety/shelter cabins, the chi-square was conducted isolating same and more, the post hoc test did not show differences. Question asked on follow-up survey.

Safety Concerns/Issues

Thirty-five percent of respondents reported researching safety issues prior to their trip. Non-residents were significantly more likely than residents to do such research (41% vs. 20%).

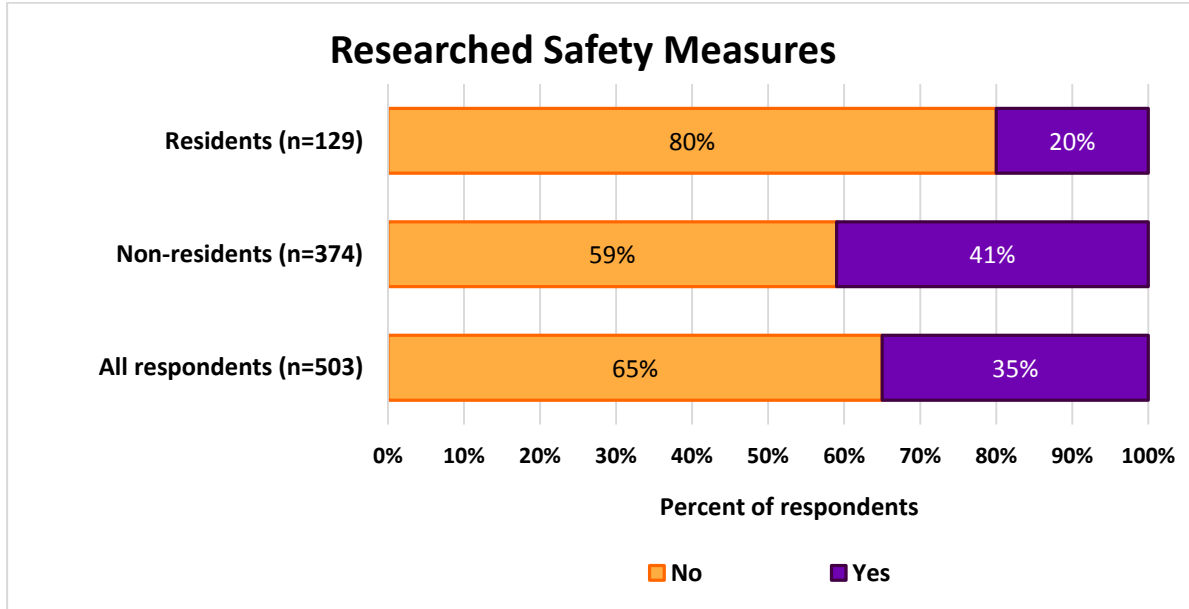


Figure 40. Researched Safety Measures.

Chi-square = 17.6, $p < .001$. Question asked on follow-up survey.

One hundred forty-four (20 residents, 124 non-residents) provided a response to the open-ended question asking what safety concerns were searched and what were their top concerns. Responses were coded into the following themes:

- Animal encounters
- Basic information about cities, towns, or travel logics (includes hospital/medical facilities)
- Recreation
- Road conditions
- Weather
- Communication
- Miscellaneous (includes firearm transportation regulations)

Several responses fit into multiple themes. For example, a response might reference concerns over animal, weather, and road conditions. Such a response would have received a code for each of those themes (see appendix E for a list of the responses arranged by theme).

- 120 responses (83%) related to animals/animal encounters (13/20 residents, 107/124 non-residents).
 - Most responses related to bears and bear safety.
- 35 responses related to weather (2/20 residents, 33/124 non-residents).
- 28 responses related to recreation (7/20 residents, 21/124 non-residents).

- 26 responses related to information about cities, towns, and travel logistics (4/20 residents, 22/124 non-residents).
 - 8 responses related to medical/emergency facilities.
 - 5 responses related to gas/fuel availability.
- 17 responses related to road conditions (4/20 resident, 13/124 non-residents).
- 12 responses related to communications (2/20 residents, 10/124 non-residents).
- 12 were related to miscellaneous items (4/20 residents, 8/124 non-residents).
 - 5 responses related to firearm transportation regulations.

Safety-Related Experiences

Respondents were presented with a list of potential safety issues and asked which they had experienced. While 83% of respondents researched wildlife issues, only 13% reported an encounter that they deemed unsafe. The most frequently cited safety issue was lack of cell phone coverage. Residents were more likely to cite bad weather and poor trail conditions (Figure 41).

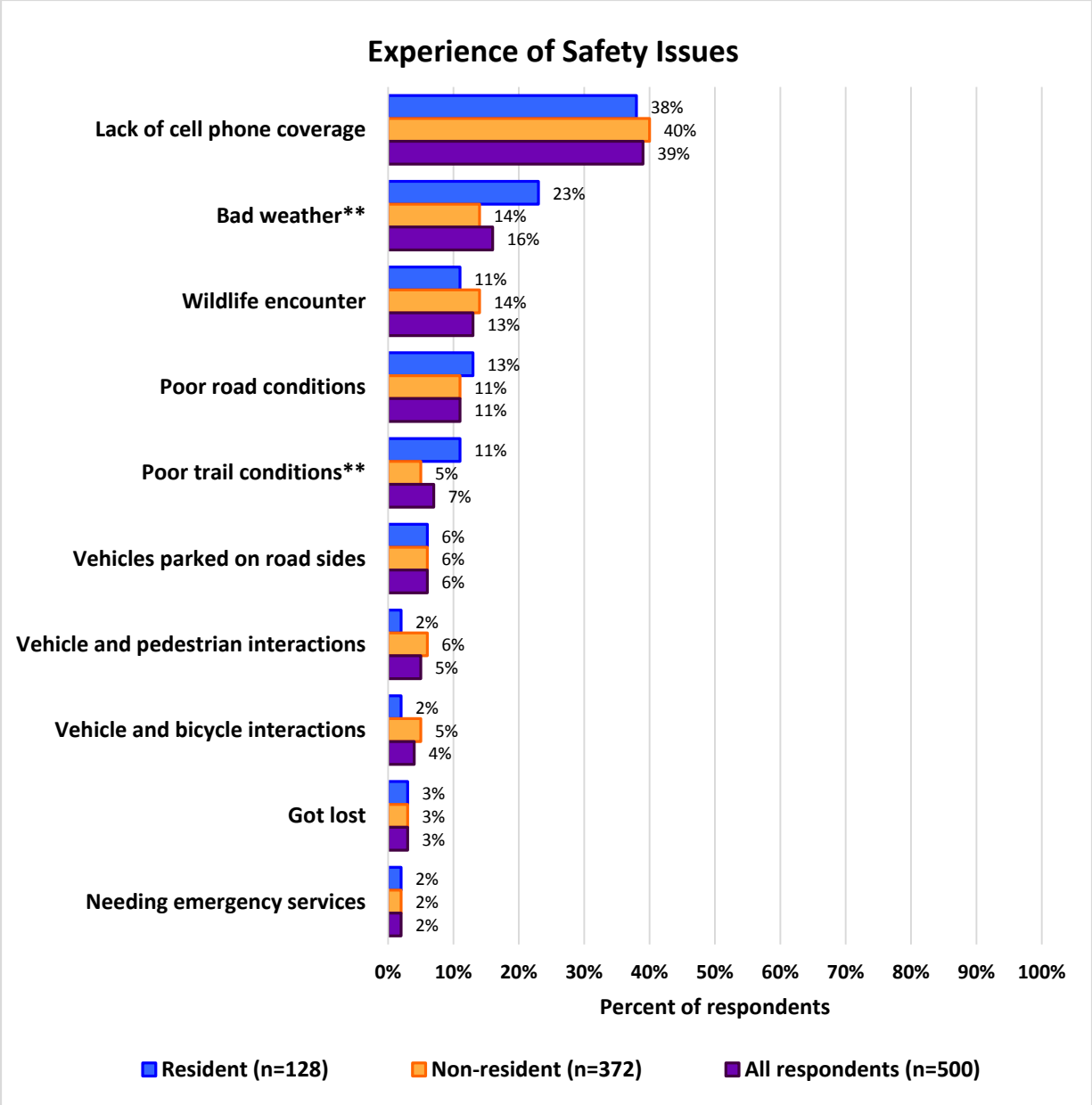


Figure 41. Experience of Safety Issues.
 **Significant difference at $p = .05$. Question asked on follow-up survey.

Respondents were asked to describe the safety issue they experienced. One hundred eighteen respondents (32 residents, 86 non-residents) provided a response to the open-ended question asking respondents to describe any safety concerns. Two of these responses indicated they felt safe. Responses were coded into the same themes as the safety concerns searched question.

- 45 responses (38%) related to communications (12/32 residents, 33/86 non-residents).
 - Most of these concerns related to a lack of cell phone coverage.
- 40 responses (34%) related to animals/animal encounters (11/32 residents, 29/86 non-residents).
- 18 responses related to road conditions (7/32 resident, 11/86 non-residents).
- 17 responses related to weather (8/32 residents, 9/86 non-residents).
- 15 responses related to recreation (4/32 residents, 11/86 non-residents).
- 7 responses related to information about cities and towns (1 resident, 6/86 non-residents).

Accidents or Safety Incidents

Respondents were asked if they were ever involved in a safety incident on Federal public lands. Only 2% reported they had been involved in one incident and 1% reported more than one. Nearly all respondents said they had not been involved in a safety incident (96%).

Table 56. Involvement with a Transportation Accident or Safety Incident.

Have you Ever Been Involved in a Transportation Accident or Safety Incident on Federal Public Lands in Alaska?	Alaska Resident	Non-resident of Alaska	Total
Yes, once	2.3% (n=3)	1.9% (n=7)	2.0%
Yes, more than once	3.1% (n=4)	0.0%	.8%
No	93.1%	97.6%	96.4%
Can't recall	1.5%	.5%	.8%

Residents n = 130, non-residents n = 374, all respondents n = 504. Due to the cells with n < 5, the chi-square test was not conducted. Three of the non-resident incidents actually occurred in Yellowstone and not Alaska (see below). Question asked on follow-up survey.

Of the 14 who had an incident on federal land in Alaska, 3 residents reported the incident and 1 non-resident reported the incident. Only 3 indicated to whom the incident was reported, providing the following responses:

- VSFS, national ski patrol, Coast Guard
- National Park Ranger
- Refuge headquarters

Eight residents provided a description of the incident (one respondent did not report having an incident, but provided a description):

- 1. Head on with a deer = disabled car (and deer) 2. Avalanche + partial burial = dug out ok 3. swamped/overturned kayak = almost hypothermic person
- A float plane I was flying in while volunteering for the forest service had to make an emergency landing shortly after takeoff. Everyone was fine and we were able to return to town safely an hour or so later in a different plane.
- Changing a flat tire in the southbound lane of Dalton Highway in a low-visibility curve in January at -50F in the dark with crazy speed-demon truckers flying by yelling at me on the C.B. to "get out of the fucking way!!" I had nowhere to go, no pull off anywhere, no shoulder.
- DeHaviland motor konk-out near Deska River caused forced landing in a slough
- Described above. Woman had only scrapes. She was not familiar with ATV and tried to go up a slope that was too steep. Slope caused by was out of trail.
- No winter road maintenance icy conditions even Refuge officers would not travel on road but refused to close road or maintain/sand. No regular snow removal.
- Two flat tires, separate incidents, one suspension related breakdown
- Vehicle steering issue. No accident or property damaged occurred. I fixed the issue onsite.

Seven non-residents provided a description of the safety incident. Of note, 3 incidents happened in Yellowstone. The incidents that occurred in Yellowstone have not been removed from Table 56.

- Congestion, cars, ped wildlife at Yellowstone two years ago. Appeared to be norm so no point reporting idiot behavior.
- Damage to RV on the campground road.
- Decades ago a contractor's dump truck on Yellowstone NP road traveling at high rate of speed and way over center of line. My auto was definitely at risk -- scared me. I reported it but I wasn't taken seriously.
- Flat tire
- One person tripped and fell on the bridge across the Kennecott River at McCarthy
- Pick-up truck backed into culvert (driver's fault), towed out by another passing truck, no injuries or damage
- Yellowstone! Sow and cub were alongside the road on a curve. People were hitting their breaks because people were stopping to get pictures and crossing the road to get closer. So driving you missed seeing the bears because you had to watch the people.

Additional Feedback on Travel Experience

Two hundred twenty-six (49 residents, 177 non-residents), provided a response to the open-ended question asking respondents to share any additional feedback on their travel experience during their trip. Responses were coded into the following themes:

- Basic information about cities, towns, or travel logistics
- Recreation
- Travel/transportation related (road condition, road access, shuttles, public transportation)
- Ferry travel logistics and Alaska Marine Highway System Ferry
- Communication (Wi-Fi and cell service, website issues)
- Very satisfied (responses that expressed satisfaction with the trip)
- Miscellaneous
- None (the respondent stated they had “no comment” or wrote “none”)

Several responses fit into multiple themes. For example, a response might relate to road conditions and communication. Other responses might express satisfaction and qualify the satisfaction was with the roads; such responses were coded as satisfied and travel/transportation.

- 76 responses (34%) related to travel/transportation (17/49 residents, 59/177 non-residents).
- 70 responses (31%) expressed satisfaction with their travel experiences (4/49 residents, 66/177 non-residents).
- 28 responses (12%) related to recreation (15/49 residents, 13/177 non-residents).
- 14 responses (6%) related to ferry travel (2/49 residents, 12/177 non-residents).
- 9 responses (4%) related to communication (all non-residents).
- 3 responses (1%) related to information about cities and towns (1/49 residents, 2/177 non-residents).
- 41 responses (18%) expressed no problems with their travel experience (11/49 residents, 30/177 non-residents).

Within the travel/transportation category, the largest share of responses (n=22) referenced poor road conditions. A handful of respondents, however, gave positive comments about the roads (n=8). Other issues included public transportation (e.g., long wait times, lack of service, lack of information; n=8), the cost of transportation (n=8), construction-related delays (n=5), and signage (n=4). A few respondents also commented on their access to sites. While one or two respondents felt they were not given sufficient access (e.g., could not take their vehicle into Denali National Park), others were pleased with their level of access and acknowledged the tradeoff between access and preserving the land.

Within the Ferry/AMHS category, respondents indicated they would have preferred more frequent service and better connections with other forms of public transportation. A couple of respondents also noted delays with the ferry.

Within the recreation category, about one-half of the comments pertained to trails (n=12), including trail conditions, lack of signage or trail maps, and the need for more trails.

See Appendix E for a list of responses arranged by theme.

Other Suggestions for Improving Travel to/through Federal Lands

One hundred fifty respondents¹⁰ (44 residents, 106 non-residents) provided a response to the open-ended question asking respondents if they had any suggestions for how travel/transportation to or through federal public lands could be improved. Responses were coded into the following themes:

- Recreation
- Travel/transportation related (road condition, road access, shuttles, public transportation)
- Basic information about cities and towns
- Regulations or maintain current condition
- Communication (Wi-Fi and cell service, website issues)
- Very satisfied (responses that expressed satisfaction with the trip)
- Miscellaneous

Several responses fit into multiple themes. For example, a response might relate to road conditions and communication. Other responses might express satisfaction and qualify the satisfaction was with the roads; such responses were coded as satisfied and travel/transportation.

- 64 responses (42%) related to travel/transportation (15/44 residents, 49/106 non-residents).
 - Of these, 6 non-residents expressed satisfaction with travel-related conditions.
- 42 responses (28%) related to recreation (22/44 residents, 20/106 non-residents).
- 34 responses (23%) related to satisfaction (3/44 residents, 31/106 non-residents).
- 15 responses (10%) related to regulations and maintain current conditions of an area (9/44 residents, 6/106 non-residents).
- 5 responses (4%) related to communication (1/44 resident, 4/106 non-residents).
- 4 responses (3%) related to basic information about cities and towns (2/44 residents, 2/106 non-residents).

Among the transportation/travel-related response respondents tended to mention poor road conditions most often (n=18).

In addition, a number of respondents (n=19) referenced access to federal lands. Responses were mixed as to desiring more access, typically via private vehicle (n = 9; e.g., *"In my opinion there are not enough roads to remote areas in Alaska"*), and expressing support for limiting access in order to preserve public lands (n=9; *"Keep it as remote as possible. Don't spoil the wilderness"*).

Another transportation /travel related issue was public transportation (n=9). Respondents indicated the need for service in certain locations and some noted issues with the Denali shuttle buses. Among the recreation-related comments, about half mentioned trails (n=22). Some respondents mentioned a desire for more trails, while others cited the need to improve trail conditions or the availability of information about trails (e.g., trail maps, signage). In addition respondents were fairly evenly divided on whether there should be more or less trails for ATVs.

See Appendix E for a list of responses arranged by theme.

¹⁰ Excludes 46 respondents who stated they did not have suggestions (i.e., the respondent wrote in "no" or "none". This treats the "none" differently than suggestions for improvement; as a response to suggestion for improvement, "none" was assumed to have meaning as in no improvements were needed.

Appendices

Appendix A Letters to FLMAs and Survey Instruments

Each of the Alaska CVTS leads for their Land management Agency sent out the letter announcing the study to their units. The UAF survey team followed up with phone calls to each site to receive input into the logistics.

The CVTS team leads that sent out the FLMA letters are listed below:

USFS – Amy Thomas
NPS – Paul Schrooten
FWS – Charles Grant
BLM – Randy Goodwin

Templates of the letters follow, as does one example final letter that was sent to Sitka NHP.

National Park Service, Paul Schrooten

Example: Denali

Dear ,

The Federal Land Management Agencies (FLMAs) in Alaska, including the National Park Service, the Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service, are planning to conduct a visitor survey at Denali National Park and Preserve during the summer of 2016. The same survey will be administered at approximately fifteen FLMA units across the state as part of a collaborative effort among FLMAs to collect visitor experience data. The survey focuses on visitors' transportation-related experiences and the resulting data will be incorporated into the 2017 Alaska Long Range Transportation Plan. The results will be shared with your unit, and you will also have access to the data.

This project represents an unprecedented survey collaboration effort. The Alaska FLMAs, as well as the Alaska Department of Transportation and Western Federal Lands Highway Division, U.S. Department of Transportation (DOT) each signed a Memorandum of Understanding (MOU) granting permission to collect the survey data on FLMA public lands. Additionally, in support of this collaboration, the Western Federal Lands Highway Division, U.S. DOT provided funding that enabled the FLMAs to obtain a Generic Clearance, approved by the Office of Management and Budget (OMB Control # 0596-0236), to streamline the process for conducting multi-agency surveys. The Alaska survey will serve as a pilot for the Generic Clearance, and lessons learned will be shared with other FLMAs across the nation that are planning similar, collaborative surveys.

The University of Alaska at Fairbanks (UAF) will administer the Alaska survey on behalf of the FLMAs. Dr. Peter Fix, the survey manager, and his team have administered numerous surveys on Alaska Federal Lands. The survey team will intercept visitors and administer a brief survey on-site. Visitors will also be asked to complete a follow-up survey online (after their trip). Dr. Fix will send you a preliminary set of survey intercept locations and a tentative survey schedule in advance for your feedback and approval. He will work with the appropriate staff at your unit to coordinate the data collection and to ensure that the survey complies with all regulations.

As a first step, Dr. Fix will be following up with you in the next week or so to determine if there are any requirements (e.g., permits) or restrictions that UAF should be aware of before administering the survey.

If you have any questions about the survey, please contact Dr. Peter Fix (pjfix@uaf.edu or 907-474-6926). If you have questions about the collaborative effort, please contact the U.S. DOT Technical Lead, Margaret Petrella (Margaret.Petrella@dot.gov or 617-494-3582)

Thank you for your cooperation and support.

Best Regards,

Paul Schrooten

Forest Service, Amy Thomas

Example: Chugach

Dear ,

The Federal Land Management Agencies (FLMAs) in Alaska, including the U.S. Forest Service, National Park Service, Bureau of Land Management, and U.S. Fish and Wildlife Service, are planning to conduct a visitor survey at Chugach National Forest during the summer of 2016. The same survey will be administered at approximately fifteen FLMA units across the state as part of a collaborative effort among FLMAs to collect visitor experience data. The survey focuses on visitors' transportation-related experiences and the resulting data will be incorporated into the 2017 Alaska Long Range Transportation Plan. The results will be shared with your unit, and you will also have access to the data.

This project represents an unprecedented survey collaboration effort. The Alaska FLMAs, as well as the Alaska Department of Transportation and Western Federal Lands Highway Division, U.S. Department of Transportation (DOT) each signed a Memorandum of Understanding (MOU) granting permission to collect the survey data on FLMA public lands. Additionally, in support of this collaboration, the Western Federal Lands Highway Division, U.S. DOT provided funding that enabled the FLMAs to obtain a Generic Clearance, approved by the Office of Management and Budget (OMB Control # 0596-0236), to streamline the process for conducting multi-agency surveys. The Alaska survey will serve as a pilot for the Generic Clearance, and lessons learned will be shared with other FLMAs across the nation that are planning similar, collaborative surveys.

The University of Alaska at Fairbanks (UAF) will administer the Alaska survey on behalf of the FLMAs. Dr. Peter Fix, the survey manager, and his team have administered numerous surveys on Alaska Federal Lands. The survey team will intercept visitors and administer a brief survey on-site. Visitors will also be asked to complete a follow-up survey online (after their trip). Dr. Fix will send you a preliminary set of survey intercept locations and a tentative survey schedule in advance for your feedback and approval. He will work with the appropriate staff at your unit to coordinate the data collection and to ensure that the survey complies with all regulations.

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Thank you for your cooperation and support.

Best Regards,

Amy Thomas

Fish and Wildlife Service, Charles Grant

Example: Kenai National Wildlife Refuge

Dear ,

The Federal Land Management Agencies (FLMAs) in Alaska, including the U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, and Bureau of Land Management, are planning to conduct a visitor survey at Kenai National Wildlife Refuge during the summer of 2016. The same survey will be administered at approximately fifteen FLMA units across the state as part of a collaborative effort among FLMAs to collect visitor experience data. The survey focuses on visitors' transportation-related experiences and the resulting data will be incorporated into the 2017 Alaska Long Range Transportation Plan. The results will be shared with your unit, and you will also have access to the data.

This project represents an unprecedented survey collaboration effort. The Alaska FLMAs, as well as the Alaska Department of Transportation and Western Federal Lands Highway Division, U.S. Department of Transportation (DOT) each signed a Memorandum of Understanding (MOU) granting permission to collect the survey data on FLMA public lands. Additionally, in support of this collaboration, the Western Federal Lands Highway Division, U.S. DOT provided funding that enabled the FLMAs to obtain a Generic Clearance, approved by the Office of Management and Budget (OMB Control # 0596-0236), to streamline the process for conducting multi-agency surveys. The Alaska survey will serve as a pilot for the Generic Clearance, and lessons learned will be shared with other FLMAs across the nation that are planning similar, collaborative surveys.

The University of Alaska at Fairbanks (UAF) will administer the Alaska survey on behalf of the FLMAs. Dr. Peter Fix, the survey manager, and his team have administered numerous surveys on Alaska Federal Lands. The survey team will intercept visitors and administer a brief survey on-site. Visitors will also be asked to complete a follow-up survey online (after their trip). Dr. Fix will send you a preliminary set of survey intercept locations and a tentative survey schedule in advance for your feedback and approval. He will work with the appropriate staff at your unit to coordinate the data collection and to ensure that the survey complies with all regulations.

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If you have any questions about the survey, please contact Dr. Peter Fix (pjfix@uaf.edu or 907-474-6926). If you have questions about the collaborative effort, please contact the U.S. DOT Technical Lead, Margaret Petrella (Margaret.Petrella@dot.gov or 617-494-3582)

Thank you for your cooperation and support.

Best Regards,

Charles Grant

Bureau of Land Management, Randy Goodwin

Example: Tangle Lakes and Delta National Wild and Scenic River

Dear ,

The Federal Land Management Agencies (FLMAs) in Alaska, including the Bureau of Land Management, U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service, are planning to conduct a visitor survey at Tangle Lakes and Delta National Wild and Scenic River during the summer of 2016. The same survey will be administered at approximately fifteen FLMA units across the state as part of a collaborative effort among FLMAs to collect visitor experience data. The survey focuses on visitors' transportation-related experiences and the resulting data will be incorporated into the 2017 Alaska Long Range Transportation Plan. The results will be shared with your unit, and you will also have access to the data.

This project represents an unprecedented survey collaboration effort. The Alaska FLMAs, as well as the Alaska Department of Transportation and Western Federal Lands Highway Division, U.S. Department of Transportation (DOT) each signed a Memorandum of Understanding (MOU) granting permission to collect the survey data on FLMA public lands. Additionally, in support of this collaboration, the Western Federal Lands Highway Division, U.S. DOT provided funding that enabled the FLMAs to obtain a Generic Clearance, approved by the Office of Management and Budget (OMB Control # 0596-0236), to streamline the process for conducting multi-agency surveys. The Alaska survey will serve as a pilot for the Generic Clearance, and lessons learned will be shared with other FLMAs across the nation that are planning similar, collaborative surveys.

The University of Alaska at Fairbanks (UAF) will administer the Alaska survey on behalf of the FLMAs. Dr. Peter Fix, the survey manager, and his team have administered numerous surveys on Alaska Federal Lands. The survey team will intercept visitors and administer a brief survey on-site. Visitors will also be asked to complete a follow-up survey online (after their trip). Dr. Fix will send you a preliminary set of survey intercept locations and a tentative survey schedule in advance for your feedback and approval. He will work with the appropriate staff at your unit to coordinate the data collection and to ensure that the survey complies with all regulations.

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Thank you for your cooperation and support.

Best Regards,

Randy Goodwin



IN REPLY REFER TO:
I.A.2.(AKRO-EPD)

United States Department of the Interior

NATIONAL PARK SERVICE

Alaska Region
240 West 5th Avenue, Room 114
Anchorage, Alaska 99501

VIA ELECTRONIC MAIL – HARD COPY TO FOLLOW

DEC 10 2015

Memorandum

To: Brinnen Carter, Chief of Resources, Sitka National Historical Park

From: Paul Schrooten, Regional Transportation Program Manager, Alaska Region

Subject: 2016 Visitor Survey

The Federal Land Management Agencies (FLMAs) in Alaska, including the National Park Service, the Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service, are planning to conduct a visitor survey at Sitka National Historical Park during the summer of 2016. The same survey will be administered at approximately fifteen FLMA units across the state as part of a collaborative effort among FLMAs to collect visitor experience data. The survey focuses on visitors' transportation-related experiences and the resulting data will be incorporated into the 2017 Alaska Long Range Transportation Plan. The results will be shared with your unit, and you will also have access to the data.

This project represents an unprecedented survey collaboration effort. The Alaska FLMAs, as well as the Alaska Department of Transportation and Western Federal Lands Highway Division, U.S. Department of Transportation (DOT) each signed a Memorandum of Understanding (MOU) granting permission to collect the survey data on FLMA public lands. Additionally, in support of this collaboration, the Western Federal Lands Highway Division, U.S. DOT provided funding that enabled the FLMAs to obtain a Generic Clearance, approved by the Office of Management and Budget (OMB Control # 0596-0236), to streamline the process for conducting multi-agency surveys. The Alaska survey will serve as a pilot for the Generic Clearance, and lessons learned will be shared with other FLMAs across the nation that are planning similar, collaborative surveys.

The University of Alaska at Fairbanks (UAF) will administer the Alaska survey on behalf of the FLMAs. Dr. Peter Fix, the survey manager, and his team have administered numerous surveys on Alaska Federal Lands. The survey team will intercept visitors and administer a brief survey on-site. Visitors will also be asked to complete a follow-up survey online (after their trip). Dr. Fix will send you a preliminary set of survey intercept locations and a tentative survey schedule

in advance for your feedback and approval. He will work with the appropriate staff at your unit to coordinate the data collection and to ensure that the survey complies with all regulations.

As a first step, Dr. Fix will be following up with you in the next week or so to determine if there are any requirements (e.g., permits) or restrictions that UAF should be aware of before administering the survey.

If you have any questions about the survey, please contact Dr. Peter Fix (pjfix@alaska.edu or (907) 474-6926). If you have questions about the collaborative effort, please contact the U.S. DOT Technical Lead, Margaret Petrella (Margaret.Petrella@dot.gov or (617) 494-3582).

Thank you for your cooperation and support.

cc:

Mary Miller, Superintendent, Sitka National Historical Park
John Quinley, Associate Regional Director, Communications & Operations, Alaska Region
Wayne Challoner, Acting EPD Team Manager, Alaska Region
Dr. Peter Fix, Associate Professor, University of Alaska Fairbanks

The following script was utilized when administering the onsite survey.

Hello, my name is _____. I work for the University of Alaska Fairbanks and we are conducting a study for the Alaska Federal Land Management Agencies to learn about users' transportation experiences on Federal public lands. The Federal agencies will use this information to better understand the types of transportation improvements needed on Federal public lands. [Optional if asked: The survey is sponsored by the National Park Service, US Forest Service, US Bureau of Land Management, and US Fish and Wildlife Service, in collaboration with the US Department of Transportation.]

The survey is **entirely voluntary** and consists of 2 parts: an on-site survey and a follow up survey, which we could send to you by email or regular mail. The onsite survey could take up to 13 minutes to complete; however, for some of the questions, the responses may not apply to you, so the survey may take less time. After completing the on-site survey, I will ask if you would like to participate in the follow-up survey.

Note to surveyor: at this point the potential respondent might state they are not on a recreation trip (e.g., they working, commuting, etc.) If so, mention we have a survey for people who are not on recreation trips, and ask if they would like to complete that survey.

We are requesting the person in your group over 18, who has had the most recent birthday complete the survey. [If further explanation is needed: that is, within the past year, who most recently celebrated a birthday. If they ask why: we are selecting the person with the most recent birthday to help ensure a random sample.]

IF NO (Attempt to convert to completed survey, but do not push too hard)

Could I ask you three questions?

Q1: In what state or country do you live? (record in log)

Q2: [Residents] Have you visited this site before?

[Non-residents] Have you visited Alaska before? (for both code in log as: 0x, 1x, 2-3x, 4-6x, 7-10x, >10)

Q3: How would you rate your travel experience arriving at this site? Excellent, Good, Fair, Poor, Very Poor.
(Code as: E, G, F, P, VP)

Record if they were recreation or non-recreation. Record any comments received, but do not ask for comments.

Thank you. Have a great day.

IF YES

Great THANK YOU VERY MUCH.

Would you like to complete the survey on an iPad or a paper copy?

If not known yet, ask if they are a recreational visitor or non-recreational visitor.

Ask all: Are you a permanent resident of Alaska? (Use this question to provide the correct paper copy)

For residents only: The survey asks several questions about your travel through Federal public lands. For this survey, travel through public lands can include travel through Federal public lands to reach a particular destination, traveling within Federal public lands, as well as commuting through Federal public lands (e.g., on a state highway).

All: The survey asks several questions ask about your visitation to “this site.” Answer those questions with respect to [insert details about the site at which you are sampling.] There are also several questions asking about your broader trip. For questions about activities, include only activities on Federal public land in Alaska. However, the questions about trip planning should include your entire trip (i.e., if you are visiting multiple states/countries).

If you are not familiar with Federal public lands in Alaska, I have a map you could look at.

I need to confirm you are over 18. [If not, they will need to have someone else in the group respond.]

Completing the survey implies your consent to participate.

Hand them the survey...

AFTER SURVEY IS COMPLETE –

Ask if they would like to participate in the follow-up survey. The general format is below. Record id number on the follow up survey sheet.

NOTE: Both versions have a question asking if they would like to complete the follow up survey. For the iSurvey version, confirm if they responded to the follow up question, if they have not, ask them if they would like to participate. For the paper survey, you might not always be near the respondent when they complete the survey (e.g., a campground). In those cases, confirm that question was answered.

Would you be willing to complete the follow-up survey?

No

Yes → **Can we send you a link to complete the survey online, or do prefer a paper version of the survey?**

online: please provide your email address _____

mail: please provide your name and mailing address

Name: _____

Street: _____

City /State (or Country)/Zip: _____

NOTE: Email or mailing address information will be kept confidential and will only be used for the purpose of sending you the follow-up survey. Your contact information will be stored in a separate file and will never be linked to any of your survey responses. In addition, your contact information will be destroyed upon completion of the study.

FOR NON-RESIDENTS Can you let us know on which date you will be leaving Alaska, so that we know when to send you the follow-up survey?

Date you will leave Alaska: _____

NOTE, the above question is intended to measure when they will be able to receive an electronic follow up survey or a mail survey. The questions ask them about their experience in AK, so we need to be sure they have departed AK. However, they might not be traveling directly home after leaving (e.g., heading to AZ for the winter or something). So...you will need to probe a bit to determine when the “Alaska” part of their trip is over and when they can receive an email or mail survey.

There were slightly different versions of the surveys for each of the three regions. The differences were in question about transportation used to arrive at site and transportation used within the site.

- Interior did not include the White Pass Railroad
- Southcentral did not include White Pass Railroad nor Denali Visitor Transportation System bus
- Southeast did not include Denali Visitor Transportation System bus

There were also different versions of the onsite survey for residents and non-residents.

The resident and non-resident recreation surveys from the southcentral regions are shown below, followed by the resident and non-resident recreation survey.

The follow-up survey, and reminders, are shown after the onsite survey. Qualtrics was used for the web-based version of the follow-up survey.

The OMB Control number 0596-0236 was displayed as a footer on the surveys.

Alaska Federal Lands Transportation Survey – Alaska Resident

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0236. The time required to complete this information collection is estimated to average 13 minutes per response, including the time for reviewing instructions.

If you have questions or concerns about your rights as a research participant, you can contact the University of Alaska-Fairbanks Office of Research Integrity at 474-7800 (Fairbanks area) or [1-866-876-7800](tel:1-866-876-7800) (toll-free outside the Fairbanks area) or uaf-irb@alaska.edu.

1. In general, in the last year, how often have you used the Federal public lands in Alaska managed by each of the following agencies, either traveling through them to get to your destination, or participating in activities, such as hunting or fishing?
 - Federal lands include National Parks, National Forests, Wildlife Refuges, National Conservation Areas, and Wild and Scenic Rivers.
 - Include commuting through Federal public lands and working on Federal public lands.
 - First we'll ask about your use during winter months, and then we'll ask about your use during summer months.

(Check one response for each agency listed below.)

	Don't know	More than once per week	About once per week	About once per month	Less than monthly	Never
WINTER MONTHS (approximately October – April)						
Bureau of Land Management						
U.S. Fish and Wildlife Service						
National Park Service						
U.S. Forest Service						
SUMMER MONTHS (approximately May – September)						
Bureau of Land Management						
U.S. Fish and Wildlife Service						
National Park Service						
U.S. Forest Service						

2. In the last year, how often have you used each of the following forms of transportation when traveling to or through Federal public lands in Alaska (including National Parks, National Forests, National Wildlife Refuges, National Conservation Areas, Wild and Scenic Rivers)? Please include winter travel, as well as travel during other seasons. (Under "Frequency of use," check one response for each item.)

Second, for those forms of transportation that you have used when traveling to or through Alaska Federal public lands, please use the 1 to 5 scale to rate your satisfaction, on average, with your travel experience. (Under "Satisfaction rating," check one response for each form of transportation you have used.)

	Frequency of use						Satisfaction rating				
	1 - Never	2 - Rarely	3 - Occasionally	4 - Often	5 - Always		1 - Very dissatisfied	2 - Dissatisfied	3 - Neither satisfied or dissatisfied	4 - Satisfied	5 - Very satisfied
Private vehicle (car, truck, motorcycle, RV)	1	2	3	4	5		1	2	3	4	5
All-terrain vehicle (ATV) or off-road vehicle	1	2	3	4	5		1	2	3	4	5
Kayak, canoe, or raft	1	2	3	4	5		1	2	3	4	5
Motorboat	1	2	3	4	5		1	2	3	4	5
AMHS ferry	1	2	3	4	5		1	2	3	4	5
Commercial aircraft (includes air taxis, helicopter)	1	2	3	4	5		1	2	3	4	5
Private airplane (includes ultralights)	1	2	3	4	5		1	2	3	4	5
Commercial shuttle/tour bus	1	2	3	4	5		1	2	3	4	5
Public bus	1	2	3	4	5		1	2	3	4	5
Train	1	2	3	4	5		1	2	3	4	5
Snow machine	1	2	3	4	5		1	2	3	4	5
Cross country skis, snowshoes	1	2	3	4	5		1	2	3	4	5
Bicycle	1	2	3	4	5		1	2	3	4	5
Foot/hiking	1	2	3	4	5		1	2	3	4	5
Other (please specify: _____)	1	2	3	4	5		1	2	3	4	5
Other (please specify: _____)	1	2	3	4	5		1	2	3	4	5

3. Have you visited this site before today (not including this visit)?

Yes → Approximately how many times have you visited in the last year? (Check one response.)

- 1 time
 2 – 3 times
 4 – 6 times
 7 – 10 times
 More than 10 times

No

4. **Which form(s) of transportation did you use to arrive at this site?** (Please check all that apply.)
Which form(s) of transportation have you used or do you plan to use within this site to get from one destination to another? (Check all that apply.)

Type of Transportation	Used TO ARRIVE at site	Used/plan to use WITHIN site
Private vehicle (car, truck, motorcycle, RV)		
All-terrain vehicle (ATV) or off-road vehicle		
Public bus (not including shuttles or trolleys)		
Commercial shuttle/tour bus		
Alaska Railroad		
Alaska Marine Highway ferry		
Cruise ship		
Motorboat		
Kayak, canoe, or raft		
Commercial aircraft (includes air taxi, helicopter)		
Private airplane		
Bicycle		
Foot/hiking		
Other (please specify: _____)		
No additional travel within site/area		

5. **How would you rate your travel experience arriving at this site?** (Check one response in column A.)
How would you rate your travel experience within this site? (Check one response in column B.)

	A	B
	Arriving at site	Within site
Excellent		
Good		
Fair		
Poor		
Very Poor		

Now we are going to ask you a few questions about your overall trip. When we use the word trip, we mean the time you spent away from home. For example, this may be a day trip to a single site or area. It could also be a trip that lasts a week or two, where you are visiting multiple sites.

6. **On this trip, which Federal lands sites have you visited (please include this site in your response)?**

(Please check all that apply in column A.)

What Alaska Federal public lands do you plan to visit next? (Check one response in column B.)

What other Alaska Federal public lands are you planning to visit? (Check all that apply in column C.)

	A	B	C
	Visited	Next destination	Other destinations
SOUTHEAST REGION			
Glacier Bay National Park and Preserve			
Klondike Gold Rush National Historical Park			
Sitka National Historical Park			
Tongass National Forest			
SOUTHCENTRAL REGION			
Alaska Maritime National Wildlife Refuge			
Gulkana Wild and Scenic River			
Kenai Fjords National Park			
Kenai National Wildlife Refuge			
Chugach National Forest			
Campbell Tract (Anchorage)			
Tangle Lakes and Delta Wild and Scenic River			
Wrangell-St. Elias National Park and Preserve			
SOUTHWEST REGION			
Kodiak National Wildlife Refuge			
Katmai National Park and Preserve			
Lake Clark National Park and Preserve			
INTERIOR			
Denali National Park and Preserve			
Fortymile Wild and Scenic River			
Steese National Conservation Area			
Tetlin National Wildlife Refuge			
White Mountains National Recreation Area			
Yukon-Charley Rivers National Preserve			
NORTHERN REGION			
Bering Land Bridge National Preserve			
Cape Krusenstern National Monument			
Gates of the Arctic National Park and Preserve			
Kobuk Valley National Park			
Noatak National Preserve			
Dalton Highway			
Arctic National Wildlife Refuge			
Other (please specify: _____)			
Other (please specify: _____)			
Do not plan to visit other sites			

7. **During this trip, which of the following activities have you participated in on Federal public lands?**
 (Check all that apply in column A.)
During the rest of your trip, which activities do you plan to participate in on Federal public lands?
 (Check all that apply in column B.)

	A	B
NON-MOTORIZED ACTIVITIES	Did on this trip	Plan to do during rest of this trip
Hiking or walking		
Viewing wildlife (including birdwatching)		
Backpacking/trekking		
Climbing/mountaineering		
Camping		
Hunting		
Salt water fishing		
Fresh water fishing		
Berry picking/food gathering		
Horseback riding		
Bicycling, including mountain biking		
Canoeing, kayaking, sailing, rafting		
Gold panning		
Other non-motorized activities (swimming, endurance events, etc.)		
MOTORIZED ACTIVITIES		
Driving for pleasure on roads (paved, gravel, or dirt)		
Riding on trails (ATV, UTV, etc.)		
Riding in designated off-road vehicle areas		
Water travel (motor boat, jet ski, etc.)		
Commercial aircraft tours		
Other motorized activities (organized events, etc.)		
No other activities planned		

Now we'd like to ask you a few questions about your planning for this trip. If you are on a multi-day trip visiting different sites, please answer the questions with respect to your entire trip.

8. **How long before the trip did you start making your travel arrangements?** (Check one response.)
- Less than one week
 - 1 week to 4 weeks
 - 1 to 3 months
 - 4 to 11 months
 - 1 year to 2 years
 - More than 2 years
 - Don't know/can't recall

9. **Prior to your trip, how did you and your personal group obtain information to plan the transportation and travel-related details of your trip?** (Check one response for each item.)

	Used?	
	Yes	No
Federal or State websites		
Other websites		
Social media (e.g., Facebook, Twitter, etc.)		
Podcasts		
Maps (e.g., Motor Vehicle Use Maps for National Forests)		
Brochures or pamphlets		
Travel guides/books		
Newspaper/magazine article		
Alaska Milepost		
Radio/TV broadcasts		
Word of mouth (e.g., friends or relatives)		
Previous visits		
Visitor bureaus, visitor centers, or information centers (e.g., Alaska Public Lands Information Center)		
Other (Please specify _____)		

10. **Was there information that you and your personal group needed that was not available?**

Yes → please describe: _____

No

Not Sure

Next, we have a few questions about you and your travel group.

11. **On this trip are you traveling independently or as part of a pre-purchased guided tour group?**

(Check one response.)

Independently

Part of pre-purchased package or tour group

Both

12. **On this trip, are you and your personal group traveling with any of the following types of organized groups?**

	Yes	No
a. School/educational group	___	___
b. Other organized group (such as business group, scout group, etc.)	___	___

13. **On this trip, what kind of personal group (not guided tour/school group) are you with?**

(Check one response.)

- Alone
- Family
- Friends
- Family and friends
- Business associates
- Other (please specify: _____)

14. **Does anyone in your personal group have a physical condition or personal limitation that made it difficult to access services or participate in activities on this trip?**

Yes → **Which activities or services has the person(s) had difficulty accessing or participating in?**

Please be as specific as possible, and include the location, if possible.

No

15. **Including yourself, how many people in your personal travel group are in the following age groups?**

(Please write in number of people in each age group.)

- _____ 5 years and under
- _____ 6 – 12 years
- _____ 13 – 18 years
- _____ 19 – 29 years
- _____ 30 – 44 years
- _____ 45 – 64 years
- _____ 65 or older

The following demographic questions are to help public land managers better understand their visitors. Responses will be reported as summary statistics (e.g., percentages).

16. **What is your zip code?** _____

17. **Are you:** (Check one response.)

- Male
- Female

18. **Are you Hispanic or Latino?** (Check one response.)

- Yes
- No

19. **What is your race?** (Check all that apply.)

- American Indian or Alaska Native
- Asian
- Black or African American
- White
- Native Hawaiian or other Pacific Islander
- Other

20. **Please indicate the highest level of education you have completed.** (Check one response.)

- Less than high school
- High school graduate/GED
- Vocational or technical school certificate
- Some college
- Associate's degree
- Bachelor's degree
- Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA, etc.)

21. **Which category best represents your annual household income (before taxes) last year?** (Check one response.)

- Less than \$24,999
- \$25,000 – \$34,999
- \$35,000 – \$49,999
- \$50,000 – \$74,999
- \$75,000 – \$99,999
- \$100,000 – \$149,999
- \$150,000 – \$199,999
- \$200,000 or more
- Do not wish to answer

Thank you so much for participating in the survey! We are hoping that you will be willing to complete a follow-up survey after your trip, so we can better understand your entire travel experience.

Would you be willing to complete the follow-up survey?

No

Yes → **Can we send you a link to complete the survey online, or do prefer a paper version of the survey?**

online: please provide your email address _____

mail: please provide your name and mailing address

Name: _____

Street: _____

City/Zip: _____

NOTE: Email or mailing address information will be kept confidential and will only be used for the purpose of sending you the follow-up survey. Your contact information will be stored in a separate file and will never be linked to any of your survey responses. In addition, your contact information will be destroyed upon completion of the study.

Alaska Federal Lands Transportation Survey – Alaska Non-Resident

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1. **Do you live in the United States?**

Yes → **What is your home state?** _____

No → **What country do you live in?** _____

2. **Are you a seasonal resident of Alaska?**

Yes

No

3. **Which form(s) of transportation did you use to arrive in Alaska?** (Check all that apply.)

Airplane (commercial or private)

Cruise Ship

Vehicle (car, RV, truck, motorcycle)

Alaska Marine Highway ferry

Bus

Other (please specify: _____)

4. **Have you visited Alaska before (not including this visit)?**

Yes → Approximately how many times have you visited in the last ten years? (Check one response.)

1 time

2 – 3 times

4 – 6 times

7 – 10 times

More than 10 times

No

5. **Which form(s) of transportation did you use to arrive at this site?** (Please check all that apply.)
Which form(s) of transportation have you used or do you plan to use within this site to get from one destination to another? (Check all that apply.)

Type of Transportation	Used TO ARRIVE at site	Used/plan to use WITHIN site
Private vehicle (car, truck, motorcycle, RV)		
All-terrain vehicle (ATV) or off-road vehicle		
Public bus (not including shuttles or trolleys)		
Commercial shuttle/tour bus		
Alaska Railroad		
Alaska Marine Highway ferry		
Cruise ship		
Motorboat		
Kayak, canoe, or raft		
Commercial aircraft (includes air taxi, helicopter)		
Private airplane		
Bicycle		
Foot/hiking		
Other (please specify: _____)		
No additional travel within site/area		

6. **How would you rate your travel experience arriving at this site?** (Check one response in column A.)
How would you rate your travel experience within this site? (Check one response in column B.)

	A	B
	Arriving at site	Within site
Excellent		
Good		
Fair		
Poor		
Very Poor		

Now we are going to ask you a few questions about your overall trip. When we use the word trip, we mean the time you spent away from home. For example, this may be a day trip to a single site or area. It could also be a trip that lasts a week or two, where you are visiting multiple sites.

7. **On this trip, which Federal lands sites have you visited (please include this site in your response)?**

(Please check all that apply in column A.)

What Alaska Federal public lands do you plan to visit next? (Check one response in column B.)

What other Alaska Federal public lands are you planning to visit? (Check all that apply in column C.)

	A	B	C
	Visited	Next destination	Other destinations
SOUTHEAST REGION			
Glacier Bay National Park and Preserve			
Klondike Gold Rush National Historical Park			
Sitka National Historical Park			
Tongass National Forest			
SOUTHCENTRAL REGION			
Alaska Maritime National Wildlife Refuge			
Gulkana Wild and Scenic River			
Kenai Fjords National Park			
Kenai National Wildlife Refuge			
Chugach National Forest			
Campbell Tract (Anchorage)			
Tangle Lakes and Delta Wild and Scenic River			
Wrangell-St. Elias National Park and Preserve			
SOUTHWEST REGION			
Kodiak National Wildlife Refuge			
Katmai National Park and Preserve			
Lake Clark National Park and Preserve			
INTERIOR			
Denali National Park and Preserve			
Fortymile Wild and Scenic River			
Steese National Conservation Area			
Tetlin National Wildlife Refuge			
White Mountains National Recreation Area			
Yukon-Charley Rivers National Preserve			
NORTHERN REGION			
Bering Land Bridge National Preserve			
Cape Krusenstern National Monument			
Gates of the Arctic National Park and Preserve			
Kobuk Valley National Park			
Noatak National Preserve			
Dalton Highway			
Arctic National Wildlife Refuge			
Other (please specify: _____)			
Other (please specify: _____)			
Do not plan to visit other sites			

8. **During this trip, which of the following activities have you participated in on Federal public lands?**
 (Check all that apply in column A.)
During the rest of your trip, which activities do you plan to participate in on Federal public lands?
 (Check all that apply in column B.)

	A	B
NON-MOTORIZED ACTIVITIES	Did on this trip	Plan to do during rest of this trip
Hiking or walking		
Viewing wildlife (including birdwatching)		
Backpacking/trekking		
Climbing/mountaineering		
Camping		
Hunting		
Salt water fishing		
Fresh water fishing		
Berry picking/food gathering		
Horseback riding		
Bicycling, including mountain biking		
Canoeing, kayaking, sailing, rafting		
Gold panning		
Other non-motorized activities (swimming, endurance events, etc.)		
MOTORIZED ACTIVITIES		
Driving for pleasure on roads (paved, gravel, or dirt)		
Riding on trails (ATV, UTV, etc.)		
Riding in designated off-road vehicle areas		
Water travel (motor boat, jet ski, etc.)		
Commercial aircraft tours		
Other motorized activities (organized events, etc.)		
No other activities planned		

Now we'd like to ask you a few questions about your planning for this trip. If you are on a multi-day trip visiting different sites, please answer the questions with respect to your entire trip.

9. **How long before the trip did you start making your travel arrangements?** (Check one response.)
- Less than one week
 - 1 week to 4 weeks
 - 1 to 3 months
 - 4 to 11 months
 - 1 year to 2 years
 - More than 2 years
 - Don't know/can't recall

10. **Prior to your trip, how did you and your personal group obtain information to plan the transportation and travel-related details of your trip?** (Check one response for each item.)

	Used?	
	Yes	No
Federal or State websites		
Other websites		
Social media (e.g., Facebook, Twitter, etc.)		
Podcasts		
Maps (e.g., Motor Vehicle Use Maps for National Forests)		
Brochures or pamphlets		
Travel guides/books		
Newspaper/magazine article		
Alaska Milepost		
Radio/TV broadcasts		
Word of mouth (e.g., friends or relatives)		
Previous visits		
Visitor bureaus, visitor centers, or information centers (e.g., Alaska Public Lands Information Center)		
Other (Please specify _____)		

11. **Was there information that you and your personal group needed that was not available?**

- Yes → please describe: _____
- No
- Not Sure

Next, we have a few questions about you and your travel group.

12. **On this trip are you traveling independently or as part of a pre-purchased guided tour group?**

(Check one response.)

- Independently
- Part of pre-purchased package or tour group
- Both

13. **On this trip, are you and your personal group traveling with any of the following types of organized groups?**

- | | Yes | No |
|--|-----|-----|
| a. School/educational group | ___ | ___ |
| b. Other organized group (such as business group, scout group, etc.) | ___ | ___ |

14. **On this trip, what kind of personal group (not guided tour/school group) are you with?**

(Check one response.)

- Alone
- Family
- Friends
- Family and friends
- Business associates
- Other (please specify: _____)

15. **Does anyone in your personal group have a physical condition or personal limitation that made it difficult to access services or participate in activities on this trip?**

Yes → **Which activities or services has the person(s) had difficulty accessing or participating in?**

Please be as specific as possible, and include the location, if possible.

No

16. **Including yourself, how many people in your personal travel group are in the following age groups?**

(Please write in number of people in each age group.)

- _____ 5 years and under
- _____ 6 – 12 years
- _____ 13 – 18 years
- _____ 19 – 29 years
- _____ 30 – 44 years
- _____ 45 – 64 years
- _____ 65 or older

The following demographic questions are to help public land managers better understand their visitors. Responses will be reported as summary statistics (e.g., percentages).

17. **Are you:** (Check one response.)

- Male
- Female

18. **Are you Hispanic or Latino?** (Check one response.)

- Yes
- No

19. **What is your race?** (Check all that apply.)

- American Indian or Alaska Native
- Asian
- Black or African American
- White
- Native Hawaiian or other Pacific Islander
- Other

20. **Please indicate the highest level of education you have completed.** (Check one response.)

- Less than high school
- High school graduate/GED
- Vocational or technical school certificate
- Some college
- Associate's degree
- Bachelor's degree
- Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA, etc.)

21. **Which category best represents your annual household income (before taxes) last year?** (Check one response.)

- Less than \$24,999
- \$25,000 – \$34,999
- \$35,000 – \$49,999
- \$50,000 – \$74,999
- \$75,000 – \$99,999
- \$100,000 – \$149,999
- \$150,000 – \$199,999
- \$200,000 or more
- Do not wish to answer

Thank you so much for participating in the survey! We are hoping that you will be willing to complete a follow-up survey after your trip, so we can better understand your entire travel experience.

Would you be willing to complete the follow-up survey?

No

Yes → **Can we send you a link to complete the survey online, or do prefer a paper version of the survey?**

online: please provide your email address _____

mail: please provide your name and mailing address

Name: _____

Street: _____

City /State (or Country)/Zip: _____

NOTE: Email or mailing address information will be kept confidential and will only be used for the purpose of sending you the follow-up survey. Your contact information will be stored in a separate file and will never be linked to any of your survey responses. In addition, your contact information will be destroyed upon completion of the study.

Can you let us know on which date you will be leaving Alaska, so that we know when to send you the follow-up survey?

Date you will leave Alaska: _____

Alaska Federal Lands Transportation Survey – Non-Recreational Alaska Resident

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0236. The time required to complete this information collection is estimated to average 13 minutes per response, including the time for reviewing instructions.

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- In general, in the last year, how often have you used the Federal public lands in Alaska managed by each of the following agencies, either traveling through them to get to your destination, or participating in activities, such as hunting or fishing? Include commuting through Federal public lands and working on Federal public lands. First we'll ask about your use during winter months, and then we'll ask about your use during summer months. (Check one response for each item.)**

	Don't know	More than once per week	About once per week	About once per month	Less than monthly	Never
WINTER MONTHS (approximately October – April)						
Bureau of Land Management						
U.S. Fish and Wildlife Service						
National Park Service						
U.S. Forest Service						
SUMMER MONTHS (approximately May – September)						
Bureau of Land Management						
U.S. Fish and Wildlife Service						
National Park Service						
U.S. Forest Service						

- Have you visited this site before today (not including this visit)?**
 Yes → **Approximately how many times have you visited in the last year?** (Check one response.)
 - 1 time
 - 2 – 3 times
 - 4 – 6 times
 - 7 – 10 times
 - More than 10 times No

3. **Which form(s) of transportation did you use to arrive at this site?** (Please check all that apply.)
Which form(s) of transportation have you used or do you plan to use within this site to get from one destination to another? (Check all that apply.)

Type of Transportation	Used TO ARRIVE at site	Used/plan to use WITHIN site
Private vehicle (car, truck, motorcycle, RV)		
All-terrain vehicle or off-road vehicle		
Public Bus (not including shuttles or trolleys)		
Commercial shuttle/tour bus		
Alaska Marine Highway ferry		
Cruise ship		
Motorboat		
Kayak, canoe, or raft		
Commercial airplane (includes air taxi)		
Private airplanes		
Bicycle		
Foot/Hiking		
Other (please specify: _____)		
No additional travel within site/area		

4. **How would you rate your travel experience arriving at this site?** (Check one response in column A.)
How would you rate your travel experience within this site? (Check one response in column B.)

	A	B
	Arriving at Site	Within site
Excellent		
Good		
Fair		
Poor		
Very Poor		

5. **Please use the space below to share any additional feedback on your travel experiences on Alaska Federal public lands. In particular, we are interested in learning about any transportation-related issues or problems you faced. Please be as specific as possible.**

6. **Do you have any suggestions for how travel/transportation to or through Federal public lands can be improved?**

We have just a few final questions. The following demographic questions are to help public land managers better understand their visitors. Responses will be reported as summary statistics (e.g., percentages).

7. **What is your zip code?** _____

8. **What is your age?** (Check one response.)
 18 – 29 years
 30 – 44 years
 45 – 64 years
 65 or older

9. **Are you:** (Check one response.)
 Male
 Female

10. **Are you Hispanic or Latino?** (Check one response.)
 Yes
 No

11. **What is your race?** (Check all that apply.)
 American Indian or Alaska Native
 Asian
 Black or African American
 White
 Native Hawaiian or other Pacific Islander
 Other

12. **Please indicate the highest level of education you have completed.** (Check one response.)
 Less than high school
 High school graduate/GED
 Vocational or technical school certificate
 Some college
 Associate's degree
 Bachelor's degree
 Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA, etc.)

13. **Which category best represents your annual household income (before taxes) last year?** (Check one response.)
 Less than \$24,999
 \$25,000 – \$34,999
 \$35,000 – \$49,999
 \$50,000 – \$74,999
 \$75,000 – \$99,999
 \$100,000 – \$149,999
 \$150,000 – \$199,999
 \$200,000 or more
 Do not wish to answer

Thank you so much for participating in the survey!

Alaska Federal Lands Transportation Survey – Non-Recreational Alaska Non-Resident

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0236. The time required to complete this information collection is estimated to average 13 minutes per response, including the time for reviewing instructions.

If you have questions or concerns about your rights as a research participant, you can contact the University of Alaska-Fairbanks Office of Research Integrity at 474-7800 (Fairbanks area) or [1-866-876-7800](tel:1-866-876-7800) (toll-free outside the Fairbanks area) or uaf-irb@alaska.edu.

1. Do you live in the United States?

Yes → **What is your home state?** _____

No → **What country do you live in?** _____

2. Are you a seasonal resident of Alaska?

Yes

No

3. Which form(s) of transportation did you use to arrive in Alaska? (Check all that apply).

Airplane (commercial or private)

Cruise Ship

Vehicle (car, RV, truck, motorcycle)

Alaska Marine Highway ferry

Bus

Other (please specify: _____)

4. Have you visited Alaska before (not including this visit)?

Yes → Approximately how many times have you visited in the last ten years? (Check one response.)

1 time

2 – 3 times

4 – 6 times

7 – 10 times

More than 10 times

No

5. **Which form(s) of transportation did you use to arrive at this site?** (Please check all that apply.)
Which form(s) of transportation have you used or do you plan to use within this site to get from one destination to another? (Check all that apply.)

Type of Transportation	Used TO ARRIVE at site	Used/plan to use WITHIN site
Private vehicle (car, truck, motorcycle, RV)		
All-terrain vehicle (ATV) or Off-road vehicle		
Public Bus (not including shuttles or trolleys)		
Commercial shuttle/tour bus		
Alaska Marine Highway ferry		
Cruise ship		
Motorboat		
Kayak, canoe, or raft		
Commercial airplane (includes air taxi)		
Private airplanes		
Bicycle		
Foot/hiking		
Other (please specify: _____)		
No additional travel within site/area		

6. **How would you rate your travel experience arriving at this site?** (Check one response in column A.)
How would you rate your travel experience within this site? (Check one response in column B.)

	A	B
	Arriving at Site	Within site
Excellent		
Good		
Fair		
Poor		
Very Poor		

7. **Please use the space below to share any additional feedback on your travel experiences on Alaska Federal public lands. In particular, we are interested in learning about any transportation-related issues or problems you faced. Please be as specific as possible.**

8. **Do you have any suggestions for how travel/transportation to or through Federal public lands can be improved?**

We have just a few final questions. The following demographic questions are to help public land managers better understand their visitors. Responses will be reported as summary statistics (e.g., percentages).

9. **What is your zip code?** _____
10. **What is your age?** (Check one response.)
 18 – 29 years
 30 – 44 years
 45 – 64 years
 65 or older
11. **Are you:** (Check one response.)
 Male
 Female
12. **Are you Hispanic or Latino?** (Check one response.)
 Yes
 No
13. **What is your race?** (Check all that apply.)
 American Indian or Alaska Native
 Asian
 Black or African American
 White
 Native Hawaiian or other Pacific Islander
 Other
14. **Please indicate the highest level of education you have completed.** (Check one response.)
 Less than high school
 High school graduate/GED
 Vocational or technical school certificate
 Some college
 Associate's degree
 Bachelor's degree
 Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA, etc.)
15. **Which category best represents your annual household income (before taxes) last year?** (Check one response.)
 Less than \$24,999
 \$25,000 – \$34,999
 \$35,000 – \$49,999
 \$50,000 – \$74,999
 \$75,000 – \$99,999
 \$100,000 – \$149,999
 \$150,000 – \$199,999
 \$200,000 or more
 Do not wish to answer

Thank you so much for participating in the survey!

Alaska Federal Lands Transportation Survey



If you have any questions about the survey, please contact Peter Fix at (907) 474-6926 or pjfix@alaska.edu.

First, we'd like to ask you a few general questions about your trip and about information sources you used during your trip.

1. **How many total nights did you spend away from home on this trip?** (Please check one response.)

- 0 → go to question 3
- 1 – 2
- 3 - 14
- 15+

2. **In what type(s) of accommodations did you and your personal group spend the night(s)?** (Check all that apply.)

- Rental lodge or cabin
- Hotel, motel, rented condo/home or bed & breakfast
- Cruise ship
- Alaska Marine Ferry or other boat
- RV/trailer camping
- Tent camping
- Backcountry camping
- Personal seasonal residence
- Residence of friends/relatives
- Other accommodations (please specify)

3. Which information sources did you and your personal group use during your trip for transportation or travel-related information? (Check all that apply in the “Used” column.)

For each source used, how helpful was the information you received? (For each information source used, check one response in the “How helpful” column.)

	1) Used During Trip?	2) How helpful?			
		Not at all helpful	Slightly helpful	Moderately helpful	Very helpful
Federal or state websites		1	2	3	4
Other websites		1	2	3	4
Social media (e.g., Facebook, Twitter, etc.)		1	2	3	4
Podcasts		1	2	3	4
Maps (e.g., Motor Vehicle Use Maps for National Forests)		1	2	3	4
Brochures or pamphlets		1	2	3	4
Travel guides/books		1	2	3	4
Newspaper/magazine article		1	2	3	4
Alaska Milepost		1	2	3	4
Radio/TV broadcasts		1	2	3	4
Word of mouth (friends or relatives)		1	2	3	4
Word of mouth (local businesses or residents)		1	2	3	4
Package tour companies/providers (Alaska Railroads, airline, cruise, independent, etc.)		1	2	3	4
Visitor bureaus, visitor centers or Information centers (e.g., Alaska Public Lands Information Center)		1	2	3	4
Previous visits		1	2	3	4
Other (Please specify)		1	2	3	4
Did not use any sources		1	2	3	4

4. From the sources marked above, did you and your personal group receive the type of information that you needed?

Yes

No → IF No, What was the information that you and your personal group needed that was not available? Please be specific.

Not sure

5. **During your trip, did you and your personal group use any of the following electronic devices to obtain transportation or travel-related information?** (Please check one response for each item.)

	Used	Did not use	Not sure
Laptop			
Tablet computer (e.g., iPad)			
Smartphone (e.g., iPhone, Android)			
Cell phone/text (without internet)			
Global Positioning System (GPS)			
Marine/aircraft radio (2-way radio)			
Other portable electronic device (please specify:_____)			
Other portable electronic device (please specify:_____)			

6. **Please indicate if you had any of the following problems when trying to obtain information on your electronic device.** (Check all that apply.)

- Service not available (e.g., no internet connection)
 Could not find the information I was seeking
 Information was incomplete, not detailed enough
 Other problem (please specify:_____)
 Did not experience any problems
 Did not use electronic devices

7. **On this trip, were the signs directing you and your personal group to your destination(s) adequate?** (Please check one response for each item.)

	Yes	No	Not applicable
Signs on state highways			
Signs in communities			
Signs along trails			
Signs at airports			
Signs at ferry terminals or docks			
Signs at railroad stations/depots			
Signs inside Federal Lands (National Parks, National Forests, National Wildlife Refuges, etc.)			

7a. [If no for one or more items]: Please explain any issues or problems you had with the signs. Please be as specific as possible.

The next set of questions is about the sites you visited and activities you engaged in.

8. Were you and your personal group able to visit all of the Federal public land sites that you planned to visit on this trip?

- Yes → go to question 11
- No

9. Which sites were you not able to visit? _____

10. What reasons prevented you from visiting those sites? (Check all that apply.)

- Not enough time
- Didn't realize how long it would take to travel to destination(s)
- Transportation to/from the destination was too costly
- Transportation to/from the destination was not available
- Transportation to/from the destination was not frequent enough/convenient
- Transportation-related mechanical problems
- Area was closed/road closure
- Bad weather
- Other (please specify: _____)

11. Were you able to participate in all the activities that you and your personal group had planned on Federal public lands?

- Yes → go to question 14
- No

12. Which activity(s) were you and your personal group not able to participate in?

13. Which of the following reasons explain why you did not engage in the activity?
(Check all that apply.)

- Rules or regulations did not allow for activity
- Area was temporarily closed to the public
- Not enough time
- Safety concerns
- Not enough information about the activity
- Too crowded
- Could not get a reservation
- Difficult road or trail access
- No road or trail access
- Unsatisfactory conditions of facilities
- Resource damage due to overuse
- Bad weather
- Wildfire/other natural hazard
- Other (please specify: _____)

Next, we'd like to ask you about your travel experience, including questions evaluating different aspects of your trip.

14. This question asks about your use of transportation during your trip and has two parts. First, please indicate which of the following forms of transportation you and your personal group used during your trip. (Check all that apply in the "Used" column.)

Next, for each form of transportation that you and your personal group used, please use the 5-point scale to rate your satisfaction, on average, with your travel experience.

	1) Used?	2) Satisfaction Rating				
		Very Dissatisfied	Dissatisfied	Neither Satisfied or Dissatisfied	Satisfied	Very Satisfied
Private vehicle (car, truck, motorcycle, RV)		1	2	3	4	5
Rental vehicle (car, truck, motorcycle RV)		1	2	3	4	5
All-terrain vehicle or off-road vehicle		1	2	3	4	5
Commercial tour bus		1	2	3	4	5
Other public bus		1	2	3	4	5
Denali Visitor Transportation System (Shuttle bus)		1	2	3	4	5
White Pass Railroad						
Alaska Railroad		1	2	3	4	5
Cruise Ship		1	2	3	4	5
Boat (motorized)		1	2	3	4	5
Alaska Marine Ferry System		1	2	3	4	5
Kayak, canoe or raft		1	2	3	4	5
Commercial aircraft (includes air taxis, helicopters)		1	2	3	4	5
Private airplane (includes ultralights)		1	2	3	4	5
Bicycle		1	2	3	4	5
Foot/hiking		1	2	3	4	5
Other (please specify: _____)		1	2	3	4	5
Other (please specify: _____)		1	2	3	4	5

14a. [For any forms of transportation rated "1" or "2"]: Why were you dissatisfied with your travel experience?

15. Thinking about your trip as a whole, please use the 5-point scale to rate how well your travel experience lived up to your expectations. (Please check one response)

Significantly below my expectations	Below my expectations	Met my expectations	Above my expectations	Significantly above my expectations
1	2	3	4	5

- 15a. If you rated your overall travel experience as a 1 or 2, why did your travel experience fall below your expectations?

16. During your trip, did you experience any delays or other problems making connections from one form of transportation to another? For example, a weather delay making a connection from a bus to a train?

Yes → IF YES, Please indicate the nature of the problem. Please be as specific as possible.

No

Not applicable (didn't make any transportation connections during my trip)

17. During your trip, how dissatisfied or satisfied were you and your personal group with each of the following services or facilities on Federal public lands (e.g., National Parks, National Forests, Wildlife Refuges, National Conservation Areas, Wild and Scenic Rivers)? (For each item, check one response. If you had no experience with a particular service or facility, please check “Not applicable.”)

	Very Dissatisfied	Dissatisfied	Neither Satisfied or Dissatisfied	Satisfied	Very Satisfied	Not Applicable
Condition of Roads	1	2	3	4	5	6
Condition of trails	1	2	3	4	5	6
Number of trail markers	1	2	3	4	5	6
Parking availability	1	2	3	4	5	6
Availability of transportation to the sites I wanted to visit	1	2	3	4	5	6
Availability of restrooms	1	2	3	4	5	6

18. During your trip, to what extent do you feel the following issues were a problem when you were visiting Federal public lands (e.g., National Parks, National Forests, National Recreation Areas, National Wildlife Refuges)? (For each item, please check one response.)

	Not a problem	Small problem	Moderate problem	Big problem	No opinion
People walking on, across, or along the road	1	2	3	4	5
Interactions between motorized and non-motorized forms of transportation	1	2	3	4	5
Too many people at scenic overlooks	1	2	3	4	5
Motor vehicle sounds that interfered with natural sounds and quiet	1	2	3	4	5
Aircraft sound that interfered with natural sounds and quiet	1	2	3	4	5
Cars parked illegally (e.g., on road shoulders)	1	2	3	4	5
Too many regulations	1	2	3	4	5
Too few regulations	1	2	3	4	5
Traffic congestion					
Other (Please specify: _____)	1	2	3	4	5

19. **Thinking about your trip, would you have liked to have seen more of, the same, or less of each of the following on the Federal public lands that you saw or visited (e.g., National Parks, National Forests, National Wildlife Refuges, National Conservation Areas, and Wild and Scenic Rivers)?**
 (For each item, please check one response.)

	Less	Same	More	No Opinion
Trails for hiking, biking, or horseback riding	1	2	3	4
Trails for all-terrain vehicles	1	2	3	4
Roads for passenger vehicles	1	2	3	4
Primitive roads (e.g., high clearance roads)	1	2	3	4
Campgrounds	1	2	3	4
Signs that include directions or wayfinding information	1	2	3	4
Safety cabins/shelters	1	2	3	4
Remote airstrips	1	2	3	4
Boat launches, moorings, and docks	1	2	3	4
Accessible-friendly (e.g., for wheelchairs) sites and facilities	1	2	3	4
Other (please specify: _____)	1	2	3	4
Other (please specify: _____)	1	2	3	4

In this last section, we have a few questions on safety.

20. **Prior to your trip, did you or anyone in your travel group search for information about safety measures?**

___ Yes → IF YES, What were the safety concerns that you searched? Please list up to three of your top concerns. _____

___ No

21. **While on Federal public lands in Alaska, did you or members of your personal group experience any safety concerns (e.g., concern about potential injury) as a result of the following:** (For each item, please check one response).

Experienced:	Safety Concern:	
	Yes	No
Wildlife encounter		
Bad weather		
Got lost		
Poor road conditions		
Poor trail conditions		
Vehicles parked along the side of the road		
Interactions between vehicles and bicycles		
Interactions between vehicles and pedestrians		
Ran out of gas or other supplies in a remote area		
Lack of cell phone coverage		
Needing emergency services		
Other (please specify: _____)		

IF YES TO ANY ITEMS: **Please describe:** _____

22. **Considering all trips you have made on Federal public lands in Alaska, have you ever been involved in a transportation-related accident or safety incident?** (Please check one response.)

- Yes, once
- Yes, more than once
- No → go to question 25
- Can't recall → go to question 25

23. **Was (were any of) the transportation related accident(s) or safety incident(s) reported?**

- Yes → IF YES, to whom? _____

- No
- Don't know

24. **Please describe the transportation-related accident or safety incident(s). If more than one, please describe the most serious:**

25. Please use the space below to share any additional feedback on your travel experiences during your trip. In particular, we are interested in learning about any transportation-related issues or problems you faced. Please be as specific as possible.

26. Do you have any suggestions for how travel/transportation to or through Federal public lands can be improved?

You have completed the survey. Thank you so much! Your participation is deeply appreciated.

Use the space below to provide any additional comments.

Text for cover letter (printed on UAF Letterhead). Cover letter was customized for each survey site.



School of Natural Resources and Extension

Department of Natural Resources Management

**303 O'Neill Building • P.O. Box 757200 • Fairbanks AK 99775-7200
(907) 474-7188 • fax (907) 474-6184 • <http://www.uaf.edu/snrns/> • fysnrns@uaf.edu**

Dear [First Last],

We hope that you enjoyed your recent visit to Alaska's Federal public lands. You may recall completing the first part of a survey in-person at [SITE], and you agreed to complete our follow-up survey. This follow-up survey is about that same trip, and it should take less than 20 minutes of your time to complete. Your feedback is very important to us! The results will be used to help us better manage your Federal public lands.

When you have completed the survey, please return it to us in the postage-paid return envelope.

Your responses will remain confidential. As participation is voluntary, you can withdraw at any time. Completing the survey implies your consent to participate. If you have any questions about the survey, please contact Peter Fix at (907) 474-6926 or pjfix@alaska.edu. If you have questions or concerns about your rights as a research participant, you can contact the UAF Office of Research Integrity at 474-7800 (Fairbanks area) or 1-866-876-7800 (toll-free outside the Fairbanks area) or uaf-irb@alaska.edu.

Thank you in advance for your participation!

Sincerely,

Dr. Peter J Fix
Principal Investigator
University of Alaska Fairbanks

Text for thank you/reminder postcard.

Dear <first> <last>,

A survey was recently mailed to you regarding your trip on Alaska Federal public lands. As of today we have not received your response. If you have already completed the survey, thank you for your help. If not, please complete the survey at your earliest convenience. Because the surveys were sent to only a limited number of visitors to Alaska Federal public lands, it is extremely important that we hear from you.

If you did not receive the survey, please contact Peter Fix at (907) 474-6926; or ak.transportation.survey@alaska.edu.

Sincerely,

Peter J Fix
Principal Investigator
University of Alaska Fairbanks

Appendix B Comparison of CVTS Data to AVSP Data

Travel to Regions of the State

The AVSP presented visitors with five regions of the state (Southeast, Southcentral, Interior, Southwest, and Northern) and asked which regions they visited. While the CVTS did not ask that exact question, it did ask about visitation to specific sites within those five regions. Using responses to specific site visitation, a new variable was created to indicate which of the five regions the CVTS respondents visited. CVTS data shows a lower rate of visiting southeast Alaska and a higher rate of visiting Interior, southwest, and the north (Table 57).

Table 57. Visitation to regions of Alaska: CVTS compared to AVSP.

Regions	CVTS ¹		AVSP ²
	n	%	
Southeast	1161	59%	68%
Southcentral	1040	53%	56%
Interior	1069	55%	33%
Southwest	227	12%	4%
North	151	8%	2%

¹n = 1958, which includes only the non-resident recreation visitors.

²Data are from 2011.

Mode of arrival to Alaska

The CVTS non-resident recreation respondents were used for this analysis. There were 1,958 nonresident recreation surveys. Of those, 252 entered more than 1 mode of travel to Alaska (the question was set up so respondents could check all that apply). For the respondents who checked more than one mode, to categorize their arrival type, the following rules were developed:

- If cruise ship was listed among the travel modes, the arrival type was coded as cruise.
- If air was listed among the travel modes, but cruise ship was not, the arrival type was coded as air.
- If Alaska Marine Highway System Ferry and private vehicle were both checked, arrival type was coded as Alaska Marine Highway System Ferry.

Of the 252 that checked more than one, the following codes were applied.

- 150 coded as air
- 70 coded as Cruise ship
- 3 coded as vehicle
- 21 coded as AMHS
- 8 coded as other

Table 58. Comparison of CVTS Mode of Travel to Arrive in Alaska to AVSP Exit Mode.

Travel Mode	CVTS ¹		AVSP ²
	N	%	
Airplane	1000	51%	49%
Cruise ship	558	28%	46%
Vehicle	318	16%	4% ³
AMHS	46	2%	<1%
Other ⁴	36	2%	

¹n = 1958.

²Exit mode and 2015 estimate.

³Listed as “highway” in AVSP report.

⁴Notable among the “other” are 12 respondents who listed train (i.e., White Pass Rail Road) and 5 that listed private boat. (For this analysis, the “other” category includes only the respondents who selected other and were not classified into one of the other arrival types.)

When compared to the AVSP data, given the assumptions in the comparison, cruise ship passengers might be underrepresented and those visiting by private vehicle overrepresented. As sites visited, activity participation, and demographics could vary by those travel modes, we created weights and applied them to the data to investigate if results were biased due to travel mode not matching the best estimate of travel mode (i.e., the AVSP). With regard to the weights, the largest weight was 1.61. Although vehicle, AMHS, and “other” had relatively small weights, they were a relatively small percentage of the sample (Table 59). Residents were assigned a weight of “1.” In general, applying the weights did not have a large impact on the results. Weighting did impact analysis related to regions visited (because cruise passengers are skewed toward the Southeast), but overall it appears cruise ship passengers and non-residents arriving in a private vehicle were similar with regards to activity participation and demographics. For all relevant analyses, an analysis was conducted with both the raw data and the data with weights applied. When weighting changed the results of frequencies by more than 5%, the results with weighted data are also presented.

Table 59. Mode of Transportation Weights Applied to Data.

Mode of Transportation	% sample	% AVSP	Weight
Airplane	51.07	49	0.9594
Cruise ship	28.50	46	1.6141
Vehicle	16.24	4	0.2463
AMHS	2.35	0.5	0.2128
Other	1.84	0.5	0.2719

Appendix C Non-response Bias Test

Non-response Bias Test of Onsite Respondents

Travel mode arriving/within site

Surveyors attempted to observe the travel mode of the non-respondent. As surveyors were always at the site, the respondent did use that mode within the site. However, for non-respondents only one mode of transportation was recorded, whereas respondents could select more than one. With those limitations, travel mode within the site is compared between respondents and non-respondents (Table 60).

Table 60. Non-response Test, Travel Mode within Site.

Travel mode	Respondents	Non-respondents ¹
Private vehicle	27%	39%
Foot/hiking	72%	44%
Train	3%	1%
Commercial shuttle/tour	9%	5%
Denali VTS	7%	-- ¹
AMHS	2%	2%

Respondents n = 2049, non-respondents n = 561 (both include only recreation trips).

¹Observed by surveyor, only mode of transportation was recorded (the mode when they refused to conduct the survey).

²It would be difficult for the surveyor to observe whether a non-respondent used the Denali VTS.

- Given the differences in methodology a statistical test was not conducted. However, the results show a diversity of travel modes for both respondents and non-respondents; i.e., non-respondents are not lumped in a particular travel mode category.

Rating of travel arriving at site

When possible, and when they were willing, non-respondents were asked the question from the survey regarding their travel experience to the site (Table 61).

Table 61. Non-response Test, Rating of Travel Arriving at Site.

	Respondents	Non-respondents
Excellent	62.1%	41.4%
Good	31.6%	47.2%
Fair	5.2%	7.8%
Poor	0.8%	2.9%
Very Poor	0.3%	0.6%

Respondents n = 2773, non-respondents n = 309 (both include only recreation trips).

$\chi^2 = 57, p < .001$; Cramer's $V = .07$.

- While the chi-square tests indicates there were differences in evaluations between respondents and non-respondents, the magnitude of the percent of respondents selecting excellent or good is not that different (94% of respondents and 89% of non-respondents and respondents, respectively). Further the effect size is less than .1 (Cramer's $V = .07$), indicating a small effect.
- Given the small effect size and similar overall split between excellent/good and fair/poor, data were not weighted.

Activity participation

Activity was another variable recorded for non-respondents. However, rather than asking the respondent directly, the non-respondent's apparent activity was recorded. In addition to the subjective nature of recording the activity, there are two other complications when comparing to respondents. First, the respondents were asked about all activities they participated in or planned to participate in; the activities for any particular respondents are not mutually exclusive, whereas only one activity was recorded for non-respondents. Second, respondents were presented with a list; the list used to observe non-respondents had some slight differences. Despite these differences, activities for respondents and non-respondents are presented in Table 62.

Table 62. Non-response Test, Activities of Respondents and Non-respondents.

Respondents		Non-respondents ¹	
Activity	%	Activity	%
Wildlife viewing	70%	Sightseeing	60%
Hiking/Walking	89%	Walking through site ²	26%
Fishing	28.2%	Fishing	5%
Hiking	-- ³	Hiking	16%
Camping	32%	Camping	10%
Guided tour	-- ⁴	Guided tour	5%
Driving for pleasure	40%	Traveling through	11%

Respondents n = 2726, non-respondents n = 565.

¹Observed by surveyor, only one activity was recorded for each respondents.

²Activity added after the first week of data entry.

³Respondents were not asked separately whether they participated in hiking.

⁴Not asked of respondents.

- Because the measures of activities for respondents and non-respondents were so different, statistical tests were not conducted.
- Although the measures were different, it can be concluded there was similar diversity if activities. I.e., non-respondents did not appear to be associated with any particular activity.

Previous visitation to site (residents)

When possible, and when they were willing, resident non-respondents were asked a question corresponding to the survey regarding their previous visitation to the site. This allowed a direct comparison between resident respondents and resident non-respondents (Table 63).

Table 63. Non-response Test, Resident Previous Visitation of Site.

	Respondents	Non-respondents
First visit	32%	21.1%
1 time	19%	12.9%
2 - 3 times	20%	14.1%
4 - 6 times	11%	14.1%
7 - 10 times	3%	5.9%
> 10 times	15%	31.8%

Respondents n = 824, non-respondents n = 85 (both include only recreation trips).
 $\chi^2 = 21.06, p < .001$; Cramer's $V = .07$

- While the effect size was small (Cramer's $V = .07$); among non-respondents, there are fewer first time visitors and relatively more respondents who have visited more than 10 times (a 2x2 chi-squared test results in $\chi^2 = 13.4, p < .001$; Cramer's $V = .18$). As frequency of visitation might be related to site preferences, weights were calculating and applied to the data.
- The resulting weights were within .3 of 1, and the results did not change by more than 1%.
- Data were not weighted by this variable.

Previous visitation to Alaska (non-residents)

When possible, and when they were willing, non-resident non-respondents were asked a question corresponding to the survey regarding their previous visitation to Alaska. This allowed a direct comparison between non-resident respondents and non-resident non-respondents (Table 64).

Table 64. Non-response Test, Non-residents previous visitation to Alaska.

	Respondents	Non-respondents¹
First visit	61%	74.8%
1 time	16%	15.1%
2 - 3 times	12%	6.4%
4 - 6 times	5%	0.9%
7 - 10 times	2%	1.4%
> 10 times	4%	1.4%

Respondents, n = 1957; non-respondents, n = 218 (both include only recreation trips).
 $\chi^2 = 22.6, p < .001$; Cramer's $V = .05$

- Although the chi-square is significant, the small magnitude of the effect size suggests there is not a practical difference. Indeed, a majority within both respondents and non-respondents were on their first visit. Data were not weighted.

Tour group

Surveyors attempted to record, through observation, whether the non-respondent was on a tour. This would include departing a cruise ship or tour bus, or passing through a site with a tour group. This method, though, has potential to undercount non-residents on a tour. More respondents indicated they were on a tour than respondents (25%, n = 2768) than non-respondents (11%, n = 564, recreational trips only). However, given the difference in methodology, the chi-square test was not computed. Likewise, it appears the majority of respondents and non-respondents did not take a cruise.

Group size

When possible, the surveyors recorded the group size of the non-respondents. Respondents were not asked about their group size, but rather how many group members were in predefined age categories (e.g., 5 years old and younger, 6 – 12 years old, etc.). To compare groups size between respondents and non-respondents, the sum of respondent's group members across all predefined group size categories was calculated. Because of the difference in methodology, a t-test was not conducted. While respondents did have a slightly larger mean, the magnitude was not great and outliers might explain the difference (see below).

- Respondents M = 3.8 (std. deviation = 2.83, n = 2660 [recreational trips only], includes 18 respondents with group sizes > 30 [with 11 summing to > 40, and one sum of 66 and another of 87]).
- Non-respondents M = 3.04 (std. deviation = 2.99, n = 592 [recreational trips only], includes two respondents who stated they were in groups of 40).

Representation of Follow-Up Survey

Also of concern is whether the follow-up surveys are representative of the onsite surveys. To determine if there is a bias associated with 1) respondents that agreed to complete an onsite survey and 2) of those agreeing, the respondents who actually completed the follow-up survey, the following variables were compared among all respondents, respondents agreeing to complete the follow-up, and respondents who completed the follow-up survey:

- Residency,
- Traveling independently vs. with a tour,
- Group composition (alone, family, friends, etc.),
- Number of group members within predefined age categories, and
- Demographics.

Given the large sample size (i.e., the influence on the significance of the chi-square statistic) and the number of 5x2, and larger, contingency tables that would result (i.e., resulting in many post-hoc tests and a difficulty in controlling the family-wise error rate), the magnitude of the differences were examined. Of the 140 comparisons, only 11 differed by more than 5%, with only 5 differing by greater than 6%. Differences were as follows, the comparisons below are the percentage difference compared to all recreation respondents (e.g., if "Bachelor's Degree" was 28% of all recreation respondents, but 35% of those agreeing to complete the follow-up survey, a difference of +7% is reported). See Table 65 for a summary of differences, results of specific tests follow.

Group characteristics

Table 65. Differences between Respondents Agreeing to Follow-up Survey and Respondents Completing Follow-up Survey: Group Composition and Demographics.

Characteristic	Agreeing to follow-up survey	Completing follow-up survey
Group composition: Traveling with family	+5.8%	+7.6%
Group members: 19-29 years old, 0 group members ¹	n/a	+5.9%
Group members: 30-44 years old, 0 group members ¹	n/a	+8.5%
Group members: 45-64 years old, 0 group members ¹	n/a	+ 5.2
Group members: 45-64 years old, 1 – 2 group members ¹	n/a	-5.5%
Group members: 65 years old +, 0 group members ¹	-6.3%	-12.3%
Group members: 45-64 years old, 1 – 2 group members ¹	+5.5%	+11.2%
Income: \$100,000 - \$149,000	n/a	+5.4

¹The group membership question asked respondents how many people they were traveling with in each of seven age ranges: 5 years old and younger, 6 – 12 years old, 13 – 18 years old, 19 – 29 years old, 30 – 44 years old, 45 – 65 years old, and 65 years old or older. The question was open ended, but data were coded into the following categories: 0 group members, 1 – 2 group members, 3 – 5 group members, 6 – 10 group members, and 11 + group members.

Table 66. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Type of Traveler

	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Independently	74.7%	76.1%	76.7%
Independently and tour group	25.3%	23.9%	23.3%
	all n = 2768	Agreed to follow up all n = 1197	Completed follow up all n = 527

Table 67. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Group Composition.

Group composition	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Alone	11.5%	8.1%	6.9%
Family	57.7%	63.5%	65.3%
Friends	15.0%	12.8%	13.0%
Family and friends	13.1%	11.8%	11.9%
Business associates	0.8%	.7%	.2%
Other (Please specify.)	1.9%	3.0%	2.7%
	all n = 2751	Agreed to follow up all n = 1191	Completed follow up all n = 522

The n for each table below: all residents = 807, all nonresidents = 1894, all respondents = 2701, agreed to follow up = 1175, and completed follow up = 520

5 years and under	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
0 group members	90.0%	91.7%	94.0%
1 to 2 group members	9.0%	8.0%	5.8%
3 to 5 group members	0.8%	0.3%	0.2%
6 to 10 group members	0.2%	0.1%	0.0%
11 + group members	0.0%	0.0%	0.0%

6 to 12 years old	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
0 group members	84.0%	87.1%	88.8%
1 to 2 group members	13.2%	10.8%	9.8%
3 to 5 group members	2.6%	1.9%	1.2%
6 to 10 group members	0.2%	0.3%	0.2%
11 + group members	0.1%	0.0%	0.0%

13 to 18 years old	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
0 group members	87.4%	88.1%	89.2%
1 to 2 group members	10.5%	10.4%	9.4%
3 to 5 group members	1.9%	1.3%	1.2%
6 to 10 group members	0.1%	0.1%	0.2%
11 + group members	0.1%	0.2%	0.0%

19 to 29 years old	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
0 group members	77.0%	78.5%	82.9%
1 to 2 group members	18.7%	17.6%	14.2%
3 to 5 group members	3.7%	3.1%	2.3%
6 to 10 group members	0.5%	0.8%	0.6%
11 + group members	0.1%	0.1%	0.0%

30 to 44 years old	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
	0 group members	66.3%	70.0%
1 to 2 group members	27.7%	25.4%	21.3%
3 to 5 group members	5.1%	4.3%	3.8%
6 to 10 group members	0.8%	0.3%	0.0%
11 + group members	0.1%	0.0%	0.0%

45 to 64 years old	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
	0 group members	45.9%	45.3%
1 to 2 group members	44.9%	45.3%	50.4%
3 to 5 group members	7.1%	7.1%	7.1%
6 to 10 group members	1.5%	1.6%	1.3%
11 + group members	0.5%	0.7%	0.4%

65 and older	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
	0 group members	68.4%	62.1%
1 to 2 group members	26.5%	32.1%	37.7%
3 to 5 group members	3.7%	4.7%	5.4%
6 to 10 group members	0.7%	0.3%	0.2%
11 + group members	0.6%	0.9%	0.6%

Residency of the respondent

Table 68. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Residency.

Residence of respondent	All Respondents		Respondents Agreed to Follow up		Respondents Completed Follow up	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Alaska Resident	838	30%	356	30%	140	26%
Non-resident of Alaska	1958	70%	846	70%	389	74%
Total	2796	100%	1202	100%	529	100%

Gender

Table 69. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Gender of Respondent.

Gender	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Male	50.5%	48.7%	46.1%
Female	49.5%	51.3%	53.9%
	n = 2757	n = 1192	n = 523

Education

Table 70. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Education Level of Respondent.

Education	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Less than high school	.7%	0.7%	0.6%
High school graduate/GED	9.6%	7.3%	6.1%
Vocational or technical school certificate	4.1%	3.2%	2.9%
Some college	13.8%	12.3%	10.5%
Associate's degree	7.5%	7.3%	6.7%
Bachelor's degree	32.1%	33.9%	33.0%
Graduate degree or professional degree	32.2%	35.3%	40.4%
	n = 2738	n = 1193	n = 525

Income

Table 71. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Income of Respondent.

Income	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Less than \$24,999	4.6%	4.0%	2.1%
\$25,000 - \$34,999	3.8%	3.3%	3.7%
\$35,000 - \$49,999	6.7%	5.9%	5.2%
\$50,000 - \$74,999	13.2%	13.5%	13.9%
\$75,000 - \$99,999	16.4%	17.4%	17.0%
\$100,000 - \$149,999	19.1%	22.7%	24.5%
\$150,000 - \$199,999	7.5%	8.5%	8.9%
\$200,000 or more	8.3%	9.2%	8.9%
Do not wish to answer	20.4%	15.4%	15.8%
	n = 2686	n = 1181	n = 518

Hispanic or Latino

Table 72. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Respondent Hispanic or Latino.

Hispanic or Latino	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
Yes	3.7%	4.1%	3.3%
No	96.3%	95.9%	96.7%
	n = 2739	n = 1190	n = 523

Race

Table 73. Differences Among All Respondents, Those Agreeing to the Follow-up Survey and Those Completing the Follow-up Survey: Race of Respondent.

Race	All Respondents	Respondents Agreed to Follow up	Respondents Completed Follow up
American Indian or Alaska Native	3%	3%	3%
Asian	3%	2%	1%
Black or African American	1%	1%	0%
White	94%	96%	96%
Native Hawaiian or other Pacific Islander	0%	0%	0%
	n = 2637	n = 1158	n = 511

Appendix D Additional Detailed Analysis

Table 74. Percent of Respondents with Group Members of Specific Age, by FLMA.

Sample region ¹	Sample Site	n	Percent of Respondents with Group Members of ages						
			<= 5	6 – 12	13 – 18	19 – 29	30 – 44	45 – 64	>= 65
Interior Regions									
	APLIC Fairbanks	90	6%	10%	10%	21%	13%	70%	43%
	APLIC Tok	62	0%	0%	2%	16%	13%	47%	47%
	Denali National Park	319	5%	8%	10%	25%	24%	57%	44%
	Tangle Lakes	141	16%	26%	19%	20%	43%	53%	28%
	WMNRA	278	18%	24%	15%	33%	47%	46%	12%
Southcentral									
	APLIC Anchorage	65	0%	11%	8%	8%	14%	65%	49%
	Alaska Maritime NWR	175	4%	11%	13%	18%	24%	52%	41%
	Brooks Camp	79	3%	5%	9%	23%	25%	65%	24%
	Chugach National Forest	109	9%	21%	21%	19%	40%	55%	28%
	FWS Dispersed	102	20%	31%	16%	23%	48%	57%	24%
	Kenai Fjords NP	182	3%	7%	9%	29%	29%	56%	26%
	Kenai NWR Visitor Center	60	12%	10%	3%	13%	18%	52%	45%
	Russian River - FWS	55	2%	4%	9%	18%	27%	55%	45%
	Russian River Campground	72	19%	18%	7%	21%	40%	58%	24%
Southeast									
	AMHS Ferry	135	5%	9%	10%	13%	22%	48%	44%
	Hoonah Ranger District	78	1%	12%	18%	14%	19%	65%	63%
	Juneau Dispersed	105	1%	10%	13%	23%	22%	57%	51%
	Klondike Gold Rush NHP	225	7%	15%	14%	23%	32%	64%	40%
	Mendenhall Glacier	65	5%	11%	18%	18%	32%	57%	35%
	Sitka National Historic Park	122	5%	10%	10%	13%	19%	57%	58%
	Southeast Alaska Discovery Center	54	6%	6%	9%	17%	15%	57%	52%

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites. Sample sites with less than 50 respondents are not shown (AIVC, Tetlin, Ketchikan trails, Prince of Wales).

Table 75. Site Visitation by Visited, Next Destination, and Other Destinations.

Site	Visited			Next Destination			Other destination		
	Resident %	Non-resident %	Total %	Resident %	Non-resident %	Total %	Resident %	Non-resident %	Total %
Glacier Bay National Park and Preserve	6%	14%	12%	3%	11%	9%	5%	4%	4%
Klondike Gold Rush National Historical Park	3%	19%	15%	2%	6%	5%	5%	2%	3%
Sitka National Historical Park	6%	9%	8%	1%	5%	4%	5%	3%	3%
Tongass National Forest	13%	35%	28%	3%	11%	9%	4%	2%	3%
Alaska Maritime National Wildlife Refuge	9%	10%	9%	1%	1%	1%	3%	1%	2%
Gulkana Wild and Scenic River	3%	2%	3%	2%	1%	1%	3%	1%	2%
Kenai Fjords National Park	15%	22%	20%	2%	10%	7%	4%	4%	4%
Kenai National Wildlife Refuge	24%	17%	19%	3%	5%	4%	3%	3%	3%
Chugach National Forest	26%	26%	26%	4%	6%	5%	3%	2%	2%
Campbell Tract (Anchorage)	8%	5%	6%	1%	1%	1%	3%	2%	2%
Tangle Lakes and Delta Wild and Scenic River	18%	3%	7%	1%	0%	1%	4%	1%	2%
Wrangell-St. Elias National Park and Preserve	6%	5%	6%	3%	3%	3%	4%	2%	3%
Kodiak National Wildlife Refuge	3%	1%	2%	1%	3%	3%	4%	1%	2%
Katmai National Park and Preserve	3%	5%	4%	2%	1%	1%	3%	1%	2%
Lake Clark National Park and Preserve	1%	1%	1%	1%	1%	1%	3%	1%	2%
Denali National Park and Preserve	19%	36%	31%	5%	12%	10%	4%	4%	4%
Fortymile Wild and Scenic River	4%	2%	2%	1%	0%	1%	4%	1%	2%
Steese National Conservation Area	6%	2%	3%	1%	1%	1%	4%	1%	2%
Tetlin National Wildlife Refuge	4%	5%	5%	1%	1%	1%	3%	1%	2%
White Mountains National Recreation Area	34%	3%	12%	1%	1%	1%	3%	1%	2%
Yukon-Charley Rivers National Preserve	3%	2%	2%	1%	1%	1%	3%	1%	2%
Bering Land Bridge National Preserve	1%	0%	0%	1%	0%	0%	3%	1%	2%
Cape Krusenstern National Monument	0%	0%	0%	1%	0%	1%	3%	1%	1%
Gates of the Arctic National Park and Preserve	3%	1%	2%	1%	1%	1%	4%	1%	2%
Kobuk Valley National Park	0%	0%	0%	1%	0%	0%	3%	1%	2%
Noatak National Preserve	0%	0%	0%	1%	0%	0%	3%	1%	2%
Dalton Highway	7%	4%	5%	1%	1%	1%	4%	1%	2%
Arctic National Wildlife Refuge	3%	2%	2%	1%	1%	1%	4%	1%	2%
Other	1%	3%	2%	0%	1%	1%	2%	1%	1%

Residents n = 822; non-residents n = 1931

Note, 3 respondents only checked “other” and listed sites not included in this list; they were sampled at APLIC Tok, APLIC ANC, and the AMHS Ferry, so they are not excluded from the table above.

All resident-non-resident pairs differed at $\alpha = .05$ unless noted by: Blue font = NOT significant differently; Purple font = significant at $p = .10$. (Other destinations was not tested.)

Table 76. Activity Participation, by Did on This Trip and Plan to Do on this Trip.

Activity	Did on this trip			Plan to do this trip		
	Resident %	Non-resident %	All respondents %	Resident %	Non-resident %	All respondents %
Hiking or walking	74%	81%	78%	33%	42%	40%
Viewing wildlife (including birdwatching)	43%	65%	58%	20%	40%	34%
Backpacking/trekking	16%	9%	11%	6%	6%	6%
Climbing/mountaineering	4%	3%	4%	3%	2%	2%
Camping	40%	21%	27%	24%	14%	17%
Hunting	3%	1%	1%	5%	1%	2%
Salt water fishing	7%	11%	10%	4%	9%	8%
Fresh water fishing	22%	12%	15%	18%	10%	13%
Berry picking/food gathering	17%	10%	12%	14%	7%	9%
Horseback riding	1%	1%	1%	2%	1%	1%
Bicycling, including mountain biking	8%	5%	6%	6%	6%	6%
Canoeing, kayaking, sailing, rafting	13%	12%	12%	9%	12%	11%
Gold panning	5%	7%	6%	4%	6%	5%
Other non-motorized activities (swimming, endurance events, etc.)	3%	4%	4%	3%	3%	3%
Driving for pleasure on roads (paved, gravel, or dirt)	33%	36%	36%	15%	20%	19%
Riding on trails (ATV, UTV, etc.)	8%	3%	4%	6%	3%	4%
Riding in designated off-road vehicle areas	3%	2%	2%	3%	2%	2%
Water travel (motor boat, jet ski, etc.)	7%	21%	17%	5%	15%	12%
Commercial aircraft tours	1%	9%	6%	2%	6%	5%
Other motorized activities (organized events, etc.)	1%	8%	6%	3%	6%	5%

Resident n = 809, non-resident n = 1917, all respondent n = 2726; All comparisons were significantly different at $p = .05$, unless noted by: Blue font = NOT significant differently; Purple font = significant at $p = .10$.

Table 77. Types of Transportations Used to Arrive at Site, by Sample Site.

Sample region ¹	Sample Site	n	Transportation modes used to arrive at site ²														
			Private vehicle	ATV or off-road vehicle	Public bus	Commercial shuttle/tour bus	Denali VTS	Alaska/White Pass Railroad	AMHS Ferry	Cruise ship	Motorboat	Kayak, canoe, raft	Commercial aircraft	Private airplane	Bicycle	Foot/Hiking	Other
Interior Regions																	
	APLIC Fairbanks	95	45%	0%	2%	29%	2%	12%	0%	0%	1%	1%	4%	2%	1%	24%	4%
	APLIC Tok	67	90%	3%	0%	6%	3%	0%	0%	1%	0%	1%	3%	0%	1%	7%	0%
	Arctic Interagency Visitor Center	23	83%	0%	0%	17%	0%	0%	0%	0%	4%	4%	26%	0%	9%	9%	0%
	Denali National Park	323	55%	0%	2%	20%	6%	23%	0%	0%	0%	0%	3%	0%	0%	4%	1%
	Tangle Lakes	142	100%	1%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	1%	2%	0%
	Tetlin NWR Visitor Center	30	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%
	WMNRA	292	98%	2%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	1%	5%	0%
Southcentral																	
	APLIC Anchorage	63	44%	0%	5%	13%	0%	8%	2%	2%	0%	0%	6%	0%	0%	37%	5%
	Alaska Maritime NWR	174	71%	0%	1%	6%	1%	2%	3%	21%	2%	1%	2%	1%	2%	9%	0%
	Brooks Camp	81	12%	0%	0%	5%	0%	1%	1%	1%	1%	1%	69%	40%	1%	11%	0%
	Chugach National Forest	109	81%	0%	0%	4%	0%	17%	0%	0%	0%	1%	2%	0%	4%	9%	1%
	FWS Dispersed	106	97%	1%	1%	1%	1%	1%	3%	1%	1%	2%	3%	1%	1%	6%	1%
	Kenai Fjords NP	182	81%	0%	1%	7%	1%	9%	1%	2%	1%	1%	4%	0%	1%	4%	1%
	Kenai NWR Visitor Center	63	95%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
	Russian River - FWS	55	95%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	2%	5%
	Russian River Campground	74	100%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	1%	3%	5%	0%

Table continues

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 77 cont.

Sample region ¹	Sample Site	n	Transportation modes used to arrive at site ²														
			Private vehicle	ATV or off-road vehicle	Public bus	Commercial shuttle/tour bus	Denali VTS	Alaska/White Pass Railroad	AMHS Ferry	Cruise ship	Motorboat	Kayak, canoe, raft	Commercial aircraft	Private airplane	Bicycle	Foot/Hiking	Other
Southeast																	
	AMHS Ferry	133	48%	0%	4%	7%	0%	8%	71%	2%	0%	0%	17%	1%	2%	8%	3%
	Hoonah Ranger District	77	5%	1%	0%	22%	0%	0%	1%	77%	0%	0%	0%	0%	0%	23%	1%
	Juneau Dispersed	102	23%	0%	3%	5%	0%	0%	3%	41%	2%	0%	2%	0%	0%	42%	2%
	Ketchikan Trails	45	56%	0%	0%	7%	2%	2%	4%	9%	2%	2%	4%	4%	2%	38%	2%
	Klondike Gold Rush NHP	226	33%	0%	3%	15%	0%	1%	4%	40%	0%	0%	3%	0%	1%	9%	4%
	Mendenhall Glacier	64	22%	0%	9%	61%	0%	2%	3%	14%	0%	3%	0%	0%	3%	33%	5%
	Prince of Wales	30	90%	0%	0%	0%	0%	0%	3%	0%	7%	3%	17%	0%	0%	10%	3%
	Sitka National Historic Park	128	18%	0%	5%	32%	0%	0%	5%	27%	2%	2%	15%	0%	2%	62%	2%
	Southeast Alaska Discovery Center	54	4%	0%	6%	2%	2%	2%	4%	48%	2%	0%	4%	0%	4%	61%	0%

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 78. Types of Transportation Used Within Site, by Sample Site.

Sample region ¹	Sample site	n	Transportation modes used within the site ²														
			Private vehicle	ATV or off-road vehicle	Public bus	Commercial shuttle/tour bus	Denali VTS	Alaska/White Pass Railroad	AMHS Ferry	Cruise ship	Motorboat	Kayak, canoe, raft	Commercial aircraft	Private airplane	Bicycle	Foot/Hiking	Other
Interior Regions																	
	APLIC Fairbanks	61	30%	0%	5%	16%	3%	11%	3%	0%	0%	0%	5%	0%	0%	67%	7%
	APLIC Tok	45	62%	4%	0%	9%	11%	4%	2%	2%	0%	4%	4%	2%	7%	31%	0%
	Arctic Interagency Visitor Center	14	64%	21%	0%	14%	0%	0%	7%	0%	0%	29%	7%	0%	14%	57%	0%
	Denali National Park	250	34%	2%	1%	21%	45%	5%	0%	1%	0%	0%	1%	0%	3%	60%	0%
	Tangle Lakes	137	16%	14%	0%	0%	0%	0%	0%	0%	9%	29%	1%	0%	11%	85%	1%
	Tetlin NWR Visitor Center	26	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	81%	0%
	WMNRA	219	33%	18%	0%	2%	1%	1%	0%	0%	1%	4%	1%	1%	8%	71%	0%
Southcentral																	
	APLIC Anchorage	46	22%	2%	0%	9%	0%	11%	0%	4%	2%	2%	0%	2%	4%	74%	4%
	Alaska Maritime NWR	129	42%	2%	5%	19%	2%	2%	6%	8%	5%	2%	2%	2%	4%	51%	4%
	Brooks Camp	51	6%	2%	2%	12%	0%	0%	0%	0%	0%	2%	16%	12%	4%	69%	2%
	Chugach National Forest	78	46%	0%	0%	3%	0%	9%	0%	0%	3%	15%	0%	0%	18%	71%	5%
	FWS Dispersed	81	51%	6%	5%	5%	6%	5%	6%	5%	21%	36%	5%	5%	12%	59%	6%
	Kenai Fjords NP	113	39%	3%	6%	9%	4%	4%	3%	11%	4%	12%	3%	3%	4%	63%	4%
	Kenai NWR Visitor Center	34	12%	0%	0%	6%	0%	0%	0%	0%	3%	3%	0%	0%	3%	82%	0%
	Russian River – FWS	40	65%	0%	0%	0%	0%	0%	0%	0%	0%	33%	0%	0%	3%	50%	33%
	Russian River Campground	51	41%	0%	2%	2%	2%	0%	0%	0%	2%	10%	0%	2%	12%	80%	2%

Table continues

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 78 cont.

Sample region ¹	Sample site	n	Transportation modes used within site ²														
			Private vehicle	ATV or off-road vehicle	Public bus	Commercial shuttle/tour bus	Denali VTS	Alaska/White Pass Railroad	AMHS Ferry	Cruise ship	Motorboat	Kayak, canoe, raft	Commercial aircraft	Private airplane	Bicycle	Foot/Hiking	Other
Southeast																	
	AMHS Ferry	104	49%	2%	7%	13%	0%	8%	19%	3%	13%	11%	8%	2%	9%	49%	13%
	Hoonah Ranger District	53	0%	2%	6%	26%	0%	0%	0%	0%	2%	2%	0%	0%	4%	87%	2%
	Juneau Dispersed	87	1%	1%	1%	8%	1%	1%	1%	1%	5%	2%	2%	1%	1%	87%	11%
	Ketchikan Trails	29	3%	3%	0%	3%	3%	0%	3%	0%	3%	3%	3%	0%	7%	100%	0%
	Klondike Gold Rush NHP	199	9%	0%	1%	10%	0%	5%	1%	1%	1%	1%	1%	0%	2%	96%	17%
	Mendenhall Glacier	39	3%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	3%	95%	3%
	Prince of Wales	18	17%	0%	0%	0%	0%	0%	0%	0%	6%	11%	0%	0%	0%	78%	0%
	Sitka National Historic Park	111	5%	0%	0%	5%	0%	1%	1%	5%	1%	4%	4%	0%	1%	93%	2%
	Southeast Alaska Discovery Center	31	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	97%	0%

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 79. Rating of Travel Experience Arriving at Site, by Sample Site.

Sample region ¹	Sample Site	n	Rating of travel experience arriving at site				
			Excellent	Good	Fair	Poor	Very Poor
Interior Regions							
	APLIC Fairbanks	95	63.2%	31.6%	5.3%	0.0%	0.0%
	APLIC Tok	65	41.5%	40.0%	15.4%	1.5%	1.5%
	Denali National Park	325	63.1%	32.9%	3.4%	0.6%	0.0%
	Tangle Lakes	142	33.8%	48.6%	13.4%	3.5%	0.7%
	WMNRA	292	57.9%	36.0%	4.5%	1.7%	0.0%
Southcentral							
	APLIC Anchorage	65	61.5%	27.7%	9.2%	0.0%	1.5%
	Alaska Maritime NWR	176	66.5%	30.1%	3.4%	0.0%	0.0%
	Brooks Camp	81	75.3%	22.2%	2.5%	0.0%	0.0%
	Chugach National Forest	110	71.8%	23.6%	4.5%	0.0%	0.0%
	FWS Dispersed	106	47.2%	34.9%	14.2%	1.9%	1.9%
	Kenai Fjords NP	185	63.2%	34.1%	2.2%	0.5%	0.0%
	Kenai NWR Visitor Center	64	64.1%	28.1%	6.3%	1.6%	0.0%
	Russian River - FWS	55	63.6%	30.9%	3.6%	0.0%	1.8%
	Russian River Campground	74	63.5%	33.8%	1.4%	1.4%	0.0%
Southeast							
	AMHS Ferry	134	61.2%	33.6%	4.5%	0.0%	0.7%
	Hoonah Ranger District	80	77.5%	21.3%	1.3%	0.0%	0.0%
	Juneau Dispersed	109	71.6%	22.0%	5.5%	0.9%	0.0%
	Klondike Gold Rush NHP	227	65.6%	30.4%	3.5%	0.0%	0.4%
	Mendenhall Glacier	67	76.1%	22.4%	1.5%	0.0%	0.0%
	Sitka National Historic Park	131	65.6%	30.5%	1.5%	1.5%	0.8%
	Southeast Alaska Discovery Center	55	72.7%	25.5%	1.8%		0.0%

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 80. Rating of Travel Experience Within Site, by Sample Site.

Sample region ¹						
Sample Site	n	Rating of travel experience within site				
		Excellent	Good	Fair	Poor	Very Poor
Interior Regions						
APLIC Fairbanks	67	74.6%	22.4%	3.0%	0.0%	0.0%
APLIC Tok	52	51.9%	44.2%	3.8%	0.0%	0.0%
Denali National Park	255	60.4%	33.7%	5.1%	0.4%	0.4%
Tangle Lakes	133	58.6%	33.8%	6.0%	1.5%	0.0%
WMNRA	228	62.7%	29.8%	6.6%	0.9%	0.0%
Southcentral						
APLIC Anchorage	54	68.5%	29.6%	1.9%	0.0%	0.0%
Alaska Maritime NWR	158	66.5%	30.4%	2.5%	0.6%	0.0%
Brooks Camp	77	67.5%	29.9%	2.6%	0.0%	0.0%
Chugach National Forest	103	75.7%	21.4%	1.9%	0.0%	1.0%
FWS Dispersed	97	58.8%	28.9%	11.3%	1.0%	0.0%
Kenai Fjords NP	147	72.8%	25.9%	1.4%	0.0%	0.0%
Kenai NWR Visitor Center	51	70.6%	27.5%	2.0%	0.0%	0.0%
Russian River - FWS	50	68.0%	24.0%	8.0%	0.0%	0.0%
Russian River Campground	68	70.6%	29.4%	0.0%	0.0%	0.0%
Southeast						
AMHS Ferry	110	52.7%	41.8%	5.5%	0.0%	0.0%
Hoonah Ranger District	66	60.6%	33.3%	6.1%	0.0%	0.0%
Juneau Dispersed	63	61.9%	36.5%	1.6%	0.0%	0.0%
Klondike Gold Rush NHP	175	63.4%	30.9%	5.1%	0.6%	0.0%
Mendenhall Glacier	61	73.8%	24.6%	1.6%	0.0%	0.0%
Sitka National Historic Park	114	77.2%	19.3%	3.5%	0.0%	0.0%

¹Sample regions are based on the sites sampled by the Fairbanks, Soldotna, and Juneau based surveyors. That classification differs from how FLMA managers might classify the sites.

²The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Appendix E Codes for Open Ended Questions

Responses were edited for typos and other grammatical issues. In no cases, though, did the meaning change.

Multiple respondents provided the same responses, or responses that were similar. When that occurred, the individual responses were collapsed and the number of times the response was provided is shown in parentheses after the response. For example “long walk (13x)” indicates that “long walk” was a response provided by 13 respondents.

Responses to Open-Ended Question: What Services or Activities did You Have Difficulty Accessing?

Table 81. Response Potentially Related to ADA.

Personal limitation listed	Service or activity listed	ADA Codes	Response potentially related to ADA	Residency
		General	ADA accessible especially Kenai	Non-AK Res.
		General	ADA compliance needs work	AK Res.
Age; Mobility		General	Age and mobility and needs more handicap access.	Non-AK Res.
	Water activities	Wheelchair/walker	Anything that is not wheelchair accessible. Tide differential made getting on whale watching boat difficult	Non-AK Res.
		Ramps/rails and Terrain	Can do it all if trail is smooth	AK Res.
		General	Checked No but handwritten that they "noticed absence of ADA improvements in Wrangell, Haines, and even Juneau	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	climbing/descending without handrails	AK Res.
Diabetes	Bus tours; Sitting	General	Diabetic and Disabled: cannot ride Denali tours because they are all too long, worried if a medical emergency occurred.	Non-AK Res.
	Film viewing	Hearing impaired	Disabled vet with hearing loss-need closed captions on movies at visitor centers	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Getting down tot he water to fish. No handicap ramps.	Non-AK Res.
		Ramps/rails and Terrain	Hand rails	AK Res.
		Wheelchair/walker	Handicap/walker	AK Res.
		Ramps/rails and Terrain	Having steps could have used ramp	Non-AK Res.
		Hearing impaired	Hearing impaired	Non-AK Res.
		Ramps/rails and Terrain	Jim’s landing/no mobility ramps or rails.	AK Res.
Knees		Ramps/rails and Terrain	Knees- difficulty on stairs	Non-AK Res.
Mobility		Wheelchair/walker	Limited mobility. Getting off the cruise line was hard. Hard to get a wheelchair it took a few hours.	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Long walks and stairs (x2)	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Long walks and stairs ramp off ship	Non-AK Res.
		Wheelchair/walker	Medical foster care homer for veterans, so two of them are wheelchair bound.	Non-AK Res.
		General	More handicapped access	AK Res.

Continues

Personal limitation listed	Service or activity listed	ADA Codes	Response potentially related to ADA	Residency
		Wheelchair/walker	Non wheel chair availability	Non-AK Res.
		Wheelchair/walker	On a walker	AK Res.
	Walking/Hiking	Wheelchair/walker; Ramps/rails and Terrain	People in wheelchairs so stairs and no long walks	Non-AK Res.
Knees; Heart; Brain	Walking/Hiking	General; Ramps/rails and Terrain	Prosthetic knees, brain injury, and heart issues. Walking long distances and doing stairs in particular at Russian River campground.	AK Res.
		Wheelchair/walker	Someone in wheelchair	Non-AK Res.
		Ramps/rails and Terrain	Stairs	AK Res.
		Ramps/rails and Terrain	Stairs (x3)	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Stairs and hiking	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Stairs and long walks (x4)	Non-AK Res.
	Misc	Ramps/rails and Terrain	Stairs, no soft seating. Alaska maritime refuge	Non-AK Res.
	Standing	Wheelchair/walker	Standing for long periods of time, motorized wheelchair	Non-AK Res.
		Ramps/rails and Terrain	Steep ramps/stairs. Gravel walkways/roads	Non-AK Res.
		Ramps/rails and Terrain	Steep stairs	Non-AK Res.
		Ramps/rails and Terrain	Steps	Non-AK Res.
	Walking/Hiking	Ramps/rails and Terrain	Steps long walks	Non-AK Res.
		Ramps/rails and Terrain	Steps need more ramps	Non-AK Res.
		Wheelchair/walker	Traveling through sites because of wheelchair	Non-AK Res.
	Walking/Hiking	General	Trouble walking around. Physical disability accessibility can be improved	Non-AK Res.
		General	Very handicap accessible	Non-AK Res.
		Wheelchair/walker	Walker wheelchair	Non-AK Res.
	Walking/Hiking	Wheelchair/walker	Walking, person in power wheel chair could not come. Not public bus close that can bring them. One wheel chair accessible taxi in town	Non-AK Res.
		General	We are chose activities that would accommodate disabilities	Non-AK Res.
		Wheelchair/walker	Wheel chair bound	AK Res.

Continues

Personal limitation listed	Service or activity listed	ADA Codes	Response potentially related to ADA	Residency
		Wheelchair/walker	Wheelchair access available but limited	AK Res.
		Wheelchair/walker; Ramps/rails and Terrain	Wheelchair bound and loose gravel is difficult.	AK Res.
		Wheelchair/walker	Wheelchair bound couldn't go too far	Non-AK Res.
		Wheelchair/walker	Wheelchair shuttle from cruise ship	Non-AK Res.

Table 82. Response Related to a Service or Activity

Personal limitation listed	Service or activity listed	Responses related to a service or activity	Residency
Misc	Walking/Hiking; Climbing	7.5 months pregnant woman hikes table top but didn't climb rocks	AK Res.
	Walking/Hiking	Ability to walk long distances	Non-AK Res.
Age	Walking/Hiking	Age Specific Hiking	Non-AK Res.
	Physical exertion	Anything exercised	Non-AK Res.
	Physical exertion	Anything physically challenging (x2)	Non-AK Res.
	Walking/Hiking	Anything walking	Non-AK Res.
Arthritis	Walking/Hiking	Arthritis and can't do the long hikes.	Non-AK Res.
Knees	Walking/Hiking	Artificial knee. Difficult to hike the smokes.	Non-AK Res.
Legs	Walking/Hiking	Artificial leg walking long distances hard.	AK Res.
Asthma	Walking/Hiking	Asthma on hills	AK Res.
Back	Water activities	Back issues and accessing the river.	Non-AK Res.
Back	Walking/Hiking	Back pain. Unable to hike.	Non-AK Res.
Feet	Walking/Hiking	Bad feet can't walk long distances	Non-AK Res.
Heart	Walking/Hiking	Bad heart and can't participate in long hikes	Non-AK Res.
Knees; Legs	Walking/Hiking	Bad hips and knees hard hikes	Non-AK Res.
Knees; Arthritis	Walking/Hiking	Bad knees and arthritis minimum hiking	Non-AK Res.
Balance	Walking/Hiking	Balance issues. No technical trails	Non-AK Res.
	Biking; Water activities; Climbing	Biking kayaking, climbing	Non-AK Res.
Feet	Walking/Hiking	Broken foot- anything walking	Non-AK Res.
Knees	Walking/Hiking	Broken knee so walking is hard	Non-AK Res.
	Walking/Hiking	Can manage short distance hikes. Nothing too strenuous.	AK Res.
Feet	Walking/Hiking	Cannot feel feet so difficult to walk/hike	AK Res.
	Walking/Hiking	Can't do a bunch of walking	Non-AK Res.
	Walking/Hiking	Can't do the major hiking or climbing.	Non-AK Res.
	Walking/Hiking	Cant hike	Non-AK Res.

Continues

Personal limitation listed	Service or activity listed	Responses related to a service or activity	Residency
	Walking/Hiking	Can't walk too far	AK Res.
	Bus tours	Checked no but entered this(observed poor info for visitors bus & how to get to heritage totem site ride in electric scooter. Didn't know about free bus & turned back wearing out Bally)	Non-AK Res.
Lungs	Walking/Hiking; Climbing	COPD altitude issues so climbing steep mountain sides not an option.	Non-AK Res.
Legs	Walking/Hiking	Difficult to hike due to leg injury	Non-AK Res.
	Walking/Hiking	Difficulty walking	Non-AK Res.
	Walking/Hiking	Duck tour, walking tours	Non-AK Res.
Fibromyalgia	Walking/Hiking	Fibromyalgia which makes it painful to walk long distances for hikes.	AK Res.
	Water activities	Fishing- cant see well anymore	AK Res.
Balance	Walking/Hiking; Water activities	Fishing, hiking- balance is difficult	AK Res.
	Eating	Food allergies (x2)	Non-AK Res.
	Walking/Hiking	General walking	AK Res.
Arthritis	Water activities	Getting down to the river is hard with arthritis	Non-AK Res.
Age; Mobility	Bus tours	Getting in and out of bus. Older people have less mobility.	Non-AK Res.
Celiac	Eating	Gluten free food for celiac	Non-AK Res.
Arthritis	Walking/Hiking	Hard hiking - arthritis	Non-AK Res.
Mobility	Walking/Hiking	Hard of walking- mobility difficulties	Non-AK Res.
Lungs	Water activities	Hard to breath when bent over. Water too cold, too many bugs	AK Res.
Heart	Walking/Hiking	Has a pacemaker, but limitations are negligent. Just can't do the long hikes.	Non-AK Res.
	Walking/Hiking	Hiking	AK Res.
	Walking/Hiking	Hiking (x12)	Non-AK Res.
	Walking/Hiking	Hiking (elevation changes difficult)	Non-AK Res.
Heart	Walking/Hiking	Hiking activities/heart condition	Non-AK Res.
	Walking/Hiking; Water activities	Hiking and kayaking limited	Non-AK Res.

Continues

Personal limitation listed	Service or activity listed	Responses related to a service or activity	Residency
	Walking/Hiking	Hiking climbing	Non-AK Res.
	Walking/Hiking	Hiking is difficult	AK Res.
	Walking/Hiking; Water activities	Hiking trekking, no water borne activities (active)	Non-AK Res.
Age	Walking/Hiking	Hiking, All are old	Non-AK Res.
	Walking/Hiking	Hiking, long walks	Non-AK Res.
	Misc	Just referring to cruise activities	Non-AK Res.
Knees	Walking/Hiking	Just with more difficult hikes because of bad knee.	Non-AK Res.
Knees	Walking/Hiking	Knee issues so avoids hiking.	Non-AK Res.
Knees	Walking/Hiking	Knee replacements inhibit long walks/hikes/climbs	Non-AK Res.
	Misc	Lack of good restroom showers, toilets, etc.	Non-AK Res.
	Walking/Hiking	Limited ability to walk >1/2 mile	Non-AK Res.
	Walking/Hiking; Physical exertion	Limited exercise, uphill walking	Non-AK Res.
	Walking/Hiking	Limited hiking	Non-AK Res.
Mobility	Walking/Hiking	Limited mobility cant do the long hikes.	Non-AK Res.
	Walking/Hiking	Limited walking (x2)	Non-AK Res.
	Walking/Hiking	Limited walking therefore most activities	Non-AK Res.
	Walking/Hiking	Limited walking/ taxis were great	Non-AK Res.
	Walking/Hiking	Long hikes	Non-AK Res.
	Walking/Hiking	Long hikes around Denali. Just walking from the visitor center to wilderness center was long. Good thing there was a shuttle back	Non-AK Res.
	Walking/Hiking	Long strenuous hikes	Non-AK Res.
Knees	Walking/Hiking	Long walk knee replacement	Non-AK Res.
Legs	Walking/Hiking	Long walking amputee	Non-AK Res.
	Walking/Hiking	Long walks	AK Res.
	Walking/Hiking	Long walks (x14)	Non-AK Res.

Continues

Personal limitation listed	Service or activity listed	Responses related to a service or activity	Residency
	Walking/Hiking	Long walks and climbing	Non-AK Res.
Legs	Walking/Hiking	Long walks recent ankle break	Non-AK Res.
	Walking/Hiking	Lots of hiking	Non-AK Res.
	Physical exertion	Low inactivity	Non-AK Res.
	Walking/Hiking	Minimal walking	Non-AK Res.
Multiple Sclerosis	Walking/Hiking; Climbing	MS can't walk too steep of climb and the climbing.	Non-AK Res.
	Walking/Hiking	Need to sit a while at times, cannot walk around for too long of a time.	Non-AK Res.
Arthritis	Backpacking	No backpacking due to arthritis	Non-AK Res.
	Climbing	No climbing	Non-AK Res.
	Physical exertion	No physical activity	Non-AK Res.
Age	Walking/Hiking	Older age, difficulty walking (leg cramps due to age)	Non-AK Res.
Misc	Walking/Hiking	Poor health makes hiking difficult.	AK Res.
	Misc; Water activities	Private bathrooms would be helpful, family bathroom. Need help of the opposite sexes. Kayaking	Non-AK Res.
Knees	Walking/Hiking	Running and long walking bad knees	Non-AK Res.
Hernia	Sitting	Sitting hernia surgery	Non-AK Res.
	Misc	Square dancing	Non-AK Res.
	Walking/Hiking	Steep or long walks (x2)	Non-AK Res.
	Walking/Hiking	Strenuous hiking	Non-AK Res.
	Walking/Hiking; Water activities	Swimming hiking walking	Non-AK Res.
	Walking/Hiking	Trail too steep at perseverance	Non-AK Res.
	Walking/Hiking	Trails steep and long.	Non-AK Res.
Mobility	Walking/Hiking	Up stairs, walking long distances	Non-AK Res.
	Walking/Hiking	Walking (x3)	AK Res.
	Walking/Hiking	Walking (x12)	Non-AK Res.
Oxygen	Walking/Hiking	Walking (on oxygen has to be careful and watch activities).	Non-AK Res.
	Walking/Hiking	Walking a lot (x2)	Non-AK Res.

Continues

Personal limitation listed	Service or activity listed	Responses related to a service or activity	Residency
Lungs	Walking/Hiking	Walking and breathing hard	Non-AK Res.
	Walking/Hiking	Walking and climbing	Non-AK Res.
	Walking/Hiking	Walking and standing for long	Non-AK Res.
Arthritis	Walking/Hiking	Walking around (x2)	Non-AK Res.
	Walking/Hiking	Walking arthritis	AK Res.
Knees	Walking/Hiking	Walking confined to places close To the roads	Non-AK Res.
	Walking/Hiking	Walking due to injured knee	Non-AK Res.
	Water activities	Walking in the river to fish	AK Res.
	Walking/Hiking	Walking is limited (x2)	Non-AK Res.
	Walking/Hiking	Walking long distances (x3)	Non-AK Res.
	Walking/Hiking; Water activities	Walking long distances and can't participate in deep sea fishing like use to.	Non-AK Res.
	Walking/Hiking	Walking long distances and having benches to rest on.	AK Res.
	Walking/Hiking; Water activities	Walking off trail for gathering, fishing	AK Res.
	Walking/Hiking	Walking on gravel	Non-AK Res.
	Walking/Hiking	Walking over unmaintained , trails down to river are nice	Non-AK Res.
Mobility	Walking/Hiking	Walking stairs hills etc.	Non-AK Res.
	Walking/Hiking	Walking to and from locations. Around sites and off and on cruise ship	Non-AK Res.
Mobility	Water activities	Walking up boat ramps	Non-AK Res.
Mobility	Walking/Hiking	Walking, getting around	AK Res.
	Walking/Hiking	Walking/hiking (x2)	Non-AK Res.
Balance	Walking/Hiking	Walking/stability	Non-AK Res.
Misc	Water activities	Was hospitalized for an unknown allergy a few days ago mso cancelled plans just in case if something were to happen. One of the plans was kayaking.	Non-AK Res.
	Misc	Weather determines whether hefeatger hunts or walks	AK Res.
	Misc	Wrangle St. Elias assistance on glacier	Non-AK Res.
	Walking/Hiking; Misc	Zip line walking ATVing	Non-AK Res.
	MISC	Zip lining, anything	Non-AK Res.

Table 83. Response Related to a Personal Limitation.

Personal limitation listed	Service or activity listed	Response related to personal limitation	Residency
Age		Age (x4)	Non-AK Res.
Knees		Age and an artificial knee, but no real problems with acces though.	Non-AK Res.
Arms		Anything needing arms	AK Res.
Mobility		Anything w climbing in it	Non-AK Res.
Arthritis		Arthritis	Non-AK Res.
Autism		Autism	AK Res.
Back		Back problems	AK Res.
Back; Mobility		Back problems so it causes limited mobility.	Non-AK Res.
Back; Feet; Age		Bad back/ foot/age	AK Res.
Knees; Mobility		Bad knee and has limited mobility	Non-AK Res.
Knees		Bad knees (x3)	Non-AK Res.
Knees; Sciatica		Bad knees and sciatica	Non-AK Res.
Knees; Legs		Bad knees/hip	Non-AK Res.
Misc.		Broke	AK Res.
Lungs		COPD- prince Rupert ferry terminal	Non-AK Res.
Mobility		Getting in and out of facilities.	Non-AK Res.
Mobility		Getting off the ship	Non-AK Res.
Mobility		Gimps	AK Res.
Knees		Just had knee surgery	AK Res.
Knees		Knee replacement	AK Res.
Knees; Lungs		Knee replacement and COPD	Non-AK Res.
Knees		Knee surgery	Non-AK Res.
Knees; Mobility		Knee surgery makes it difficult to get around	Non-AK Res.
Mobility		Limited mobility (x5)	Non-AK Res.
Age; Mobility		Limited mobility with age (x3)	Non-AK Res.

Continues.

Personal limitation listed	Service or activity listed	Response related to personal limitation	Residency
Back		Lower back is screwed up. Had surgery.	AK Res.
Lungs		Lung problems	Non-AK Res.
Mobility		Mobility issues (x5)	Non-AK Res.
Mobility; Knees		Mobility limitation. Bad knees.	Non-AK Res.
Mobility		Mobility limitations	AK Res.
Multiple Sclerosis		MS- no specific location most difficult	Non-AK Res.
Children		New born in group	Non-AK Res.
Age		No big problems just old	Non-AK Res.
Knees		No trouble but has knee replacement	Non-AK Res.
Mobility		Not as limber	Non-AK Res.
Back		Not at this facility, but has a back problems.	Non-AK Res.
Age		Old so getting around	Non-AK Res.
Feet		One young on has a broken foot	AK Res.
Parkinson's		Parkinson's disease (x2)	Non-AK Res.
Mobility; Legs		Someone on crutches not getting around a lot	Non-AK Res.
Feet		Sore feet	AK Res.
Age		Too old	AK Res.
Children		Traveling with a 17 month old has presented some limitations	Non-AK Res.
Mobility		Use trekking poles for support due to injuries	Non-AK Res.

Responses to Open-ended Question: What Information was Needed but Not Available?

Basic local information

Table 84. Information needed but not Available: Basic Local Information.

Denali	Pricing	Maps	Facil. Hours/Closure	General Logistics	Basic Local Information	Residency
				X	Area restaurants	Non-AK Res.
				X	Basic info of towns	Non-AK Res.
			X		In Homer visitor center is closed then there was poor communication, and no good address. It was an Ocean not-for-profit behind Safeway. Center for Alaskan Coastal Studies. Also mentioned that the hours sign posted on the door needs to be more visible. Difficult to see with reflection of glass.	Non-AK Res.
			X	X	Fuel availability - closed facilities	Non-AK Res.
			X		Hard to tell what will be open when you arrive	AK Res.
			X		Hours of operation	Non-AK Res.
			X		Hours of operation are not dependable.	Non-AK Res.
X					Denali has very little specific info	Non-AK Res.
	X				Didn't know tours were cheaper locally	Non-AK Res.
			X		Closure times of federal buildings like customs but also didn't look	Non-AK Res.
				X	Dump station/gas/water available	Non-AK Res.
				X	Finding the addresses for certain offices and gps.	Non-AK Res.
			X		Info centers closed when we were at them	Non-AK Res.
				X	Places to eat (2x)	Non-AK Res.
				X	Public showers directory	Non-AK Res.
				X	Saxman totem village in Ketchikan lacking info	Non-AK Res.
			X		Visitor center hours	Non-AK Res.
			X		Visitor center is not open	Non-AK Res.

Continues.

Denali	Pricing	Maps	Facil. Hours/Closure	General Logistics	Basic Local Information	Residency
			X		We visited before but we didn't know the center was closed	AK Res.
				X	Restrooms	Non-AK Res.
	X				Cost for meal at lodge	Non-AK Res.
				X	Lack of lodging information, lack of comprehensive information	Non-AK Res.
				X	Not sure what services are available at lodges	AK Res.
				X	Accommodation	Non-AK Res.
	X				Accurate information on tendering	Non-AK Res.
				X	Bathymetry	AK Res.
X					Better be ne'er standing of overall lodging options at Denali park	Non-AK Res.
	X				Gratuities were not mentioned	Non-AK Res.
				X	Recycling	Non-AK Res.
			X		Specific details about travel time, available facilities/amenities.	Non-AK Res.
			X		Admission fee and hours not listed online. No free Wi-Fi @ visitor centers.	Non-AK Res.
				X	Information on finding fuel and motels on the highway isn't accurate and up to date.	Non-AK Res.
			X		Websites geared towards marketing instead of basic information. Such as, phone numbers, addresses, times of operation, and at hidden lake the trail information could be better.	Non-AK Res.
				X	Clothes to bring for weather in southeast	Non-AK Res.
		X		X	Map and playground places for young kids	Non-AK Res.
		X			Maps lacking stops and attractions in small towns	Non-AK Res.
				X	Very difficult to locate Kenai peninsula city/area information	Non-AK Res.
		X			Info to get from Skagway to DYEA	Non-AK Res.

Continues.

Denali	Pricing	Maps	Facil. Hours/ Closures	General Logistics	Basic Local Information	Residency
		X			Trouble finding map of waterfront park	AK Res.
		X			Vegetation maps/info	AK Res.
			X		Gates locked	AK Res.
		X			Maps/detailed maps (8x)	Both
		X			Maps of old mining activity/sites	AK Res.
				X	Signage	Non-AK Res.
		X		X	Signs could be more consistent and easier to see and find	Non-AK Res.

Recreation

Table 85. Information needed but not Available: Recreation.

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
	X						X		Where to purchase fuel and bear spray for Katmai NP. Where gas stations are at on long drives. A good map on Katmai.	Non-AK Res.
				X					Services available at campground	AK Res.
X									Cost benefits of recreation vs resource extraction	AK Res.
X									Misinformation on Katmai	Non-AK Res.
X									More poop bags	AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
				X					RV Parks	Non-AK Res.
				X					Trying to figure out the next place to camp at since Skilak was full. It only took them to find out about Swanson camping because someone a grocery store told them about it.	AK Res.
							X		When the ice goes out	AK Res.
				X					Booked forest cabin- but is it locked?	Non-AK Res.
					X				Campground pricing	AK Res.
				X					Campground reservations	AK Res.
							X		Dog or bike friendly?	AK Res.
X									Backcountry camping	Non-AK Res.
								X	Best ways to catch sockeye salmon as well as time tables to catch halibut	Non-AK Res.
				X					Better cabin rental info	Non-AK Res.
X									Bikes for rent	Non-AK Res.
				X					Camping site details	Non-AK Res.
	X								Climbing routes on some peaks	Non-AK Res.
								X	Fish count and where there are being caught.	Non-AK Res.
								X	Fishing access	AK Res.
								X	Fishing charters moped rentals	Non-AK Res.
								X	Fishing options	Non-AK Res.
		X							Gear Checklist for Chilkoot hard to find	Non-AK Res.
	X								Glacier bay access info	Non-AK Res.
							X		Gold panning info	Non-AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
		X							It was challenging to get detailed trail information. We like to hike and couldn't get great info for hiking	Non-AK Res.
	X								Katmai/brooks falls brochure	Non-AK Res.
				X					List all campgrounds	Non-AK Res.
								X	Local fishing opportunities free no guide	Non-AK Res.
		X							More detailed hiking/biking trail info	AK Res.
							X		More detailed information all the opportunities available.	Non-AK Res.
								X	More fish counters	Non-AK Res.
						X			Northern Lights Information	Non-AK Res.
						X			More info on cultural groups/archaeology of the area	Non-AK Res.
						X			More information on First Nation/Native American	Non-AK Res.
								X	Timing of salmon unknown	Non-AK Res.
		X							Unsure all trailed were listed	AK Res.
		X							Would have liked more information about hiking trails accessible from beaches/waterfront	Non-AK Res.
		X							Length of hike	AK Res.
			X						Let us know about 8 hour frightening ride up hairpin curves and narrow road	Non-AK Res.
							X		Clam tides	Non-AK Res.
				X					If campsites provide firewood	AK Res.
							X		Local tide charts	Non-AK Res.
		X							Public knowledge of local ATV TRAILS	AK Res.
			X						More info on Denali	Non-AK Res.
			X						Where to hop on hop off bus in Denali	Non-AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
				X					What the food cache area was going to look like.	AK Res.
				X					Wondering about available wood instead of hiking out to find some	AK Res.
	X	X							Better marked trails/maps	AK Res.
		X							Deer mountain summit marker	Non-AK Res.
					X				Rental information-canoes	AK Res.
	X								Knowing which parks are what. National vs state. Improve signs to key you know which is what. Appreciates the restroom at visitor centers.	Non-AK Res.
		X							The length of trails are often not mentioned on signs.	Non-AK Res.
		X							They need to mark to trails that lead to camps from trails. Out mile markers on trail as well.	Non-AK Res.
		X							Trail markers	AK Res.
		X							Trail signage for split tree	Non-AK Res.
		X							Trail signage is confusing	AK Res.
							X		Pickup point for tour	Non-AK Res.
			X						No concise "go to" place in the park(Denali). In other federal parks the "newspaper" has schedules for everything as well as cost. Much of the scheduled events are at the same time so if you miss one, you miss them all. This seems to be set up for cruises, not for general public.	Non-AK Res.
		X							Current trail conditions, mud, washouts	AK Res.
		X							How tough trails are	Non-AK Res.
		X							Trail info	Non-AK Res.
		X							Better information on trail conditions	Non-AK Res.
		X							Trail info on website was 2 weeks old	AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
		X							Trails (2x)	Non-AK Res.
	X	X							Trail map (2x)	Both
				X			X		Campground information, driving 'times' on remote roads, construction delays etc. Not just distance.	Non-AK Res.
		X							Details about trail difficulty	Non-AK Res.
				X					Info on public use cabins milepost, saw cripple creek has one, could not find	AK Res.
					X				Prices of campgrounds	Non-AK Res.
	X		X						There needs to be better maps about the visitor center campus	AK Res.
	X								Difficult to find trail maps	Non-AK Res.
	X								Elevation changes along highways/roads for biking	Non-AK Res.
	X								Some camp and recreation sites were not listed in map	Non-AK Res.
				X					State camp site locations	AK Res.
	X			X					Tangle lakes campground info/map	Non-AK Res.
			X	X					Denali campground info minimal before arriving, filter or no unsure- no info on websites	Non-AK Res.
				X					Hard to know campgrounds before arriving ; 2016 didn't match true campground locations	Non-AK Res.
			X						Hiking at Denali -> contacted Talkeetna VC by phone + they mailed Alpenglow - not online	Non-AK Res.
				X					Need more campground choices. Good Sam and other websites have info on 50% or less.	Non-AK Res.
								X	The fish count web page wasn't working (AKF&G)	AK Res.
		X							Trail conditions would be handy on BLM site	AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/Cabins/ RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
		X							Snow conditions on Chilkoot trail	Non-AK Res.
		X							Hiking guide to Skagway area. An excellent one is available (published by the Skagway Convention and Visitors Bureau) but we didn't know of it until we came to town	Non-AK Res.
		X							Lack of signage for public use cabins in white mountains	AK Res.
		X							Marked trail at and around Borealis cabin	AK Res.
							X		Finding fresh water that is available, and no places indicating a trash receptacle use.	Non-AK Res.
	X								Difficulty finding a good topographic map	AK Res.
		X							Distance of trails (2x)	AK Res.
	X								GPS coordinates	AK Res.
	X								Lime peak? Better maps	AK Res.
	X								Map of lake- bathymetry	AK Res.
	X	X							Maps in town of trails	Non-AK Res.
	X	X							Trail heads need maps, distance listed, and a topographic map of what to expect on your hike.	Non-AK Res.
	X								Update the Arial imagery(BLM mainly). Would be useful to know more specifics when looking at photos of an area regarding land condition	AK Res.
	X	X							Maps throughout trail at mile markers	AK Res.
		X							Profile of trails (elevation)	Non-AK Res.
		X							Where the top of the trail is, mile markers	AK Res.
		X							Trail signage	Non-AK Res.
	X	X							Map of trails are difficult to find on Internet	Non-AK Res.
		X							Mileage markers on hikes	AK Res.

Continues

Misc.	Maps	Trails	DNP	Campgrounds/ Cabins/RV parks	Cost/Pricing	Cultural Info	General Logistics	Fishing	Recreation Information	Residency
				X					Signs could be better for the tenting. Indicating where all of the tent sites were.	AK Res.
	X								A map could be useful to see where you are in relation to King Salmon	Non-AK Res.
	X								Maps were hard to get, GPS is helpful but maps needed	Non-AK Res.
				X					Campgrounds not true to website	AK Res.
			X	X					Denali campground info minimal before arriving, filter or no unsure- no info on websites	Non-AK Res.
			X				X		Denali was confusing- different information and permits were located in different buildings, ended up wasting a lot of time driving around to figure it all out. ALSO would appreciate a way to sort junior ranger programs by state online. I guess there is a list online of all junior ranger programs in the country it cannot be filtered	Non-AK Res.
	X								Any good map online	AK Res.
				X					Site specifics for camping were lacking	AK Res.

Travel/transportation related

Table 86. Information needed but not Available: Travel/Transportation Related.

Misc.	General/ Other Travel	Public Transp.	Shuttles	AMHS	Customs	Maps and Signage	Travel/Transportation Related	Residency
	X						Transportation connections	Non-AK Res.
X							Communication on ship about shows and entertainment in towns	Non-AK Res.
					X		Border crossing-fruits and veggies	Non-AK Res.
	X						Booking airline seats	Non-AK Res.
		X					Bus into Hoonah	Non-AK Res.
		X					Bus routes and public transportation	Non-AK Res.
	X						Info about White Pass train prices and times	Non-AK Res.
		X					No real public transportation information for homer	Non-AK Res.
		X					Public transportation in Seward	Non-AK Res.
			X				Small buses around downtown Juneau	Non-AK Res.
		X					Transportation to DYE A	Non-AK Res.
		X					Bus maps	Non-AK Res.
			X				Info on shuttles	Non-AK Res.
		X					Ketchikan bus routes and maps	Non-AK Res.
			X				More info on the shuttle to valley of ten thousand smokes (were not told there was a fee)	AK Res.
			X				Shuttle schedules for Denali	Non-AK Res.
			X				Clarity about lodge shuttle times (not relevant to park). Also, shuttle time for park are advertised in time brackets(e.g. 7:30-8:00am) but leave at a specified time.	Non-AK Res.

Continues

Misc.	General/ Other Travel	Public Transp.	Shuttles	AMHS	Customs	Maps and Signage	Travel/Transportation Related	Residency
			X				Finding shuttles and know when the shuttle is coming into the exit glacier. Being an independent travel or in Seward is difficult. There is no map indicating where stops are or no time stops.	Non-AK Res.
			X				It was unclear where buses left from, in Denali and how you pay for them etc..	Non-AK Res.
				X			It would be nice for Chilkoot trail hikers if the Yukon- Whitehorse train schedule would mesh with the state ferry schedule. As it is now, the ferry leaves 15 min before the train gets in. This affects >50 hikers per train trip	Non-AK Res.
			X				Pickup point for tour	Non-AK Res.
			X				The bus schedule & planning from Seward to Homer	Non-AK Res.
			X				Trolley information hard to find the scheduling.	Non-AK Res.
	X						Where to get on the train in Whittier	Non-AK Res.
X							White gas and bear spray information was lacking without having to contact the company ahead.	Non-AK Res.
	X						Where to get information for getting transportation to Kesugi Ridge trail head	Non-AK Res.
	X						Gas station locations on the Dalton Highway	Non-AK Res.
	X						Gas stations (2 x)	Non-AK Res.
	X						Gas stations in route from Edmonton	Non-AK Res.
X							Good hotel info for AK highway	Non-AK Res.
		X					Ground transport info vague- ex Juneau is very long so had to rent a car	Non-AK Res.
	X						More about land travel specifics of cruise-land package offered by princess cruises	Non-AK Res.
	X						Paying methods	Non-AK Res.
X							Poor detail about luggage transfer from Denali to Fairbanks	Non-AK Res.

Continues

Misc.	General/ Other Travel	Public Transp.	Shuttles	AMHS	Customs	Maps and Signage	Travel/Transportation Related	Residency
	X						Questions about travel packets from the Yukon river area.	Non-AK Res.
	X						Taxi service in Haines. had to email visitors bureau	Non-AK Res.
		X					Getting to and from trail	Non-AK Res.
				X			Could not find a PDF schedule for AMHS and the website was hard to use	Non-AK Res.
				X			Cruise website sucked- considered AMHS but website was too difficult	Non-AK Res.
				X			Difficult to find the AMHS website. thought I had booked through them but told on arrival I had booked via a travel agency. cost very high \$4700, subsequently told ferry out of Canada cheaper than Bellingham but didn't find that on Internet	Non-AK Res.
				X			Ferry website wasn't working properly	Non-AK Res.
				X			Distance ferry terminals from cities	Non-AK Res.
				X			Easy planning tool- state ferry	Non-AK Res.
				X			Ferry information in Valdez	Non-AK Res.
				X			Ferry schedule from Skagway to Haines	Non-AK Res.
				X			Ferry schedule was nearly impossible to understand	Non-AK Res.
				X			Ferry schedules for summer 2016	Non-AK Res.
				X			Ferry website difficult to use	Non-AK Res.
				X			Really important- ferries are not advertised enough as an alternative to cruise ships. people don't want to travel via cruise. cycling in June beau is also to advertised enough. not promoting places to north of Ketchikan. everything seems tailored to people with a 6-8hr visit. no emphasis on independent travelers looking to do activities here	Non-AK Res.
	X						Rental cars general knowledge of federal sites in the area	Non-AK Res.
					X		Many travel forms for non-US citizens	Non-AK Res.

Continues

Misc.	General/ Other Travel	Public Transp.	Shuttles	AMHS	Customs	Maps and Signage	Travel/Transportation Related	Residency
					X		List of items you can and can't bring into the states	Non-AK Res.
X							Wish they knew they could travel through the interior and then get on the cruise	Non-AK Res.
						X	Knowing whether or not certain lands are state or federal entities.	Non-AK Res.
						X	Maps, mileposts	AK Res.
						X	State map	Non-AK Res.
						X	Signage coming from south of this park is not clear and it's dangerous	AK Res.
						X	Signage needs to be better from highway. the forest loop took them to the old visitor center. no sign on the flora. like more information on tribes in the area at the visitor center about their culture and life on the peninsula.	Non-AK Res.
						X	Direct sign on road	AK Res.
						X	Signage not good	Non-AK Res.
						X	Signs	AK Res.
						X	Mile markers	Non-AK Res.
						X	Mile posts time frame	AK Res.
						X	Exits not listed with milepost	Non-AK Res.
						X	Maps of Fairbanks and 40 mile	Non-AK Res.
						X	More detail map of Alaska	Non-AK Res.
						X	Public land ownership map	Non-AK Res.
					X		Closure times of federal buildings like customs but also didn't look	Non-AK Res.

Communication

Table 87. Information needed but not Available: Communication.

Web Info	Service (Phone)	Wi-Fi	Emerg. Contact	Communication	Residency
	X	X		Wi-Fi accessibility, cell phone coverage, roadside assistance services	Non-AK Res.
			X	Difficult to contact ranger	AK Res.
			X	Not really but it can be hard to access rangers while in remote areas, stations sometimes are far from boat docks	Non-AK Res.
	X	X		Availability of Internet and cell phone service	Non-AK Res.
	X			Have 907 phone numbers as well as 1-800 phone numbers available. many 1-800 numbers don't work when dialed within Alaska. with no 907 option availability tourists are out of luck when planning on the fly	Non-AK Res.
		X		Clear Wi-Fi access	Non-AK Res.
		X		Free Wi-Fi spots-	Non-AK Res.
		X		Internet	Non-AK Res.
X				Could not find a PDF schedule for AMHS and the website was hard to use	Non-AK Res.
X				Cruise website sucked- considered AMHS but website was too difficult	Non-AK Res.
X				Campgrounds not true to website	AK Res.
X				Denali campground info minimal before arriving, filter or no unsure- no info on websites	Non-AK Res.
X				Denali was confusing- different information and permits were located in different buildings, ended up wasting a lot of time driving around to figure it all out. ALSO would appreciate a way to sort junior ranger programs by state online. I guess there is a list online of all junior ranger programs in the country it cannot be filtered	Non-AK Res.

Continues

Web Info	Service (Phone)	Wi-Fi	Emerg. Contact	Communication	Residency
X				Could be more user friendly i.e. less than three clicks	AK Res.
X				lots of campground info in anchorage etc would try more before coming, overnight locations allowed in any parks is hard to access while abroad. easy once I the state	Non-AK Res.
X				Better info online US NPS	AK Res.
		X		Difficult to do research via Internet while on the ship- internet expensive. would do more research of signs for free WIFI	Non-AK Res.
X				Difficult to find the AMHS website. thought I had booked through them but told on arrival I had booked via a travel agency. cost very high \$4700, subsequently told ferry out of Canada cheaper than Bellingham but didn't find that on Internet	Non-AK Res.
X				Ferry website wasn't working properly	Non-AK Res.
X				Hard to begin Tripadvisor etc. limited	Non-AK Res.
X				Map of trails are difficult to find on Internet	Non-AK Res.
X				Please add online registration for scheduling tours	Non-AK Res.
X				Reservation for bus tour Denali restricted on-line	Non-AK Res.
X				Small tour companies didn't have websites hard to shop around	Non-AK Res.
X				The fish count web page wasn't working (ADF&G)	AK Res.
X				Trail conditions would be handy on BLM site	AK Res.
X				Websites geared towards marketing instead of basic information. Such as, phone numbers, addresses, times of operation, and at Hidden lake the trail information could be better.	Non-AK Res.
X				Websites were not complete with information. hard to contact with time difference.	Non-AK Res.
X				Any good map online	AK Res.

Responses to Open-Ended Question: What Safety Concerns Did You Research?

Table 88. Response Describing Safety Concerns Researched.

Animal Issues	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Concerns Researched	Residency
X				X			1. Bears 2. sudden weather changes 3. river conditions	Non-AK Res.
X		X					1. Bike trails and bike lanes/safety in Juneau and Sitka 2. Bear safety in Juneau and Alaska	Non-AK Res.
X			X				1. Human/wildlife interactions (esp. bears) 2. road conditions (rocks, potholes, washouts)	AK Res.
X	X	X					1. Safe procedures for viewing wildlife especially bears. 2. Safety of floatplanes. 3. Securing luggage & personal items especially cameras and lenses.	Non-AK Res.
X			X	X			1. Wildlife 2. Roads 3. Weather	Non-AK Res.
X				X			Animal interaction Bad weather	Non-AK Res.
X							Animals and other tourist	Non-AK Res.
X	X				X		Animals, especially bears :) proximity to fuel, cell reception in case of emergency	Non-AK Res.
X				X			Animals, safety, weather,	AK Res.
X		X					Appropriate gear and bear encounters	Non-AK Res.
X	X						Availability of fuel. Bear Safety	Non-AK Res.
X		X					Avalanche warnings. Bear warnings	Non-AK Res.
X							Bear and moose encounters (x3)	Non-AK Res.
							Bears (x3)	AK Res.
X							Bears (x23)	Non-AK Res.
X	X				X		Bear encounter, out-of-state hospitalization, cellular coverage areas	Non-AK Res.
X				X			Bear encounters, bad weather	Non-AK Res.

Continues

Animal Issues	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Concerns Researched	Residency
X		X	X				Bear encounters, roadway, campground safety	Non-AK Res.
X	X			X			Bear Encounters, Unexpected Bad Weather, Fire Danger and ongoing fire conditions	Non-AK Res.
X	X					X	Bear interactions Hospital locations Gun laws	Non-AK Res.
X							Bear regulations	AK Res.
X						X	Bear Safety, personal weapons regulations, flight travel safety	AK Res.
X		X					Bear safety, river crossings	Non-AK Res.
X				X		X	Bear safety, traveling with firearms, weather/clothing preparedness	Non-AK Res.
X				X	X		Bear safety, weather safety, access to emergency help in remote areas without cell service	Non-AK Res.
X		X					Bear watching, remote hiking, kayaking around icebergs	Non-AK Res.
X							Bear Compass Mosquitos	Non-AK Res.
X	X			X			Bears weather. Airplane	Non-AK Res.
X							Bears and other wildlife (x3)	Non-AK Res.
X			X				Bears and roads and what we should take with us for protection!	Non-AK Res.
X	X		X				Bears medical road conditions	Non-AK Res.
X				X			Bears weather slides bugs	Non-AK Res.
X		X					Bears while fishing and hiking.	Non-AK Res.
X							Bears while hiking on trails.	Non-AK Res.
X		X		X			Bears, , weather, general "what to bring" when hiking with a family	Non-AK Res.
X	X						Bears, access to vehicle gasoline.	Non-AK Res.
X		X	X				Bears, backcountry first aid, AK Highway road safety	AK Res.
X		X					Bears, camping	Non-AK Res.

Continues

Animal Issues	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Concerns Researched	Residency
X			X				Bears, drivable roads.	Non-AK Res.
X			X			X	Bears, firearms, road conditions	Non-AK Res.
X							Bears, moose (x3)	Non-AK Res.
X		X					Bears, moose, general backcountry preparedness	Non-AK Res.
X							Bears, mosquitoes	Non-AK Res.
X		X					Bears, other hiking concerns	Non-AK Res.
X	X		X				Bears, road conditions, and gas availability.	Non-AK Res.
X	X						Bears, vehicle breakdown, Flash flooding/landslides, gasoline	AK Res.
X				X			Bears, weather. (x2)	Non-AK Res.
X			X	X			Bears, weathers, driving conditions	Non-AK Res.
X		X					Bears. Falling on the trail.	Non-AK Res.
X				X			Bears. Weather conditions on water,	Non-AK Res.
X		X		X			Boat transportation, wildlife, weather	Non-AK Res.
X				X			Encountering wildlife Recommendations on rain (weather) gear	Non-AK Res.
X			X				General safety of road ways (primitive, road conditions, wild life)	Non-AK Res.
X		X					General safety when walking on trails, respecting wildlife and keeping safe	Non-AK Res.
X		X					How to be safe around glaciers & icebergs with our boat How to be safe in bear territory	Non-AK Res.
X							How to handle seeing wildlife (bears)	Non-AK Res.
X				X			Landslides, earthquakes, wildlife encounters	Non-AK Res.
X	X						Local emergency contact number and wildlife safety precautions	Non-AK Res.
X			X				Road conditions, fast driving on gravel roads, animals on roads	Non-AK Res.

Continues

Animal Issues	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Concerns Researched	Residency
X		X	X				Trail conditions, road conditions, bear warning-or-activity	AK Res.
X	X				X	X	Typical remote emergency management, motorcycle repair, bear and wildlife safety.	AK Res.
X	X						Water, special needs child bears	AK Res.
X	X			X			Weather Animals Transportation	Non-AK Res.
X		X		X			Weather and exposure; rafting and river level; wildlife encounters	Non-AK Res.
		X		X			Weather, tides, coastal features	Non-AK Res.
X		X					Wild animals, boat tour over cold water, getting lost in forests	Non-AK Res.
X							Wildlife encounter (x7)	Non-AK Res.
X				X			Wildlife encounter, traveling, weather.	Non-AK Res.
X				X			Wildlife encounters & bad weather (x4)	Non-AK Res.
X							Wildlife encounters (bear, moose)	Non-AK Res.
X	X						Wildlife encounters such as bear, moose. Local town facilities including gas, food, hospital.	Non-AK Res.
X		X		X			Wildlife encounters! Weather, backcountry navigation	Non-AK Res.
X	X			X			Wildlife encounters, driving directions so we didn't get lost, bad weather	Non-AK Res.
X	X		X				Wildlife interactions, roadside safety, and general laws	Non-AK Res.
X							Wildlife safety, particularly bears and moose. mosquito issues.	Non-AK Res.
X							Wildlife, remote areas	Non-AK Res.
X	X			X			Wildlife, Weather, Crime	Non-AK Res.
X				X			Wildlife, weather, navigation	Non-AK Res.
		X	X				1. Hiking safety 2. Road conditions along the Denali Highway	AK Res.
	X						Accessibility	Non-AK Res.

Continues

Animal Issues	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Concerns Researched	Residency
				X		X	Bad weather, fires, health concerns for people traveling with me.	Non-AK Res.
		X					Boat safety	AK Res.
		X				X	Boating safety, gun regulations	AK Res.
		X					Camp provided all the information we needed	Non-AK Res.
					X		Cell phone coverage Shelters	AK Res.
					X		Communication and general public safety	Non-AK Res.
					X		Concern for personal safety.	Non-AK Res.
	X				X		Help with vehicle break downs, hospitals	Non-AK Res.
						X	I didn't search any. Just know from previous trips, what is safe	Non-AK Res.
					X		Injury Illness Getting lost	Non-AK Res.
						X	Lifeboats	Non-AK Res.
	X				X		Medical, accidents,	Non-AK Res.
	X				X		Medivac capability	Non-AK Res.
		X					Related to camping: burns, cuts Related to hiking: sprains	AK Res.
			X	X			Road conditions and weather	Non-AK Res.
			X				Safety issues while driving personal car on Denali road during lottery days	Non-AK Res.
	X						Safety of tour bus seating for toddlers	Non-AK Res.
					X	X	SPOT, GOES, Boat US Insurance	Non-AK Res.
	X						Water	AK Res.
	X			X		X	Weather conditions, street safety, and currency exchange. No major concerns.	Non-AK Res.
X		X		X			Weather, boat safety, bear safety	AK Res.

Responses to Open-Ended Question: Please Describe Your Safety Issue

Table 89. Responses Describing Safety Issues.

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
X				X	X		1. grizzly = good outcome 2. 5 consecutive days rain= 5+ indirectly 3 4. No service = no 911 or ability to report washout + debris flow	AK Res.
			X		X		1. Richardson highway needs potholes filled 2. Cell coverage to make emergency calls 3. Emergency services very far away, need hospital closer to outlying areas	AK Res.
					X		a lady next to our camp had a heart attack and had to call 911 because could not find any signs on RV park to find nearest doctor	Non-AK Res.
X							Afraid of Bears	Non-AK Res.
X							Again...concerned about bears, especially...didn't feel comfortable hiking in Denali without bear spray. In Denali and other areas, also concerned about moose. We watched the Denali 12 min. video about how to deal with this, at least 3 times--very helpful	Non-AK Res.
X					X		bear came out of nowhere and scared kids. Cell coverage bad so couldn't share beauty on social media	Non-AK Res.
X							bear encounter x3	Non-AK Res.
X		X					bear popped up from tall grass within 10 feet, Dumpling Mountain trail - difficult footings. Not used much yet this year.	Non-AK Res.
X							Bears were on our mind but no problem	Non-AK Res.
X	X				X		Bears , proximity to fuel, cell reception in case of emergency	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
X			X				Bears and poor road conditions	Non-AK Res.
					X		Being accustomed to cell access I would like to have cell phone service for emergencies.	Non-AK Res.
					X		Better cell coverage would be nice	Non-AK Res.
					X		Better cell phone and internet connectivity would greatly enhance safety in being able to contact emergency services, roadside assistance, ranger/park service personnel/campground facilitators, law enforcement, and other rescue and assistance organization.	Non-AK Res.
					X	X	Bicycles were spread out across road instead of a single line. Cell coverage is spotty quite a lot in Alaska (where we were - mainly in Ketchikan and Skagway; Juneau was good)	Non-AK Res.
X							Came upon a moose and her calf unexpectedly. There was great signage warning us, but of course, it was still startling! I was on guard and truly appreciated having the warning.	Non-AK Res.
		X					Campgrounds too remote with no active campground hosts/supervision. Camping equipment left during the day while out hiking/sightseeing, etc. was stolen.	Non-AK Res.
X						X	Carried bear spray, delayed return to Bartlett Cove for 4 hours from getting lost, also turned around. bushwhacking back from bustavus forlands had GPS	AK Res.
X							Cars stopping to view wildlife blocking traffic in two directions	Non-AK Res.
					X		Cell phone coverage at Mendenahall glacier was not good - we almost missed our bus at the visitor center because we could not contact 2 of our group of 17 - they were only 1 mile away - there was some coverage at the visitor center, but it was gone by the time you went towards the waterfall	Non-AK Res.
					X		Cell service could be better, but lack of technology was also a reason we came to Alaska.	Non-AK Res.
					X		Cell service not available in some areas. We did not have an emergency.	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
			X	X			Concern about stream crossings on roads with water in rainy weather. Prefer roads be paved on main(secondary) roads	Non-AK Res.
	X						Crime in Anchorage down town	Non-AK Res.
X							Encounter with female moose and calf along trail. However, were briefed previously by Park Service and followed directions	Non-AK Res.
			X				Expected road construction but not on this scale. Was concerned we would surely get a flat. But it was just a concern and it didn't turn into an actual problem.	Non-AK Res.
		X					Fast moving bikes on trails shared by hikers. Some bikers did not announce "On your right" or other announcement.	Non-AK Res.
	X						Fire danger	Non-AK Res.
X							Getting approached by dangerous wildlife while hiking	Non-AK Res.
X				X	X		Grizzly bear near our camp when eating, storm approaching, eroded trail in Kesugi Ridge. Lack of service in road, difficult finding directions.	Non-AK Res.
	X		X				Haul highway-mud vehicles- in odd places hall highway- used more gas because of road conditions cell phone- comfort of knowing you could get help	Non-AK Res.
					X		Hard to receive a mobile phone signal in some areas	Non-AK Res.
			X	X			Heavy rainfall made Turnagain Pass a little hairy.	AK Res.
		X					Hiking trails-- not well marked at junctions, so got lost every turn(7 lakes especially)	Non-AK Res.
X							How to best handle a bear encounter or avoid one	Non-AK Res.
						X	I did not feel comfortable by seeing all those people carrying the gun in the gas station or supermarket.	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
					X		I do hit plenty of "dead cell" zones when I travel, and I always worry that I will have an issue and be unable to call out for help.	AK Res.
					X		I do not feel that lack of cell phone coverage in the area was a significant safety concern. I go out there to get away from the city and it's trappings.	AK Res.
X							I felt safe, realizing that I should pay attention and be aware of my surroundings, especially regarding wildlife.	Non-AK Res.
X	X		X				I was concerned that I might have a flat tire or run out of gas along the Denali Hwy. I took extra gas and my tires are in good shape. I also carried a firearm for bear protection. It would have been good to know the lodges have gasoline for sale.	AK Res.
					X		I was having problems with vertigo, but where I was staying has very poor cell service and it was difficult to nearly impossible at times to call out or have a phone conversation without getting disconnected.	AK Res.
X							I would have liked more information about potential bear encounters, or recent bear encounters.	AK Res.
					X		I would have liked more Wi-Fi to find directions	Non-AK Res.
					X		If an emergency had come up, our only means to contact someone for help would have been marine radio.	Non-AK Res.
					X		in case of emergency not having way to get help	Non-AK Res.
X							Interface with wild animals - but it was not a problem	Non-AK Res.
				X			It rained like crazy and was windy; bet it is a rain forest, so we were prepared	AK Res.
		X					Just general safety concerns in case of accident while off road	Non-AK Res.
					X		Lack of cell coverage a risk in an emergency.	Non-AK Res.
					X		Lack of cell service along the major highways for emergencies as a great concern.	AK Res.

Continues

Animal	B Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
					X		Lack of cell service in national parks, etc. was 100% understandable and kind of nice (made everyone put their phones away) but concerned some members of the group. No safety issues were encountered, wildlife stayed far away.	Non-AK Res.
					X		Lack of phone coverage	Non-AK Res.
		X					Land Mark Gap trail is in very poor condition. Very rocky and trail wide, deep puddles.	Non-AK Res.
					X		Limited cell phone coverage	Non-AK Res.
X	X				X		Lot of wildlife, water availability in remote areas, need info about drinking or pot. Some roads were hard to travel (St. Elias). Gas station didn't except my card, or no station at all, no reception for cell at all.	Non-AK Res.
X					X		Lots of bears in area. No cell phone coverage in area.	AK Res.
			X				Lots of construction	Non-AK Res.
				X	X		Lots of rain, roads not in good repair, cyclists take advantage, cell phone coverage poor	Non-AK Res.
						X	Making sure we had a plan in place if an unsafe condition occurred.	Non-AK Res.
X							Making sure we knew how to keep safe around the bears	Non-AK Res.
X							Met a mother bear with two cubs on the path to Brooks Falls. we followed the training provided by the rangers and left the path as she was not going to. Luckily she kept going. Very scary.	Non-AK Res.
						X	Minor since with a group including NPS staff	Non-AK Res.
					X		Need more cell phone towers, some tourists drive like idiots	Non-AK Res.
					X		No AT&T cell coverage	Non-AK Res.
					X		No cell coverage	AK Res.
					X		no cell coverage at all	AK Res.

Continues

Animal	B Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
					X		No cell phone coverage, no ability to call for assistance. However, I am very aware of the impact of humans that need cell towers in remote, untouched wilderness. Requires humans to be pre-prepared. I am o.k. with this. If one isn't prepared & aware of the risk, then one shouldn't be in this area.	Non-AK Res.
					X		No cell phone service.	AK Res.
					X		No service	AK Res.
						X	Not enough fuel, car getting stuck	Non-AK Res.
		X		X			Nothing too significant. Primarily related to marine navigation, small boats and weather	Non-AK Res.
				X			Poor weather created difficulty following the trail.	AK Res.
			X		X		Pot holes in road/frost heaves. Would like more cell service	Non-AK Res.
				X			Rain tooooo much	Non-AK Res.
X			X	X			Rainy wet roads, bear and goats on road, loose gravel and potholes	Non-AK Res.
X				X			Reaction of bears; flying out of camp in bad weather	Non-AK Res.
			X				Road condition very rough for vehicle, had to reduce speed significantly at times.	Non-AK Res.
			X				road going in from Steese very poor. Steese to Davidson Ditch bad to river	AK Res.
			X		X		Rough roads, no phone service	Non-AK Res.
			X				Russian River campground road in poor condition.	Non-AK Res.
						X	Same people tried to cross in front of bus!	Non-AK Res.
X							Saw a mother bear and her two cubs about 50 feet in front of us. Lack of cell service was not a problem. I kind of enjoyed it.	Non-AK Res.
		X					slippery trail; trail not marked well.	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
		X					Some trail boards were torn up or wobbly.	Non-AK Res.
				X			Storm came in but we finished just in time	AK Res.
		X	X				The access road from the contact station through the campground and day use parking areas is in terrible condition. It has been this way for several years.	AK Res.
X			X	X			The concern for bear encounter was mitigated by carrying bear spray, concern for weather by bring proper clothes, slowed down on the road to avoid numerous potholes, on trail we avoided the washed out and deep muddy sections by making our way over vegetation off the trail	AK Res.
			X				The Dalton Highway needs to be fixed, we went to Coldfoot two times, and road was the same	AK Res.
X							The need for bear spray	Non-AK Res.
X							The only real concern we had was wildlife encounters during hikes.	Non-AK Res.
			X				There was road construction on the drive to Exit Glacier in which only 1.5 lanes were available. I almost glazed the side of cars going the opposite direction, trying not to hit the orange road construction barricades.	Non-AK Res.
					X		There were a number of times while in Gustavus that we had limited cell phone reception	Non-AK Res.
		X			X		Trail washed out. Woman had roller her 4 wheeler. She was not hurt bad but there was no phone service	AK Res.
		X					trails were not even good enough for people with slight walking problem	Non-AK Res.
	X	X					Typical boating and navigation issues. Fuel, signaling, food, water, exposure gear, etc.	Non-AK Res.
					X		Vehicle breakdowns could not use cell-No coverage!	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
						X	very dangerous biking-but not on public lands, only on bike trails around Soldatna, K. beach road, cars do not pay any attention to the bicycle riders.	Non-AK Res.
						X	Very difficult trying to cross on foot a major highway to see Beluga whales. One driver honked and flipped us the bird, would not slow down.	Non-AK Res.
X				X			Wanted to educate other family members about wildlife encounters and how to behave in such a situation. Also checked on weather conditions - we would not have gone hiking in high heat, heavy rain or thunderstorms. Reviewed safety info with youngsters, especially what to do if separated.	AK Res.
					X		Wanted to use 4G on my cell phone for directions and info	Non-AK Res.
					X		Was not able to use my phone at all. Had a carrier that could not get reception while others could.	Non-AK Res.
	X						we carried extra fuel and added it once to make sure we had enough to get to the next fuel station.	Non-AK Res.
						X	We didn't really have safety concerns so much as we observed that there were pedestrians or other disabled vehicles or bicycle us on the side of the road. Commonsense tells us to slow down and be aware... And everybody was safe	AK Res.
X							We had a close encounter with a grizzly sow and her sub adult while in Denali but were helped by a Parks van who drove us out of danger	Non-AK Res.
X							We saw bear poop on the trail, which reminded me to make noise for bears. A few hundred yards further, we actually saw one. This make me think a sign at the start of the trail reminding people about the possible presence of bears would be good. I when told a local AK Res. about the encounter, she also commented that she walks that trail all the time and had never thought she might encounter a bear there. After hiking a bit further, I saw that there were signs at the campground about bear proof devise, etc. but we started at the other end.	AK Res.
X							We were hiking and a grizzly was over Ridge with 20 yards of us. a ranger guided us to safety.	Non-AK Res.

Continues

Animal	Local Info.	Recreation	Road cond.	Weather	Communications	Misc.	Responses Describing Safety Issues	Residency
X							We were the party that rescued the woman who had a brown bear encounter on the Kenai River Trail on July 3. It all worked out OK, but the decision to evacuate her ourselves to the hospital was dictated by the lack of cell phone coverage. I am definitely not advocating for cell towers in either the Forests or Refuges! It just was a factor in our experience. Had not members of our party had experience with the Kenai, we would have no way of knowing where the nearest emergency facility was. An "H" sign along the highway would be very useful!	Non-AK Res.
		X					We weren't sure if we took the correct fork in the trail in order to reach the summit.	AK Res.
X		X					what to do in unexpected animal encounters, being aware of surroundings, what to be prepared with when hiking,	AK Res.
					X		When in a remote area, not being able to phone for help should it be needed in an emergency. Our guide did have a satellite type device but if something happened to him, I didn't feel secure that I would be able to work his device.	Non-AK Res.
				X			While fishing got caught in rain storm--lightning	Non-AK Res.
X							Wife is concerned about bear problems.	AK Res.
X				X			Worried about bears and lightening	Non-AK Res.
				X			Worried that heavy rains would start while we were hiking	AK Res.
					X		Would like to be able to have cell phone coverage at all times	Non-AK Res.

Responses to Open-ended Question: Provide Additional Feedback on Your Travel Experience

Table 90. Additional Feedback on Travel Experiences.

Basic Local Info	Recreation	Travel/Transportation	Ferry/AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			A great job was done to repair the landslide on the Denali park road and allow passage at specific times. The bus traffic was a little concentrated for wildlife/wilderness experience but I am assuming this was primarily due to the landslide problem and his was a small compromise and the experience was still great.	Non-AK Res.
		X						access road to campground was very rough with potholes	AK Res.
		X						Alaska Conservation Center should move their main entrance away from intersection of Seward Highway and Portage Rd to Whittier	AK Res.
		X						Alaska has the worst roads in North America. The condition of the highways broke the right-height rod and a shock absorber in half. Currently in Edmonton waiting for parts for our RV. If you want to damage your RV and car, drive to and in Alaska!	Non-AK Res.
					X			Alaska is extraordinary. I hope it continues to be protected. I found all the Federal facilities to be very helpful.	Non-AK Res.
					X			Alaska is amazing with the best parks and National Forests, our National Gems	Non-AK Res.
					X			All transport was great!	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						Always nervous along Turnagain Arm. With the fire at McHugh Creek, felt more dangerous.	Non-AK Res.
			X	X				As a web savvy, DIY guy I found the Alaska Marine Ferry website tough. I really wanted to roll my own multi-stop ferry trip. Took me a LONG time to figure out that if I left on a Saturday I could hop from ferry to ferry. Surprised there weren't any premade tour schedules. Didn't like getting up super early, or not being able to crash at the ferry terminal between the late night arrival, and the early morning departure from Skagway to Juneau, Juneau to Prince Rupert...	Non-AK Res.
		X						Bad roads due to upheaval	Non-AK Res.
	X							Bartlett Cove boat launch need to have an adjacent float to allow more reasonable single person boat launching case and safety	AK Res.
	X	X						Biggest issue was ATV damage to roads. Erosion and off road ATV damage was the only major detractor from my experience.	AK Res.
		X						Busses in park were not comfortable and could not see well. Too crowded.	Non-AK Res.
		X						Caught public bus in Fairbanks and got dropped off at supermarket and then was unsure of where to catch return bus	Non-AK Res.
				X				Cell coverage	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						Construction/road realignment/flood damage roadwork delays and priority to heavy transport. Generally very reasonable but private company hired to control traffic very inconsistent. One woman at sign very good, one man unfriendly and arbitrary.	AK Res.
	X							Could not find adequate campground space to accommodate a truck and 20 foot travel trailer in many places, so could not dry camp much. We were travelling for 3 months, and were hoping there would be more accessible camp sites	Non-AK Res.
					X			Denali was awesome and the park was magnificent. Coach tour bus and Denali park bus were excellent. No problems, no complaints, only praise for our experience	Non-AK Res.
						X		Did not have ANY travel/transportation issues	AK Res.
		X						Dirt roads were very bumpy traveling in RV, scary at time. Once u pass the initial sign there are no additional signs as u r traveling to the destination. Often times we thought we were lost until at the very end of the road we finally arrived	Non-AK Res.
		X						Don't limit flying over the parks/land. This is the best way to see for older and disabled people. They should have just as much right to see the country as hikers.	Non-AK Res.
		X						Drivers in Alaska were unsafe. They pulled out without looking, darted in and out of other cars, etc.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						Elliot Hwy sucks!	AK Res.
					X			Everything as well as could be expected for a 2-month boat trip from Prince Rupert, BC to Glacier Bay & return to PR. Trailer-boat from Blaine, WA to PR, ~ 950miles one-way. All problems self-solved - as to be expected.	Non-AK Res.
					X			Everything was perfect--hated to leave	Non-AK Res.
		X						Excellent service from Ann to bring me from Skagway to DYE. However \$20/person for a 20 min ride is expensive. Having other options would have been nice.	Non-AK Res.
					X			Excellent. Glacier Bay is our national treasure...I am very thankful to the NPS for maintaining the park. I acted as a volunteer for sea otter research on my trip. Being able to visit via state ferry has been a real bonus-less whimsical to weather than flying.	AK Res.
		X						Extremely high rates for car rental plus the basically required insurance due to having to pay for the car while it's in the shop. Blew out a tire on a big rock on a main road into Palmer. No other issues.	Non-AK Res.
					X			Fantastic trip -- weather perfect -- citizens and seasonal help well above expectations in almost 100% of the cases.	Non-AK Res.
						X		Fortunately, we had no issues with our travel -- construction delays had a minimal impact on our agenda I'm not a fan of increasing use of ATV/motorized vehicles within the parks	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			Found both car rental and camper rental employees helpful	Non-AK Res.
		X						Frost heaves a big problem if you tow a trailer, I snapped a leaf spring in half and the other 3 are all bent	Non-AK Res.
					X			Glacier park was amazing...thanks....loved the small boat interaction (un-cruise)	Non-AK Res.
					X			Great experience, great country with very good touristic information!	Non-AK Res.
					X			Great trip	AK Res.
					X			Great trip. We will be back.	Non-AK Res.
					X			Had a great trip. Everyone was very friendly and helpful. Will definitely visit again.	Non-AK Res.
						X		Had no problems	Non-AK Res.
					X			I commend the Park Service. I was in Denali NP when a major mudslide occurred on the main road. The park service opened the road in amazingly good time considering all the conditions.	Non-AK Res.
						X		I didn't have any problems	Non-AK Res.
		X						I found the speed limits a bit high, given that tourists would like to gawk. I did appreciate the number of turnouts for slower moving traffic and parking areas for viewing.	Non-AK Res.
						X		I had no problems or issues with transportation	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						I have a comment about. A previous trip to Denali. The inability to drive into Denali is very limiting. I understand the issue but the bus system is not a comfortable way too see the park. I have done it once and will never do it again. The bus takes too long, and the only other way to see the park is too expensive.	Non-AK Res.
					X			I love Alaska and am lucky to get to spend a month or more there a year for work. Let's not screw it up!	Non-AK Res.
X	X							I loved Alaska. I love the freedom it allows but I would appreciate a little more guidance, such as detailed trail markers and gas station locations (i.e., how far away the next one is).	Non-AK Res.
					X			I loved Alaska. We were lucky, no problems.	Non-AK Res.
		X						I researched the Denali Hwy before I travelled there so I knew to expect a very rough road with a top speed of maybe 35mph. I was disappointed that much of the road was bad enough that I could only go 10 to 15 mph in my old motorhome. So I just pattered long and enjoyed the sights.	AK Res.
		X						I think that RV travel needs to be catered to more. Turn around space, parking space. Some units and trailers need a bit more room to maneuver. Perhaps more signage or line marking would help.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			I think you have struck a good balance between public safety and leaving the wilderness wild. To many handrails, steps and highly improved trails would spoil the natural, rugged splendor of the parks.	Non-AK Res.
			X					I usually try to visit my ailing, elderly mother once a month via the state ferries. However, that has not been possible due to cutting back of ferry service this year. As a consequence, I've had to bear the extra expense of flying at least one way, which I cannot afford as I am a disabled retiree on a fixed income.	AK Res.
					X			I was a little concerned about having to take the shuttle bus in Denali, but I was pleasantly surprised, it was great seeing that much land with only one road.	Non-AK Res.
					X			I was quite pleased on how well trail heads and photo opportunities were marked. Better here than a lot of places in the lower 48. While cell phone was spotty it was expected so we had alternate sources including milepost mag ready to provide information	Non-AK Res.
		X						I was scared witless when Denali buses had to pass each other alongside cliffs (but then I felt the same way in the same situations in the Andes)	Non-AK Res.
		X			X			I was very impressed with the quality and access to remote sites and scenery that the park service is providing now. I wish it had been like this when I lived here!	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X			X			I was very impressed with the roads. I like the passing lanes and think there could be a few more of those on the highway to Denali. I didn't expect to have total cellphone coverage, I don't even have it where I live now in California. I was there in the fall and the bulk of the tourists were gone so things didn't seem so crowded. Anchorage traffic was a mess, but it is not a Federal land.	Non-AK Res.
					X			I will plan more time, it was vast and I wish to see more. All the educational staff was positive and very helpful.	Non-AK Res.
							X	I would have preferred to visit Prudhoe Bay without an oil company escort. That was less than a good experience.	Non-AK Res.
		X					X	I would have relied on trains, buses, and shuttles and not have rented a car if I could do it over again. Information on traveling with firearms was incomplete and left us with researching so many details on our own and not having clear information from PS. We ended up renting a car when we really didn't need to -- just so we could transport the firearm.	Non-AK Res.
							X	I'm 53 years old and when I was 22 I had trouble with the law and coming in to Canada, made it hard to get through it. Happen 30 years ago and you would think they would not be so hard on you that something happen so many years ago.	Non-AK Res.
	X							Improve boat ramp at Jim's Landing	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						In Homer and Sitka, Hop-on, Hop-off tour companies had one shuttle which made for long waiting times and sometimes no room on the shuttles. It should be told to customers before they decide to buy the tickets.	Non-AK Res.
						X		In the Yukon there was a long Stretch between gas stations . The Mile post was not current . In Denali / Alaska no problems .	Non-AK Res.
			X	X				Internet service on AMH ferries.	Non-AK Res.
		X						It seems that wash boarded or roads and sharp objects in the road created problems with our older vehicle.	AK Res.
					X			It was great	Non-AK Res.
				X				I've no idea what one would do in case of car trouble and no cell phone.	Non-AK Res.
		X						Just dusty gravel roads--hard to see	Non-AK Res.
							X	just not what I expected	Non-AK Res.
		X						Lack of road signs	Non-AK Res.
					X			Loved everything about Alaska!	Non-AK Res.
					X			Loved everything about it! Rangers were so nice. Saw some big bull moose . It was cloudy so seeing Denali was a no go. Other than that had an amazing experience. Hope to come back next year!	Non-AK Res.
					X			Loved the trip to beautiful Alaska	Non-AK Res.
			X					Main problem would be lack of Ferry service to Sitka	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
				X				More ability to communicate using cell phones, etc.	Non-AK Res.
	X							More cycling trails - not mountain bikes, just normal ones would be appreciated. Now in Canada and I think they do this better.	Non-AK Res.
X								More info for families with special needs	AK Res.
		X						more public bus transport connections	Non-AK Res.
						X		Most of our trip was either in cities/towns or major roads. We had no problems of any significance.	Non-AK Res.
	X							Motorized watercraft was extremely noisy and drivers(boat) were disrespectful on river in Fairbanks--we were in a canoe. It kind of ruined the outdoor peace and quiet. We liked the numerous areas where vehicles could pull off to take pictures, etc. roads are in good condition, construction was an inconvenience at times, but not a problem.	Non-AK Res.
				X				My out of state cell phone would not work for a 9-1-1 call I had to make.	Non-AK Res.
					X			My son and I were impressed with the overall concern for the environment and the wildlife. We recognized that Alaska is a big place and that utilities and road conditions would be rough, but were surprised by how good they were. Alaska is a very rugged lace, demands respect and thinking ahead.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			My son lives in anchorage and travels the state a lot, so he drove and guided us. I noticed lots of good improvements on road conditions--public pull over since my last visit- Great accessibility to fishing spots.	Non-AK Res.
						X		n/a (2x)	AK Res.
						X		N/A	Non-AK Res.
	X							Need some rolling water bars to prevent erosion on trails. Drainage channels needed from low points as well.	AK Res.
					X			Never wanted to leave	Non-AK Res.
						X		No issues (7x)	AK Res.
						X		No issues (14x)	Non-AK Res.
						X		No additional feedback to share	AK Res.
	X							No opinion on transport. I did find it hard to find a good trail map - REI does not sell them.	AK Res.
		X						No problems with travel or transportation. Please note that the cruise ship we used was a smaller 'Uncruise' boat, which was excellent. We thought that the giant cruise ships were too big for this area and looked out of place!	Non-AK Res.
					X			No problems, except weather...We LOVED our Alaska experience.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						No problems, however the closely shaved rock walls on the highway between Anchorage and Seward were way too close to the roadway in several spots...easily to have large rocks fall onto passing cars; similar concerns about the train ride in the canyon from Denali to Fairbanks; looking straight down from the train window the river was directly visible...no land visible.	Non-AK Res.
					X			no problems. I love Alaska!	Non-AK Res.
						X		No problems. 3 commercial flights, ferry from Juneau to Skagway. Several rail journeys. Public bus from Carcross to Whitehorse.	Non-AK Res.
						X		No real problems. Some minor problems relating to our travel document on the Bennett to Skagway train, but conductor was very helpful	Non-AK Res.
		X						No signs on road, if yes no info about distance at all.	Non-AK Res.
							X	No transportation problems other than that its very high cost. I appreciated that the 1st trip was cancelled due to inclement weather - they valued our lives as well as cost to replace their float plane. We were lucky to obtain an opening and flew out the next week. So we paid for the 2 nights lodging the night before and night of the trip for no reason, but that was no one's fault, although an added cost to make the trip.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
	X							Noisy jet boats with high powered motors	AK Res.
						X		None the Northern highways are what they are... Safety no matter what we do will always be a concern	AK Res.
		X						On one green bus ride out of Denali Park, the driver had to slam on the breaks to avoid hitting a critter, which I appreciate, but the bus skidded quite a bit and made everyone feel we might go over the cliff. There are some places along the road that are extremely narrow.	Non-AK Res.
		X						Only a minor inconvenience is that when traveling from south to north over Anchorage, the city of Anchorage cannot be bypassed.	Non-AK Res.
	X	X						Other than parking, some crowding on trails, overcrowded restrooms and loud aircraft overhead (helicopters!) the experiences were good. None of the minor issues were show-stoppers. Staff and park rangers were helpful, knowledgeable, polite and fun to chat with! Restrooms were clean, in spite of the crowds.	AK Res.
					X			Our tour guides from WhaleCoastAlaska arranged group transport and did a great job. Loved the video screens in the Denali park bus. Driver great job showing wildlife particularly bear mama with 2 cubs passing single bear.	Non-AK Res.
					X			Our trip was amazing and exceeded all expectations.	Non-AK Res.
					X			Overall a good trip!	Non-AK Res.
					X			Please keep protecting the landscape. It was amazing.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						Please rebuild and recondition the road.	AK Res.
	X							Please review the current regulations and trail specification on the trail running from Wickersham Dome Trailhead to US/Nome/McKay Creek trailheads. This would make a very interesting overland responsible motorized use trail as all but a very short section of it is already motorized. However since the current boundary catches a very short section of the trail, it cannot be used as a through trail. The distance of non-motorized is very short. I don't understand why such a short section of trail in the middle of motorized trail on either side would be so important to keep non-motorized. Please, if possible in any way, get my concerns to the people who could review and revise the current boundary and trail use specification for the area. Thank you.	AK Res.
							X	Poor communication with pacific airways about luggage being delivered to another destination	Non-AK Res.
		X						Poor road conditions, ruts, uneven pavement, not enough passing lanes and pull-outs	Non-AK Res.
		X						Poor road maintenance	AK Res.
	X							Poor signage and trails at the beginning of the route.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
	X	X		X				Problems encountered were campground theft, lack of phone service and lack of public internet/Wi-Fi services. Also crowds from cruise ships spoiled the experience. Should limit to one or two at a time.	Non-AK Res.
		X						Public transportation did not seem to stop at Federal visitor center in Homer where I did verbal survey. It did stop at city visitor center.	Non-AK Res.
			X					Requiring 2 hour arrival prior to departure for the ferries is inconvenient. The wording sounds like your reservation will be given away if you do not arrive 2 hrs prior to departure. The wording of this "threat" should be modified.	Non-AK Res.
		X						Road condition poor	AK Res.
		X						Roads to camping area contained significant potholes in a few locations. These uneven surfaces cause severe stress on campers, motor-homes and regular vehicles as well as obstacles for pedal bikes. They should have been filled before major use times such as holidays and long weekends.	AK Res.
		X						Roads were a lot better than we expected. The Denali Highway was pretty rough but that was expected.	Non-AK Res.
		X						Roads were in excellent condition!	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			Sea winds floatplane tour and pilot Steve were excellent. Fantastic trip to misty Ford and then to the crab feed. This was a fabulous floatplane trip in an great beaver aircraft.	Non-AK Res.
		X						Several of the roads were under construction, so we experienced delays several times. fortunately, we were not on a tight schedule, so no big deal.	Non-AK Res.
		X	X					Since I was traveling by ferry without a car, I sometimes faced challenges (during trip planning) figuring out how I would get from the ferry terminal to my ultimate destination. This forced me to change some plans or, in other cases, created stress during my visit since I wasn't always sure when a left the ferry how/if I would get where I wanted to go. Also, some of the taxis (e.g., in Juneau) were filthy (inside), dilapidated vehicles in which I didn't feel safe, as if there are no standards or codes for such operators.	Non-AK Res.
							X	Some areas had too many steps for one member of my party to use, but we were expecting that and was fine with it.	Non-AK Res.
		X						Some of the remote roads were very rough and narrow.	Non-AK Res.
							X	Takes too long to get there	Non-AK Res.
	X							Tangle Lakes campground has a sign that says "no dust." People need to slow down in there and I had to remind a few drivers to do so.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						The Anchorage-Denali railway is prohibitively expensive. Roundtrip for two people is \$676 (\$169 x 4), whereas our Turo car rental was only \$213 for 7 days. We are college students on a budget.	Non-AK Res.
	X							The boot brush at the trail head was great!	AK Res.
		X						The bus into Denali was adequate- I'm used to having my own vehicle in Nat'l Parks, but the bus was a good alternative.	Non-AK Res.
							X	The bus ride from Anchorage to Denali with Howard the driver. He was an incessant talker. If he talked about Alaska that would have been fine, but he jabbered on about his wife and six daughters. That got old. Silence can be golden.	Non-AK Res.
		X						The cost of the train from Seward to Denali was too high and we weren't able to utilize the train and forcing us to rent a car. We visited the first week of June.	Non-AK Res.
		X						The delays caused by construction were definitely irritating, but I'm not sure what can be done since this is the time of year the roads can be fixed.	Non-AK Res.
		X						The Denali Highway mile 0 thru 15 has a lot of heaves (dips in road from permafrost). When pulling out RV, this is rough!	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
	X	X						The Elliott was in better shape than expected, due to recent repairs. The trail was also a bit better than expected (to Wickersham Dome via the Summit Trail) due to addition of geotech plastic gridding. It was very poorly redone about 10 years ago, with an obvious lack of understanding of the local soils and drainage patterns (back when old boardwalk was ripped out.) Things have improved a lot since, but it could have been done for far less money and less hassle with better design from the outset!	AK Res.
			X		X			The ferry was a great way of getting around SE Alaska. Would have used it more if the schedules were more frequent or more ferries available.	Non-AK Res.
		X						The highway from Anchorage to Denali could use more frequent passing lanes, or slow vehicle turnout. Getting stuck behind a slow semi or camper was at times frustrating.	Non-AK Res.
			X					The issue with the ferry delay was frustrating as it meant we had little time to see Skagway. However the weather was nasty so we would have done little outside activities anyway and would have focused more on history.	Non-AK Res.
	X							The off road vehicle accessible trail have very large stones/rocks along the route which made the ride very tough. I'm sure walking on these same trails was difficult too.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
	X							The requirement to book camp sites online or via phone is terrible. Another feature is needed at sites to permit those without this technology the ability to stay at sites, particularly if ferries arrive late.	Non-AK Res.
		X			X			The road conditions are vastly improved since my first trip to Alaska in 1975. The traffic is certainly heavier, but managed well for the most part.	Non-AK Res.
	X	X						The road to Lake Louise is in very bad condition and we had to turn back almost nowhere an information about trail elevation and profile could be found.	Non-AK Res.
		X						The roads were what we expected. Some with a few potholes, some with lots of frost heaves, some with no shoulders but all part of the adventure!	Non-AK Res.
		X						The roadway into Nome Creek is often rutted and not well maintained.	AK Res.
				X				The satellite coverage for the GPS was occasionally poor. This may have been related to the GPS we were using, but it was brand new and purchased in the U.S.A.	Non-AK Res.
		X						The signs for pull outs are not posted back far enough away from the site so that you can stop in time. The sign is posted and then the site is almost immediate. Need to set back further from turnout. We found that if we followed travel warning signs wed be fine. No damage to vehicle or camper entailed while traveling.	Non-AK Res.
					X			The tour was well organized with timely departures and arrivals. There were no incidents, all was well organized.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
					X			The trip to Alaska was wonderful + people very friendly	Non-AK Res.
		X						There is no public transport in Fairbanks. what a pity! I find museums really good. Native exhibition great! Community specially friendly, amazing university! the Power Alaska owns: the people!	Non-AK Res.
		X						There was a lot of road work while we were traveling to Denali from Anchorage and it was raining so it made it a little difficult and lengthened our travel time.	Non-AK Res.
							X	There were no real issues. We were just two old people on a cruise ship that walked around the towns that the ship docked at and took one glacier tour. Other than the prices charged we had a good time. I have told everyone that I work with that Alaska I a bucket list item	Non-AK Res.
		X			X			There were no transport issues on our trip which was mostly train, ferry coach and plane. All worked smoothly and to time-most impressive.	Non-AK Res.
					X			There were none, we were happy with our trip. Met and exceeded our expectations	Non-AK Res.
							X	This was a visit to Nat'l Park in Sitka- I was able to use a carrier (bus) operated by thing is in Sitka to get to Nat'l Park	AK Res.
	X						X	Though not transportation related, the great number of HUGE RV's and travel trailers is disheartening. Especially when they run generators in lovely wilderness campgrounds morning and night. Not pleasant for tent campers	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						Too many one way streets in Anchorage	Non-AK Res.
		X						Took city buses to local areas instead of tour companies. Schedule and wait times here sometimes long.	Non-AK Res.
		X			X			Took the Kantishna Experience tour in Denali. Using school buses that are designed for children to transport adults is quite uncomfortable. We are very tall and had to use the aisle for our legs. I appreciate that the seats were not bench though. :) I am so happy that transportation into Denali is limited so that nature can catch a break (unlike bear jams in Yellowstone). We drove almost 2000 miles in a week, and found that 90% of the area was free of roadside trash. There was just one overlook that was very littered.	Non-AK Res.
	X							Trail is in poor condition.	AK Res.
	X	X			X			Transport to & around park land had no issues at all, trailheads were easily accessible by car or bus and trails were well-marked and maintained. Utilized Rust's Flying Service multiple times, they were great. Posted wildlife encounter info was clear (bear/moose safety signs) and welcomed. Scenic stops and restrooms were well-marked and accessible from road.	Non-AK Res.
		X			X			Travel has been great for us I'd prefer that 'inaccessible' places remain so -- requiring adventure to get there, allowing the relative pristine nature of those places to remain so.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X			X			Traveling on our own, we depended on public transportation, walking, or taxi to get around the towns. Just getting from our guest house rental to boat for glacier bay excursion was \$15 for a few mile ride. We were impressed how friendly and helpful everyone was. We really enjoyed our visit!	Non-AK Res.
			X					Very frustrated with lack of transportation options at ferry terminals especially Juneau. Cannot understand why bus doesn't come a few more miles to pick up passengers getting off ferry.	Non-AK Res.
					X			Very happy with services provided.	Non-AK Res.
					X			Very impressed by cleanliness and upkeep of points of interest despite volume of tourists, many of whom are not so considerate.	Non-AK Res.
						X		We always try to be prepared and so we have avoided any problems.	Non-AK Res.
						X		We did not have any transportation issues.	Non-AK Res.
						X		We did not have any transportation problems because we used own vehicles. we were also early in the season so overcrowding was not a problem	Non-AK Res.
	x							We enjoy exploring areas on ATV trails and hope that other people use common sense and respect when they use the trails too so that we can continue to go on these types of adventures.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
			X					We enjoyed our 8 weeks in Alaska and can nor remember any transportation related problems other than the 2 hr. late arrival of the AMH ferry in Skagway and the 8 hour weather (fog) delay leaving Kodiak Island.	Non-AK Res.
	X				X			We found some well-maintained scenic hiking trails, which were a joy. We wish there were more trails, more dog-friendly trails, and good trail maps. Problems that we encountered: trails not marked and hard to find or follow, terrible ugly clearcuts along rails. Clearcut logging shouldn't be allowed.	Non-AK Res.
					X			We had a great time and had no dire transportation-related issues. All went smoothly.	Non-AK Res.
		X			X			We had a great time. Alaska delivered everything we hoped. railroad was really well done. great trip. fire south of anchorage and traffic congestion was well reported. never felt lost or confused. road conditions excellent. keep up the good work! an thanks	Non-AK Res.
		X			X			We had no issues travelling across Alaska in our passenger vehicle. The roads were very smooth and ride to drive on.	Non-AK Res.
						X		We had no issues. We used charter planes to get into and out of the Arctic Refuge.	Non-AK Res.
					X			We had no problems as the guides, drivers, pilots were simply outstanding !	Non-AK Res.
						X		We had no real problems other than being weathered in at a camp in Kenai	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
						X		We had no transportation issues.	Non-AK Res.
					X			We had no transportation problems at all during the Denali National Park part of our trip. In fact the only real problem we had the entire 2-week trip was that our whale watch tour in Juneau was canceled due to high winds. It was a GREAT trip!	Non-AK Res.
						X		We had no transportation related issues either in Denali NP or on the Lindblad cruise.	Non-AK Res.
					X			We had no trouble, everything was fine. we would tell people to go to Alaska as it is a beautiful and safe place to visit	Non-AK Res.
						X		We have personal truck, boat and cabin so no real transportation issues	Non-AK Res.
				X	X			We loved our trip to Alaska - we have become so reliant on cell phone coverage that we take it for granted - it is expected - I get that we were in the wilderness but maybe that will improve over time	Non-AK Res.
					X			We loved the trip. It was too short.	AK Res.
		X						We managed to blow two tires on our camper. We had to leave our camper to try to find a tire repair shop in Cantwell.... And we were unsuccessful. That was our big issue for the trip. We were very surprised that there wasn't a fix it shop in Cantwell or even Talkeetna. We had to drive all the way back to Wasilla to get a new tire.	AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						We really didn't want to rent a car, but it turned out it was so much cheaper than taking the train. So our biggest problem is that the train was expensive I guess! We also ran into some road construction delays, but it wasn't much of a problem. Also, this may be beyond the scope of this survey, but we wanted to bring our own bicycles, but that is also prohibitively expensive, so we just rented them for a few days to bike the Denali park road, which was fine, but our own bikes would have been better!	Non-AK Res.
					X			We really love everything about the Federal Public Lands in Alaska, wouldn't change a thing!	Non-AK Res.
			X					We thought it odd that information on the cancelled AMH ferry service wasn't conveyed to us by text or email when we held reservations for the trip. We learned of the cancellation only after getting to the ferry terminal the day of the voyage.	Non-AK Res.
			X		X			We thought the Alaska Marine Highway Ferries were fantastic and liked the facilities for people to prepare their own food and the relaxed way in which people could make themselves comfortable sleeping in the lounges etc. at night	Non-AK Res.
					X			We travelled on a ship from Seattle calling at the main ports where we went either on foot, public bus or with a ship's tour. The weather was exceptionally sunny and we enjoyed the trip enormously.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
			X		X			We used the AMH ferry system and were pleasantly surprised. The ferries were always on time. We traveled from Juneau to Sitka to Petersburg, Wrangell and Ketchikan.	Non-AK Res.
		X						We wanted to take the train, but it was equal to renting a car for 2 people to all the places we wanted to go and did not give us access to other public lands, trail heads except Denali Nat'l Park. Unable to find bus information.	Non-AK Res.
	X							We went to Brooks Falls and on the road one uses to walk to the falls, there were some 4 wheelers with park staff driving past a number of times. I wondered how many of those trips were really necessary.	Non-AK Res.
	X							We were at the Kantisha lodge we could get to as many of the park as we wished so I am coming back with a guide that can help me to vamp out in the park.	Non-AK Res.
						X		We were cruise ship based, so we didn't have much experience on the roads.	Non-AK Res.
						X		We were in Ketchikan and there is only about 25 miles of road so there wasn't a lot of opportunity for problems!	Non-AK Res.
		X						We were in Soldotna trying to find the Kenai National Wildlife Refuge and the signs were terrible. We almost gave up but did go back and find it. Glad we did but you need a lot of signage out there.. Great trip otherwise.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
		X						We were lucky enough to have a friend who lives in AK loan us their car otherwise we may not have taken the trip as car rental is Outrageous!	Non-AK Res.
	X				X			We were really impressed with the Chena River State Recreational Area North of Fairbanks. Look at providing a similar experience with river access, lake access, and camping areas with road management. Some area management without recreation facilities would work great on federal lands in Alaska. Use small towns and businesses as getaways to these areas. It would be a win-win situation for both Alaska residents and tourists. (PS) All remarks made due to WET, RAINY conditions on our trip.	Non-AK Res.
					X			We were surprised about the existing infrastructure, which was in excellent shape. No issues at all.	Non-AK Res.
					X			We were traveling on our personal sailboat & were thoroughly impressed with everything we experienced in AK.	Non-AK Res.
					X			We were very pleased with the transportation private and public that we dealt with during our various stays in various towns in Alaska. All were very friendly and helpful and presented us with many helpful tips and ideas on what to do as well as local favorite places to eat while visiting their cities.	Non-AK Res.
					X			We were very pleased with transportation through federal public lands on our vacation especially the Alaska Train. The handing and delivery of our luggage and our hotel was excellent. Also the guides/hostesses were very pleasant. We have no complaints.	Non-AK Res.

Continues

Basic Local Info	Recreation	Travel/Transportation	Ferry /AMHS	Communication	Very Satisfied	None	Misc.	Additional Feed Back on Travel Experience	Residency
			X					We wished there were more frequent express ferry options to the different islands from Juneau.	Non-AK Res.
							X	When boating on the refuge some federal employees act as if it is there refuge not the ours. Even to go so far as telling me to leave. This has happens more than once.	AK Res.
		X						Widen the Dalton highway so a guy with a flat tire can have somewhere to go and not create safety hazard, those trucks cannot stop on a dime even in good conditions, let alone heavily loaded and on ice.	AK Res.
					X			Wonderful! Would like to visit again	Non-AK Res.
					X			Your state is Wonderful!	Non-AK Res.

Responses to Open-ended Question: Suggestions for How Travel to/through Public Lands can be Improved

Table 91. Other Suggestions for Improving Travel to/through Federal Lands.

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
X								1. Make finishing the Wickersham dome trail-hardening project a priority over more distance projects such as Denali Park/Wrangell St. Elias/etc.. where tourists dominate people of Alaska want to use trails near their towns. 2. Re-instate trash service at Tolovana River access to White Mountains, better to upgrade the toilet facilities while you are at it, I have had to use the woods at least 85 of the last 100 visits to the area. 3. Trail-hardening or at least drainage for Mt. Prindle Trail at a spot about 1.5 miles in from campground and Nome Creek rock crossing	AK Res.
	X							A tire repair shop in Cantwell would have been beneficial to us during this trip.	AK Res.
	X							Above car level bus stop signs in supermarket car parks.	Non-AK Res.
X								Add more ATV trails. Trails along ridges like Compeau Trail can be easily maintained and are quite popular	AK Res.
	X							Additional parking would be helpful - creatively placed to minimize impact on space and views. It would be nice to somehow limit the number of buses going through parks and forests, but I'm not sure how that can be done without causing issues.	AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X							Again, perhaps beyond the scope of the survey, but make the train cheaper than renting a car and make airlines change their bicycle shipping fees! Good luck with both those goals ;)	Non-AK Res.
	X							Allow more private vehicle access, especially for Denali. The park is beautiful and not all are able to ride on the bus tours.	Non-AK Res.
X								Allowing private vehicles further into Denali National Park.	Non-AK Res.
							X	As we had nothing to do with transport we cannot answer this as we had no experience of roads etc.	Non-AK Res.
					X			At this time, I believe you folks are doing a great job to preserve The Last Frontier for future generations. Thank you!!	Non-AK Res.
	X							Baby friendliness on buses. Maybe more stops, longer stops.	Non-AK Res.
			X					Better guidance on guns and how they can be stored, transported...and all of this being made more convenient on NPS lands (Denali). Seems there is a standoff-ish attitude toward communication about firearms -- like they don't want us to bring them so they leave us in the dark, which puts us at risk in a number of ways.	Non-AK Res.
	X							Better quality road construction so there will be less frost heaves	Non-AK Res.
	X							Better road maintenance	Non-AK Res.
		X						Better Signage!	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
X								Bigger/longer camp sites. Given the amount of public lands, more and bigger sites should not be hard to come up with	Non-AK Res.
X								BLM, Rangers, etc... are always appreciated when we need them and even when we don't	AK Res.
	X							Buses to trailhead	Non-AK Res.
						X		Can you relocate some of those spectacular mountain views to Iowa?	Non-AK Res.
							X	Can't think of any. We drove 2300 miles in 16 days and never encountered any issues. We read up on the roads using the Alaska Milepost and other public information. Follow the map and the instructions and everything was expected.	Non-AK Res.
X				X				Denali was crowded, but we knew and expected that. The Denali transportation system was crowded and bumpy and dreadfully slow, with my sister's bus arriving 2-3 hour late, causing us anxiety. With no cell coverage she was unable to call and tell us of the delay.	Non-AK Res.
	X							Develop regulations governing excess noise: 1. lack of mufflers + "jake brakes" on heavy truck diesels. 2. Very inadequate mufflers on most aircraft engines. 3. Use of supersonic prop. blades in wilderness airspace e.g. 2 blad C-185 and many helicopters. . Minimal overflight in wilderness 2000 ft afl. This took 47 minutes ("less than 20 min") hah!, it deserves more thoughtful answers than that.	AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
					X			Don't change anything! Leave it wild.	Non-AK Res.
	X							During high volume more picture spots for various times will help too many to be at the same spot at one time	Non-AK Res.
					X			Everything was good.	Non-AK Res.
	X							Fill in some of the pot holes on the roads	Non-AK Res.
	X							Fix Dalton Highway	AK Res.
	X							Fix road	AK Res.
	X							Fix roads. We really had a wonderful 6 weeks in Alaska	Non-AK Res.
	X							fix your bad roads	Non-AK Res.
X								For hiking or other back country endeavors, many people seemed unprepared for the for the time commitments or physical ability required to complete some of the activities. While my party has back country experience, we met others without that experience struggling on trails that were beyond their capabilities. Perhaps a simple rating system marking trails as "easy" or "expert" might be useful. A picture representation like the green circles and black diamonds found at ski resorts, as language may have been a barrier in some cases.	Non-AK Res.
	X							Glad there is limited traffic in Denali...we were 90 miles inside.	Non-AK Res.
					X			Had no problems, great time	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X							Have a free shuttle available, such as Acadia National Park's free "Island Explorer Bus."	Non-AK Res.
	X							Have commercial boat shuttle access to Brooks Falls. There formerly was one.	AK Res.
						X		Have SE AK be its own state- Thank you	AK Res.
	X							I believe the exit glacier parking lot was full shortly after we got there.	Non-AK Res.
	X							I do like frequent passing lanes.	AK Res.
							X	I do not.	Non-AK Res.
	X							I don't understand how the roads in northern Canada can be so much better than those in Alaska. They experience similar weather. When I drove the Top of the World road from Dawson City, I was ashamed at how poor the US highway was compared to Canada. The speed limit is 50 MPH. I was doing 25 MPH and asked my husband if he thought I should slow down more.	Non-AK Res.
	X							I fully endorse the traffic policies that are in place for the Denali park road.	Non-AK Res.
X			X					I like the way you monitored the number of visitors on the bear viewing platform. However photographers took up much space without sharing the space with others. I wonder if you should have a separate area for serious photographers and all of their equipment. I am short and it was difficult for me to see and to find a space. Perhaps you are allowing too many people on the platforms at once or maybe you could ask people to stand at the front for a limited period of time.	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
					x			I really don't have any major complaints. Our trip was great!	Non-AK Res.
					X			I think the State as a whole has done a Fantastic job	Non-AK Res.
	X							I think there should be some sort of public bus system between hotels and food locations in Denali. The hotels run shuttles to scenic areas, but you are trapped in hotels for low quality, high cost food. I would have liked to be able to have other choice, or hotels have to up their game because of competition.	Non-AK Res.
	X				X			I thought it all worked very well -- if volume of traffic is increased it will spoil the nature of Alaska	Non-AK Res.
	X							I was generally satisfied with my experience within Federal public lands (most problems were with getting to those areas, not while I was there). That said, a shuttle service between Gustavus and Glacier Bay would although some different vacation options for that leg of a trip. Klondike Gold Rush and Sitka NHPs were both very walkable, so transportation was not an issue; I required a rental vehicle to visit Mendenhall Glacier, and that really seemed to be the only option since I was staying at a hotel near the airport.	Non-AK Res.
X	X							I would have loved to see more of Denali via road transportation but also like that there are not a lot of cars/campers inside the park. Small planes are too pricey for families. Not sure if more of the park can be accessed without ruining it.	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	MISC	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
X								I would like non-campers to be able to park in National Campgrounds for fishing access, restroom use, etc.	Non-AK Res.
X								I would like to see more hiking trails. Although I probably won't return to Alaska again, I think others would like to have more hikes available. If I still lived there, I would like more trails.	Non-AK Res.
X								I would love to see more hiking trails, preservation of old growth trees and forests, and an end to clear-cutting. The forest service brochures describing trees, plants, animals are excellent and should be continued. Also cut down on the number of large cruise ship visits to the Alaskan coast.	Non-AK Res.
					X			If all forms of transportation could be like the gold star Alaskan railroad it would be perfect! We loved the naturalist onboard, the food and drink and the ride. Plus, they picked up and delivered our luggage to the hotel in Seward! Harbor 360. That was wonderful. We did 3 rail trips. All A+ Thank you!	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	MISC	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X							<p>I suspect road construction is a never ending constant condition. Hard to plan daily travel distance without knowing construction delays. I would love to go again but Canada is a long way to get to Alaska. Perhaps I would cruise and also take a companion.</p> <p>Better planning on my part--be good to go with someone who has been there and done that</p> <p>I hike, bike, tennis, golf and kayak. I am also 75, so time is not on my side.</p>	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X							<p>If there was a way to know the weather better for the flight crew as well as the customers it might be helpful. It would be better if it had been listed or we'd of been told exactly where the plane was to land on a map, and if other activities would have been listed - such as it would have been ok to pack my rod & reel and also if I would have known that there was lodging available and we could have spent the night there and gone home the next or another day. Because the trip from Anchorage to Katmai - (which involved 2 trips to Homer because 1st trip Cxld due to weather) We drove to Homer - gas. Had to arrive day before for check in and bear safety with Commercial Plane company, this required arrival the day before- motel and meals expense overnight. Having expected a return close to 7 pm we had booked the 2nd night motel too. On the 2nd trip, same 2 nights, plus planned to fish the day before so left Anchorage earlier in morning on 1st day. The trip for 2 from Anchorage to Katmai cost just over \$2400 total I can fly with a companion to Hawaii, spend a week in a good motel, eat and have a rental car and spend less than I did on the Katmai trip, and we were only on the ground 4 hours at Katmai! I had checked the going flights from competitors, checked other hotel prices and there was no "better" deal. I cannot believe that the price of a motel on the Kenai peninsula cost over \$180 when booked over 2 months in advance or day of, made no difference. So, if there was a shuttle bus avail from Anch. to Homer, an economical accommodations in Homer as well as transportation made avail by plane or boat to Katmai, lodging accommodations and meals available once there - all at affordable rates it would be an improvement. Also, there were 3 platforms available, 1 was not used by anyone. The Brooks Falls platform was so crowded that no videos could be taken without hearing all the other people talking, it was difficult to get up front in order to film the falls and bears (its</p>	AK Res.

Continues

	Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X								Improve buses.	Non-AK Res.
	X								Improve dust binding on non-paved vehicle roads	Non-AK Res.
X									Improve trail maps. There are so many ways to shared trail route information now. Google earth files, downloadable GPX file, web maps with photos, mile markers and other information, downloadable pdf trail maps with topographic information.	AK Res.
	X								improve your roads	Non-AK Res.
	X		X						In my opinion there are not enough roads to remote areas in Alaska. For instance Colorado has many more dirt roads allowing access to remote camping areas. In Alaska one tends more to stay in campgrounds because of the lack of roads into more of the interior.	AK Res.
	X				X				In Sitka and Ketchikan we've used the public bus system. Very good service-pleasant drivers. especially in Ketchikan we encountered the friendliest bus driver ever. Valerie is exceptional: friendly, helpful, caring and is the best ambassador for her city.	Non-AK Res.
	X								Increase travel on the Marine Hwy. System so people can visit their families in remote areas more often.	AK Res.
	X								Instigate a method of contacting reservation holders when ferry service is delayed or cancelled.	Non-AK Res.
X					X				It needs to stay the same. It has the perfect feeling of adventure	Non-AK Res.
					X				It was very organized and allowed for a lot of visitors without too much impact on the land.	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
				X				It would be nicer if float planes had designated take-off/landing areas when they're in major waterway channels. Or at least be able to communicate with boats via VHF to alert them of their take-off or landing path. For us not used to sharing the waterways with planes, it was a bit nerve-wrecking.	Non-AK Res.
					X			It's really pretty good (in my non-Alaskan estimation)	Non-AK Res.
	X							Just a little more road maintenance please	Non-AK Res.
					X			Just continue to do things like this - obvious concern for users. All Federal employees were great.	Non-AK Res.
X			X					Keep it as remote as possible. Don't spoil the wilderness. Disallow large vehicles, especially motor homes.	Non-AK Res.
					X			keep it beautiful!	AK Res.
			X					Keep multi use land use available. Allow for some areas to be remote and undeveloped, so overcrowding does not occur.	AK Res.
	X							Keeping roads well graded and free of debris. Hard at times, I know.	AK Res.
	X		X					Less restrictions better roads.	AK Res.
	X				X			Liked the public transportation	Non-AK Res.
X			X					Local residents should be allowed to/from boat access within Glacier Bay NP's Bartlett Cove without restriction for safety, moorage and refueling from outside the Park. Local residents should be allowed boating use within Glacier Bay within needing a permit	AK Res.
X			X					Love boardwalks and improved walking surfaces in tundra areas. Less ATV access.	AK Res.
X	X							Maintain road access to campgrounds and signage to concentrate usage particularly of ATVs.	AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
		X						Make a better effort to include private services, such as lodges with gasoline, tire repair, food and lodging. I know you cannot vouch for their services or even guarantee that they will be open for business but a brief description of services and a telephone number to call would be helpful.	AK Res.
						X		Make college students aware of what to do with disabled people. They could have cared less at Denali	Non-AK Res.
X								Maps at trailheads/parking would be a nice bonus but not totally necessary. Wasn't always sure of how much distance some loop/out & back trails covered, had to look online before heading to the parks. Otherwise - encountered no issues.	Non-AK Res.
	X							Marking turnouts in advance so people would know what is coming up without stopping suddenly when they see them. Traffic flow might be smoother.	Non-AK Res.
	X							Maybe have vehicles for rent at some of the federal land areas (can take the train to get to Denali but have van for rent inside the park)	Non-AK Res.
			X					Minimize roads to maintain wildness	Non-AK Res.
X								More ATV trails	AK Res.
X								More bike paths and mountain bike trails. More developed remote campsites and public use cabins.	AK Res.
X								More camping opportunities.	Non-AK Res.
X								More funding for recreation so that trails can be maintained.	AK Res.
X								More hiking/biking trails at Glacier Bay Nat'l Park. One of Point Gustavus w/bridges from Dude Creek would be nice	AK Res.
						X		More information on procedures for first time visitors	Non-AK Res.
		X						More information on nearest gas station.	Non-AK Res.

Continues

	Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X								More paved roads & more signs do that visitors know that they are heading the right direction	Non-AK Res.
X	X								More paved roads and more trails for 4-wheelers	AK Res.
	X								More pull outs . We wanted to drive slow and caused back-ups . This was on the 14 Mike stretch into the big rock at Denali .	Non-AK Res.
	X								More rest areas, more litter boxes	Non-AK Res.
X									More science on the impacts to hydrology, vegetation, and other users' experience from ATV traffic. Especially during rainy wet years, they seem to destroy trails, create new drainage patterns, destroy overburden vegetation and lead to thermokarst. There are more of them all the time creating new trails, they stink and are noisy. I believe their use should be restricted to the elderly or disabled on many public lands.	AK Res.
X			X						More systems like you have at Denali to minimize human impact on the last great frontier. Although, I believe the transportation provided by the park should be affordable. Perhaps these systems should be privatized.	Non-AK Res.
X									More tours	Non-AK Res.
				X					More towers	Non-AK Res.
X									More trail markers on the Chilkoot.	Non-AK Res.
X									More trails including trails dedicated to bicycling. Use of private aircraft should be encouraged and more airfields suitable for small private aircraft should be provided or a means devised so that the public can develop airstrips.	AK Res.
	X								More transport-less expensive trains	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
X	X							More wet weather secondary roads. Provide recreation opportunities through road design and management. Really nobody can afford additional rec facilities and their maintenance costs.	Non-AK Res.
							X	No (16x)	Non-AK Res.
							X	No (4x)	AK Res.
					X			No- have a great trip, great job!	Non-AK Res.
	X							No-- large state, small population; environmental challenges with building and maintaining--We think the road from Boundary to Chicken needs to be graded more often then it apparently is...and that is state not fed.	Non-AK Res.
					X			No- we had a great travel experience!	Non-AK Res.
					X			No, it was truly wonderful.	Non-AK Res.
					X			No. Parking was adequate and I backpacked the entire trip.	AK Res.
X				X	X			Not at Nome Creek, very pleased with the services, trails & campgrounds here in the white mountains. Except for no cell phone coverage in case of an emergency.	AK Res.
						X		not rush everything...seems tours give u little time to get off bus or whatever. take pic then hurry back on...we had nooooo time to enjoy areas	Non-AK Res.
	X				X			No. All modes of transport were excellent and on time. Roads all in good condition. All commercial flights were full; this was July and presumably the busiest month of the year.	Non-AK Res.
	X							No. I think the way Denali National Park is set up so that private vehicles can only drive to Mile 15 is appropriate. Allowing private vehicles to travel freely through the park would ruin it, in my opinion.	Non-AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X				X			No-we were pleased with the way roads etc. were laid out/designed.	Non-AK Res.
	X							Offer more options to get to Chilkoot trailhead.	Non-AK Res.
	X							Open additional driving options into Denali.	Non-AK Res.
					X			Other than the above, no; Alaska is captivating and has such a strong appeal to look closer and experience the scenery first hand.	Non-AK Res.
					X			Our main transportation was the cruise ship as well as the private and public buses. We also did some fishing and road the train. Each of these were great experiences (except we didn't catch any fish). We loved that we were allowed to go as close as possible to the glaciers since that area is very protected. We also appreciated the cruise ships explanation of the various protected areas, even asking us to be quite and just enjoy the beauty of what we were viewing.	Non-AK Res.
				X				Phone or internet service.	Non-AK Res.
X								Please mentions at Denali visitor center, that mount McKinley is now mount Denali and do not ignore the first nation and their history in that area.	Non-AK Res.
X			X					Please use an intelligent approach to classifying areas as "non-motorized". There are a lot of users who are alienated from public lands due to an inability to operate off-road/off-highway vehicles responsibly on public lands. In Alaska, where most of te state is roadless already, it seems like the necessity for trails to be classified as non-motorized should be limited. Thank you for your time.	AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
		X						Post schedules at hotels	AK Res.
			X					Reduce hunting to the point that natural balances of nature's creatures can occur	AK Res.
	X							Road improvements are necessary. We just have to wait and not be in a hurry.	Non-AK Res.
						X		See above	AK Res.
						X		See above	Non-AK Res.
X								See above. Trails that are properly designed to drain water and that are non-motorized can be very cheap to build and maintain. I used to do this work in the eastern US. Thanks for the survey!	AK Res.
					X			Seemed fine to me	Non-AK Res.
	X							Seward highway traveling north from Anchorage to Denali was almost impassible during light to moderate rain. The lane grooves from traffic were pooling with water and led to dangerous hydroplaning conditions.	Non-AK Res.
X								Signs or markers indicating historical areas.	AK Res.
						X		T	Non-AK Res.
	X							The design of the windows on the Denali bus system are identical and unchanged since the school buses that I used as a child in the 1960's. Windows work poorly and pose a danger to those who have to stand and manipulate them. The windows have to be able to open repeatedly during every trip, so they are very important to the people who want to take pictures. The window design has always been bad and needs to be replaced. I am certain that a better engineered design could be employed.	Non-AK Res.

Continues

Recreation	Travel/Transportation Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
X	X							The Forest Service CG in Sitka is closed to thru traffic, but open to go to the artesian well. Their reason it's hard to maintain the road. That's hard to believe when they are just now completing a multi-million dollar office complex here. To boot, they don't even brush out their signs to the campgrounds and picnic area. Our responses to this survey are based on hiking in the Totem Historic Park here in Sitka.	AK Res.
	X				X			The green bus in Denali is a fantastic way to see the sites and who could ask for a better price! Needs more advertisement. The Wilderness bus was great too, but I enjoy more of "my own" handling in places like Denali.	Non-AK Res.
X								The horse trails should be cleared of burnt and down trees. Today most old trails can't even be found. Like the ones to and around Tustumena lake. More lakes should be open to float planes.	AK Res.
			X					The less regulation the better.	AK Res.
			X					The tangle lakes are a moose calving ground. there is an abundance of other wildlife. I believe you should have a 10 horsepower boat motor limit. this is a place to hear when you listen, to see when you look, and to feel when you touch. A place worthy of our protection	AK Res.
			X					There will always be balance between what people want from federal lands. Even so, I was surprised to see how cavalier folks who were camping at Hidden Lake campground were about bear safety (Much more so than at other public campgrounds I have stayed i in Alaska.) USFW should maybe step up their game there, perhaps with more officer intervention and education. (Signs don't seem to be keeping coolers off of picnic tables!)	Non-AK Res.
	X							Traffic through Anchorage might be improved by developing some overpasses, effectively avoiding same level crossings in down-town.	Non-AK Res.
X								Trails need better maintenance.	AK Res.

Continues

Recreation	Travel/Transp. Related	Basic Local Information	Regulations	Communication	Very Satisfied	Misc.	None	Other Suggestions for Improving Travel to/through Federal Lands	Residency
	X							Transportation. Examples, in Yosemite, Grand Canyon, there are buses that do a loop so one can get to a trail head, go to another part of the park, etc. I realize those parks have a lot more population density.	Non-AK Res.
					X			True treasure. Thank you for being the keeper.	Non-AK Res.
					X			Unfortunately can't control rain, fog or high waves. We had a great trip.	Non-AK Res.
X								Use D1 Rock on the trails.	AK Res.
					X			Very satisfied . Excellent trip through Alaska during our 11 weeks and 5000+ miles. Beautiful Country	Non-AK Res.
					X			We had no problems traveling in our own private boat except for bad weather preventing us from traveling. But we expected it would happen on occasion.	Non-AK Res.
						X		We walk, use local transportation, or hitch a ride .	Non-AK Res.
					X			What a wonderful experience to visit Alaska. A fest for the eye around every corner	Non-AK Res.
	X							Work with the DOT to improve the road. The campground host at Tangle Lakes was a very good campground host!	Non-AK Res.
X								Would like to see more improved trails throughout Denali Park for hikers that don't backpack, i.e. day hikers	Non-AK Res.
	X							Would prefer to keep the transportation more primitive even if that does mean a less smooth ride	Non-AK Res.
					X			You are doing a great job!,	Non-AK Res.
					X			You're doing a great job. keep it up!	Non-AK Res.
							X	Thank you	Non-AK Res.
							X	Thanks for the survey!	Non-AK Res.
X								Trail guides on website, more information regarding Green and Brown line buses favoring the brown bus. Include what trails are at each stop on the green line in Denali	Non-AK Res.

Question 12 Follow up

12. Which activity(s) were you and your personal group not able to participate in?

There were 60 people who indicated that there were activities they were unable to participate in. Of those six mentioned, boating, 10 flightseeing, three sightseeing, seven fishing, 12 hiking, three mentioned camping and 20 mentioned specific places for the activities.

Code: Non-motorized Boating

- Whitewater boating 2. Tundra hikes and mountains
- **as mentioned, the rivers were too high for planned canoeing/ kayaking trip**
- Kayaking, fishing, mountain biking, hiking
- Kayaking, weather and ran out of time.
- Unable to sail in to Tracy Arm fjord
- **I had hoped to take a half-day sea kayak trip through the concessionaire at Glacier Bay NP, but as a single traveler, the concessionaire was unable to accommodate me (i.e., not the minimum number of people for such a trip).**

Code: Flightseeing

- Flight to Denali and landing glacier
- Flightsee cancelled due to weather
- a visiting tour was cancelled, ten thousand volcanos tour was delated. The bus was out off order
- Air tour of Denali and Bear watching
- Helicopter ride
- Glacier tour due to inclement weather
- Homer flying bear viewwing
- We did not get to visit Mendenhall Glacier as it was raining and there was heavy fog. The helicopters could not fly. This was the main reason for coming to Alaska (to go there).
- Mystic Fjords float plane in Ketchikan
- One overflight tour was canceled due to weather conditions.

Code: Sightseeing (by land)

- Busing all the way back
- **Drive into Denali - closed because of a bear incident with a stupid person.**
- Sight seeing

Code: Fishing

- Fishing
- Fishing due to poor weather.
- fishing, horseback trail riding, biking
- *1 mention in other comment
- I would have fished and seen more of the available country (surrounding land) that I was walking around in
- Viewing salmon spawning, Calm digging
- Rock climbing due to rainy weather, fishing

Code: Hiking

- Hikes x2
- Hikes, denali
- Hiking at campgrounds due to bear at Savage River area.
- Hiking in Denali Nat Park was limited due to heavy rain & fog. We plan on visiting again. Beautiful area!
- Hiking primrose etc. and driving the last 3 miles of the 15 mile drive in Denali national park due to bear incident
- hiking trails were closed due to bear activity
- hiking/camping
- Had hoped to do more hiking but it rained quite a bit while we were in Denali
- Random hikes
- We were limited on time or we would have spent more time at visitor centers and trail wandering¹

*1 mention in other comment

Code: Place

- Denali Park
- Destinations in Skagway
- **could not see Mount McKinley. we were there 3 days. guess we have to come back!!!**
- **Decided not to visit federal public lands in Skagway area due to weather and ferry delay**
- **Visiting the sled dog demonstration at Denali. Lack of time. Had we known about it before we left home we would have probably been able to incorporate this into our trip. We wanted to do some hiking so that took precedent.**
- **We simply ran out of time. We would have liked to travel deeper into Denali Park, but because of time constraints, we chose to hike no further in than Toklat River.**
- Sled dog facility at Denali
- **There was a landslide preventing us from getting all the way to Wonder Lake.**

Code Camping:

- One night stay at Fures Cabin in Katmai National Park
- overnight camping in wickersham dome area

Code: Other

- berry picking
- **could not always find a campground space for our 20 foot trailer**
- **Day guided trips due to lack of handicap access**
- **Finishing the hike. too much fog/rain/water flowing down social trails. Younger set had to head back. We got to tors but couldn't see well enough due to constant rain and fog to get to the end of the trail. still a fun trip.**
- Indian dancing

- **My group wanted to ride our motorcycles from Wickersham Dome Trailhead to McKay Creek/Nome Creek/ US Creek Area. This would be an exceptional off-road ride and we are quite prepared for the challenge/difficulty it would present physically. Our issue is hat according to all the maps we can find, there is a short section of non-motorized land (Beaver Creek Wildlands Area) that interrupts the existing trail. We would like to use this trail but are unwilling to break the law to do so. Please help!**
- **Not allowed boat access**
- Part of trails
- Rained out
- Ran out of time to do it all. Way bigger than planned for!
- Several guided tours, cause it was too expensive.
- **Trail blocked by snow. Could not go as far as planned. snow pack had not melted for season.**
- **Trails closed to UTV**

Question 13- “Other” response

Which of the following reasons explain why you did not engage in the activity? Other (please specify:

As for the 12 people did not engage in an activity due to a circumstance not listed, 3 were due to a lack of information, two were due to a mechanical issue.

Code: Informational

- **lack of good information form NPS and Denali NP**
- No maps
- **arranging transportation was difficult, I did not learn early enough about the bicycle trail availability to fully take advantage of this resource as much as I would have liked once I discovered it.**

Code: Mechanical Breakdown

- Ferry broke down and caused delay.
- our POV broke down :(

Code: Other

- The bus was over
- **water level too low = rocks + grounding**
- money
- **I already know the trail shelter to be an unsatisfactory site for my new hiker to gain first time experience with overnight trip, probably do that at tabletop mountain**
- Injury
- Insufficient number to book tour.
- Berries not ready

Question 16 Follow up

During your trip, did you experience any delays or other problems making connections from one form of transportation to another? For example, a weather delay making a connection from a bus to a train?

___ Yes → IF YES, Please indicate the nature of the problem. Please be as specific as possible.

As for the 60 who indicated that they experienced delays or problems making connections, 13 experienced delays due to weather, four had trouble due to the computer issues Delta experienced, and seven had delays due to road construction or poor road conditions.

Code: Weather

- 8 hour weather delay on Kodiak Island. Alaska Marine Highway ferry from Juneau to Skagway was 2 hours late arriving.
- **Not a big deal, but we were going to float the Kenai twice in June. By the second time, it was too high which I guess we can blame on teh weather.**
- We had reservations, the commercial airline cancelled them due to inclement weather & offered us choice of another reservation or money return.
- weather delayed us from traveling
- Weather prevented flying out on float plane
- Wind
- Yes, we got in to Juneau one-half hour late due to weather.
- Yes. Weather on the way home delayed our flights.
- flight home delayed due to weather in the lower 48
- Initial delay reaching AK due to American Airlines delay initially allegedly due to the weather. 24 hr. delay.
- Bad weather
- flight home delayed due to weather in the lower 48
- Initial delay reaching AK due to American Airlines delay initially allegedly due to the weather. 24 hr. delay.

Code: Delta Computer System

- Delta airline major computer system malfunction stranded us for 1 day
- Delta Airlines meltdown as we commenced travel in Wisconsin and Minnesota.
- Delta had serious computer problems, so our plane was significantly delayed to Seattle, and significantly delayed from Seattle to Detroit. We had no problems traveling within Alaska, with the exception of weather related cancellations.
- We were delayed a day because of the Delta computer snafu that trapped so many travelers. We were unable to make our flight on time from Seattle, so we had to wait a day.

Code Road Conditions/Construction:

- Construction delays
- Delays with road repairs but expected
- Poor road conditions delayed us getting to the hotel
- Construction delays
- Road construction
- **YOUR ROADS ARE IN NEED OF REPAIR Valdez to TOK to the Canadian Boarder**

Code: Air

- Airline Delay (not weather)
- Airplane mechanical problems in Denver on the way to Alaska.
- airport delay from ANC to MPS
- charter flight was cancelled; had to reschedule on different airline
- connecting flight in ORD missed. Arrived six hours late to ANC
- Connecting flight to anchorage had mechanical problems. 2hour delay
- From Alaska Air to pontoon plane at Ketchikan to Prince of Wales Island
- when we left fairbanks airport the plane was about an hour late departing due to waiting for someone but it didn't affect us as we had a three hour wait planned at Seattle.
- Only flying home from Vancouver after leaving alaska
- Pacific airways delayed us at airport
- plane cancelled
- planes being late
- privat charter was full
- Flight from Wrangell to Anchorage cancelled 6/23. Could not leave until 6/24
- Just air flight

Code: Boat

- **Alaska Ferry from Haines to Skagway delayed by 2.5 hours as we waiting for other ferry which was late to leave the dock free in Skagway**
- Alaska Marine Highway ferry cancelled due to breakdown on one day
- **Ferry, due to unable to connect on the internet, I was unable to make a reservation. Therefore we were on standby on the Ferry from Haynes to Skagway and were unable to get on, because the ship** was smaller than used to be on did not take on as many cars, V, etc.
- Our ferry boat broke down and we had to make a different reservation. This meant we did not have as much time to explore the inside passage.
- delayed Alaska ferry departure from Bellingham, WA
- Missed our original ferry connection from Juneau to Skagway.
- Missed shore excursion at Sitka because of no one from cruise ship to give directions
- Only a cancellation to Fox Island from Seward
- Real slow checking in Alaska ferry in Prince Rupert-had to walk quite a distance to ticket booth and a very long time to get boarding pass
- Scheduled ferry ran late. We were rebooked on another one, it was really no problem for us.
- **The Ferry has a schedule that is Marine friendly, not tourist friendly (early departures, terminals locked at night)**

Code: Ground Transportation

- Buses in the Juneau area were a problem
- city bus only ran every hour, rain delayed making our bus
- Had to wait on shuttle native heritage car Juneau due to size of group
- I had a 5 am taxi pick-up scheduled to get me to the airport (Juneau) for a 6:30 AM flight and at 4:45, the cab company called to say they had no driver available. I did make my flight because another cab company had a driver available.
- In Anchorage the bus timetable posted was wrong and so we missed a bus and waited an hour.

- There was a marathon blocking roads to train station in Anchorage and almost missed train. They should have accommodated one way to the transportation center.
- **Tour shuttle from Sitka ferry terminal to downtown required wait for another bus because there were too many passengers;** Alaska Airlines flight from Juneau to Gustavus delayed due to mechanical problems which delayed arrival to meet bus to Glacier Bay Lodg (although bus waited)
- Gray Line did not make a reservation for us on the Alaska RR.

Code: Other

- could not get through customs to make our connections from the ship
- delay from portland to seattle to connect to Sitka
- **Forest fire near Anchorage caused 3 hour traffic delay.**
- **Mother bear was standing between us and the trailhead.**
- **We did not bring our passports. We had ready cards we thought would work to get into Canada**
- We had a couple flat tires along the way.

Question 18 10 text followup

During your trip, to what extent do you feel the following issues were a problem when you were visiting Federal public lands (e.g., National Parks, National Forests, National Recreation Areas, National Wildlife Refuges)? Other (Please specify: _____)

As for the 26 who had problems other than those listed, seven were about road conditions or construction, three had problems with facilities, and two had issues with off leash dogs and their waste.

Code: crowds

- **At the cafe at Denali Park it was a bit confusing when ordering and paying . Lg crowds and slow food prep.**
- **TOO MANY CRUISE SHIPS! THEY RUIN THE EXPERIENCE FOR THOSE OF US WHO WOULD HAVE LIKED TO SEE SOMETHING OTHER THAN THOUSANDS OF PEOPLE AND HUGE SHIPS BLOCKING THE VIEWS!!!**

Code: Roads

- **bad roads, not enough warning for pull outs**
- Delays due to widespread road construction
- **too many bad roads**
- **private corporations and construction causes main congestion and hazard**
- road into the ares was bad but then we saw they were fixing it and would be better
- Paved roads were great. some dirt roads were very bumpy.

Code Accessibility:

- **Help for disabled!**

Code Weather:

- **Denali always hidden in clouds. But that's hardly your fault.**

Code Trails:

- Erosion on ATV roads

Code Facilities:

- Lack of camping in Denali
- Lack of RV, larger vehicle room
- Poor boat tramp at Jims Landing

Code: Pets

- Leash law not enforced, dog feces not picked up.
- People with dogs off leash in bird nesting areas. Dog owners not cleaning up after their dogs.

Code: Signage

- Need a sign pointing to the Laughton Glacier outhouse!
- Code Other:
 - used un-cruise boat
 - Non-parent hosts lack tolerance for children
 - To few places with drinking water
 - Unsightly clearcut areas
 - My party was appalled to see hunters with rifles walking down the trail towards us when we were on a hike to the Russian Falls on the Kenai Peninsula
 - Insufficient Resources
 - Didn't allow local residents sufficient use.
 - boats with huge motors

Follow-up Question 19

Thinking about your trip, would you have liked to have seen more of, the same, or less of each of the following on the Federal public lands that you saw or visited (e.g., National Parks, National Forests, National Wildlife Refuges, National Conservation Areas, and Wild and Scenic Rivers)? Other (please specify: _____)

As for the 12 who marked other three respondents had comments about roads (roadside pullouts, maintenance, safe surfaced roads), two wanted more access to off road motorized vehicles.

Note: I only used 12 responses since one was NA and one was No Opinion.

Code: Roads

- more roadside pull-outs
- Road Maintenance - potholes need filling
- roads with "safe" surface. By "safe" a surface that I would not get stuck in rainy weather. Not familiar with secondary road conditions in Alaska when wet.

Code: Access(Regulations)

- Allow overnite rv parking.
- I think there should be more motorcycle specific trails open to motorized. I.E.: trails less than 48" wide and not open to ATV use which creates two-track. Ideally Singletrack trail open to Hikers, Cyclists, Horses, Motorcycles much like many public lands in the American West.

- river access for fishing
- use of atvs

Code: Facilities

- Interpretive/Natural info signs/ Ditto for nature trails
- More public internet wi-fi services.
- **more trashbins**

Code: Other

- used un-cruise boat
- shop for reasonable price food

Appendix F Non-Recreational Survey Results

Of the non-recreational survey respondents, 64% were from Alaska, 32% from the United States but not Alaska, and 3.6% were foreign. 31 states were listed, with California and Washington State being the most frequently listed. Of the foreign respondents only 7 countries were listed: Brazil, Columbia, United Kingdom, Germany, Guyana, India, and the Philippines.

Table 92. Non-Recreation Respondents' State of Residence for Non-residents of Alaska.

State ¹	% of Non-Recreational Users
California	18.2%
Washington	9.1%
Texas	3.9%
Florida	3.9%
Colorado	5.2%
Michigan	3.9%
Oregon	1.3%
Arizona	5.2%

n = 77; n = the number of respondents from the US, but not Alaska.
States not shown (n = 33) had less than 2% response.

Table 93. Non-Recreational Respondents' Use of FLMAs in Previous Twelve Months.

Agency	Don't know	Never	Less than monthly	About once per month	About once per week	More than once per week
U.S. Bureau of Land Management						
Winter n = 139	17%	32%	22%	15%	7%	8%
Summer n = 122	18%	26%	15%	13%	12%	16%
U.S. Fish and Wildlife Service						
Winter n = 139	10%	32%	27%	19%	4%	9%
Summer n = 122	15%	21%	17%	21%	12%	16%
U.S. National Park Service						
Winter n = 147	4%	28%	28%	17%	7%	16%
Summer n = 137	4%	17%	26%	15%	11%	27%
U.S. Forest Service						
Winter n = 153	4%	21%	16%	20%	12%	26%
Summer n = 136	3%	15%	11%	21%	12%	38%

There were 159 resident respondents, one completely skipped this question. Of the 158 who responded to at least one FLMA in a particular season, some did not respond for particular FLMAs, and hence the n varies by FLMA. The difference between 158 and each FLMA's n might represent an undercounting of "never" or "don't know." Questions about winter months were asked first on the survey. This question was asked only to residents.

Table 94. Previous Site Visitation Not Including Today, Non-recreational Residents.

Previous Visitation to Sample Site, Not Including Today	Residents
Yes	89%
No	11%

n = 158.

Table 95. Number of Previous Site Visitations in the Past Year, Non-recreational Residents.

Number of times visited site in Past Year	Residents
1 time	13%
2 – 3 times	14%
4 – 6 times	10%
7 – 10 times	8%
More than 10 times	55%

n = 139.

Table 96. Seasonal Residence of Non-recreational Non-residents.

Seasonal residence	Non-Residents
Yes	54%
No	46%

n = 87.

Table 97. Previous Visitation to Alaska, Non-recreational Non-residents.

Previous Visitation to Alaska	Non-residents
Yes	53%
No	47%

n = 87.

Table 98. Number of Previous Visitations to Alaska in the Past 10 Years, Non-recreational Non-Residents.

Number of times visited Alaska in Past 10 Years	Non-residents
1 time	18%
2 – 3 times	29%
4 – 6 times	18%
7 – 10 times	9%
More than 10 times	27%

n = 45.

Table 99. Types of Transportation Used to Arrive at Sample Site, Non-recreational Respondents.

Mode of Transportation¹	Residents	Non-residents	All Respondents
Private vehicle (car, truck, motorcycle, RV)	74%	47%	65%
Foot/Hiking	23%	25%	24%
Alaska Marine Highway System Ferry	26%	12%	21%
Commercial aircraft (includes air taxi, helicopter)	6%	14%	9%
Bicycle	4%	11%	6%
Commercial shuttle/tour bus	4%	7%	5%
Motorboat	6%	5%	5%
Other	5%	2%	4%
Cruise ship	1%	8%	3%
Private airplane	2%	6%	3%
All-terrain vehicle (ATV) or off-road vehicle	3%	1%	2%
Public bus (not including shuttles or trolleys)	1%	4%	2%
Alaska/White Pass Railroad	1%	4%	2%
Denali Visitor Transportation System	1%	1%	1%
Kayak, canoe, or raft	1%	2%	1%

Resident n = 155, non-resident n = 83, all respondents n = 238.

¹The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Table 100. Types of Transportation Used Within Sample Site, Non-recreational Respondents.

Mode of Transportation¹	Residents	Non-residents	All respondents
Foot/Hiking	69%	76%	71%
Private vehicle (car, truck, motorcycle, RV)	45%	27%	39%
Alaska Marine Highway System	17%	8%	14%
Bicycle	13%	15%	14%
Motorboat	13%	5%	10%
Kayak, canoe, or raft	7%	10%	8%
Commercial aircraft (includes air taxi, helicopter)	6%	8%	7%
Other	5%	5%	5%
All-terrain vehicle (ATV) or off-road vehicle	3%	5%	4%
Commercial shuttle/tour bus	2%	5%	3%
Private airplane	2%	5%	3%
Public bus (not including shuttles or trolleys)	2%	2%	2%
Denali Visitor Transportation System	1%	3%	2%
Cruise ship	1%	3%	2%
Alaska/White Pass Railroad	1%	2%	1%

Resident n = 99, non-resident n = 62, all respondents n = 161.

¹The question allowed for multiple modes of transportation to be used, thus responses do not sum to 100.

Non-recreational respondents were also asked about other transportation (but didn't distinguish between to and within) they used on this trip. In this free-response type question, non-resident non-recreational respondents add taxi (2), private boat, train, utilizing bathroom, and water taxi. Residents added government vehicle (3, including a BLM pickup), drift boat, bathroom, IFA, "letting dig out", rental car, school bus, shuttle bus (2), and walk.

Table 101. Satisfaction with Travel Experience Arriving at Sample Site Non-recreational Respondents.

Travel rating of experience arriving at site	Residence of respondent		
	Resident	Non-resident	All respondents
Excellent	52%	63%	56%
Good	36%	33%	35%
Fair	10%	2%	8%
Poor	1%	1%	1%
Very Poor	0%	0%	0%

Resident n = 157, non-resident n = 84, all respondents n = 241.

Table 102. Satisfaction with Travel Experience Within Sample Site, Non-recreational Respondents.

Travel rating within site	Residence of respondent		
	Resident	Non-resident	All respondents
Excellent	50.7%	70.5%	57.6%
Good	30.8%	21.8%	27.7%
Fair	8.9%	3.8%	7.1%
Poor	0.7%		0.4%
Very Poor	1.4%	1.3%	1.3%

Resident n = 146 (11 had not traveled within site yet), non-resident n = 78 (2 had not traveled within site yet), all respondents n = 224.

Table 103. Age Composition of Non-recreational Respondents.

Age range	% of Respondents in age range		
	Residents	Non-residents	All respondents
18 - 29 years old	19%	44%	28%
30 - 44 years old	26%	27%	27%
45 - 64 years old	41%	17%	33%
65 or older	14%	12%	13%

Residents n = 156, non-residents n = 84, all respondents n = 240.

Table 104. Gender of Non-recreational Respondents.

Gender	Residents	Non-residents	All respondents
	Male	49%	61%
Female	51%	39%	47%

Residents n = 158, non-residents n = 84, all respondents n = 242.

Table 105. Education Level of Non-recreational Respondents.

Education	Residents	Non-residents	All respondents
Less than high school	3%		2%
High school graduate/GED	13%	11%	12%
Vocational or technical school certificate	3%	2%	3%
Some college	17%	14%	16%
Associate's degree	6%	10%	7%
Bachelor's degree	34%	41%	36%
Graduate degree or professional degree (MA, MS, PhD, MD, JD, MBA)	24%	23%	23%

Residents n = 152, non-residents n = 84, all respondents n = 236.

Table 106. Income Level of Non-recreational Respondents.

Income	Residents	Non-residents	All respondents
Less than \$24,999	18%	31%	23%
\$25,000 - \$34,999	6%	13%	9%
\$35,000 - \$49,999	10%	10%	10%
\$50,000 - \$74,999	16%	6%	13%
\$75,000 - \$99,999	11%	11%	11%
\$100,000 - \$149,999	16%	5%	12%
\$150,000 - \$199,999	3%	1%	3%
\$200,000 or more	1%	7%	3%
<i>Do not wish to answer</i> ¹	18%	16%	17%

Residents n = 152, non-residents n = 82, all respondents n = 234.

¹This question had a “Do not wish to answer” as a response option. The percentages shown in this row are of the overall number of respondents, including those who selected “Do not wish to answer.”

Table 107. Ethnicity and Race of Respondents.

Ethnicity Race ¹	Residents	Non- residents	All Respondents
Hispanic or Latino ²	3%	5%	3%
Race³			
American Indian or Alaska Native	14%	1%	9%
Asian	0%	6%	2%
Black or African American	1%	5%	2%
Native Hawaiian or other Pacific Islander	2%	0%	1%
White	88%	86%	87%
Other⁴	4%	2%	3%

¹This question followed the US Census Bureau standards for separately asking Hispanic or Latino as an ethnicity question, then following with a race question.

²Asked as a separate question, with a yes/no response option. Residents n = 154, non-residents n = 84, all respondents n = 238.

³Asked as a check all that apply question. Residents n = 154, non-residents n = 84, all respondents n = 238.

⁴Not included in US Census.

Non-recreation respondents were asked to provide additional feedback on their travel experience and if they had additional suggestions to improve travel on federal lands in Alaska. One hundred fifty-three provided additional feedback (including 22 who stated “none”) and 165 provided suggestions (including 27 who relied “none”). Responses are below.

Table 108. Non-recreation Respondents' Additional Feedback on Travel Experience.

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
x	x						Access to Chilkoot trail is limited	AK Res.
		x	x				Alaska marine highway is critical to my work life and personal life. Lack of schedule dramatically effects my day to day itinerary and my ability to make a living	AK Res.
		x					Alcan still has gravel patches, broke my windshield.	Non-AK Res.
x		x					Allow more travel within public lands.	AK Res.
				x			Always glad when road is passable	AK Res.
		x	x				AMHS schedule not always user friendly. (for locals) weekend travel must often be extended to weekday. Weather not always good enough for travel in small vessels	AK Res.
		x	x				As a full-time resident of Seldovia, the importance of AMHS is essential to our community and way of life. Please continue to schedule and fund our portion of the state highway system. Thank you.	AK Res.
		x					As a resident with a car it's easy. I would love an affordable commuter train or better bus service to the parks especially in winter when I dont want to drive the icy roads to get there. However if you do not have a car accessing public lands is almost impossible.	AK Res.
		x					As in all of America, the roads are in desperate condition. Tourist are a valuable asset to the state. Fix the roads.	Non-AK Res.
					x		Been easy no issues	Non-AK Res.
		x	x				Better ferry service to Sitka	AK Res.
x							Better map of town	Non-AK Res.
x							Better signage	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
x	x						Bicycles limitations.	AK Res.
	x	x					Bike lanes	AK Res.
		x					Blacktop gravel areas at icy straight	AK Res.
				x			Campground host is a very humble job with a great view.	AK Res.
						x	Can't read persons handwriting	AK Res.
		x					City bus information is unknown	Non-AK Res.
		x					Closed roads	AK Res.
		x					Construction and potholes.	AK Res.
		x					Construction was a little long but simple other than that.	Non-AK Res.
						x	Could be more receptive to people who need to pass through lands/property for work purposes. They are an addition hurdle typically to working in AK	AK Res.
	x						Denali specific: I think that it is a great idea to have bus access only on our park road. User limits/bus schedule is good as is. I do not think that our daily bus numbers need to increase or extend past highway access for tour buses. I do think we could use a better shuttle service going into the "canyon" (the shopping district ~2 miles from the park entrance area.	Non-AK Res.
		x					Dirt road to trailhead needs to be improved	AK Res.
						x	Docks need some repair	AK Res.
		x					Downtown shuttle service	Non-AK Res.
	x						Expensive bike rentals	Non-AK Res.
		x	x				Ferry is critical	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
		x	x				Ferry reliability and guest service	AK Res.
		x	x				Ferry schedule makes travel very difficult Take off local fee at Mendenhall	AK Res.
		x	x				Ferry schedule makes traveling very difficult Take off local fee at Mendenhall	AK Res.
		x	x				Ferry system being cut back especially in the winter time	AK Res.
		x	x				Ferry system needs more small town stops and needs to come to Hoonah more	AK Res.
						x	Fewer charter boats	Non-AK Res.
		x					Fix a few of the roads	Non-AK Res.
		x					Free Shuttle to totem park	Non-AK Res.
		x					Frost heaves	Non-AK Res.
x							Getting access permit to get to my state mining claims	AK Res.
x							Getting horses on federal land could be easier.	AK Res.
				x			Good	AK Res.
				x			Good in general, no problems	AK Res.
				x			Great experiences here, easily accessible	AK Res.
				x			Great site!	AK Res.
						x	Hitchhiking from Fairbanks to Haines was tricky.	Non-AK Res.
				x			I am surprised to learn how much effort BLM puts into maintaining their recreation sites.	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
						x	I had visitors in small cars parking in designated commercial vehicle spots. There were extra spots so it wasn't a problem.	AK Res.
				x			I love public lands!!!!!!!!!!!!!!!!!!!!	AK Res.
			x	x			I personally appreciate utilizing the fast ferry and cutting travel in half since this has been in effect I have been able to reach all connecting travel arrangements outside of my (illegible word) travels	AK Res.
				x			I was surprised how easy it was to get here it's been a little harder traveling in AK	Non-AK Res.
		x					I wish I had better tires, but the roads on prince of Wales are good for the most part	Non-AK Res.
						x	I wish there were more camper buses in the park	Non-AK Res.
						x	I work on the Marine highway ferry system	AK Res.
		x	x				If you have a booked confirmed and paid for reservation for a vehicle and 2 people on the ferry you shouldn't have to go standby at the terminal especially when you show up on time	AK Res.
		x					I'm a local and would love to have another transit method to go out the road such as link light rail in Seattle. Personal vehicle is the only way typically to get places. The bus takes too long to get places.	AK Res.
x							I'm very concerned about ATV use on public lands. Seems to be destroying salmon & wildlife habitat. It needs to be addressed ASAP due to population growth.	AK Res.
x							Issue with ohv usage over wet black spruce tundra	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
		x					Issues in accessing Anchorage.	Non-AK Res.
		x	x				It has been difficult over the last couple years specifically to travel through Juneau using the ferry due to infrequent departures from Skagway. We have used Whitehorse, Yukon more than Juneau over the last several years to access the lower 48	AK Res.
		x	x				It is really hard to travel here between the ever smaller ferry availability the distance and the prices of alternate transportation it can take \$5000 per trip for even looking at a site	AK Res.
				x			It is wilderness and I wouldn't expect any public transportation.	Non-AK Res.
				x			It's all been good.	Non-AK Res.
						x	I've had poor experiences with/on AK public lands	AK Res.
				x			Job well done.	Non-AK Res.
				x			Keep up the good work, new hikers	Non-AK Res.
x							Lack of access in areas during emergency situations for responders including fish and wildlife.	AK Res.
		x					Lack of CB radios in increasing private vehicles may be a safety concern on the haul road	Non-AK Res.
		x					Lack of regular plane transportation.	Non-AK Res.
		x					Logging trucks are deadly and terrifying	Non-AK Res.
						x	Lots of toilet paper and feces	AK Res.
				x			Love it	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
				x			Love the arosr	Non-AK Res.
		x	x				More ferry service in southeast would be great. Please make SE ferries a priority, they are important for our local communities and economies	AK Res.
						x	More timber sales- will rot if not harvested	Non-AK Res.
					x		NA	AK Res.
					x		Na	Non-AK Res.
		x					Need bike rentals in Ketchikan	Non-AK Res.
		x					Need less roads and more ferries- we are withering without ferry	AK Res.
	x	x					Needing more public transportation and bike trails	AK Res.
					x		No (x5)	Non-AK Res.
					x		No complaints	AK Res.
						x	No fully respect them, place wouldn't be what it is without them	AK Res.
						x	No issues. Other than weather conditions.	AK Res.
						x	No traffic the entire way. Please cancel the wind for next time so I can make it out to kayaker's cove.	Non-AK Res.
					x		None (x10)	AK Res.
					x		None just arrived here.	Non-AK Res.
		x					None other than road construction	AK Res.
		x					Not enough passing lanes, and not enough signs to say if there are more than four cars behind you pull over.	AK Res.
x		x					Not enough safety signage on road to DYEA	Non-AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
				x			Ok	AK Res.
		x					Only 'problem' is Maintenance Vehicles (not really a problem just a patience game. Speed of tour buses at times. Lack of understandings of pull offs intended for safe vehicle passage	AK Res.
				x			Other than a flat tire my time here has been wonderful.	Non-AK Res.
		x					Our roads can have if possible better roads	AK Res.
				x			Overall very good. Muddy trail condition in the boggy sections. The trail work last year helped tremendously.	AK Res.
						x	Ped crossing needed at Jeff Davis	Non-AK Res.
		x					Pen air lost luggage for five days.	Non-AK Res.
		x					Public transportation to DYE A is needed	Non-AK Res.
		x				x	Rest area issues- not cleaned by Pedro. Road issues- frost heaves.	Non-AK Res.
x							Restrictions off highway vehicles.	AK Res.
		x					Road rough. Too many dirt roads.	AK Res.
		x					Roads are congested for how little miles of road exist in Juneau	Non-AK Res.
				x			Roads are so much better now than they used to be.	AK Res.
		x					Roads are very poor going up to federal lands	AK Res.
		x					Roads need repair	AK Res.
	x	x					Should have more transportations channels for bikes	Non-AK Res.
x							Signage for turning into cooper landing could've been better especially from the south.	AK Res.
		x	x				Slow ferry to Skagway is REALLY slow...	Non-AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
		x					Sometimes a bumpy landing	AK Res.
		x					Stop allowing bikes going through. Not enough room for them almost crashing. More pull out for RVs needing and more cops.	AK Res.
						x	Stubbed my toe once	Non-AK Res.
		x					Support for local bus service should be kept up	AK Res.
x							TH sign needs more visibility for tourists and walkway entrance needs to be cleared	AK Res.
				x			Thank you!!	Non-AK Res..
				x			The Alaskan transportation systems have been very satisfactory thus far in my experience	AK Res.
		x	x				The AMH is a critical and needed transportation resource for accessing Alaska's public lands	AK Res.
		x	x				The AMHS is the only way to get to the site- I have a boat which is used at times	AK Res.
		x	x				The fast vehicle ferries are the best mode of transportation in the country, especially the Chenega	AK Res.
x							The federal government isn't making it possible to do mineral studies on federal lands for mining.	AK Res.
		x	x				The ferry has been really a blessing to me. I no longer have to fly by small plane	AK Res.
		x					The roads are a bit rough but that's normal.	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
x	x	x					The roads are always breaking up and are trouble. Parking and access to public land is difficult. Need more trails in public land.	AK Res.
		x					The shuttle bus at this time has missed its time to transport us. A call was made so hopefully it shows up. Otherwise transportation is fine	AK Res.
				x			They're friendly.	Non-AK Res.
				x			This is the best park ever!	Non-AK Res.
	x			x			Trails well kept	Non-AK Res.
						x	Trash bins were good when they existed here. The let burn policies changed. Smoke from areas allowed to burn in area that may not need that as much. Produces a lot of smoke. Review let burn policies.	AK Res.
		x	x				Traveled to Juneau 6/12 for a doctor appt, had to wait until 6/21 to get a ferry back	AK Res.
		x	x				Very concerned about the three fold increase in cost for taking a bicycle on the AK marine highway. I believe alternative non-motorized transport should be encouraged not discouraged	AK Res.
						x	Very unclear confusing survey	AK Res.
	x						Want more trails	AK Res.
				x			We didn't have any problems traveling. We got around great and the scenery is amazing.	Non-AK Res.
	x						West entrance of Skilak rec area very bumpy, potholes	AK Res.
						x	Works as a travel tour guide. Come here because of what Alaska offers	Non-AK Res.
x							Worry about finding parking lot	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS/ Ferry	Very satisfied	None	MISC	Travel experiences on AK federal lands	Residency
		x					Would be nice to have paved road all the way to the site.	Non-AK Res.
		x					Would love to access Skilak road more, but I don't trust my vehicle on the road.	Non-AK Res.
		x	x				Wrong date on the ferry schedule so they missed their Sunday ferry. It was listed wrong on the board.	AK Res.
						x	YOLO	AK Res.

Table 109. Non-recreation Respondents' Suggestions for Improvements in Travel/Transportation on Alaska Federal Lands.

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
	x						A depth map for the river and the lake	AK Res.
		x					A road to Juneau an Tenickie would be nice	AK Res.
		x					Add roads and less paperwork	AK Res.
		x					Adding more passing lanes	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x					Advertise so more people come, this air specific, no more roads	AK Res.
		x	x				AMHS has historically been the most dependable/affordable mode of transportation. Investing in ferry system would greatly benefit Alaska residents	AK Res.
x		x					Another parking lot for non-tourists, accessibility is great here	AK Res.
x							Avoid special permits to access, especially those associated with fees	AK Res.
						x	Be more economical. Increase affordability	Non-AK Res.
x							Better access to mining claims	AK Res.
x	x						Better access to trail for hikers	AK Res.
		x					Better maintain AK highways	AK Res.
x		x					Better parking	AK Res.
		x					Better roads. More out houses.	AK Res.
x		x					Better signage	AK Res.
		x					Bigger wider roads	Non-AK Res.
	x						Bike and foot paths	Non-AK Res.
	x						Bike paths and bike rentals	Non-AK Res.
		x					Build a road from Juneau to Skagway	AK Res.
		x					Bus to be on time more accurately	AK Res.
				x			Can't be better	Non-AK Res.
						x	Can't read persons handwriting	AK Res.
						x	Charge a high car tax	Non-AK Res.
	x	x					Chilkoot Trail shuttle	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x					Continue or even improve support for the marine highway. Do not cut AMHS schedule or expect to replace with roads	AK Res.
	x						Continue trail work on boggy sections with Eco-locking sections	AK Res.
		x					Continue utilizing the fast ferry between all southeast hub/ports	AK Res.
	x						Develop and engineering plan for trails program in all areas	AK Res.
		x					Dirt road needs to be smoother in parts of US Creek and Wickersham Dome. But normally there isn't a problem.	AK Res.
					x		Don't know.	AK Res.
		x					Don't use public transport	Non-AK Res.
x	x						Easier access to glacier bay national park	AK Res.
		x					Fewer road closures	Non-AK Res.
						x	Fish and game chill out	Non-AK Res.
		x					Fix potholes and the settling of the road.	Non-AK Res.
		x					Fix Skilak road. My advertisement on where the visitor center is here.	Non-AK Res.
		x					Fix the highway s little rough	Non-AK Res.
						x	For cruise crew, there is limited time to get places and walking is time consuming	Non-AK Res.
x							For emergencies allow more access.	AK Res.
x							For mining historical access points are closed.	AK Res.
		x	x				For work purposes consider seat fares and going back to ranger boats for recreation. Stop cutting funding and ferry stops. Affordable transportation is a must for living here	AK Res.
		x					Free plane rides.	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x					Free shuttle to Dyea, Broadway should only be open to the smart bus and pedestrians	Non-AK Res.
		x					Free shuttles to trail heads and parks	Non-AK Res.
		x					Good signage is needed and safe pull outs on congested highways.	AK Res.
		x					Government should give parks more money to maintain roads.	Non-AK Res.
		x					Grade road	AK Res.
	x			x			Great trails	AK Res.
x		x					Hard in AK for making our lands accessible to all because of the budget it takes to travel here and the cost of personal items: food, etc. to stay. I think AK public lands and NPS in general might be a certain class level? (C USFS and BLM). I think buses should be required in all parks and we need to reign in private vehicle traffic to limit areas or off limits to high use areas. Bicycles could also be used/loaned somehow. Denali and Zion are good case studies with USFS and BLM: I agree with creating a roadless area management system to mark areas	Non-AK Res.
	x						Help keep improving trails and well maintained along with native lands.	AK Res.
						x	Hot air balloons to Dawson city	AK Res.
						x	I like that we are cut off from the mainland	AK Res.
	x						Improve old trails, fix bridges	AK Res.
		x					Improve road divots	Non-AK Res.
x		x					Improve roads and signs	AK Res.
		x					Improve with more signs stating law and ,ore passing zones. There needs to be a minimum speed limit.	AK Res.
		x					Improved access i.e. Road or year round daily ferry	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
	x						Increase hiking trail access opportunities for NPS units in SE AK. Increased ferry service to small communities in Lynn Canal and Icy Strait in SE AK	AK Res.
	x						Just keep maintaining good trail access and condition of public use cabins	AK Res.
		x	x				Keep ferry service going. Better maintain the roads in winter	AK Res.
x							Keep roads open for multi-use purposes. Regulate game bag limits – don't manage by closing access.	AK Res.
		x					Keep the public lands as is. Do not add anymore roads.	Non-AK Res.
				x			Keep up the good work and use reviews to improve what is necessary	AK Res.
		x					Keep working on roads	Non-AK Res.
		x					Leave pre-existing roads instead of destroying them	AK Res.
						x	Less development	AK Res.
		x					Local bus transport is needed!	AK Res.
		x	x				More ferry service from Oct- April would help	AK Res.
x		x					More access roads into the Forrest	AK Res.
		x					More airlines	Non-AK Res.
	x						More bike trails/canoe/kayak. Maybe more public shuttles	AK Res.
		x					More buses (x2)	Non-AK Res.
		x	x				More ferries (x2)	AK Res.
		x	x				More ferries and figure out funding for better schedules	AK Res.
		x	x				More ferries on the schedule	AK Res.
		x	x				More ferries to and from Hoonah	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x	x				More ferry options, run the ferry more	AK Res.
		x	x				More ferry service at peak times and have the fair weather provide service to Petersburg and down south	AK Res.
		x	x				More ferry service to Sitka	AK Res.
		x	x				More ferry stops (x2)	AK Res.
		x	x				More frequent ferry service would be appreciated (x2)	AK Res.
x	x						More hiking/backpacking only trails	Non-AK Res.
x	x						More non-motorized access and trails.	AK Res.
						x	More outhouses	AK Res.
		x					More places to park. Especially RV's when they want to see a river.	AK Res.
		x					More roads in the Tongass	AK Res.
		x					More safety signage especially for tourists not being aware of road etiquette	Non-AK Res.
		x					More signage to easement.	AK Res.
		x					More signage would be great on road and trail, summit marker needed	Non-AK Res.
		x					More signs throughout the road	Non-AK Res.
	x	x					More trails and bus stops down by bar harbor	AK Res.
						x	More trains built More restrooms, especially for women, Denali was good but not the same elsewhere. Even just an outhouse will do. Kept people from staying town and spending money because they needed to come back to pee!	Non-AK Res.
					x		N/A (x2)	AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
					x		N/A	Non-AK Res.
					x		No (x6)	AK Res.
					x		No (x6)	Non-AK Res.
					x		No - paths are well maintained and clearly marked	Non-AK Res.
						x	No pt enough trashcans	Non-AK Res.
						x	No suggestions no without devastating system. Train imitation humans to respect places	AK Res.
				x			No suggestions. Roads great and passing lanes are great.	Non-AK Res.
					x		None (x6)	AK Res.
					x		None just got here.	Non-AK Res.
				x			None. Impressed with gas cans.	Non-AK Res.
					x		Nope. Seems quite good.	AK Res.
					x		Not sure	Non-AK Res.
		x					Open more roads up- if they left culverts open on logging after done logging, could be used recreationally. Doesn't make sense to tear up the road after its already been put in place	Non-AK Res.
x	x						Open to horses for trails. Add more horse trails.	AK Res.
		x	x				Open up bars again on AMH	AK Res.
		x					Pave ski hill road	AK Res.
		x					Pave the Alcan	Non-AK Res.
		x					Pave the road and ban the tour scooters. Honk horns and scare away wildlife	AK Res.
		x					Pave the roads.	Non-AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x					Paving the road completely to the site would encourage more visitors, I believe.	Non-AK Res.
						x	Possibly a longer stay in Juneau- currently we arrive at 6:30pm- shop and appts on Tuesday- return to ferry at 5am Wednesday- BUSY	AK Res.
		x					Public bus service past Auke lake. Free trails	AK Res.
						x	Public information	AK Res.
	x						Rain bird trail needs regular maintenance	AK Res.
		x	x				Regular ferry service	AK Res.
x							Removal of large cruise ships from Glacier Bay and restoring comm. fish rights	AK Res.
x	x						Restricting access and focus mitigation of damage on using atvs. Let people use the land more and open it up. Instead of using ferry would like the bans to be lifted for personal watercraft.	AK Res.
x		x					Road construction coming. Could use signs to warn drivers about the current state of the road.	AK Res.
		x					Road from here to Juneau	AK Res.
		x					Road needs to be graded more than once a year	AK Res.
		x					Road to pelican	AK Res.
		x					Road to pelican, road from Juneau to Skagway	AK Res.
						x	See #7	Non-AK Res.
						x	See previous comment.	AK Res.
x							Should be restricted to designated and clearly identified trails. No cross country travel.	AK Res.
						x	Show the Katmai ends of the earth video on Alaska Airlines.	Non-AK Res.

Continues

Access	Recreation	Travel/Transportation	AMHS Ferry	Very satisfied	None	MISC	Suggestions for travel/transportation improvements	Residency
		x					Signage alerting drivers to road etiquette (pull offs in narrow road areas, signage about speed safety because of blind corners.	AK Res.
		x					Signs about frost heaves and guard rails by Eagle Summit.	Non-AK Res.
	x						Single printed piece of info that describes attractions and shops and eating	Non-AK Res.
		x	x				Some ferry boats need to be updated	AK Res.
			x	x			Status quo is good for Forrest. Support ferry system	AK Res.
				x			The pullout a are awesome and laws for backing up people are good.	Non-AK Res.
						x	They said improvements slow down traffic.	AK Res.
		x					Tram, trolley, train- some sort of constant loop going around a downtown loop/circuit	Non-AK Res.
						x	transportation discount for cruise ship employees	Non-AK Res.
	x	x					Up keep on trails and roads	AK Res.
						x	Updated maps	Non-AK Res.
						x	Walking around is enough	Non-AK Res.
						x	What I have said earlier.	AK Res.
						x	Yakutsk has cool trails	Non-AK Res.



Appendix D

Safety Exploratory Analysis and Baseline Conditions



Alaska LRTP Implementation: Safety Exploratory Analysis and Baseline Conditions

Final Report

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Purpose

This study improves understanding of transportation safety issues in Alaska, and to a limited extent, on Alaska's federal lands. This baseline information will help Alaska Federal Lands and partners identify safety issues and prioritize investments for transportation safety improvements and countermeasures. Future updates to this analysis may be used to quantify performance outcomes and to evaluate the performance of transportation safety improvements.

Background

The Alaska Federal Lands Long Range Transportation Plan (LRTP) was completed in September 2012 by the Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture Forest Service, in partnership with the Alaska Department of Transportation and Public Facilities (Alaska DOT&PF). The process was facilitated by the Western Federal Lands Highway Division (WFL). The plan addresses the strategic identification and prioritization of transportation infrastructure and systems related to six goal areas: system management, user experience, mobility, environment, and climate change. Since completion of the LRTP, an implementation team has been implementing performance management regimes in four areas: visitor experience, asset condition, climate change, and safety.

The implementation team has been working over the last several years to characterize the most pressing safety issues facing Alaska Federal lands. Previous quantitative efforts to characterize safety issues have been hampered by inconsistent and/or incomplete data. The implementation team has convened a study team to conduct a definitive search for statewide, multimodal safety data.

Method

This effort sought to inventory potential sources of transportation safety and/or injury and fatality data. Any potentially useful multimodal and statewide data would be cleansed and analyzed using maps, charts, and infographics.

Review of Data

Travelers in Alaska use a diverse set of modes to navigate sometimes wild and undeveloped landscapes. Transportation safety issues extend beyond automotive-related fatalities and serious injury incidents, which dwarf incidents by other modes in the lower 48 states. Snow machines, off-highway vehicles (OHV's), and all-terrain vehicles(ATV's) are not only used for recreational purposes but are used by some communities as critical forms of transportation during some parts of the year. Alaska has about six times as many pilots per capita when compared to the rest of the United States and over 300 airports to allow residents to reach more remote parts of the State. Marine transport also plays a prominent role in Alaska with the State having over 5,000 miles of inland waterways and 8,500 miles of ferry routes compared to 12,000 miles of public roads.

The study team attempted to collect data that would characterize safety for the following modes of transportation:

- Automobile
- ATV/OHV
- Boating
- Bicycle
- Snow machine
- Aviation
- Rail
- Dog sled
- Hiking (pedestrians)

The team identified and investigated many sources of data (shown in the list below and described in detail in Attachment A). Several of these sources had been identified in previous efforts. Investigation techniques included online searches, phone calls, interviews, and hands-on review of available datasets.

- Alaska Department of Transportation & Public Facilities
- Alaska Department of Public Safety
- Alaska Department of Public Safety Alaska Village Public Safety Officer Program
- Alaska Department of Natural Resources Office of Boating Safety
- Alaska Department of Health and Social Services Trauma Registry
- Alaska Department of Health and Social Services Bureau of Vital Statistics
- United States Coast Guard Office of Auxiliary and Boating Safety
- Alaska Marine Safety Education Organization
- Alaska Native Tribal Health Consortium
- U.S. Department of Transportation's Federal Aviation Administration
- Alaska Department of Health and Social Services Division of Public Health's Violent Death Reporting System
- Alaska Pacific Office of the National Institute for Occupational Safety and Health

General limitations of the data sets provided by these sources include focus or bias toward specific modes, lack of geographic detail, and/or focus on only certain types of safety issues. None of the data indicated whether transportation-related incidents or fatalities occurred on or off federal lands, and most data were coded to large jurisdictional boundaries rather than geocoordinates. Notable exceptions to this were the data from Alaska DOT&PF and FAA.

The study team found the most promising data for transportation injuries and fatalities to come from the Alaska Department of Health and Social Services Trauma Registry and the Alaska Department of Health and Social Services Bureau of Vital Statistics, respectively.

The Trauma Registry is a record of patient entries to 24 acute care centers in Alaska. Incident information is entered into the Alaska Trauma Registry. Personally identifying information is cleaned from the data. Patients admitted to other health facilities are not entered into the system regardless of

their injury severity. In the event that an individual is declared deceased off hospital site, they are not included in the Alaska Trauma Registry. Fatalities occurring in the field are entered into the Bureau of Vital Statistics only. Portions of the Trauma Registry data are available to the public however it is primarily a public health database. For this study, data was available for the period 2005-2011.

The Bureau of Vital Statistics (BVS) manages a data system that tracks death certificates issued in the State. The data platform was updated in January of 2014 and the change affects the type and amount of data available. Prior to the system change, specific location information may have been provided on the physical certificate but was not input into the system. The city of death was provided but this data was an indication of where the certificate was issued and not where the death occurred. With the new data system, physical location down to address or intersection is included. There is also a formal question about if the fatality involved transport and if so, what mode. BVS data is available online however the detailed narrative is not part of the available data. For this study, data was available for the period 1999-2012.

Advantages of these data sets are that they include the outcomes of incidents reported in many of the other datasets above. Fatalities or serious injuries from car crashes, for example, are available in both the Alaska DOT&PF data, but are also in the Vital Statistics and Trauma Registry data. These two data sets are multimodal, and in using them the study team did not have to account for double counting or lack of coverage.

Data preparation methods for the two data sets are described in Attachment B.

Results

The analysis explored the following concepts in maps, graphs, and infographics:

- Summary of transportation mode involved with injuries and fatalities by borough
- Summary of transportation mode involved with injuries and fatalities over time, statewide and by borough
- Primary and secondary transportation mode involved with injuries and incidents by borough

Results of the analysis are shown in Appendix C.

Analysis

Key findings during the analysis periods for each of the datasets are summarized as follows:

- Motor vehicles were involved in 1,309 (67%) transportation fatalities statewide from 1999 through 2012. This was influenced largely by the most urban and populated areas including Anchorage, Fairbanks, Matanuska, and Kenai Peninsula. Air transport, snow machines, and water transport fatalities each contributed about 10 percent of the total.
- Motor vehicle crashes were the leading mode related to transportation fatalities in 20 out of 27 boroughs. Boroughs in which automobiles were not the main mode involved tend to be largely remote, coastal, and/or wild. Water transport was the leading mode involved in four boroughs, Sitka, Kodiak Island, Wrangell Petersburg, and Yakutat. Air-related incidents were the leading mode involved in transportation fatalities in two boroughs, Lake and Peninsula and Skagway Hoonah Angoon.
- Transportation fatalities declined statewide roughly 2.6% per year during the study period. Fatalities for all modes except all-terrain vehicles and other modes decreased during the study period. Water transport fatalities declined beginning in 2007, although the reason for this is unclear without further research.
- Motor vehicles were the leading mode involved in transportation injuries statewide, accounting for 2,640 (49%) from 2005 through 2011. All-terrain vehicles were the second leading mode, representing 1,082 (20%) transportation injuries statewide. Snow machines and bicycles accounted for 14% and 13%, respectively.
- Transportation injuries have declined roughly 3.1% per year during the study period. Declines in motor vehicle injuries at 4.0% per year have driven this trend. All-terrain vehicle injuries declined 1.5% per year. Snow machine injuries declined at an average rate of 4.3% per year. The only type of injury to increase during the study period was a result of those related to animal rides with a 1.0% increase.
- Although motor vehicles are the leading mode related to injuries statewide, the leading mode by borough is more variable. Motor vehicles are the leading mode involved in injuries in the central, urbanized areas of the state and the southwest (with the exception of Yakutat and Sitka). All-terrain vehicles and snow machines are leading modes in the remaining boroughs, with the exception of Sitka. Sitka is notable as the only borough for which bicycles are the leading mode related to injuries.

Recommendations

Despite some limitations with the data, the results have characterized transportation injuries and fatalities statewide and may provide the basis for additional year-on-year analyses and subsequent Alaska Federal Lands LRTP implementation activities. Unfortunately the data is not specific to federal lands, nor does the data allow identification of fatalities or injuries that occur on federal lands.

Recommendations of the study team are as follows:

- Identify the extent to which transportation injuries and fatalities affect resident and visitor populations, and normalize the incident statistics to determine injury and fatality rates.
- Update these statistics again and evaluate the usefulness of creating a regular business practice for obtaining data, analyzing, and reporting safety incidents and fatalities.
- Use the results of these analyses as a starting point to further understand issues, causes, and potential solutions by modes, jurisdictions, and even federal property. Interviewing safety stakeholders at more fine-grain geographies to get a better understanding of issues and modes involved (e.g., bicycle injuries in Sitka, snow machine injuries in Bethel, or car fatalities in Northwest Arctic).
- Develop more fine-grained baseline conditions for specific issues in specific places, implement targeted solutions, and monitor outcomes.
- Work with data partners to improve the quality of data over time. Provide input regarding information that would be useful to identify safety issues, and investigate how federal lands might contribute additionally to statewide data reporting efforts.

Attachment A: Review of Alaska Safety Data Sources

Safety Data Sources

Representatives from several agencies and offices were contacted regarding their collection of transportation-related safety data. Representatives from the agencies and offices listed below were contacted however data was not obtained from all of the sources.

- Alaska Department of Transportation & Public Facilities
- Alaska Department of Public Safety
- Alaska Department of Public Safety Alaska Village Public Safety Officer Program
- Alaska Department of Natural Resources Office of Boating Safety
- Alaska Department of Health and Social Services Trauma Registry
- Alaska Department of Health and Social Services Bureau of Vital Statistics
- United States Coast Guard Office of Auxiliary and Boating Safety
- Alaska Marine Safety Education Organization
- Alaska Native Tribal Health Consortium
- U.S. Department of Transportation's Federal Aviation Administration
- Alaska Department of Health and Social Services Division of Public Health's Violent Death Reporting System
- Alaska Pacific Office of the National Institute for Occupational Safety and Health

Department of Transportation & Public Facilities

The presence of incomplete and inconsistent data sets is a known issue in Alaska according to several representatives interviewed. There are a number of projects occurring in parallel with the goal of creating a single, comprehensive transportation dataset. This effort was not complete at the time of survey.

Incident reporting and data collection were both identified as challenges. The burden of reporting incidents often falls to village safety officers. There are a number of reasons why incidents may not be reported but staffing levels and a lack of understanding the importance of safety data are two popular reasons. Additionally, a large number of roads are not in the State system yet are heavily used and relied upon by village residents. When incidents occur on these roads, even if they are responded to by state troopers, they are often not entered into any transportation crash dataset. The same issue exists with ice roads as only small portions are recognized in the state roadway network.

The Alaska DOT&PF data system includes the Federal land management agency (FLMA) areas targeted by this report but only to the extent that incidents are reported back to the state by the FLMA or in events where state troopers respond. As expected, reporting and collection of information on incidents involving fatalities is at a higher rate than incidents with lesser injury.

The Alaska DOT&PF is in the process of launching the Roadway Information Portal but the data presented below was collected by contacting a data specialist at the Department.

The Village Public Safety Officer Program

Alaska Village Public Safety Officers carry the responsibility of reporting incidents in a large portion of the State. Under-reporting by this subset has the potential to create a significant weakness in the dataset.

All incidents responded to by village public safety officers are to be reported, however it has been suggested that oftentimes only serious incidents and fatalities are entered into the statewide system. Staff levels are low and the responsibility of a single village public safety officer in a community is high. Reporting of incidents is not likely the top priority. These officers have a great amount of knowledge about their particular community and the existence of transportation safety problems, however those anecdotal reports are not captured in any current data system.

Department of Public Safety

The Department of Public Safety (DPS) provides vehicle crash data to the Alaska Department of Transportation and Public Facilities. However, if an incident occurs off the State road system there is potential that those auto incidents are captured in the Public Safety data set exclusively.

All modes of transportation are captured in the DPS data system, however it is a public safety and law enforcing-focused data system. The data may not be easily merged or mapped like data collected for transportation purposes. Not all data is available to the public even when personally identifiable information is removed. The data is typically available in an aggregated statistical format, however individual requests can be submitted to DPS.

The Department of Public Safety database does not designate whether the incident occurred on or off federal lands. That analysis would have to be done in post processing.

DNR Boating Safety

There is a statutory requirement to report any boating-related incident over a certain monetary threshold to the Alaska Department of Natural Resources (AK DNR) Office of Boating Safety. The Boat Accident Report Database (BARD), generated by the AK DNR but maintained by the Coast Guard, is generated by self-reported incidents and enforcement data.

The full dataset is not public record; however an abbreviated version of the record is available to the public. Fatalities, census area, and body of water are the three main data elements. Specific locations are not provided, but given the small number of fatalities in recreational boating incidents, it may be easy to obtain a more specific location using local knowledge and newspaper archives.

In addition to recreational boating incident reporting, the Alaska State Troopers and the Coast Guard conduct law enforcement patrol for issues such as reckless driving, intoxication, and improper safety equipment, but that data is retained by the respective organization.

AK Trauma Registry

When a patient is admitted to one of 24 acute care centers in Alaska their information is entered into the Alaska Trauma Registry. Patients admitted to other health facilities are not entered into the system regardless of their injury severity.

In the event that an individual is declared deceased off hospital site, they are not included in the Alaska Trauma Registry. Fatalities occurring in the field are entered into the Bureau of Vital Statistics only. Portions of the Trauma Registry data are available to the public however it is primarily a public health database. As a result, significant post-processing may be required for effective use in a transportation safety database.

Like with the Department of Public Safety data, personally identifying information is cleaned from the data and in cases where there are less than a handful of incidents of a particular type, incidents are aggregated to the county or regional level.

AK Bureau of Vital Statistics

The Bureau of Vital Statistics (BVS) manages a data system that tracks death certificates issued in the State. The data platform was updated in January of 2014 and the change affects the type and amount of data available.

Prior to the system change, specific location information may have been provided on the physical certificate but was not input into the system. The city of death was provided but this data was an indication of where the certificate was issued and not where the death occurred. With the new data system, physical location down to address or intersection is included. There is also a formal question about if the fatality involved transport and if so, what mode.

BVS data is available online however the detailed narrative is not part of the available data.

U.S. Coast Guard

The U.S. Coast Guard Office of Auxiliary and Boating Safety publishes an annual Recreational Boating Statistics report that provides a snapshot of the types and frequency of recreational safety incidents. In going through the Boating Safety Resource Center data search engine, fatalities, injuries, and incidents can be linked to bodies of water but not more specific location data. There are very specific requirements to define an incident as “recreational” and it does not capture all boating-related incidents and fatalities.

AK Marine Safety Education Organization

The Alaska Marine Safety Education Organization does not collect data but does compile state and Coast Guard boating fatality statistics. The location specificity is at the city level. Their focus is on education and not data analysis.

Alaska Native Tribal Health Consortium

The Alaska Native Tribal Health Consortium does not collect data and referenced the Alaska Trauma Registry and the Bureau of Vital Statistics as the best sources of data across modes.

National Transportation Safety Board

Aviation incidents requiring investigation are listed in their database. The National Transportation Safety Board’s (NTSB) Aviation Accident Database contains information dating back to 1962 about civil aviation incidents and selected incidents within the United States and in international waters. Spatial information (latitude and longitude in decimal degrees) is available for most records and is available online.

Federal Aviation Administration

The Federal Aviation Administration (FAA) maintains a database of all reported incidents including those not investigated by the NTSB. Location, crash or injury severity, flight purpose, flight phase, weather, etc. are available data elements. This data is available online.

Alaska Violent Death Reporting System

The State of Alaska Department of Health and Social Services Division of Public Health maintains the Alaska Violent Death Reporting System (AK VDRS). The Bureau of Vital Statistics suggested this system as a source for incident data but upon further investigation, it is not a relevant data source. AK VDRS reviews death certificates, law enforcement records, and medical examiner reports to compile data on suicides, homicides, weapons-related deaths, legal intervention deaths, terrorism-related deaths, etc.

CDC National Institute for Occupational Safety and Health

The Alaska Pacific Office of the National Institute for Occupational Safety and Health (NIOSH) maintains a database of occupational injuries and fatalities. NIOSH obtains aviation data from the NTSB system and commercial fishing data from the U.S. Coast Guard.

Collected Data By Source

Statewide Data Sources

The following statewide data sets were obtained and analyzed.

Data Source	Modes	Fatalities	Serious Injuries	Location Element
Alaska Department of Transportation & Public Facilities <i>http://www.dot.alaska.gov/stwdpln/transdata/crash.shtml</i>	Automobile crashes; incidents where automobiles are involved	Yes	Yes	Road name; milepoint
Alaska Department of Health and Social Services, Division of Public Health, Alaska Trauma Registry <i>http://dhss.alaska.gov/dph/Emergency/Pages/trauma/registry.aspx</i>	All modes	Yes	Yes	City of injury scene
Alaska Department of Health and Social Services, Division of Public Health, Bureau of Vital Statistics	All modes	Yes	No	Census area

<http://dhss.alaska.gov/dph/VitalStats/Pages/data/default.aspx>

United States Coast Guard, Office of Boating Safety

http://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_uscg_bard.pdf

Recreational Boating	Yes	Yes	Body of water, nearest city or town, county	

Agency-specific Data Sources

The law enforcement databases of each of the FLMAs were identified as possible sources of transportation safety data however it was determined that the statewide sources mentioned previously would contain more comprehensive datasets.

Agency	Law Enforcement Database
U.S. Department of Interior Bureau of Land Management National Park Service	IMARS
U.S. Fish and Wildlife Service	LE-IMAGS
U.S. Department of Agriculture Forest Service	LEIMARS

Contact Information

The individuals listed below are individuals who were contacted regarding safety data on Federal lands.

Agency	Contact
Alaska Department of Transportation and Public Facilities	Marcheta Moulton marcheta.moulton@alaska.gov 907-465-8769
Alaska Village Public Safety Office	Bob Laurie bob.laurie@alaska.gov Bike/Ped Coordinator at Alaska DOT&PF Sgt. Leonard Wallner, Statewide VPSO Coordinator leonard.wallner@alaska.gov (907)269-5511
Alaska Department of Public Safety	Ayla Jackson, Data Management Division ayla.jackson@alaska.gov (907)269-5010
Department of Natural Resources Office of Boating Safety	Joseph McCullough joseph.mccullough@alaska.gov (907)269-8704
Alaska Trauma Registry	Ambrosia Bowlus Ambrosia.bowlus@alaska.gov (907)334-4471
AK Railroad Corporation	Shawnessy Leon leons@akrr.com
U.S. Coast Guard, RBS District 17	Mike Folkerts Michael.R.Folkerts@uscg.mil (907)463-2297
U.S. Coast Guard Boating Safety Resource Center	Susan Tomczuk susan.m.tomczuk@uscg.mil

AK Marine Safety Education Association	development_director@amsea.org (907)747-3287
Alaska Bureau of Vital Statistics	BVSResearch@health.state.ak.us (907)269-0991
	David Crossman (907)465-8603
	Andrew Jessen Andrew.Jessen@alaska.gov (907)465-8604
Alaska Native Tribal Health Consortium	Hillary Strayer hdstrayer@anthc.org (907)729-3513
Alaska Violent Death Reporting System	Deborah Hull-Jilly Deborah.Hull-Jilly@alaska.gov (907)269-8078
National Transportation Safety Board	<i>(via Steve Hoover of Atkins)</i>
Federal Aviation Administration	<i>(via Steve Hoover of Atkins)</i>
Center for Disease Control and Prevention , National Institute for Occupational Safety and Health (NIOSH)	Jennifer Lincoln, PhD Director of the Alaska Pacific Office (907)271-2382 jlincoln@cdc.gov

Attachment B: Data Preparation

Transportation Fatalities

Volpe received an Excel file from Brice Murray, a Research Analyst at Alaska Bureau of Vital Statistics, on July 24, 2014, following a request for data. The Excel spreadsheet lists Annual Number of Fatalities for each Census Area by Cause of Death for years 1999 through 2012. No significant processing of the fatality data was required.

This data set was imported into an ESRI file geodatabase, and two maps were made with these data: one features bar graphs of fatalities, and one highlights areas by their most common type of fatality. The data set was also used in the creation of a bar graph poster and an infographic.

We believe there is a two year lag between a year of a fatality and when data is available. As of April 2015, some data is available for 2013, but this data is not broken down by transportation mode involved in the incident. Further communication with the Bureau of Vital Statistics is needed to understand when future data will be made available.

Transportation Injuries

Volpe requested and received the Trauma Registry data for the years 2005-2011 from the Alaska Department of Health and Social Services, Division of Public Health. Each record lists the type of incident and the location. The Transportation-related incidents were extracted from the file based on the 'Injury Cause' field, keeping only injuries related to:

- Motor Vehicle Accidents,
- Air Transport,
- Water Transport,
- ATV,
- Snow Machine,
- Animal, and
- Bicycle.

The resulting 6,178 records were then manually scanned to make sure that each record was a transportation-related incident and was correctly coded. The breakdown of false positives is below:

Transportation Injury	Description	Error Type	Records	% Records
Y	Transport Injury	n/a	5789	93.7%
N	Military	Type I (False positive)	4	0.1%
N	Work Related	Type I (False positive)	100	1.6%
N	INJCAUSE category error	Type I (False positive)	4	0.1%
N	Parachute - Military	Type I (False positive)	20	0.3%
N	Parachute - Non-Military	Type I (False positive)	14	0.2%
N	Accident on vehicle, not transportation related	Type I (False positive)	225	3.6%
Y	INJCAUSE category error	Categorization	22	0.4%
			6178	100.0%


Then, in order to create the maps, the table was imported into an ESRI file geodatabase. The borough where each injury occurred was geographically located and the Census Area of each borough. The total number of accidents for 2005-2011 of each type of transportation mode was then calculated for each Census Area. This summary data was used to create the accident maps and bar charts.







We believe there is a three year lag between a year of an injury and when data is available. Further communication with the Trauma Registry is needed to understand when future data will be made available.

Future attempts to interpret this and forthcoming data **should only add** transportation-related entries to the data set resulting from the processing in this effort. Adding data (as opposed to replicating this process using data from 2005 through the most recent set) will preclude the need to manually scan data from 2005 through 2011 again.

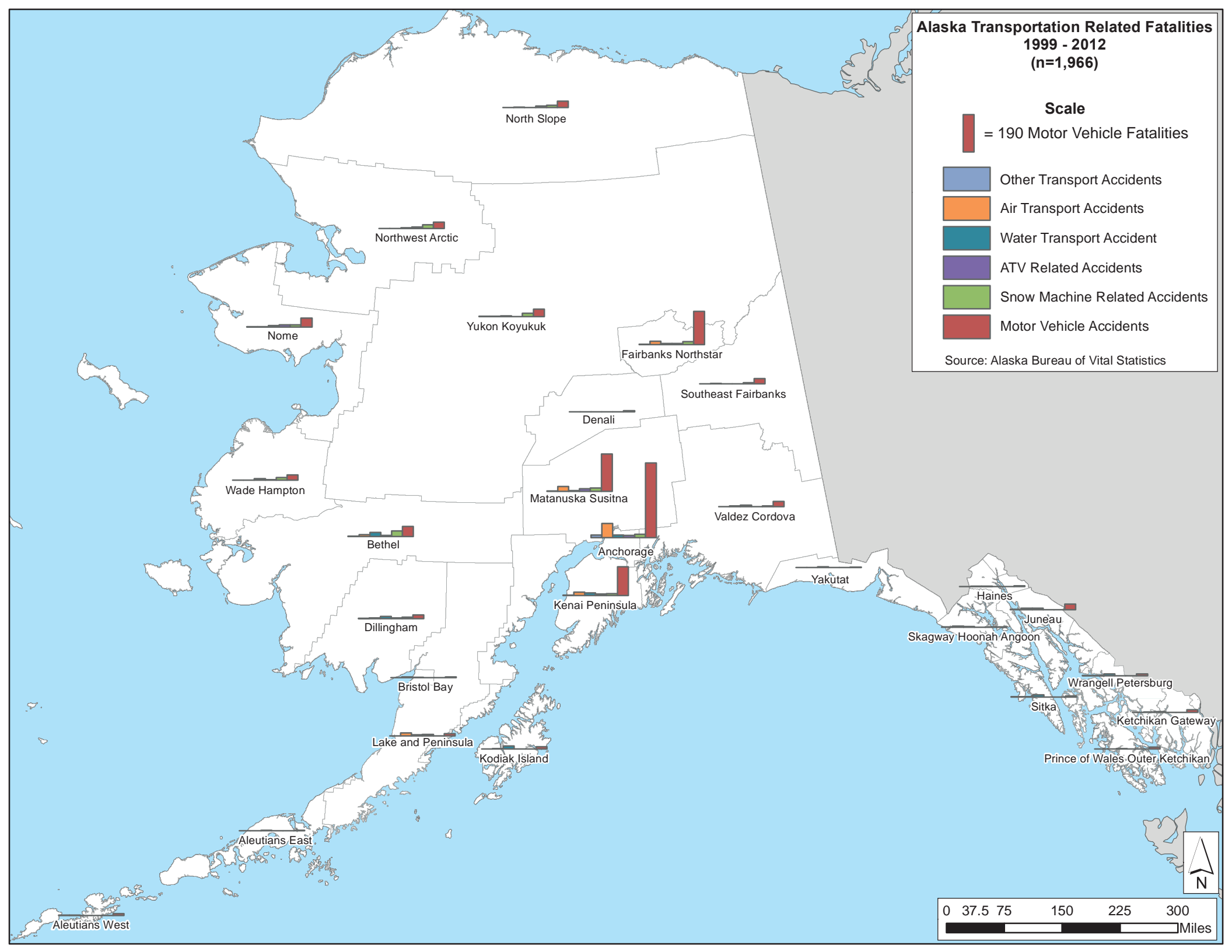
Appendix C: Results

**Alaska Transportation Related Fatalities
1999 - 2012
(n=1,966)**

Scale
 = 190 Motor Vehicle Fatalities

-  Other Transport Accidents
-  Air Transport Accidents
-  Water Transport Accident
-  ATV Related Accidents
-  Snow Machine Related Accidents
-  Motor Vehicle Accidents

Source: Alaska Bureau of Vital Statistics



North Slope

Northwest Arctic

Nome

Yukon Koyukuk

Fairbanks Northstar

Southeast Fairbanks

Denali

Wade Hampton

Matanuska Susitna

Valdez Cordova

Bethel

Anchorage

Yakutat

Kenai Peninsula

Haines

Juneau

Dillingham

Skagway Hoonah Angoon

Bristol Bay

Wrangell Petersburg

Lake and Peninsula

Sitka

Ketchikan Gateway

Kodiak Island

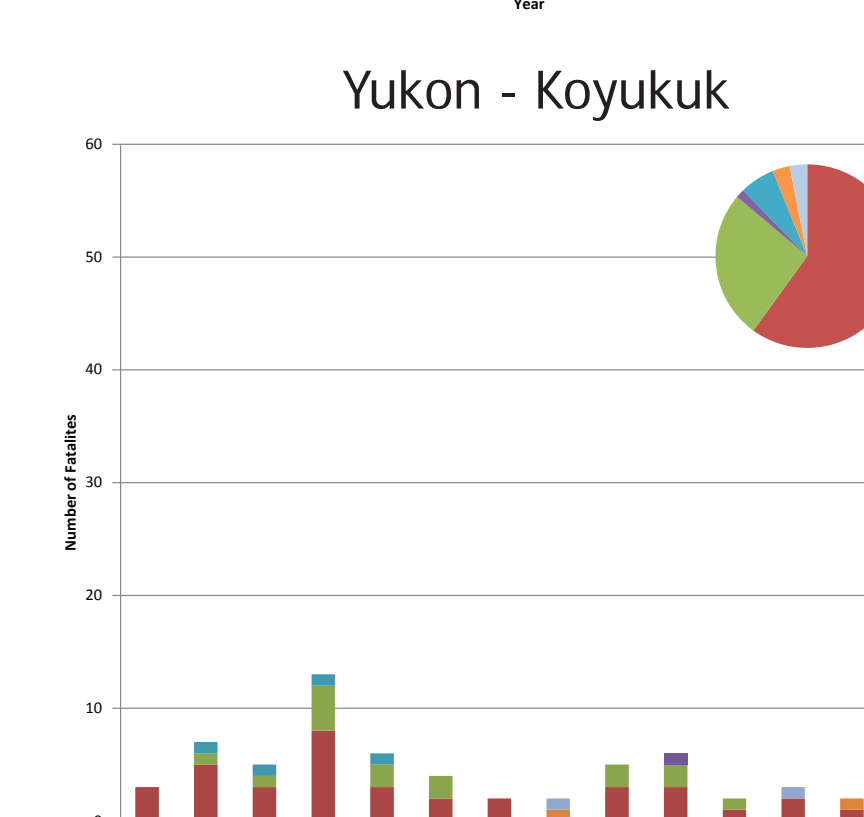
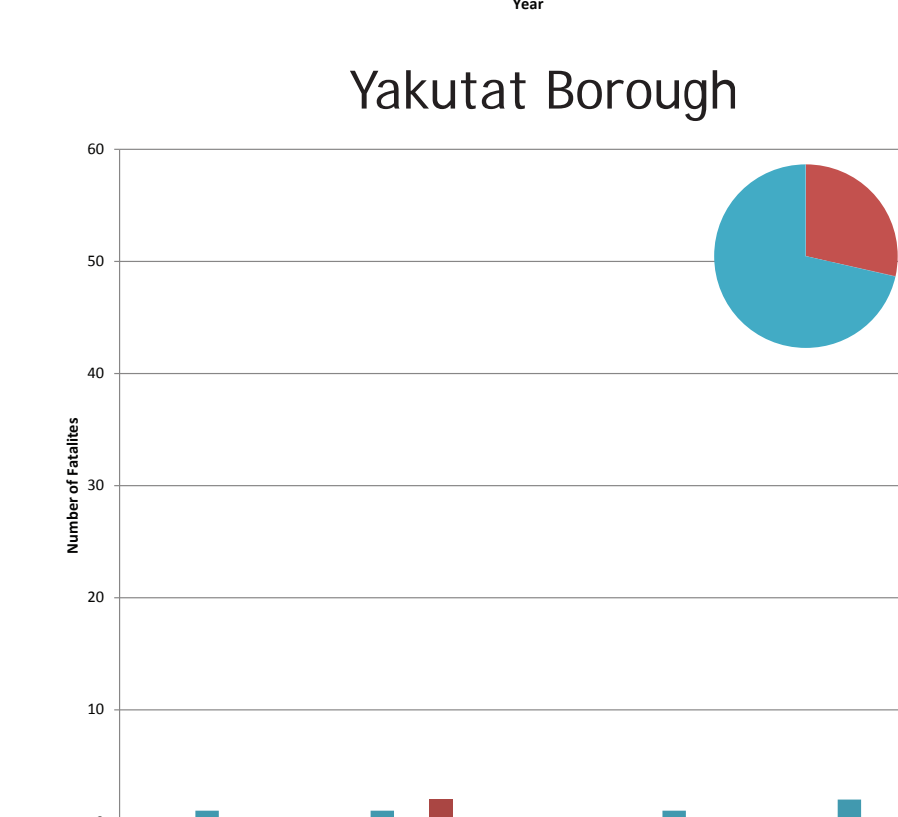
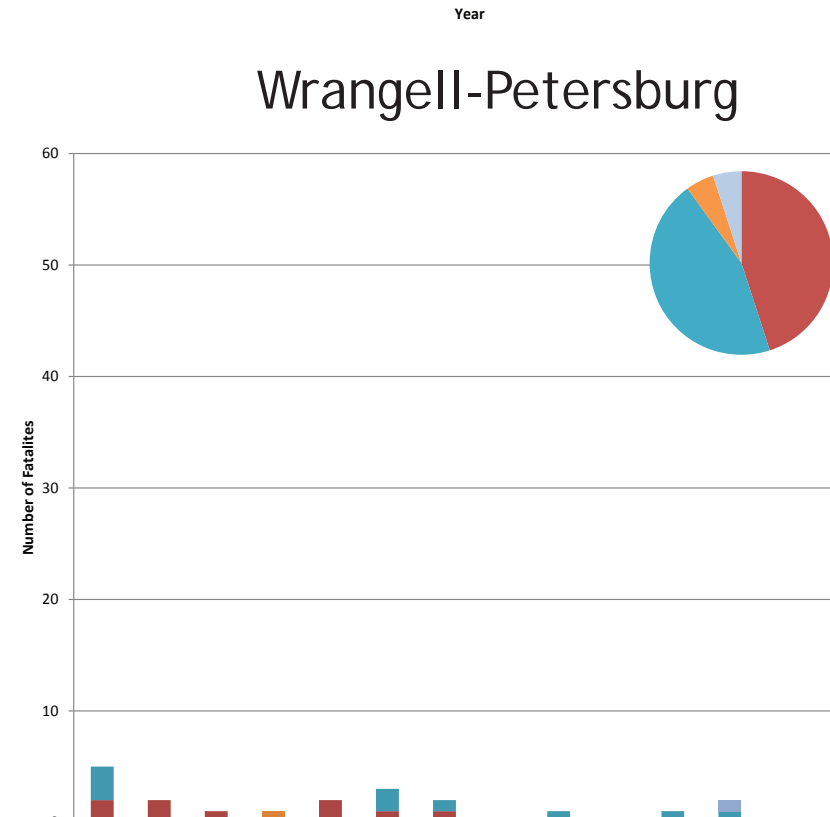
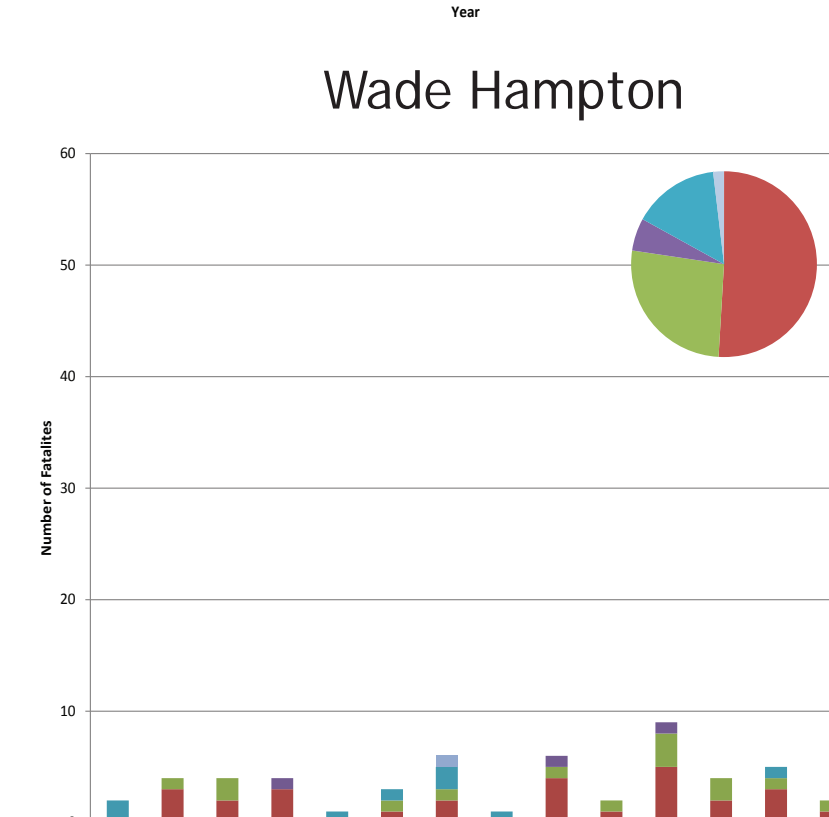
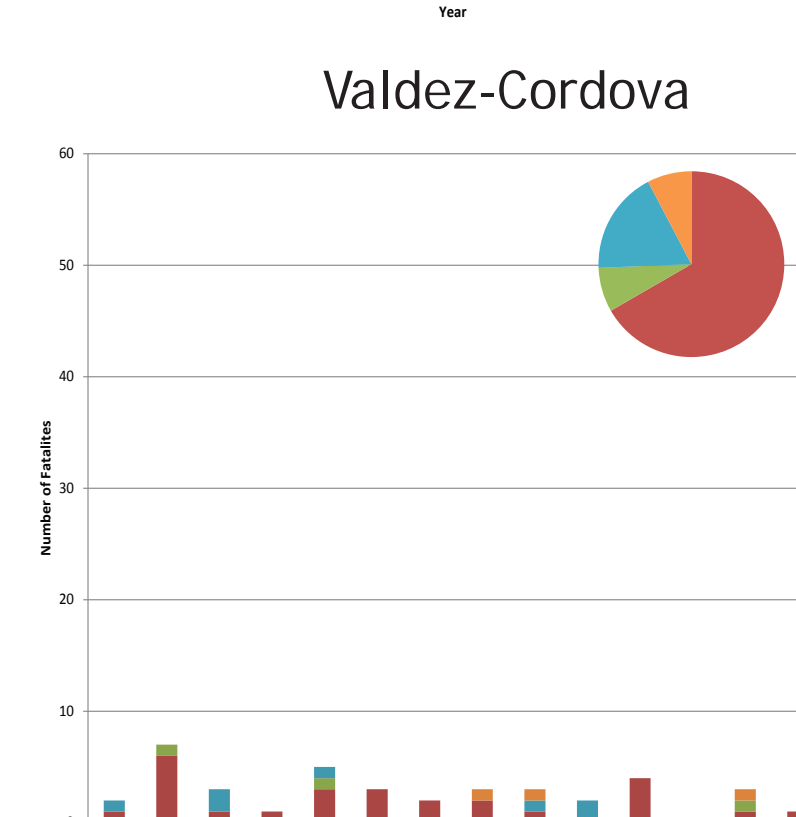
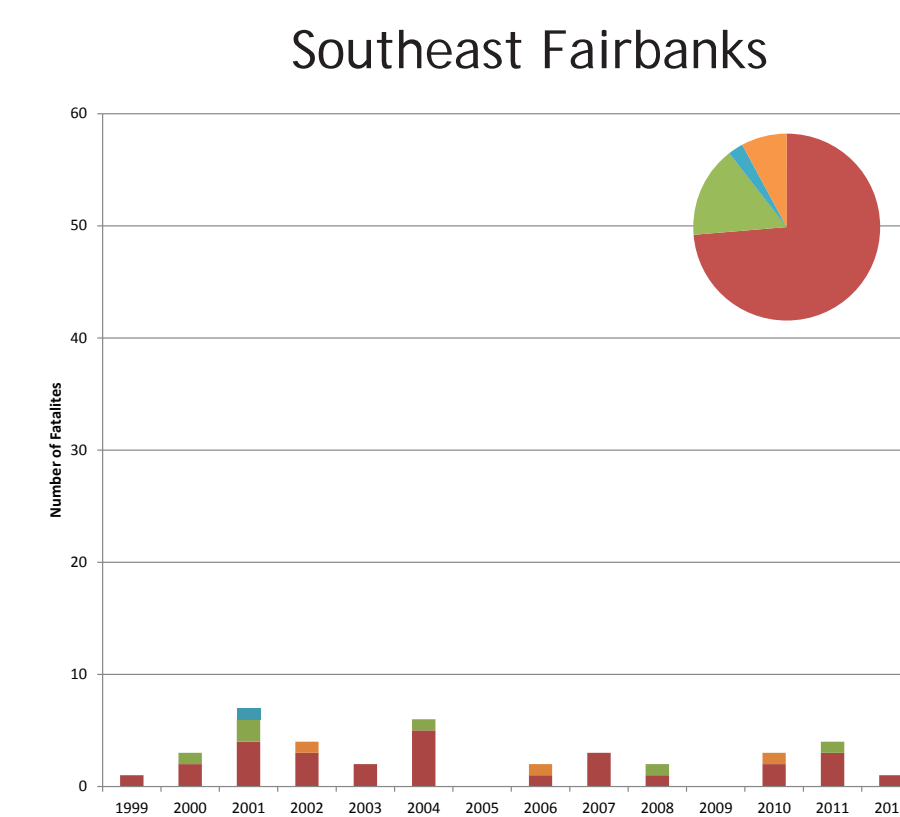
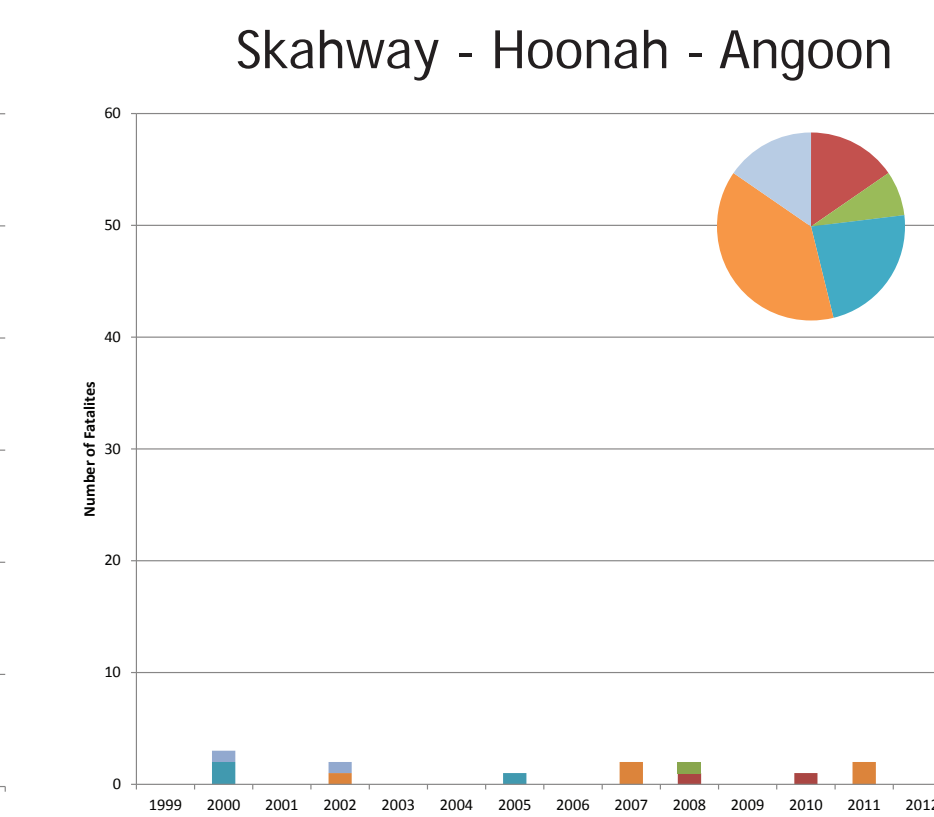
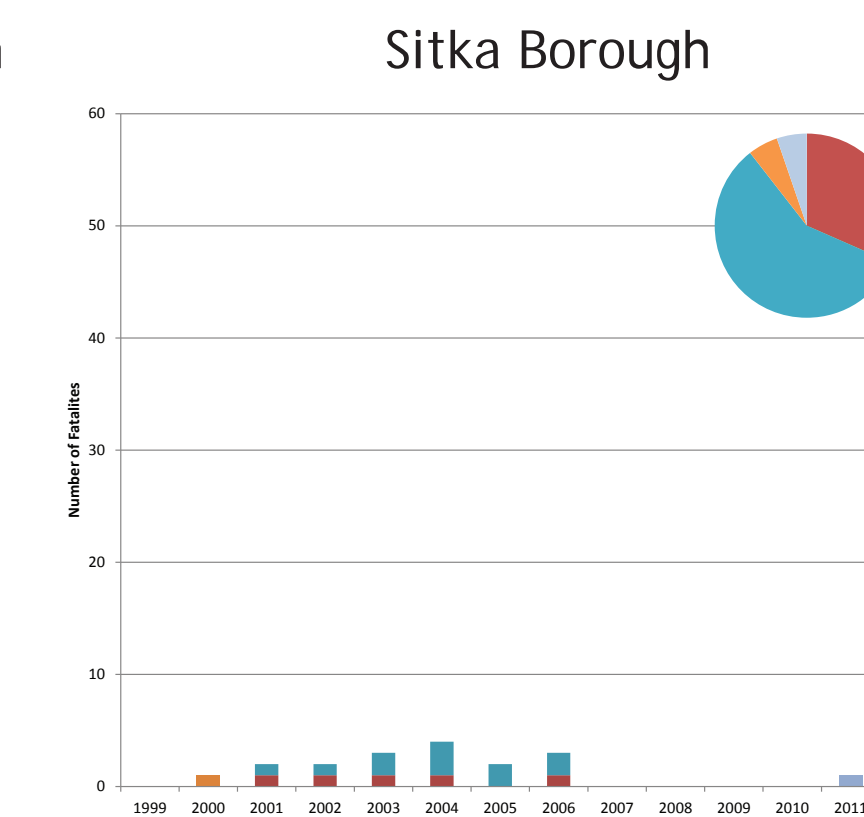
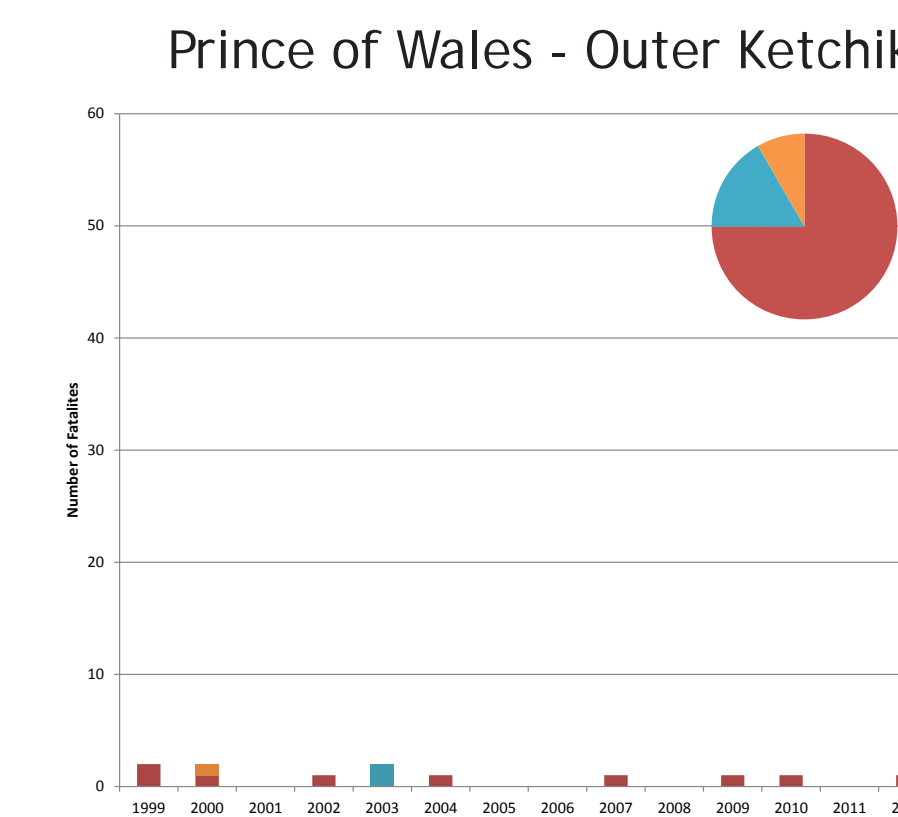
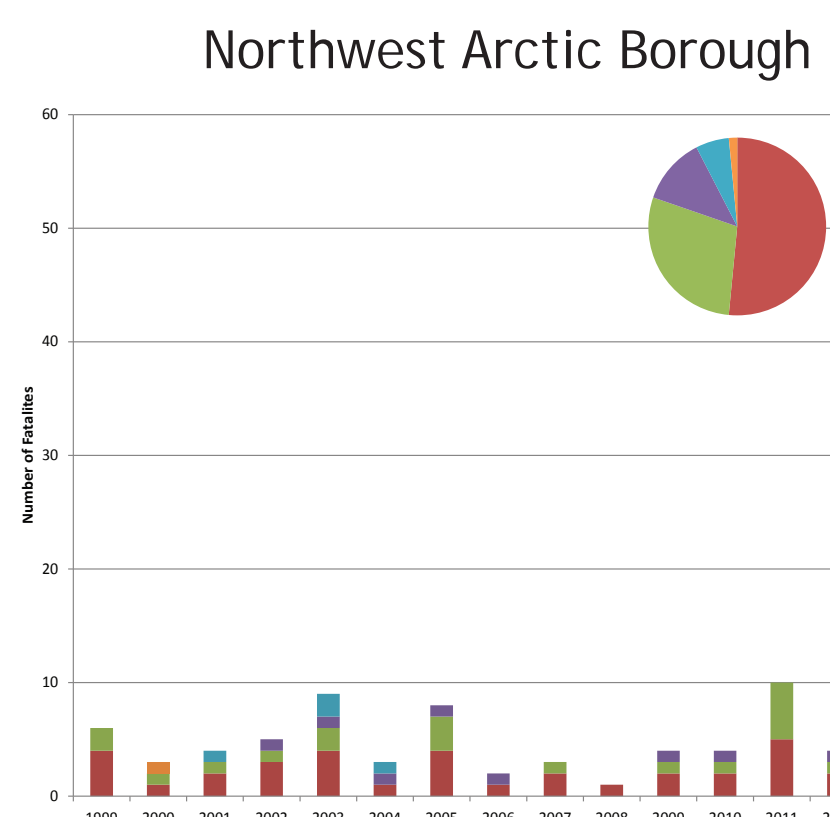
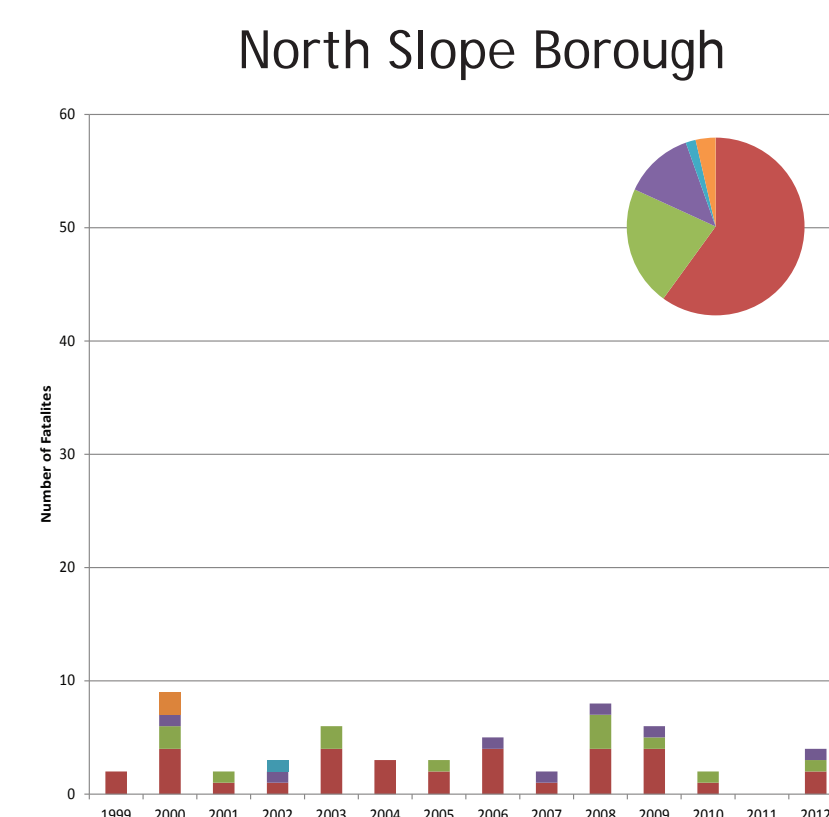
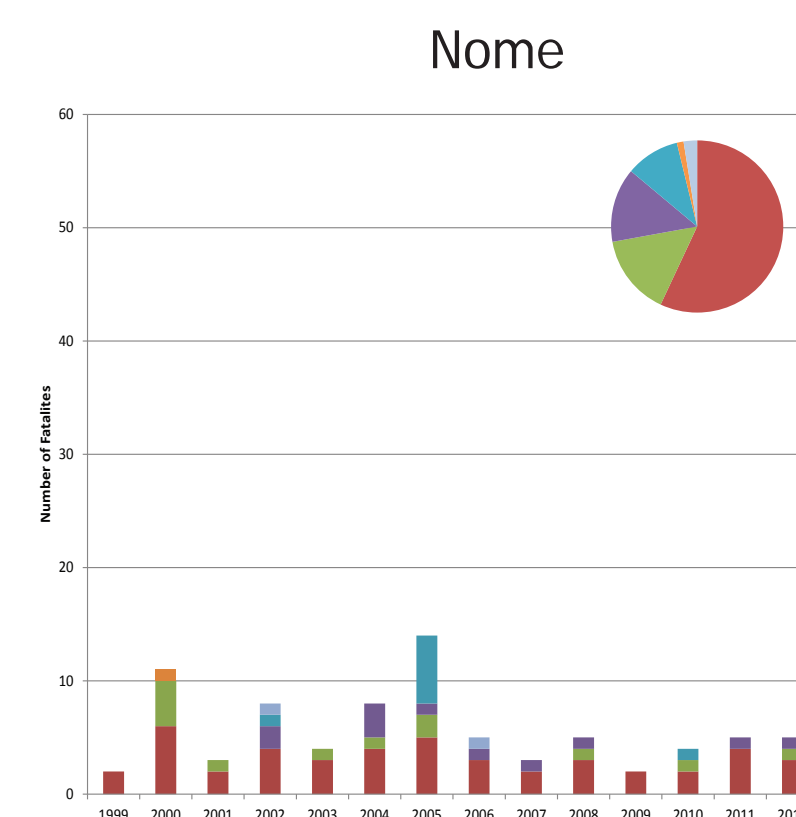
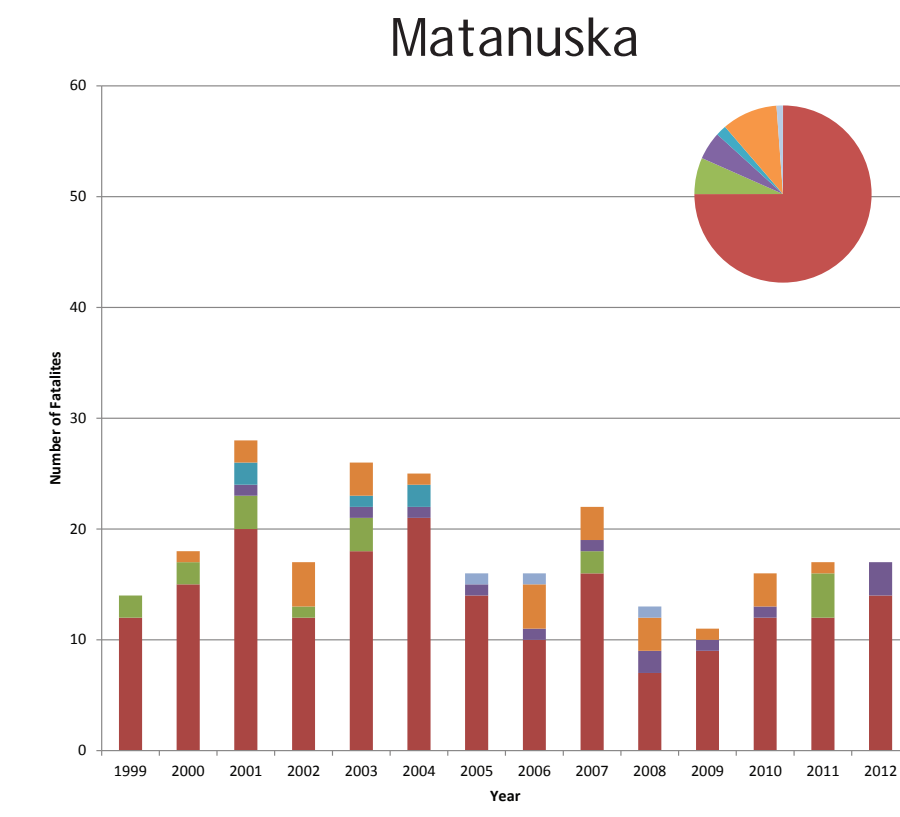
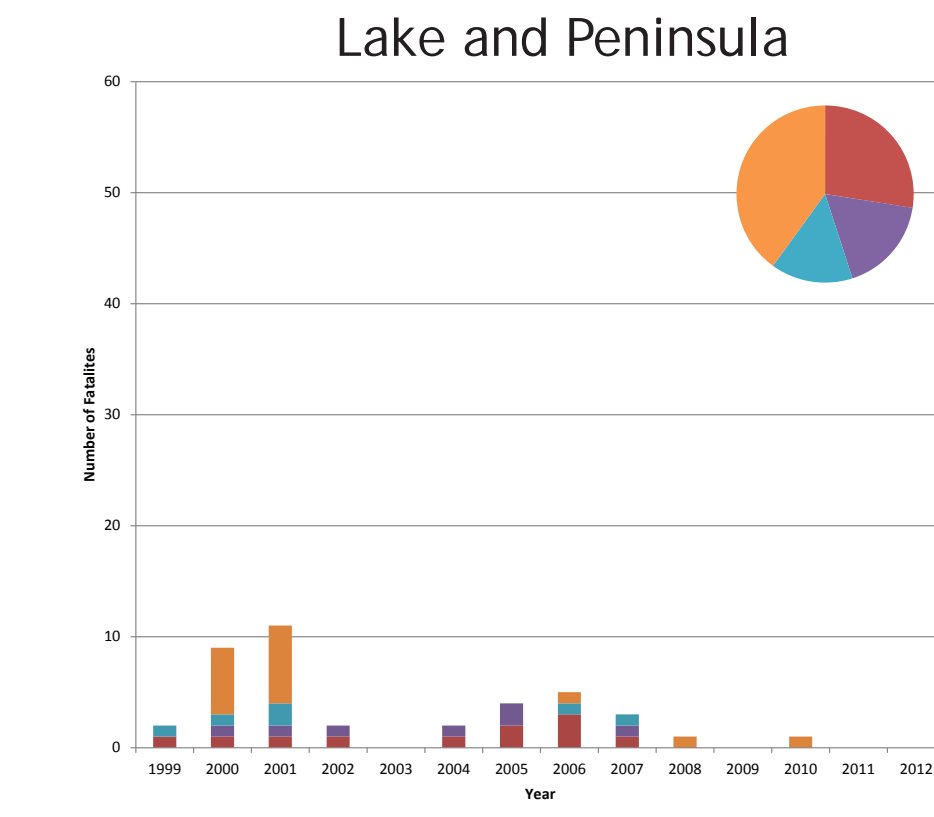
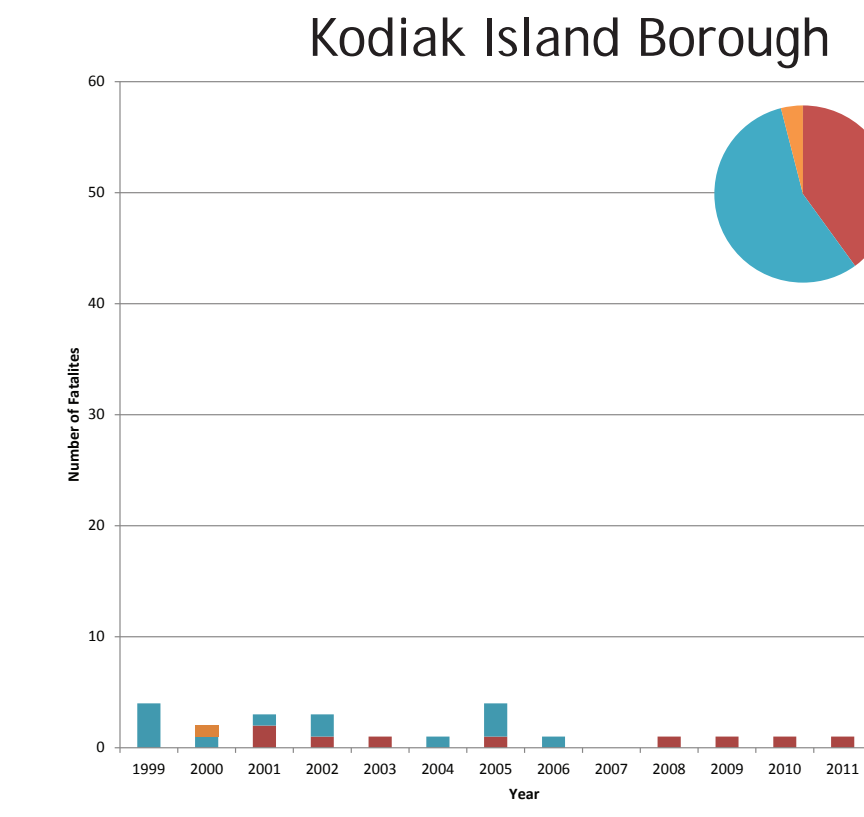
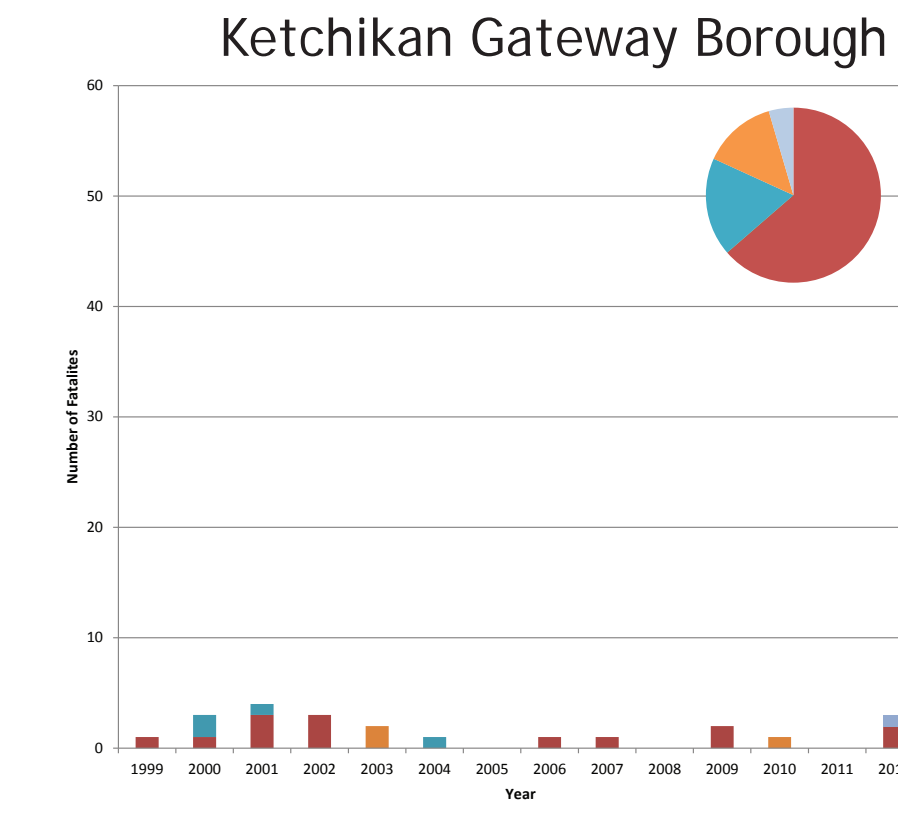
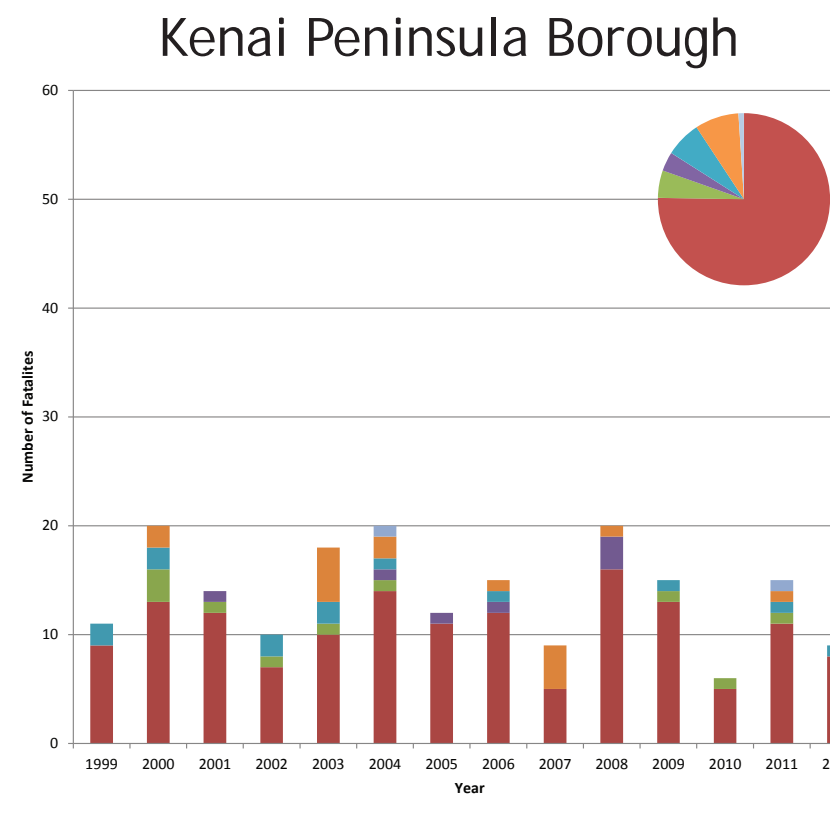
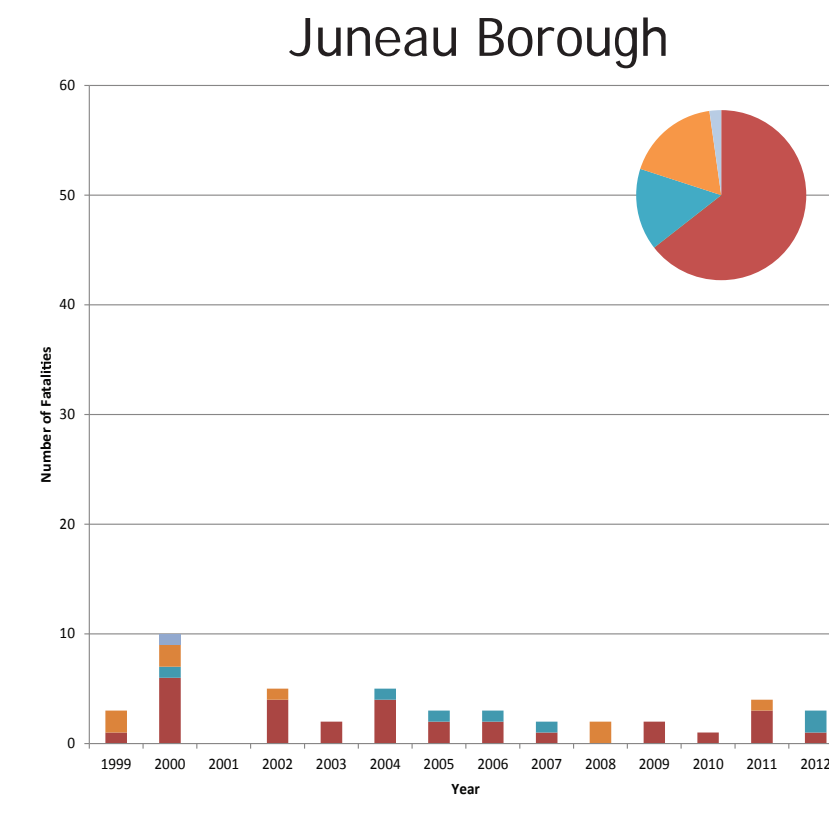
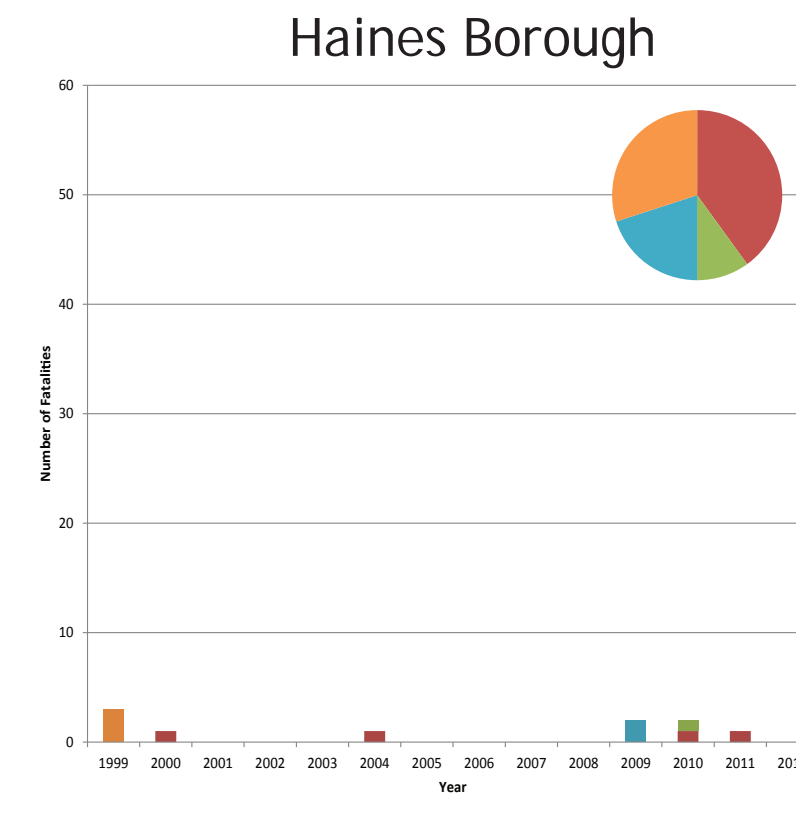
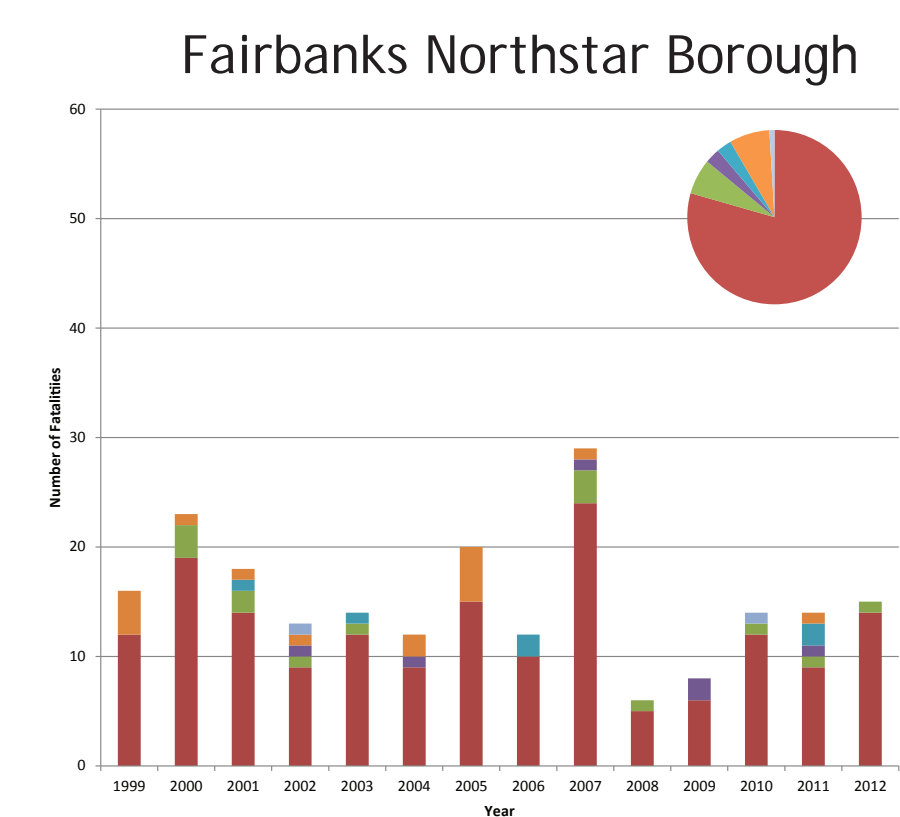
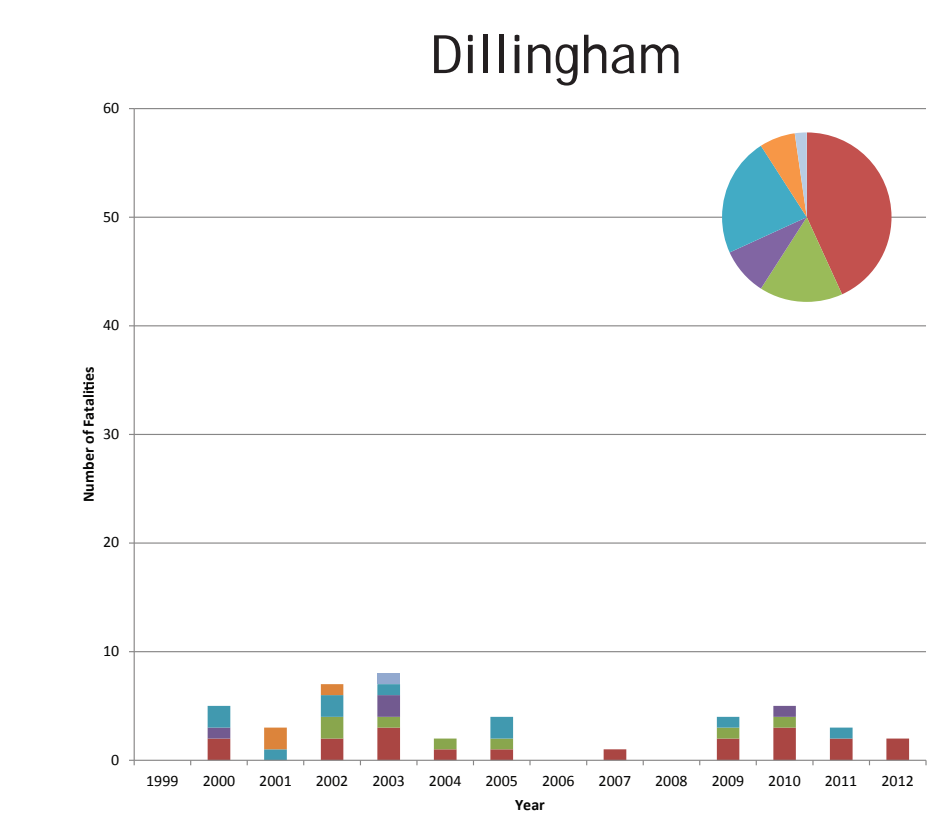
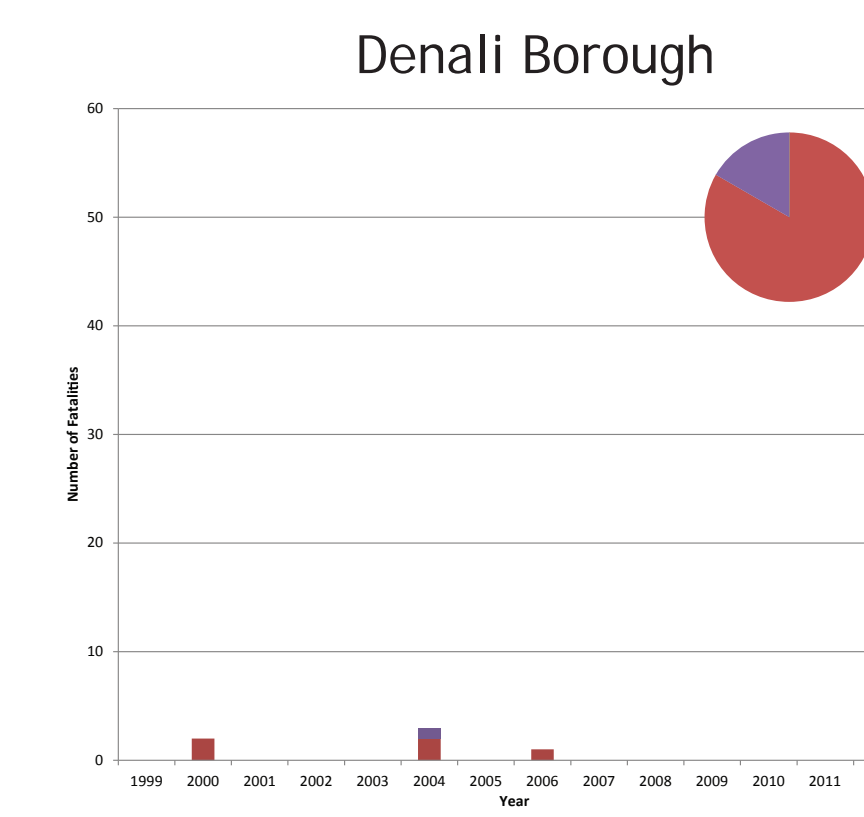
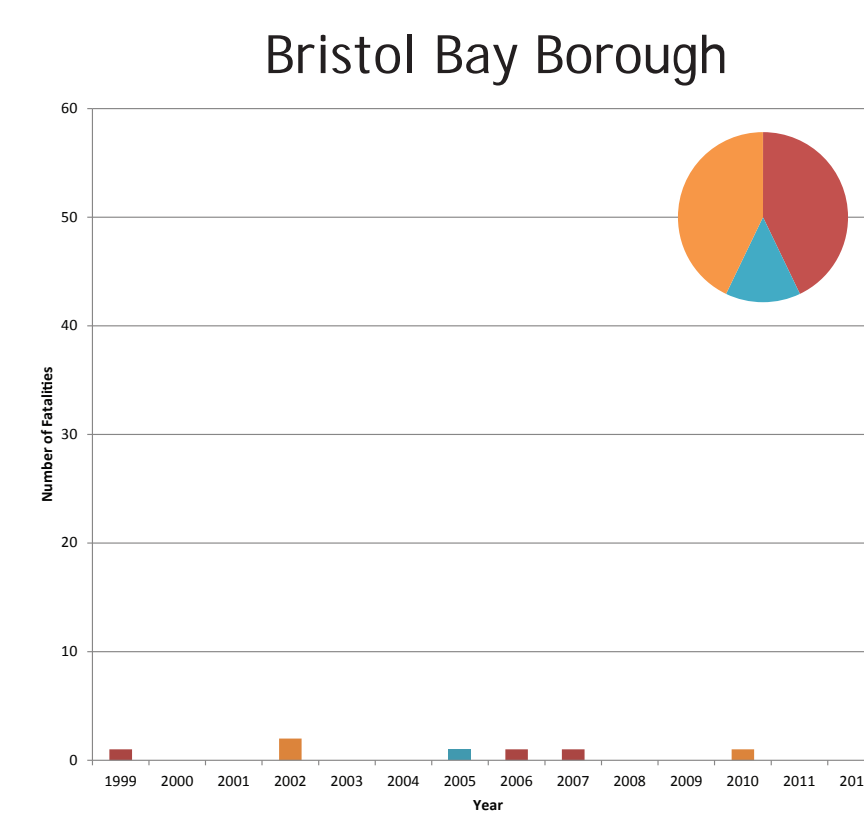
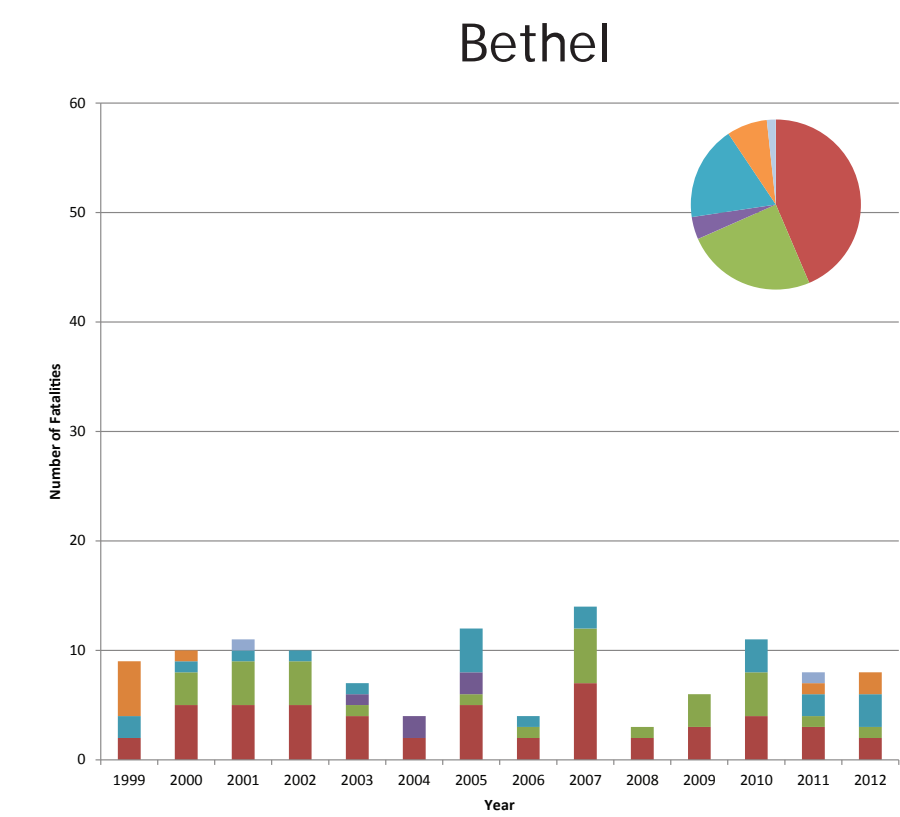
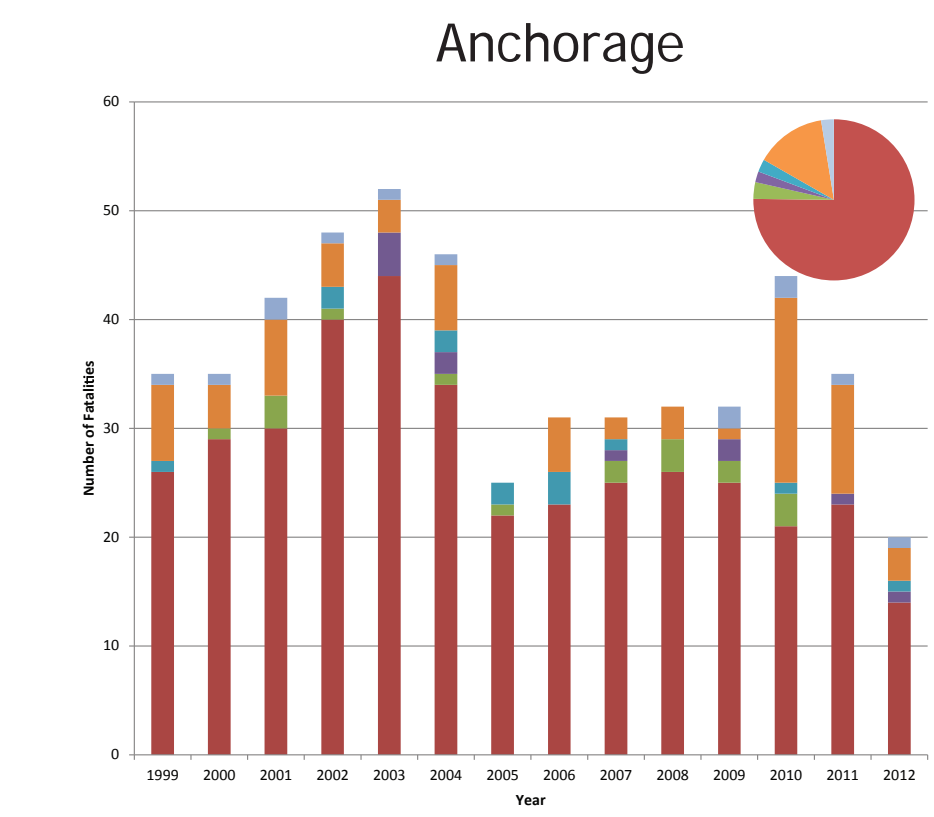
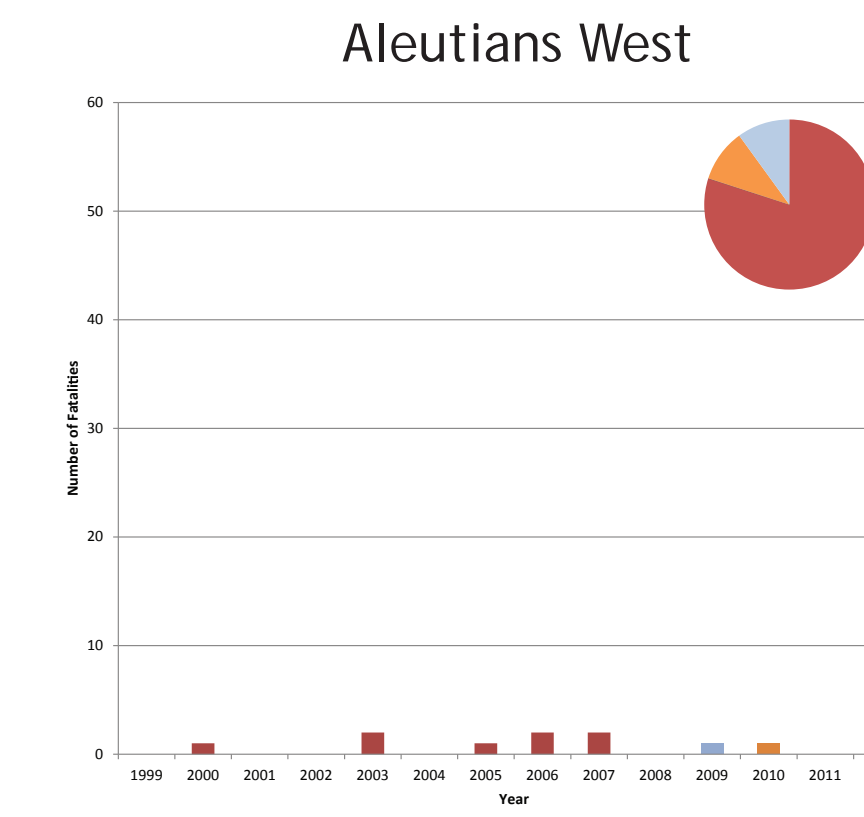
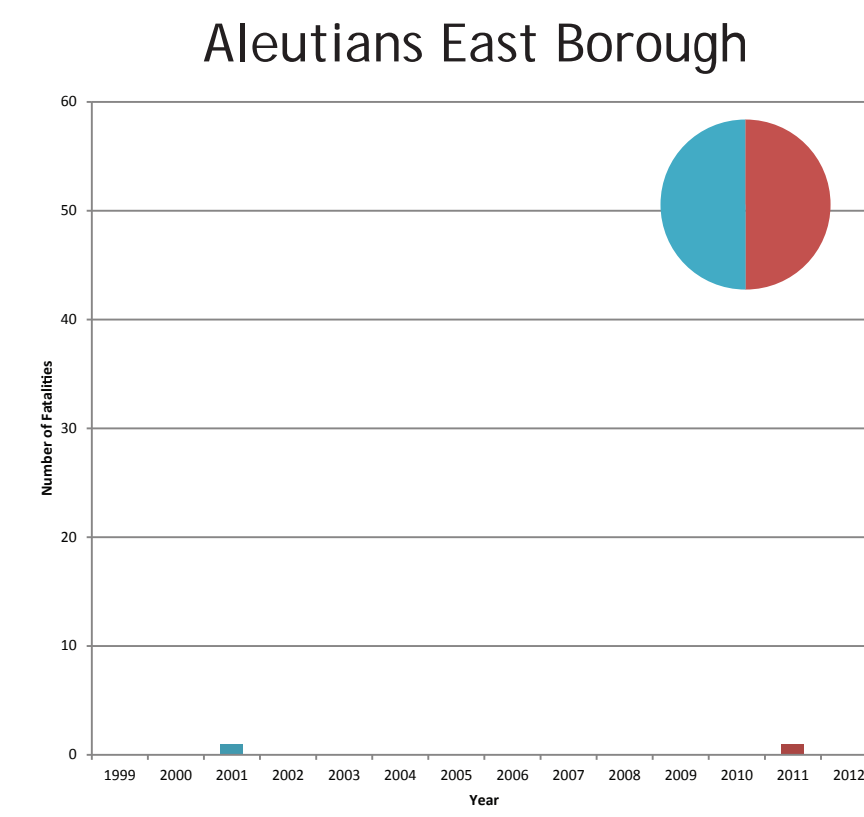
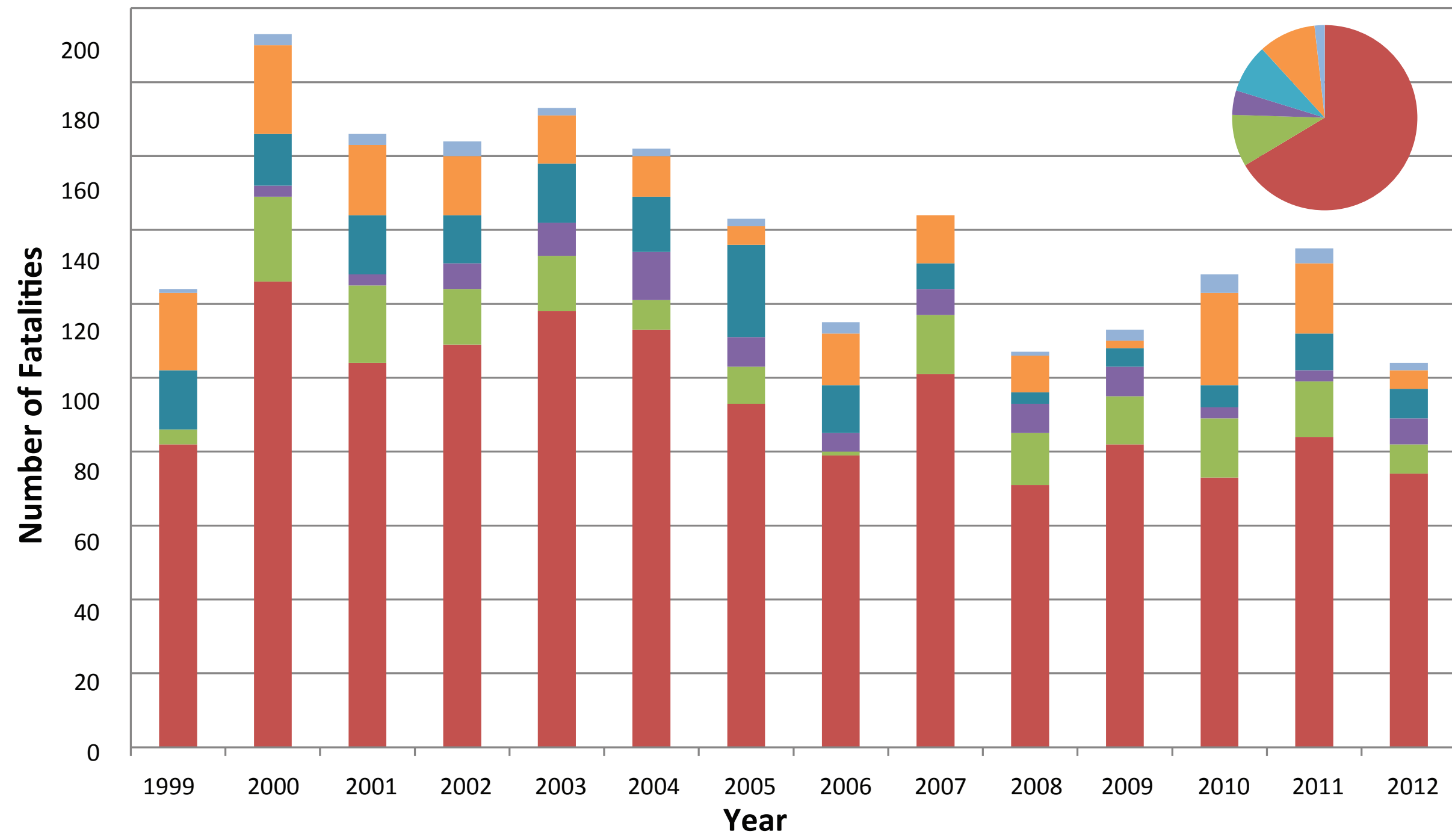
Prince of Wales Outer Ketchikan

Aleutians East

Aleutians West



Transportation Fatalities in Alaska, 1999-2012



Legend

- Other Transport Accidents
- Air Transport
- Water Transport
- ATV
- Snow Machine
- Motor Vehicle Accidents

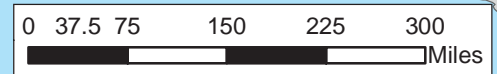
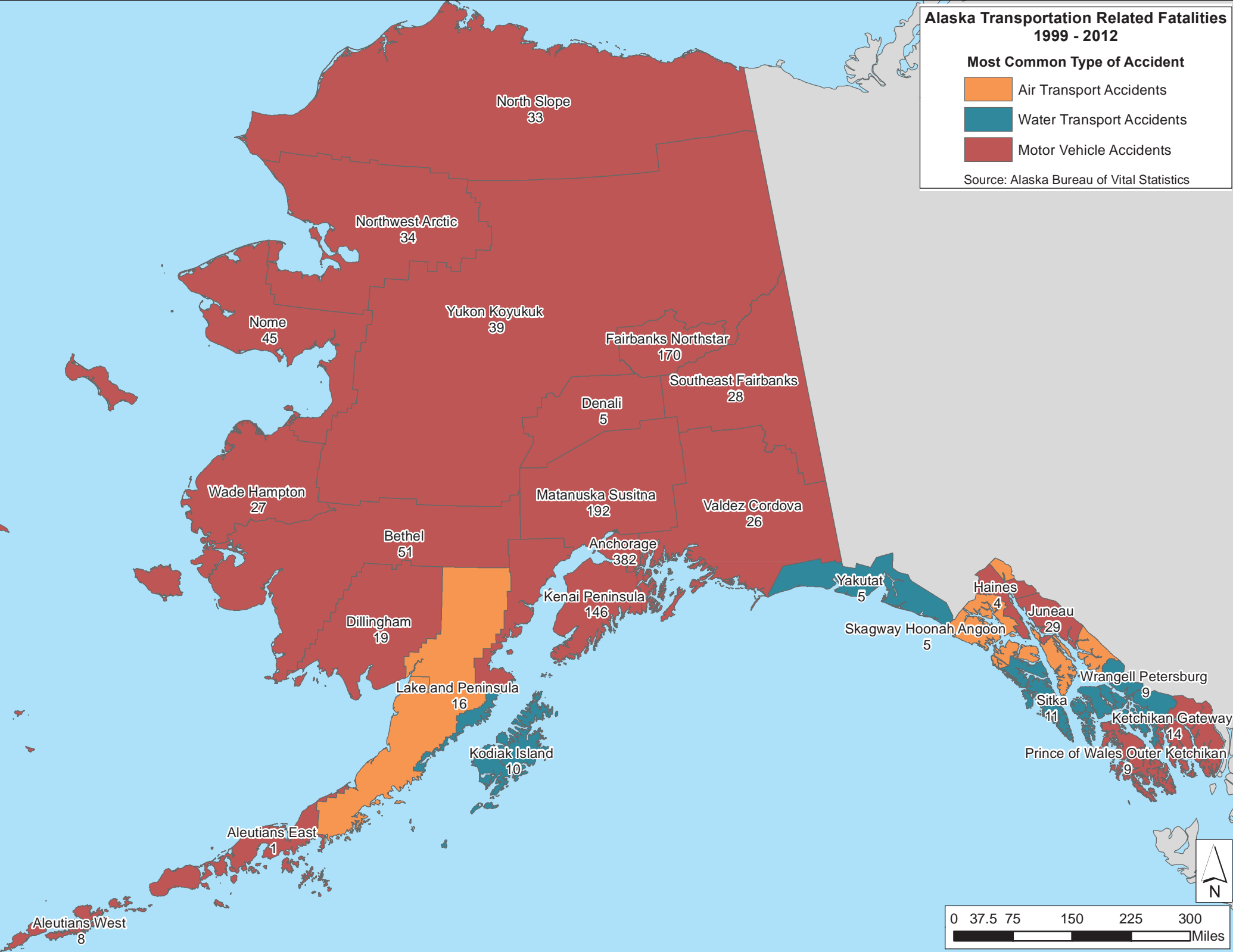
All data from Alaska Bureau of Statistics

Alaska Transportation Related Fatalities 1999 - 2012

Most Common Type of Accident

- Air Transport Accidents
- Water Transport Accidents
- Motor Vehicle Accidents

Source: Alaska Bureau of Vital Statistics



Transportation Fatalities in Alaska, 1999-2012

All data from Alaska Bureau of Statistics

Motors vehicle accidents are the most common type of transportation fatality in 22 boroughs and census areas. Following motor vehicle accidents, the second most common type of accidents in these areas include:



Aleutians East*
Kodiak Island
Sitka
Wrangell-Petersburg*
Yakutat

Water transport accidents are the most common type of fatality in 5 areas. Motor vehicle accidents are the second most common type of accident in these areas.

Air transport accidents are the most common type of fatality in 3 areas. The second most common types of accident in these areas include motor vehicle and water transport.



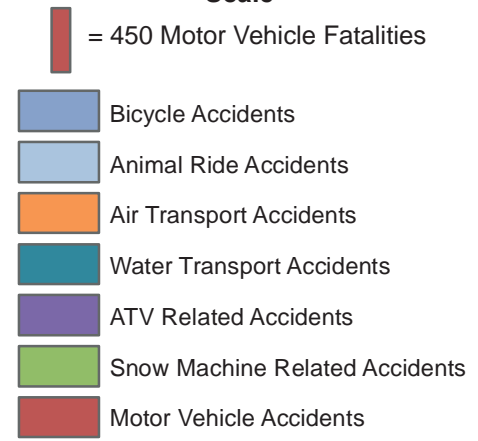
Skagway-Hoonah-Angoon

Bristol Bay*
Lake and Peninsula

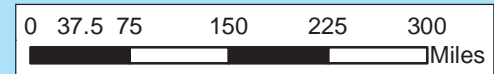
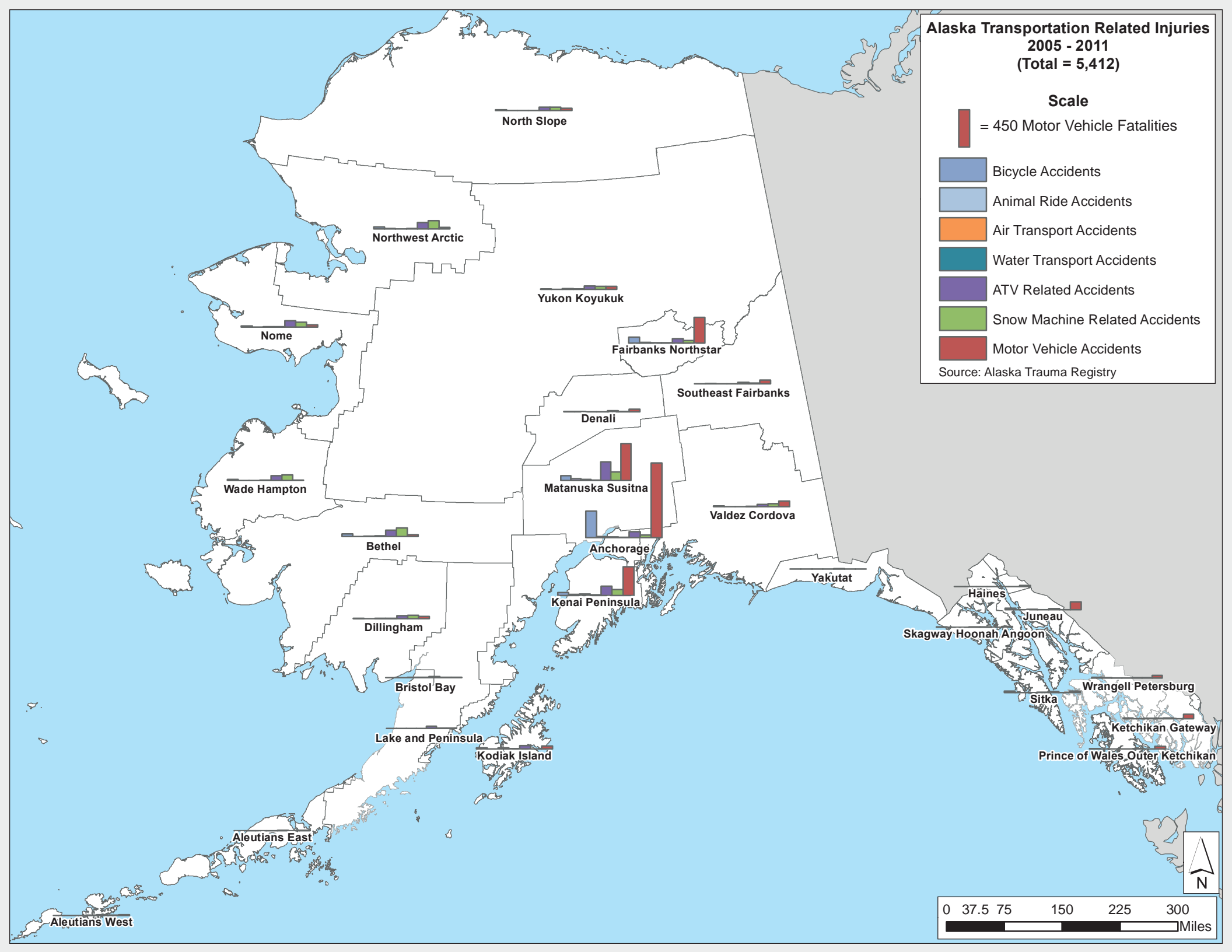
*These boroughs or Census areas have two accident types tied for the first or second most common type of transportation accident.

**Alaska Transportation Related Injuries
2005 - 2011
(Total = 5,412)**

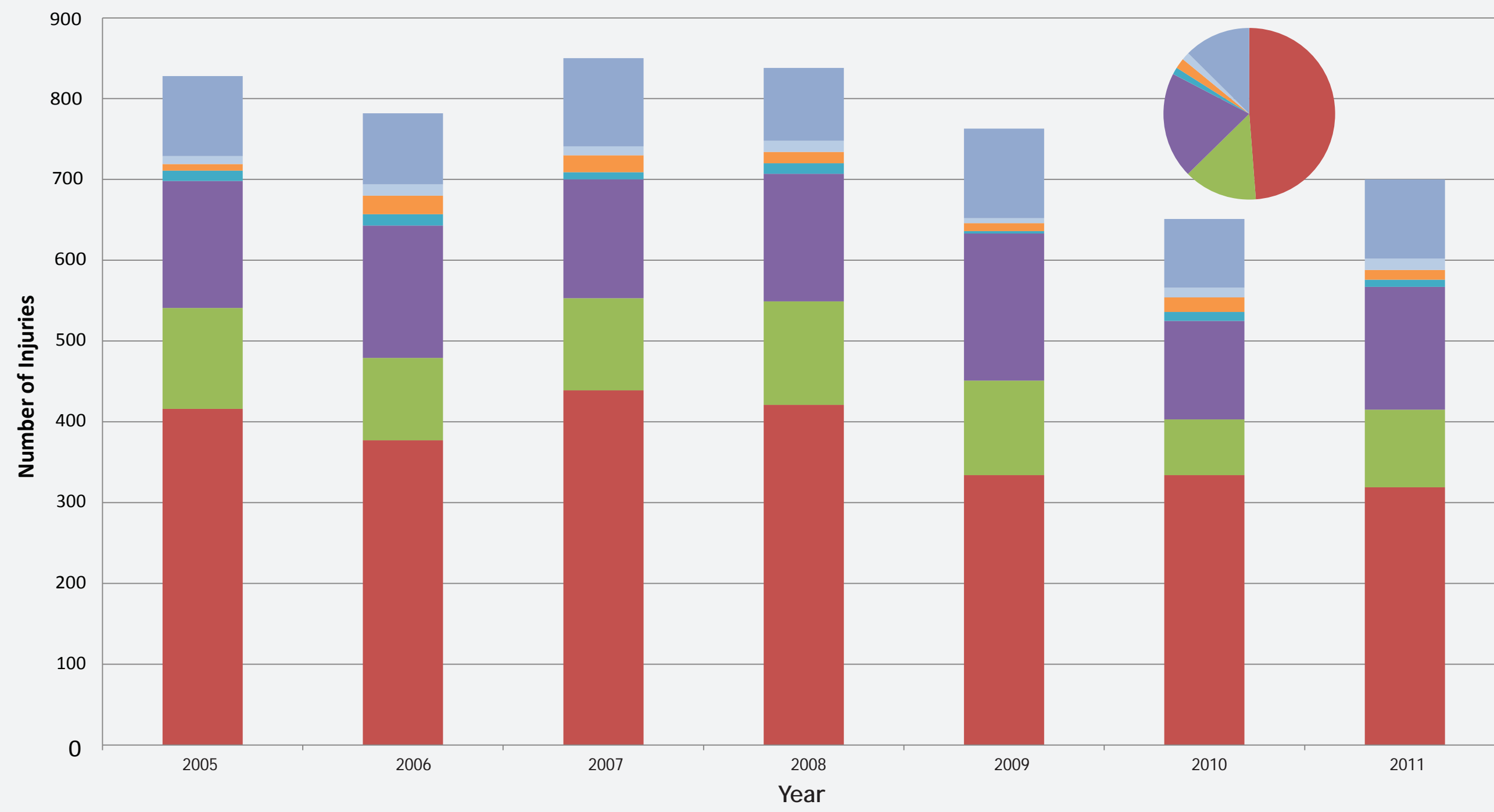
Scale



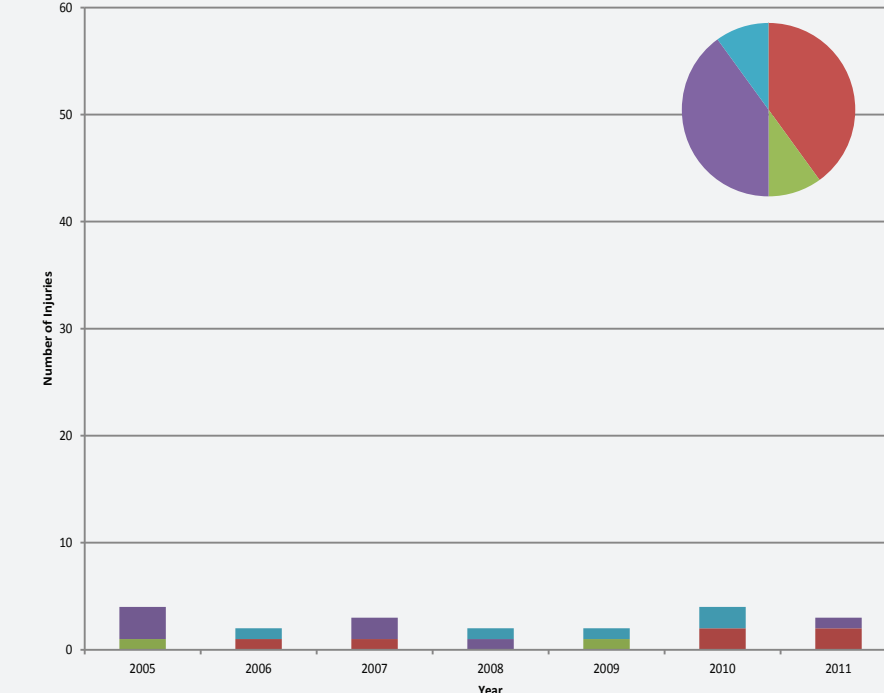
Source: Alaska Trauma Registry



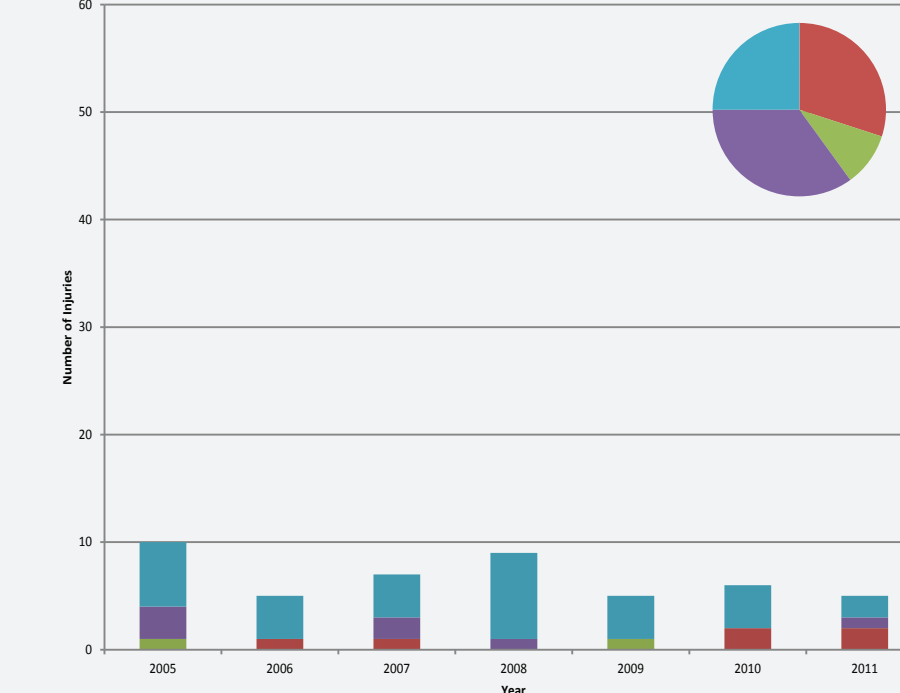
Transportation Injuries in Alaska, 2005-2011



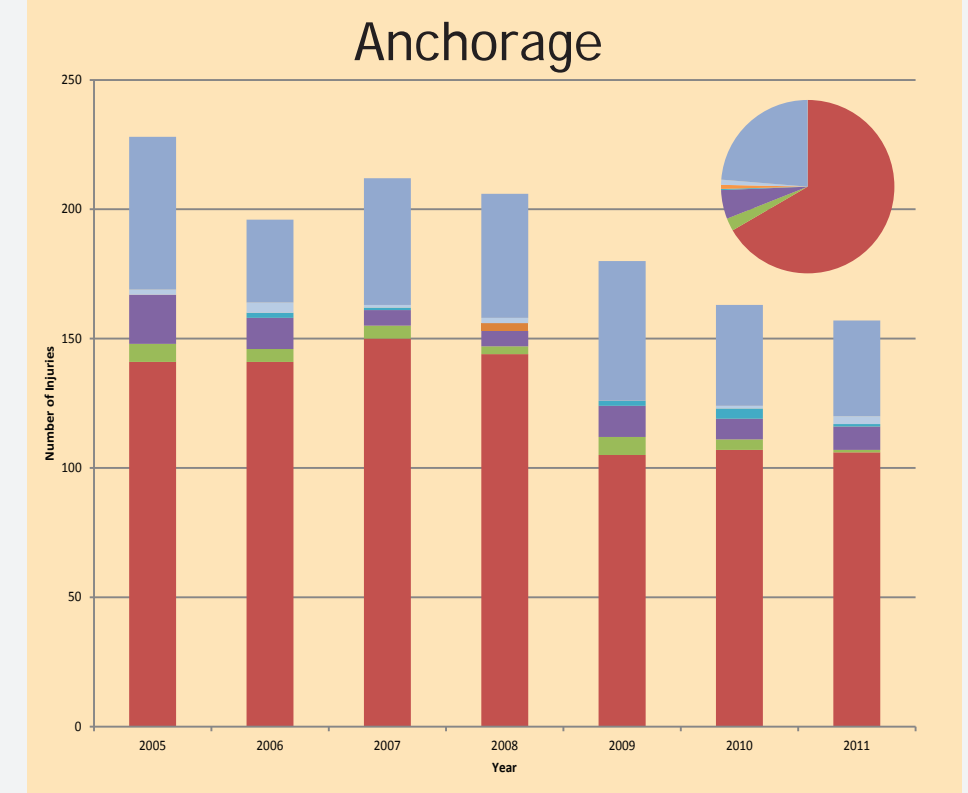
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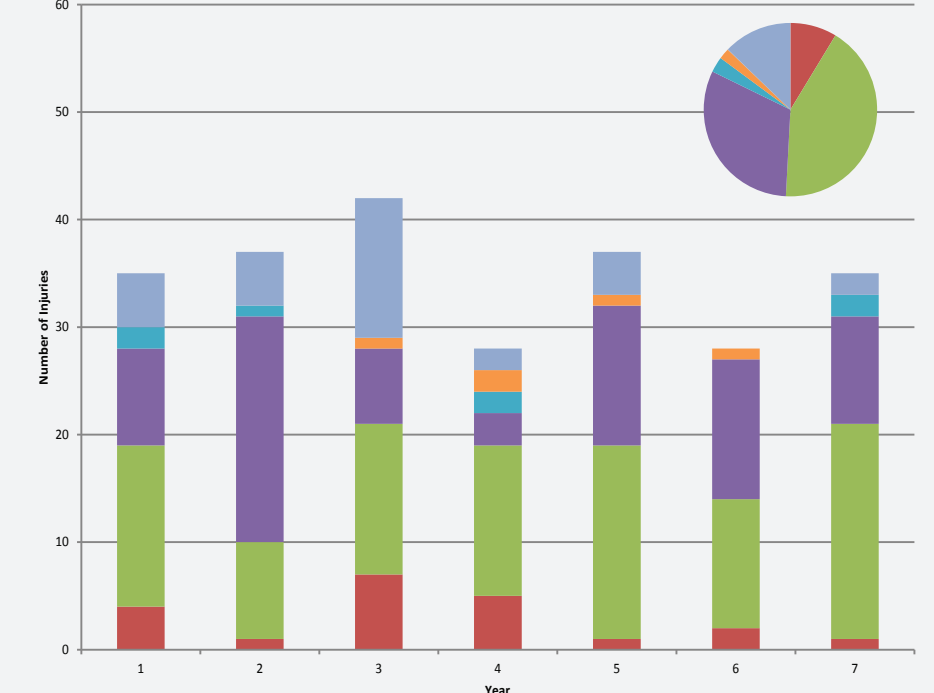
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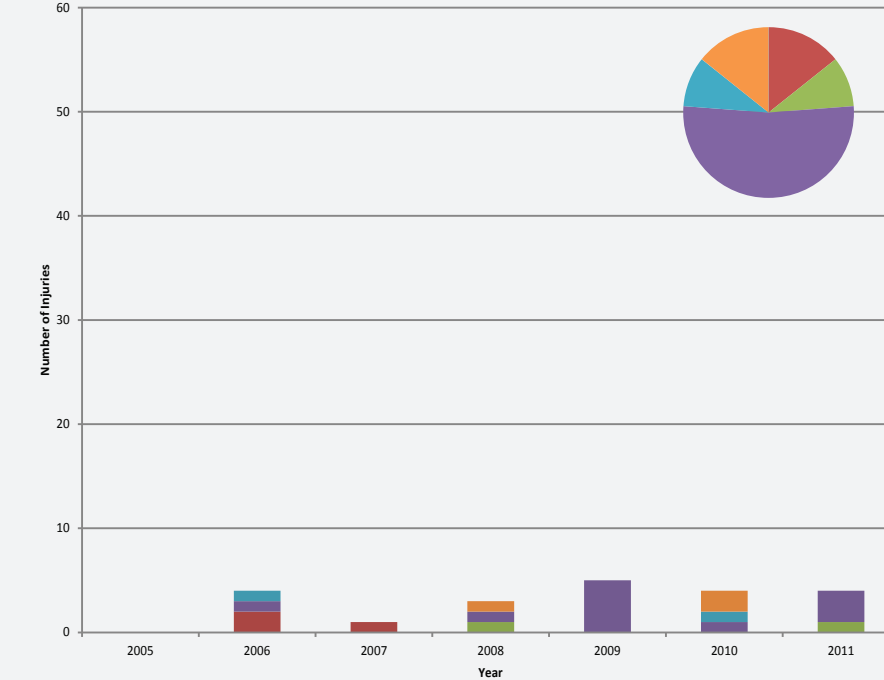
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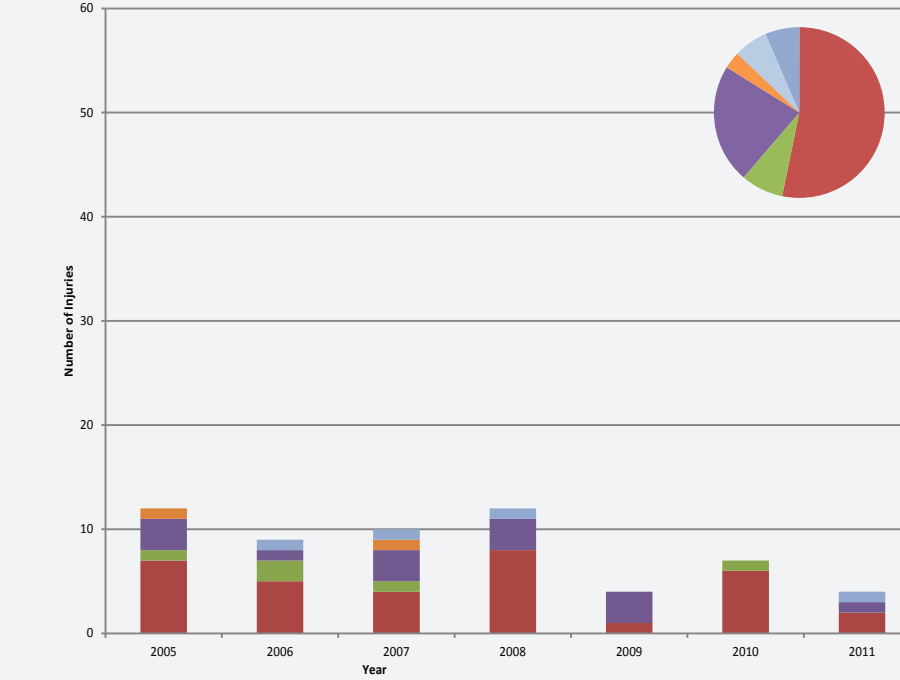
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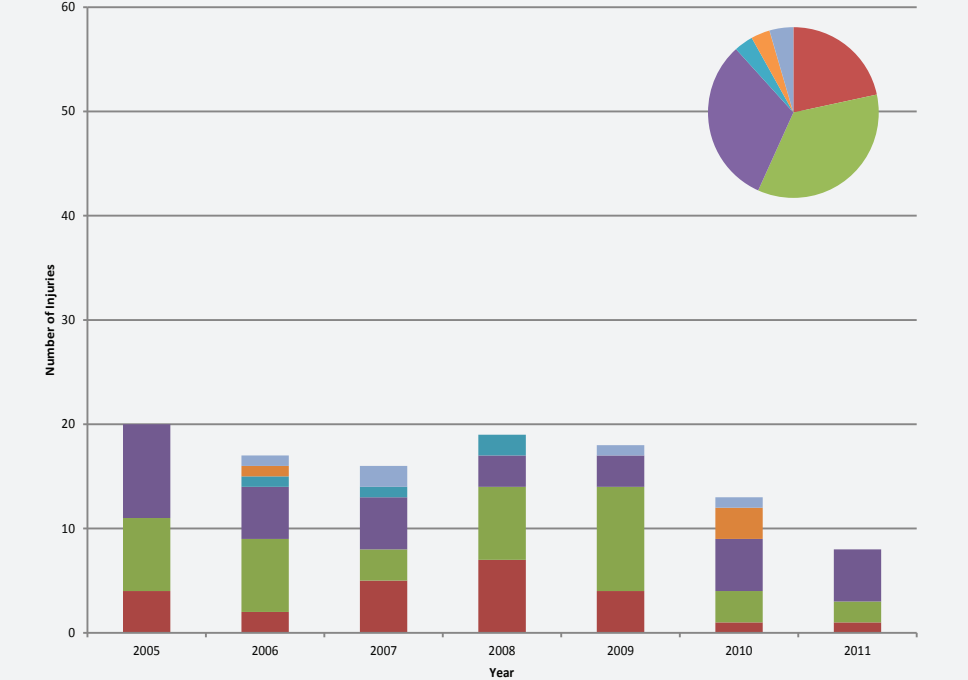
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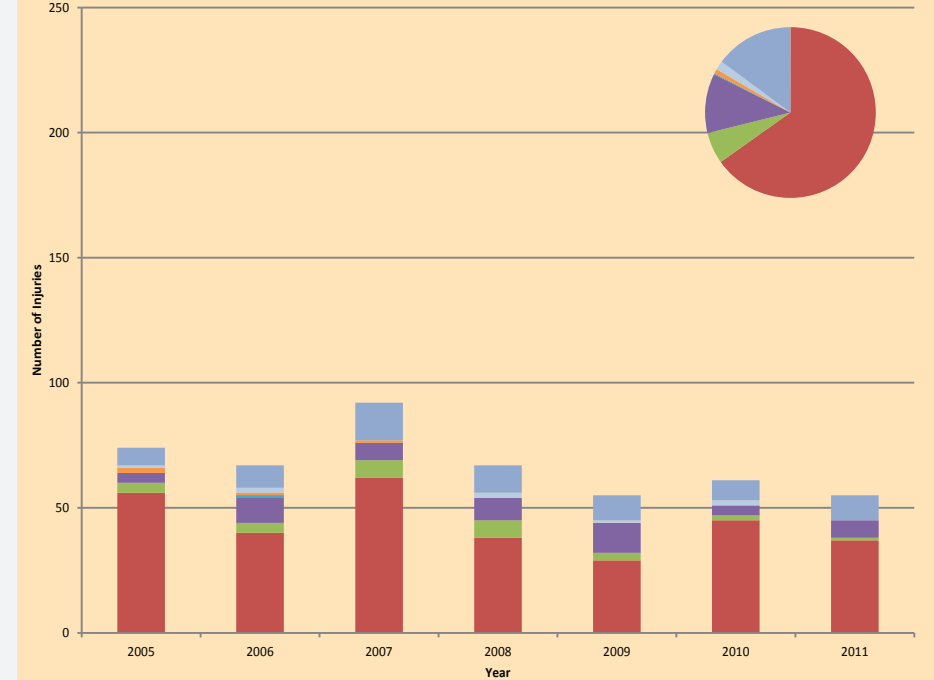
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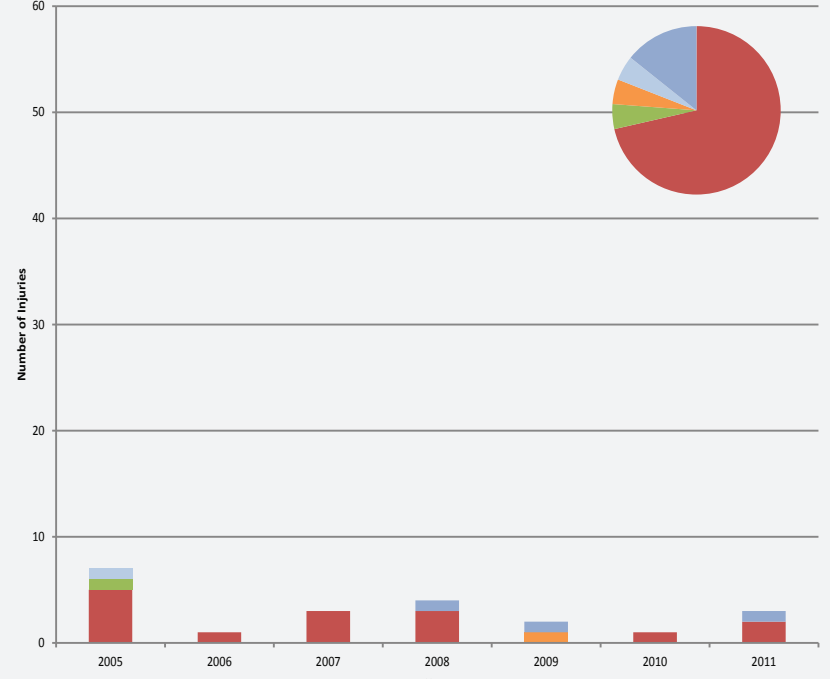
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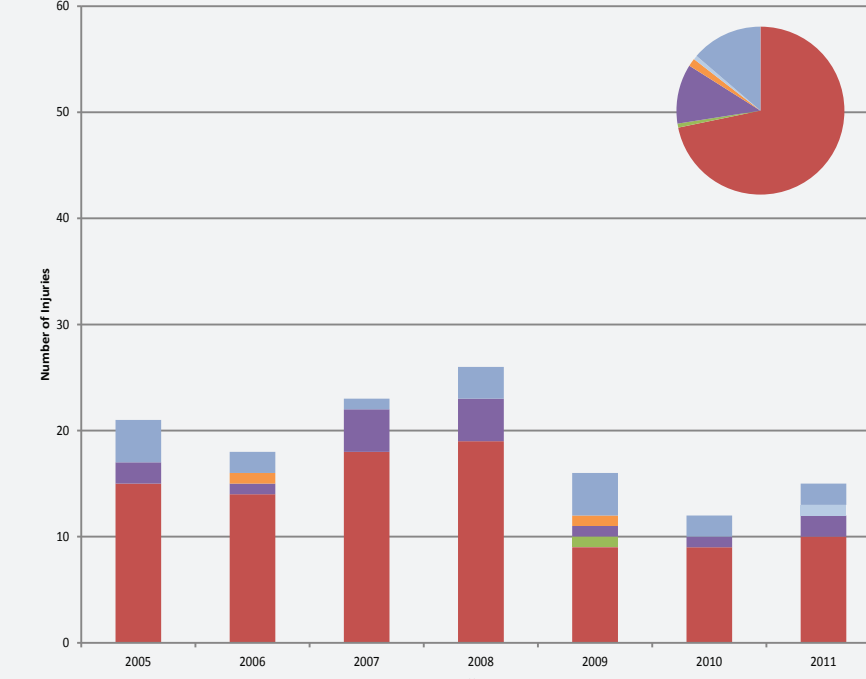
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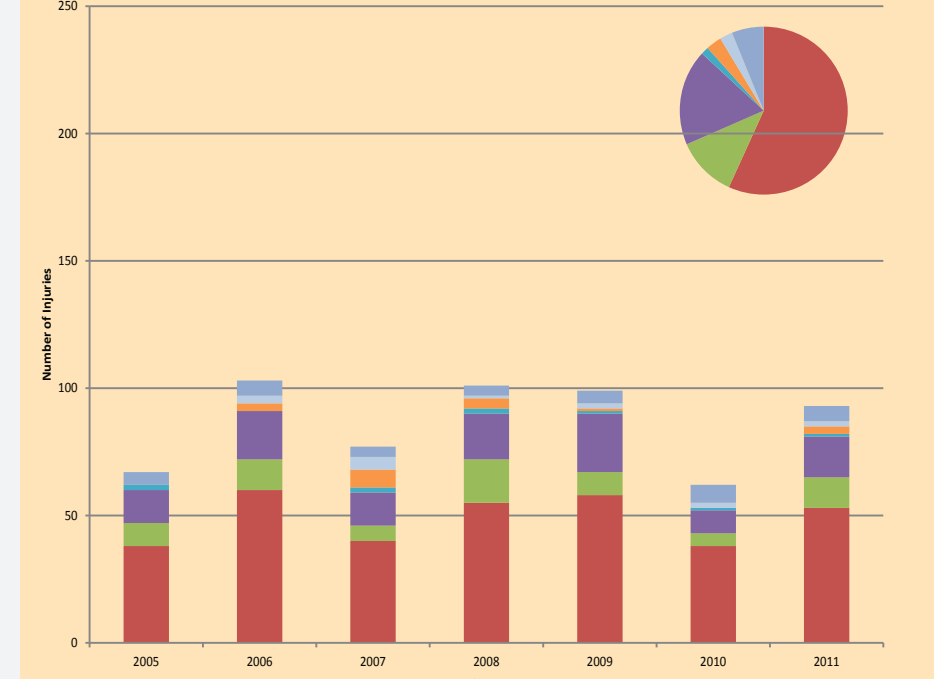
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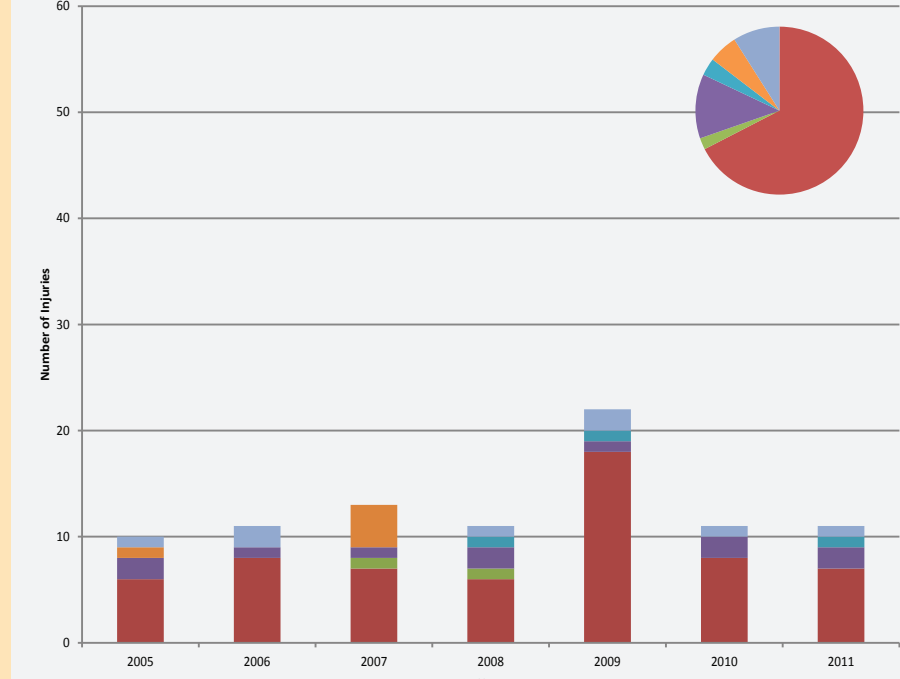
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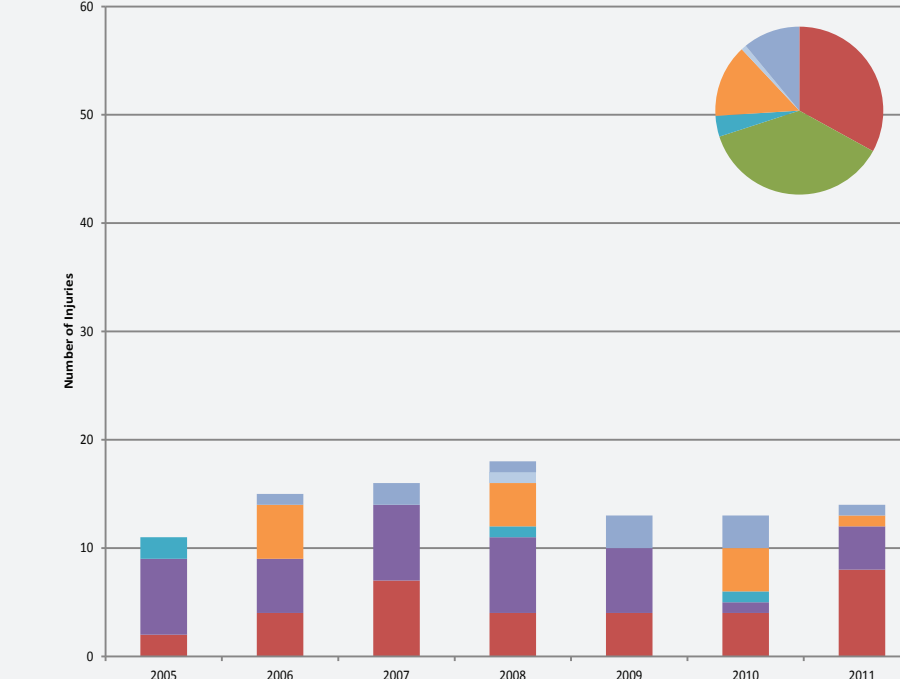
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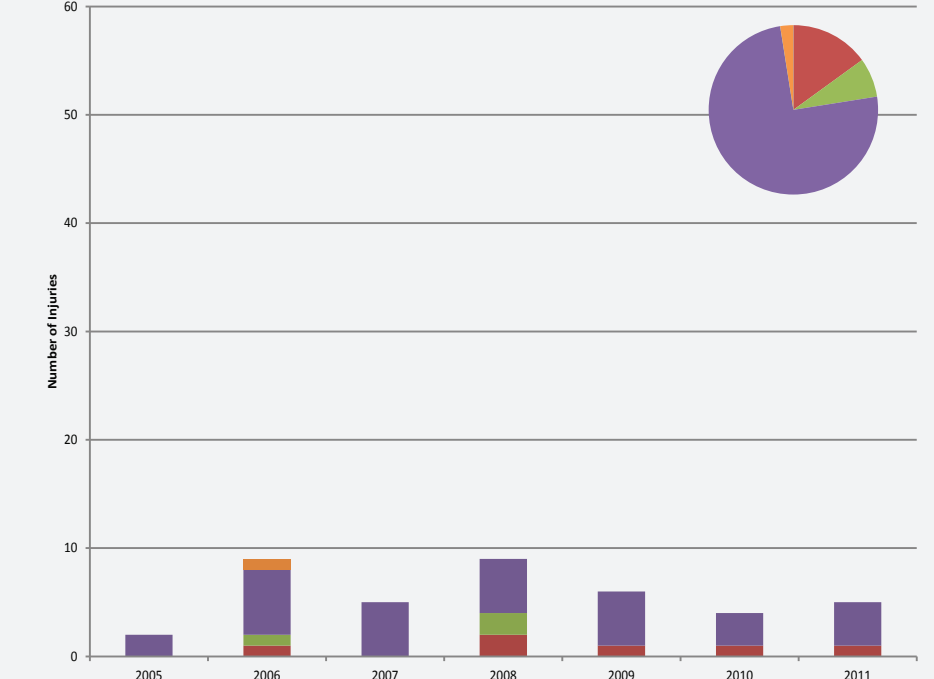
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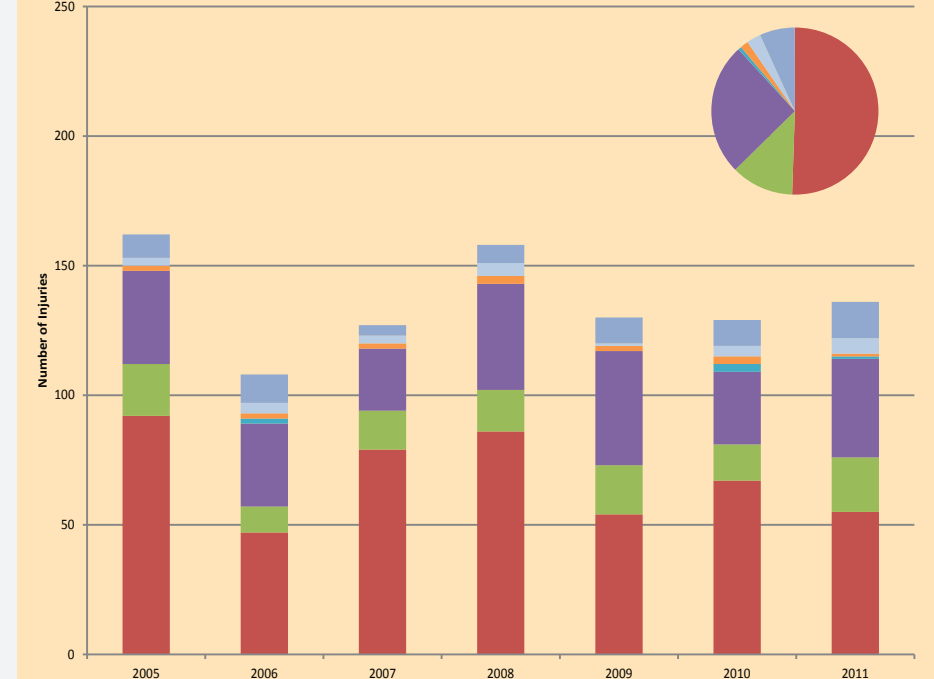
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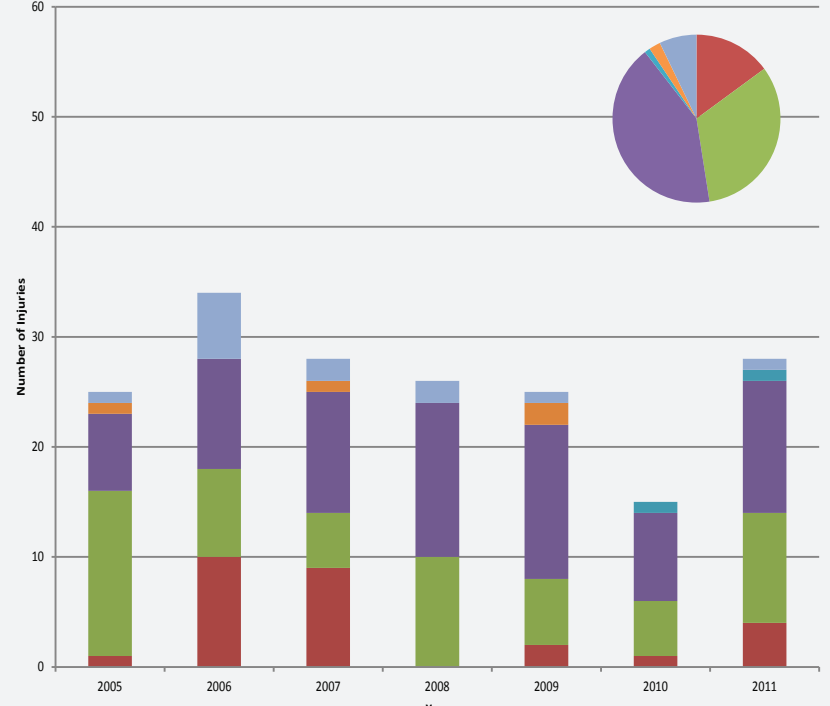
Lake and Peninsula



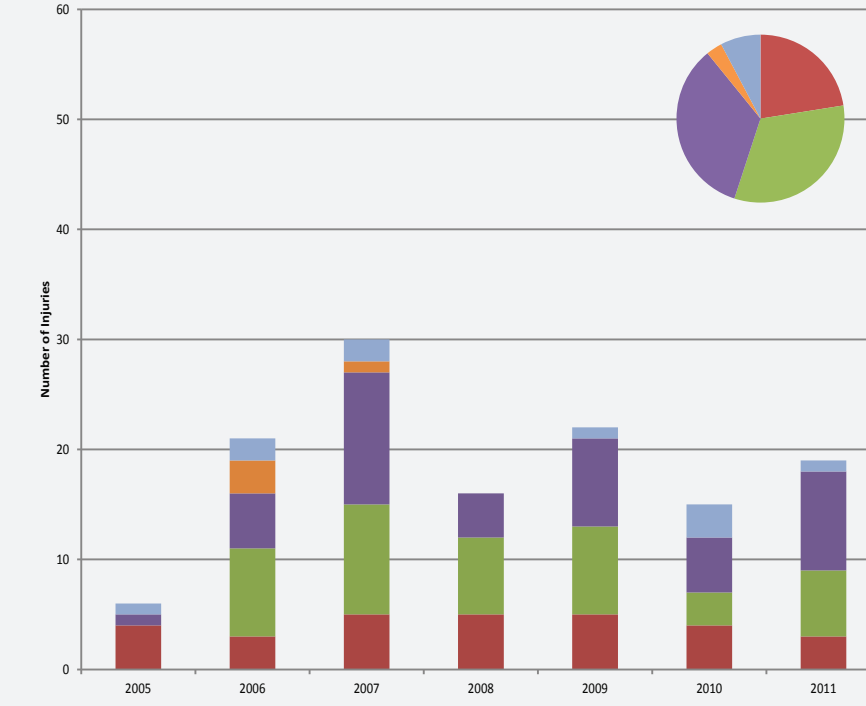
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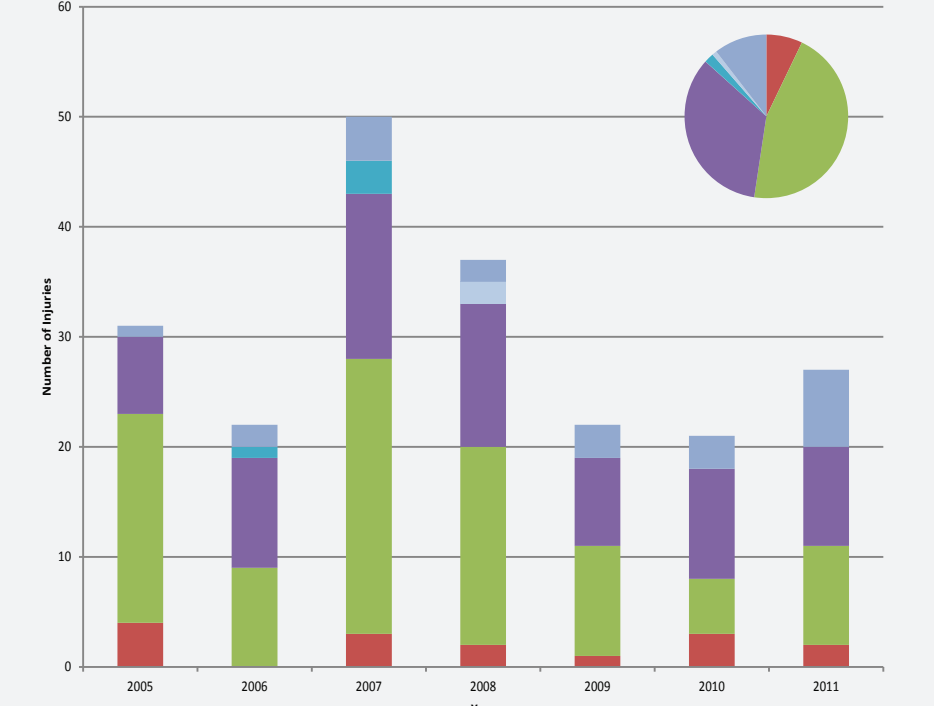
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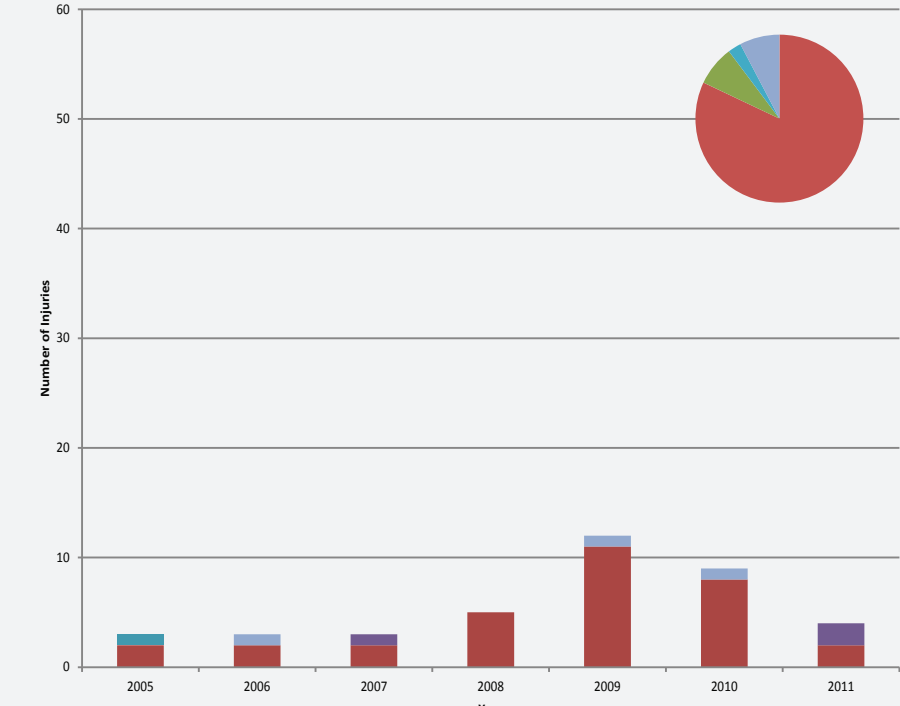
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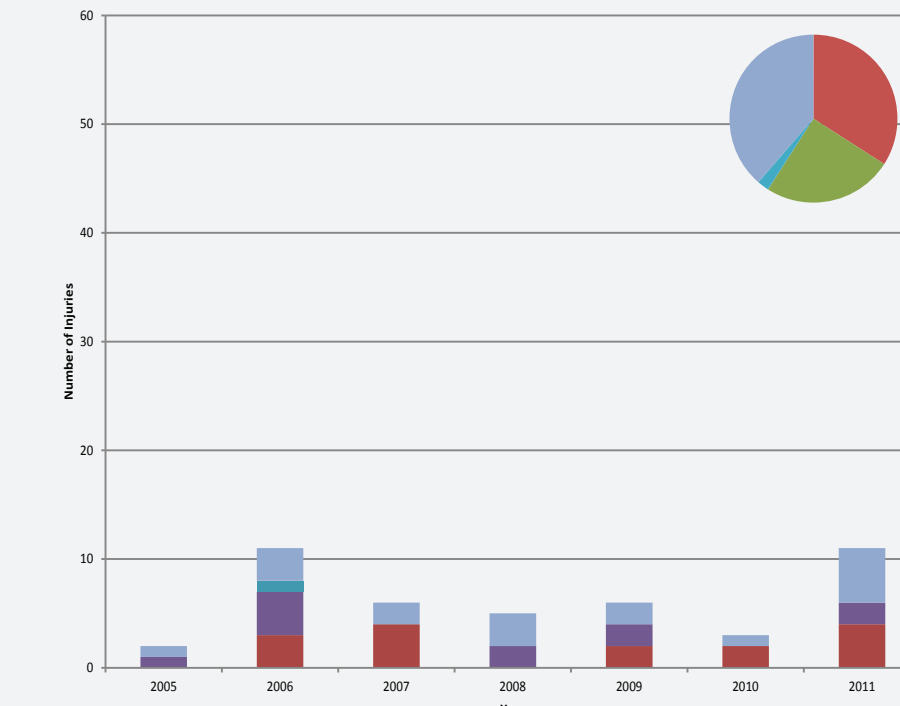
Northwest Arctic Borough



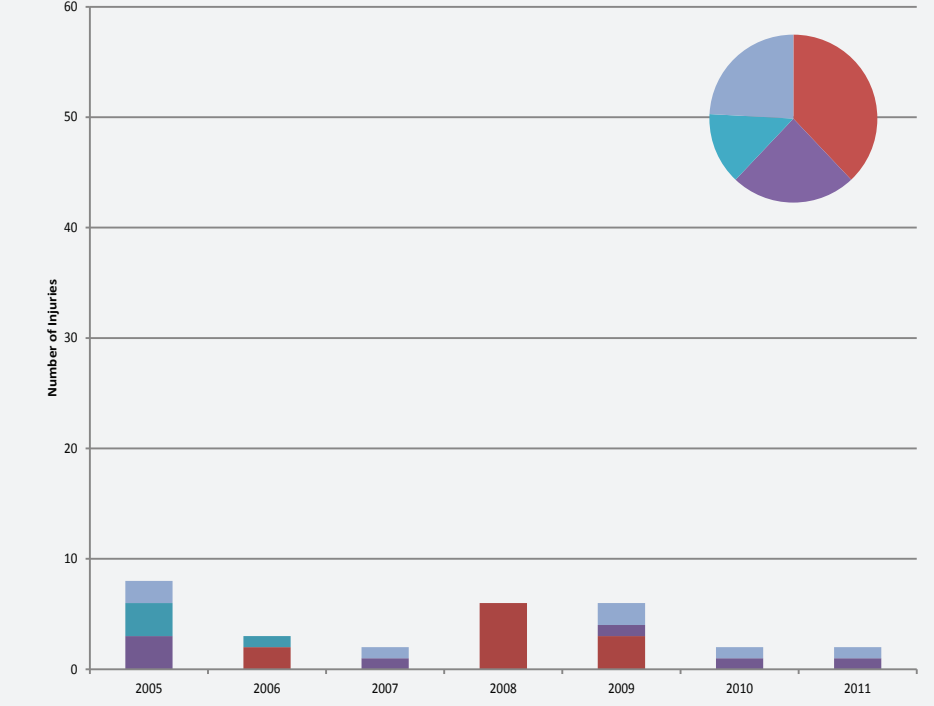
Prince of Wales - Outer Ketchikan



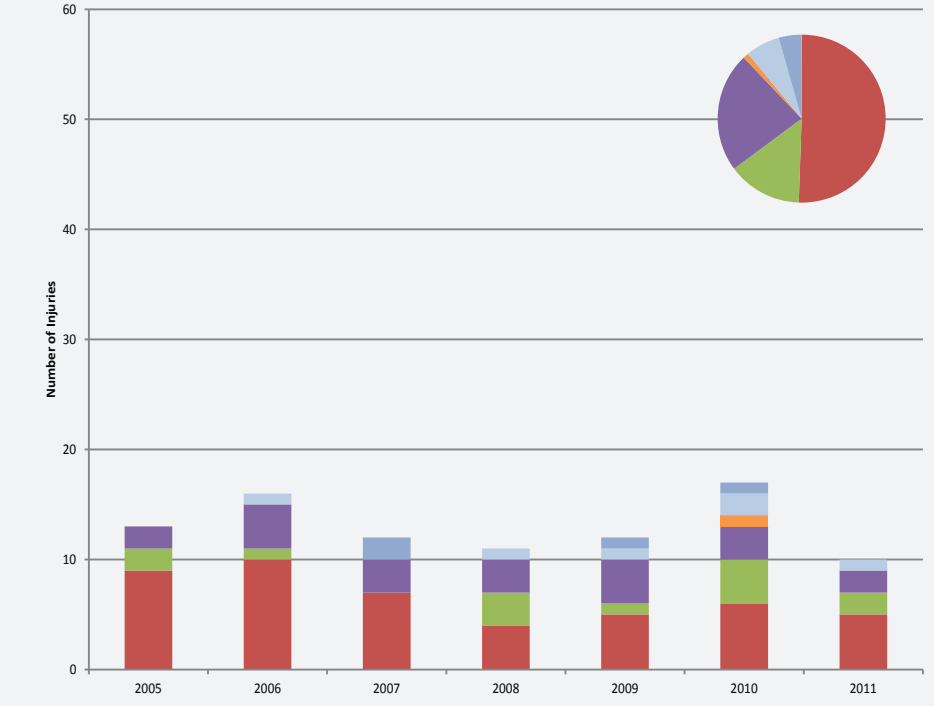
Sitka Borough



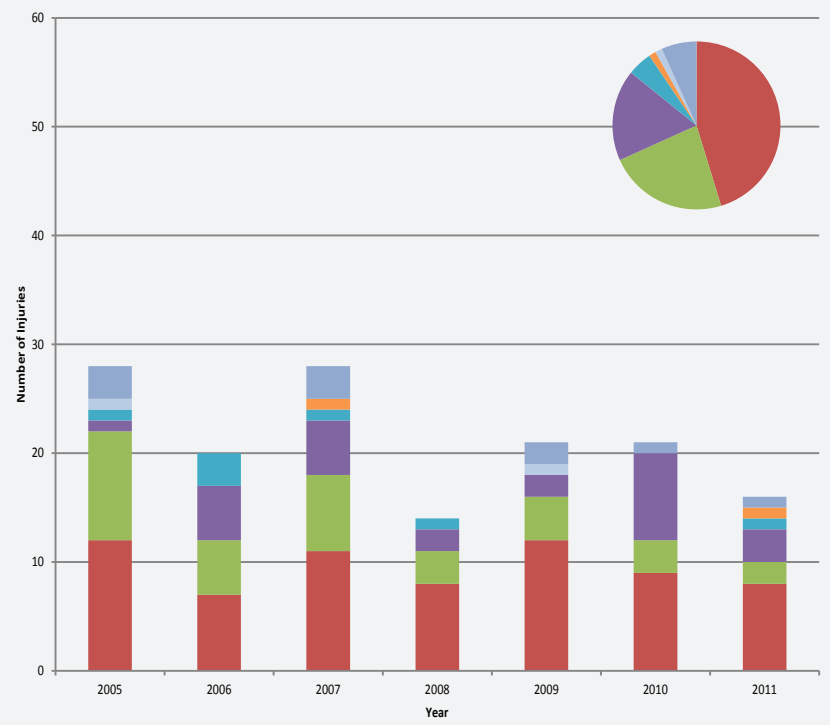
Skahway - Hoonah - Angoon



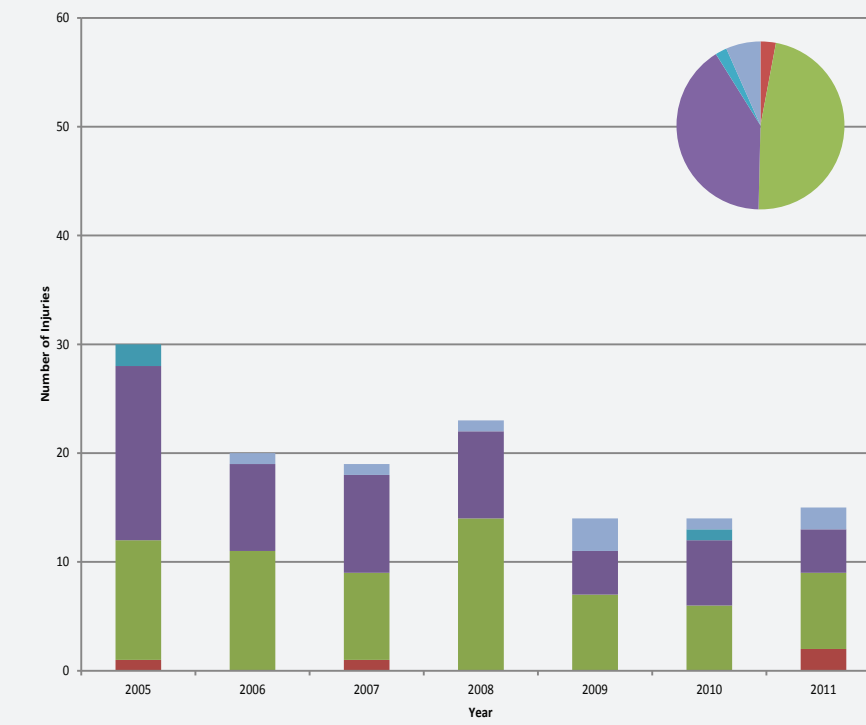
Southeast Fairbanks



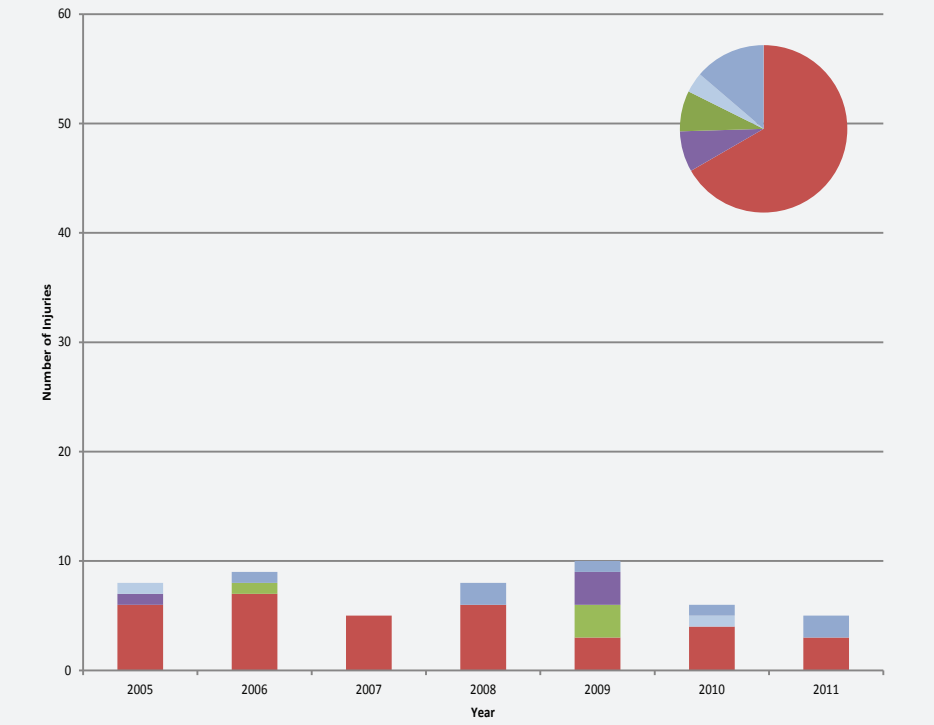
Valdez-Cordova



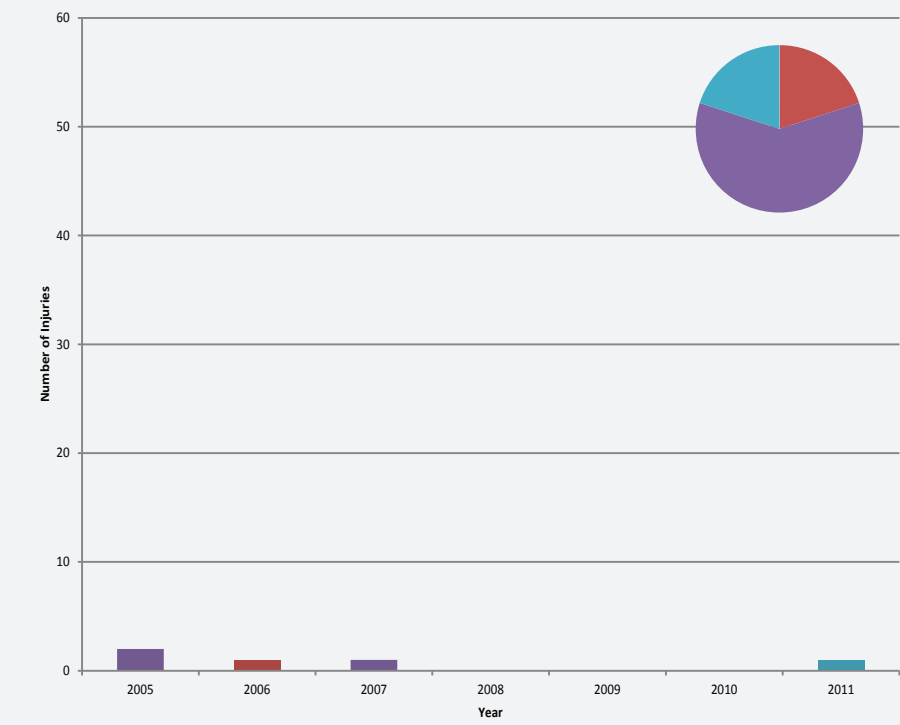
Wade Hampton



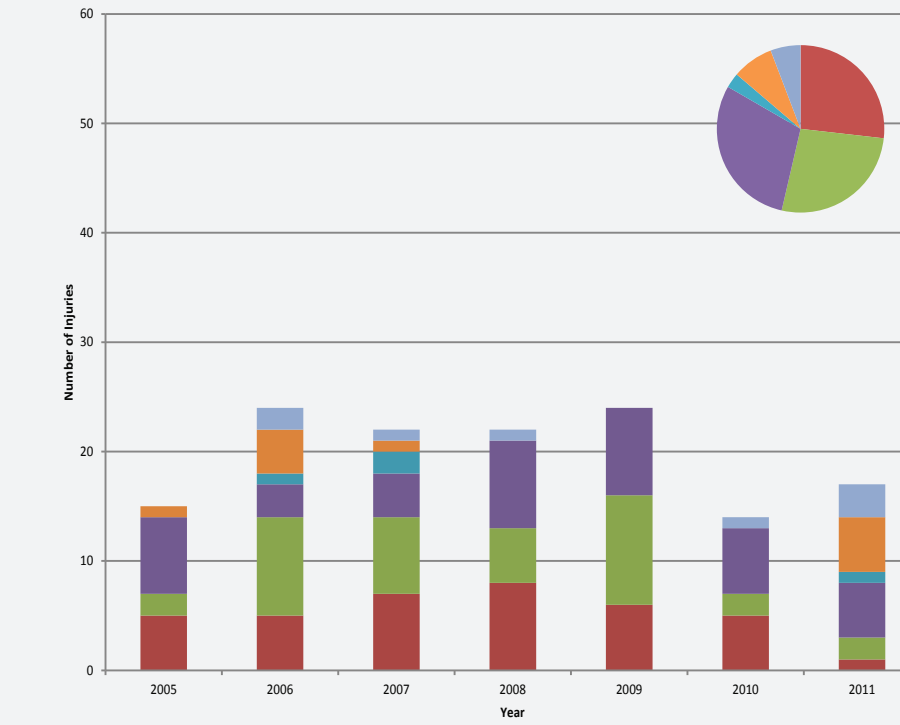
Wrangell-Petersburg



Yakutat Borough



Yukon - Koyukuk



Legend

Census areas with highlighted charts have a high number of injuries and use a y-axis scale of 250 injuries.

- Motor Vehicle
- ATV
- Animal
- Air Transport
- Snow Machine
- Bicycle
- Water Transport

All data from Alaska Trauma Registry

Transportation Injuries in Alaska, 2005-2011

All data from Alaska Trauma Registry

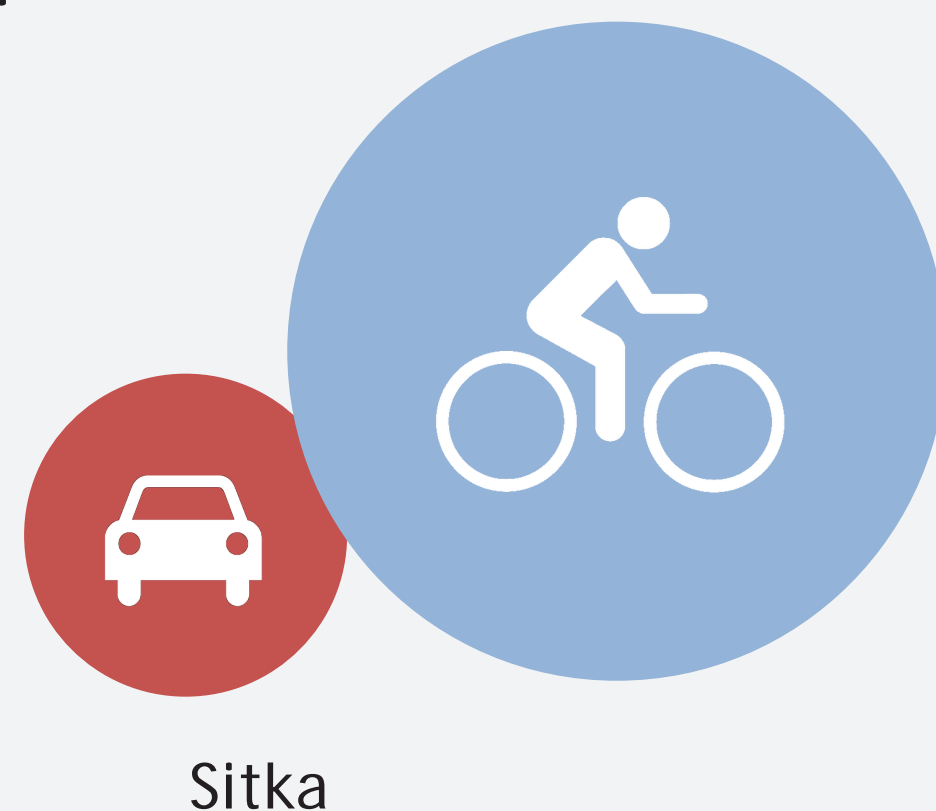
Motors vehicle accidents are the most common type of injury in 14 boroughs and census areas. Following motor vehicle accidents, the second most common type of accidents in these areas include:



Snow machine accidents are the most common type of injury in 4 areas. The second most common type of accident in these areas is **ATV**:



Bicycle accidents are the most common type of injury in 1 area. The second most common type of accident in Sitka is **motor vehicle**:







ATV accidents are the most common type of injury in 9 areas. The second most common type of accidents in these areas include:



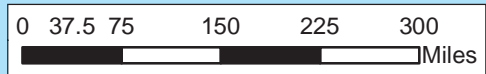
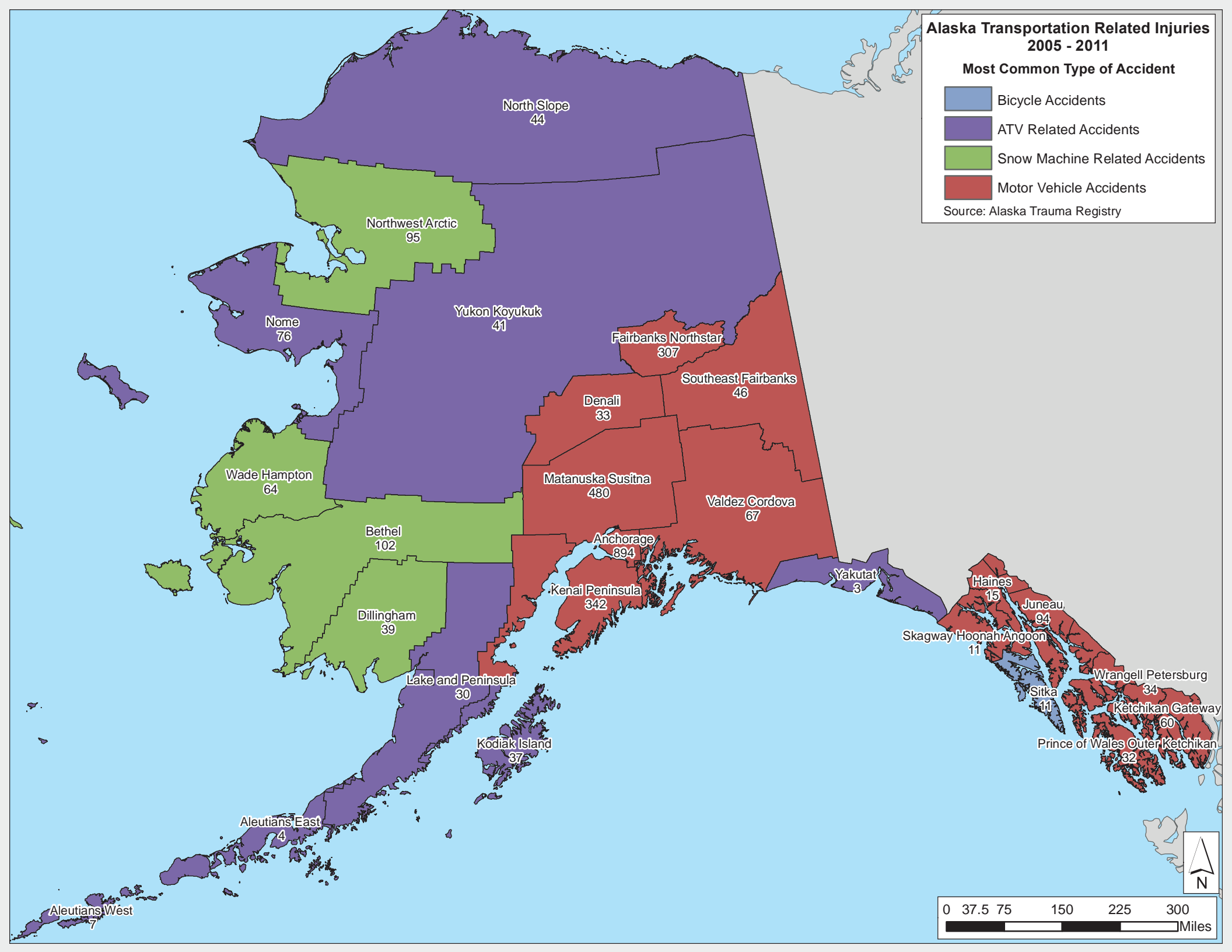
*These boroughs or Census areas have two accident types tied for the second most common type of transportation accident.

Alaska Transportation Related Injuries 2005 - 2011

Most Common Type of Accident

-  Bicycle Accidents
-  ATV Related Accidents
-  Snow Machine Related Accidents
-  Motor Vehicle Accidents

Source: Alaska Trauma Registry





Appendix E

Natural Hazards Vulnerability Technical Report



Alaska Federal Lands Long Range Transportation Plan

Natural Hazard Vulnerability Technical Report

December 2018

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1 INTRODUCTION

Extreme weather, climate change, and other natural hazards significantly affect federal land management agency (FLMA) resources and infrastructure in Alaska. Understanding and preparing for natural hazards is an important part of the long-range transportation planning process and can help FLMAs anticipate and prepare for a number of management options. This technical report supports the 2018 update of the *Alaska Federal Lands Collaborative Long-Range Transportation Plan*. Core participants in the planning effort include the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and the U.S. Forest Service (USFS), with essential support from Alaska Department of Transportation and Public Facilities (Alaska DOT&PF) and the Federal Highway Administration (FHWA) Western Federal Lands Highway Division (WFL).

Alaska experiences a number of environmental hazards that impact transportation infrastructure. These include thawing permafrost, erosion, coastal and riverine flooding, wildfires, volcanic hazards, and seismic events. While climate change exacerbates some of these hazards (e.g., melting sea ice leading to a higher risk of coastal erosion, or warmer temperatures leading to permafrost thaw), others have always been issues in Alaska (e.g., seismic and volcanic events). These natural hazards can severely damage FLMA-owned or managed transportation infrastructure and disrupt access to Federal lands for visitors, industry partners, and communities.

Understanding these risks and potential responses to them – as well as the risks of not responding – can help FLMAs better plan how to build, operate, and maintain their transportation systems in the coming decades.

This technical report includes the following sections:

- An overview of the natural hazards most relevant to FLMAs in Alaska and a discussion of scientific research on expected future trends, where applicable.
- A discussion of the impact of extreme weather and natural hazards on FLMA transportation systems.
- A description of efforts within the state of Alaska to reduce the risks posed by extreme weather and other natural hazards.

2 OVERVIEW OF NATURAL HAZARDS IN ALASKA

2.1 ALASKA'S CHANGING CLIMATE

Many of the natural hazards that affect Alaska are becoming more severe due to a changing climate. Alaska's climate has warmed about twice as rapidly as the rest of the country over the past half century, and average temperatures increased by approximately 0.7°F per decade since the late 1970s.¹ Certain

¹ Markon, C., S. Gray, M. Berman, L. Eerkes-Medrano, T. Hennessy, H. Huntington, J. Littell, M. McCammon, R. Thoman, and S. Trainor, 2018: Alaska. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II*[Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock,

areas of the state have seen even more pronounced warming. For example, Alaska’s North Slope has warmed at 2.6 times the rate of the continental US. The state is also experiencing more frequent extremely hot days and fewer extremely cold days than it did in the past.²

Impacts of a warmer climate in Alaska include earlier spring snowmelt, reduced sea ice, retreating glaciers, thawing permafrost, drier landscapes, and more extensive insect outbreaks and wildfires.³

Related to sea ice, Alaska has experienced the following impacts:

- Since 1979, the annual average Arctic sea ice extent has decreased at a rate of 3.5 to 4.1 percent per decade.⁴
- The 10 lowest September sea ice extents have all occurred in the last 10 years, with the lowest extent in 2012.⁵
- The sea ice melt season (the number of days between the spring melt onset and the fall freeze-up) has lengthened Arctic-wide by five days per decade since 1979, leading to longer open water seasons.⁶

These climate trends are expected to continue in the future. According to the 2018 U.S. National Climate Assessment, by mid-century the highest daily maximum temperatures (the high temperature on the hottest days of the year) are expected to increase by 4°-8°F, and the lowest daily minimum temperatures (the coldest nights of the year) are projected to increase by more than 12°F. The number of nights below freezing is projected to decrease by 20 nights per year statewide, and by greater than 45 nights per year in some coastal areas.⁷

Sea ice melt is expected to continue across the Arctic, and late summers are expected to become nearly ice free this century.⁸ Average annual precipitation is expected to increase across the state, although there will be local and year-to-year variability. Annual maximum one-day precipitation is expected to increase 5-10 percent in southeastern Alaska and more than 15 percent in the rest of the state.⁹

Despite sea ice melt and other factors that increase ocean water volume, sea level rise is not expected to be significant along much of Alaska’s coast because of rising land levels due to isostatic rebound and other tectonic shifts. A 2018 report on sea level rise and storm surge by the National Park Service estimates an average statewide projected sea level rise of 0.28–0.43m by 2100. However, some areas

and B.C. Stewart (eds.)). U.S. Global Change Research Program, Washington, DC, USA, pp. 1185–1241. doi: 10.7930/NCA4.2018.CH26

² Ibid

³ Ibid

⁴ USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp, doi: [10.7930/J0J964J6](https://doi.org/10.7930/J0J964J6)

⁵ Ibid

⁶ Ibid

⁷ Markon et al, 2018

⁸ USGCRP, 2017

⁹ Markon et al, 2018

on the west coast of the state are likely to see sea level rise of 0.6m.¹⁰ Moreover, depending on infrastructure placement and design, even this amount of sea level rise could impact the access to and long-term viability of this infrastructure.

2.2 CLIMATE AND EXTREME WEATHER HAZARDS

Temperature increases, sea ice melt, and changes in precipitation have the potential to affect public lands and transportation systems across Alaska. Overall, the economic costs of these climate impacts will be substantial. The 2018 National Climate Assessment estimates that the cost of reconstruction and replacement of infrastructure damaged by climate impacts will be \$3.7 to \$4.5 billion, while the cost of proactive adaptation will be significantly lower at \$2.0 to \$2.5 billion.¹¹ While these estimates cover the entire state and are broader than the transportation system, some of these infrastructure costs will be borne by Alaska's FLMAs.

The following sections discuss the ways in which climate impacts - including thawing permafrost, erosion, coastal and riverine flooding, and wildfire - will impact transportation systems in Alaska, as well as resources for understanding vulnerabilities and responding to these risks.

2.2.1 Thawing Permafrost

One of the most serious impacts of a changing climate on infrastructure in Alaska is permafrost melt. In areas where soils below the surface remain frozen for all or most of the year, permafrost forms the foundation for structures and infrastructure. Permafrost is thickest in northern Alaska, but is found to some extent beneath about half the state. Permafrost has been warming over the last several decades, and permafrost thaw is occurring in interior and southern Alaska. Permafrost is expected to disappear from 16 to 24 percent of its current extent by the end of the century.¹²

Denali National Park contains some of the southernmost continuous permafrost in Alaska. As of 2010, nearly 45 percent of the park (more than one million hectares) had continuous or discontinuous permafrost. Modeling has shown that due to warming temperatures areas that now are underlain with permafrost would lose permafrost in the next half century, limiting the area of the park in permafrost to six percent by 2060 and less than one percent by 2100.¹³

¹⁰ National Park Service. "Sea Level Rise and Storm Surge Projections for the National Park Service." Natural Resource Report Series NPS/NRSS/NRR—2018/1648. May 2018.

¹¹ Markon et al, 2018

¹² Ibid.

¹³ <https://www.nps.gov/articles/denali-permafrost-landscapes.htm>

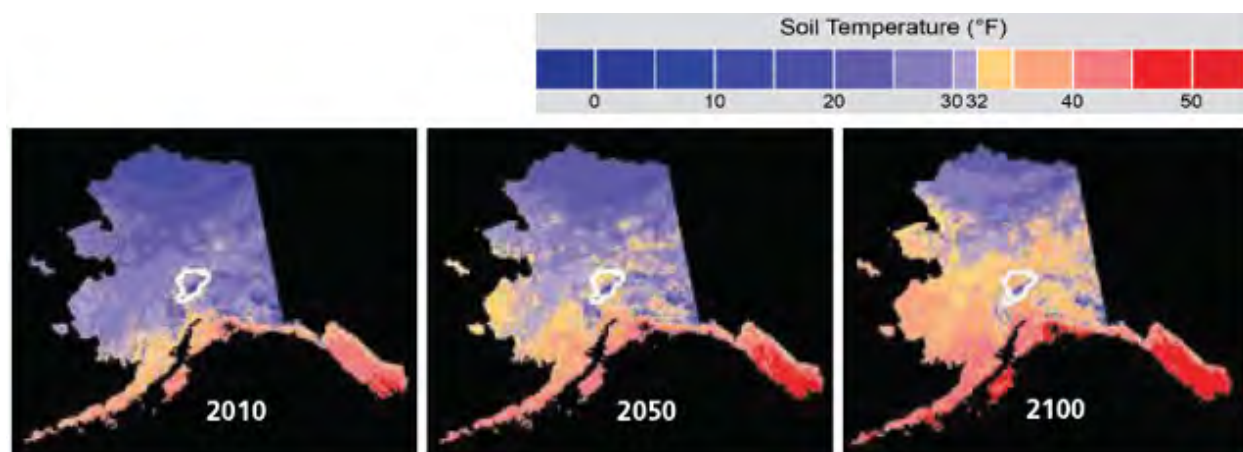


Figure 1: Modeling of present and future soil temperatures for Alaska and Denali, represented by the white outline. Where purple meets yellow, permafrost is at risk of thawing (Source: Denali National Park; <https://www.nps.gov/articles/denali-permafrost-landscapes.htm>)

Permafrost thaw leads to uneven sinking of the ground and the disruption of infrastructure built on permafrost, including roads, airports, and buildings. Permafrost thaw is estimated to significantly add to the cost of maintaining public infrastructure.¹⁴ In 2010, Alaska DOT&PF estimated that its northern region spends over \$10 million annually in maintenance and operations due to thawing permafrost alone.¹⁵

Permafrost thaw affects transportation infrastructure in the following ways:

- Increased highway and airport surface distress, asphalt softening, and traffic-related damage and rutting;
- Increased active layer detachments (slope sloughing and failures);
- Non-level driving surfaces caused by heaving and thawing;
- A need to build thicker embankments over permafrost to prevent the underlying ground from thawing;
- Relocation or reconstruction of some public buildings if their foundations thaw; and
- Frozen ground or ice roads becoming less reliable and available for shorter portions of the year.

One area where permafrost melt is expected to affect FLMA infrastructure is along Denali Park Road in Denali National Park. Denali Park Road is the only road through the park, and landslides or other disruptions due to permafrost thaw can cut off access to parts of the park. In October 2013, the Igloo Creek Landslide blocked a portion of the park road. Park staff estimated that 30,000 cubic yards of rock,

¹⁴ Chapin, F. S., III, S. F. Trainor, P. Cochran, H. Huntington, C. Markon, M. McCammon, A. D. McGuire, and M. Serreze, 2014: Ch. 22: Alaska. Climate Change Impacts in the United States: The Third National Climate Assessment, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 514-536. doi:10.7930/J00Z7150.

¹⁵ Coffey, M. 2010. Impact of Climate Change on Highway/Airport Maintenance in Alaska. Presentation to the American Association of State Highway and Transportation Officials. 2010.

soil (including melting permafrost), and vegetative matter were contained within the slide.¹⁶ Melting permafrost is expected to cause similar disturbances in the future.



Figure 2: Igloo Creek Landslide on Denali Park Road (Source: WFL).

Another piece of critical infrastructure where permafrost thaw poses a risk is the Dalton Highway, which provides access between Fairbanks and Prudhoe Bay. The Dalton Highway is the only roadway connection between the two areas, and provides access to oil extraction areas and for freight shipments, worker transportation, and tourism. As part of a FHWA study, WFL and the FHWA headquarters office evaluated permafrost thaw rates on a section of the Highway (miles 9-11) and the potential for settlement upon thawing.¹⁷ The majority of the Dalton Highway, including the case study segment, is gravel and requires extensive maintenance to keep the road operational. Increasing



Figure 3: Dalton Highway roadway near the case study location (Source: WFL).

temperatures and permafrost thaw are likely to increase maintenance costs over time. As a result, Alaska DOT&PF is interested in strategies that can reduce the vulnerability of the road to permafrost thaw.

2.2.2 Erosion

Sea ice melt and permafrost thaw are leading to increased erosion in coastal and riverine areas of Alaska. Coastal erosion accelerates when shorelines are

¹⁶ Federal Highway Administration, Western Federal Lands Highway Division. Alaska Climate Trend Vulnerability Study. 2016. https://www.fhwa.dot.gov/environment/sustainability/resilience/pilots/2013-2015_pilots/alaska/final_report/index.cfm

¹⁷ Ibid

exposed due to thawing sea ice, increased storm and wave activity, or rising sea levels. In addition, coastal bluffs that were “cemented” by permafrost are beginning to thaw in response to warmer air and ocean waters, and are therefore more vulnerable to erosion.¹⁸

Warming can exacerbate river-based shoreline erosion due to increased intensity and speed of the spring thaw period and the resulting surges of stream activity, which can lead to flooding. Increased storm frequency and precipitation levels can also accelerate stream bank erosion.



Figure 4: Aerial photo of the City of Kivalina, Kivalina Airport, and previous shoreline protection efforts (Source: WFL).

Many communities across Alaska, including those near FLMA units, are experiencing the effects of erosion. In the most extreme cases, serious erosion threatens the viability of the community; some communities have even relocated or are considering relocating due to these risks. In other cases, substantial resources are spent to combat erosion, whether that is through repairing infrastructure or buildings or moving specific structures. Transportation infrastructure in close proximity to coastal and riverine areas is likely to experience increased risks due to erosion, such as damage to the structural integrity of roads or an accelerated degradation of infrastructure.

For example, Kivalina Airport on the coast of the Chukchi Sea in northwest Alaska is vulnerable to coastal hazards and erosion. The airport is owned and maintained by Alaska DOT&PF, and WFL and partners evaluated its vulnerability as part of an FHWA-funded pilot project.¹⁹ The town of Kivalina and the airport are located on a narrow spit of land bounded by the Kivalina Lagoon and the Chukchi Sea. The airport provides the only year-round access to the town for supplies and passengers. Erosion has been an issue in the town, including at the airport, since the 1990s, and several shore protection efforts have been implemented. Residents of the community have also considered relocating. Wind, decreasing sea ice extent, and sea level rise are all expected to increase erosion at the airport, and WFL and partners are studying a number of adaptation strategies for the airport.²⁰

There is not recent, detailed data on which FLMA units in Alaska are at risk for erosion. In 2009, the U.S. Army Corps of Engineers (USACE) published the Alaska Baseline Erosion Assessment, Study Findings and

¹⁸ Chapin et al, 2014

¹⁹ FHWA Alaska Climate Trend Vulnerability Study, 2016

²⁰ Ibid.

Technical Report.²¹ The assessment identifies communities facing erosion risks, and categorizes communities based on the severity of the risk. The assessment designated 26 communities as “priority action communities,” indicating that they should be considered for immediate action by either initiating an evaluation of potential solutions or continuing with ongoing efforts to manage erosion. Sixty-nine communities where erosion problems are present, but not significant enough to require immediate action, were designated “monitor conditions communities.” Eighty-three communities where minimal erosion-related damages were reported or would not be expected in the foreseeable future were designated “minimal erosion communities.” Of the communities that USACE evaluated, 63 were in or within five miles of an FLMA unit. Of these, 15 were priority action communities, 24 were monitor condition communities, and 24 were minimal erosion communities (see Figure 5).

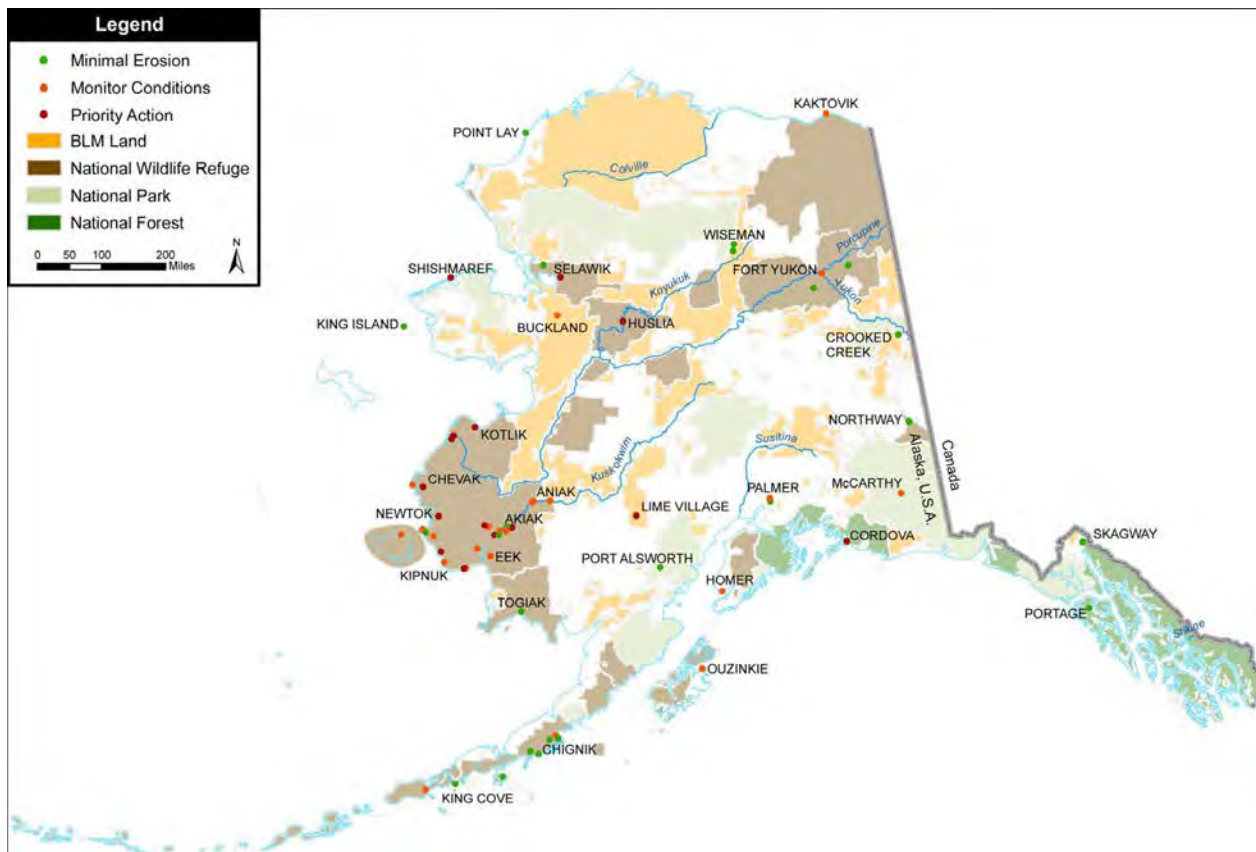


Figure 5: Communities at risk of erosion within five miles of an FLMA (Source: U.S. Army Corps of Engineers, Alaska Baseline Erosion Assessment (2009)).

²¹ U.S. Army Corps of Engineers. Alaska Baseline Erosion Assessment: Study Findings and Technical Report. March 2009. <http://www.poa.usace.army.mil/Portals/34/docs/civilworks/BEA/AlaskaBaselineErosionAssessmentBEAMainReport.pdf>

2.2.3 Flooding

Flooding in Alaska is caused by a number of factors, many of which are becoming more severe due to climate change. Most commonly, heavy rainfall and runoff lead to flooding in the late summer and fall.²² In parts of Alaska, including the southeast coast, precipitation is expected to increase in the future, which may make this type of flooding more prevalent.

Flooding due to snowmelt typically occurs in the spring, and can be exacerbated by rainfall and melting glacial ice. Faster spring thaws are becoming more common. For example, in 2012 and 2013 Alaska's riverine communities experienced two of the fastest thaws on record, leading to severe flooding.²³

Coastal flooding may occur due to storm surges, and can be exacerbated by erosion and sea level rise. Most coastal flooding in Alaska occurs in the late summer or early fall; as ice forms along the coast before winter, the risk of coastal flooding declines.²⁴ Storm surge is difficult to model for Alaska because of a lack of historical tide gauge data. In addition, sea ice along the coastline can help mitigate the impact of storm surge, but as this sea ice melts coastal areas may no longer have this protection.²⁵

Coastal and riverine flooding – whether caused by heavy precipitation, sea level rise, storm surge, or snowmelt – can cause temporary disruption or long-term damage to transportation infrastructure through road washouts and overtopping of bridges and culverts. The cumulative effect of smaller, more frequent precipitation events can also cause increased structural vulnerability and damage to transportation infrastructure.

Several resources are available to help agencies assess the risks of flooding on transportation infrastructure. Although these resources have not been tested in Alaska, they may provide a useful starting point for agencies to assess risk. The FHWA [Hydraulic Engineering Circular No. 17](#), 2nd Edition: Highways in the River Environment provides technical guidance and methods for assessing the vulnerability of transportation facilities to extreme events and climate change in riverine environments. Similarly, the FHWA [Hydraulic Engineering Circular No. 25](#), Volume 2: Highways in the Coastal Environment details methods for assessing the vulnerability of coastal transportation facilities to extreme events and climate change. FLMA resources include the Forest Service [Storm Damage Risk Reduction Guide for Low-Volume Roads](#) and the FWS [Roadway Design Guidelines](#).

2.2.4 Wildfires

Wildfire activity in Alaska has increased in recent decades in both boreal forest and Arctic tundra environments. Wildfires are expected to increase through the end of the century due to warmer and drier conditions in interior Alaska and thawing permafrost. The total burned area in the state is expected to increase by 25-50 percent by 2100.²⁶ While wildfires in many remote areas of Alaska currently burn

²² Alaska Department of Military and Veterans Affairs. State of Alaska Hazard Mitigation Plan. March 2013. <http://ready.alaska.gov/plans/documents/Alaska%20HMP%202013%20reduced%20file%20size.pdf>

²³ Ibid

²⁴ Ibid

²⁵ National Park Service. "Sea Level Rise and Storm Surge Projections for the National Park Service." Natural Resource Report Series NPS/NRSS/NRR—2018/1648. May 2018.

²⁶ USGCRP, 2017

undetected or without the need for fire suppression, the increasing number and severity of wildfires increases the likelihood that they will occur near populated areas.

The thick smoke from wildfires is a risk to human health, and also temporarily disrupts visibility for vehicles and airplanes. Extensive wildfires can also change ecosystems and habitats.

2.3 GEOLOGIC HAZARDS

In addition to these risks caused by extreme weather, other natural hazards – including geologic hazards – pose a risk to Alaska’s public lands and transportation systems.

2.3.1 *Volcanoes*

An average of one to two volcanic eruptions per year occurs in Alaska, and the state has over 50 active volcanoes. In 1912, the largest eruption of the 20th century occurred at Novarupta and Mount Katmai, located in what is now Katmai National Park and Preserve on the Alaska Peninsula.²⁷

Volcanoes in Alaska have the potential to temporarily or permanently displace entire communities and disrupt all modes of travel. Specific to transportation infrastructure, volcanic ash can damage or collapse structures, and can be a significant hazard to aircraft and maritime vessels. Volcanoes can also lead to debris avalanches, mudflows (lahars), and debris flows, all of which can damage transportation infrastructure.²⁸

Volcanic ash can damage aircraft engines, and as a result a volcanic eruption can ground flights and lead to major travel and tourism impacts. For example, the 2010 Eyjafjallajökull volcanic eruption in Iceland resulted in a major disruption in air traffic across many European countries for a week. The effects of the closures led to flight cancellations worldwide, and many tourists were stranded for weeks or cancelled their trips. In Alaska, where air travel is the primary way to access many communities, such a disruption could cut off travel in and out of these areas. In early 2006, Mt. Augustine in the Cook Inlet in south central Alaska erupted and blew ash into the air, which led to flight cancellations.

²⁷ Alaska Hazard Mitigation Plan, 2013

²⁸ Ibid

One resource in assessing the risks of volcanic activity is the [Alaska Volcano Observatory](#), a joint program of the United States Geological Survey, the Geophysical Institute of the University of Alaska Fairbanks, and the State of Alaska Division of Geological and Geophysical Surveys. The Volcano Observatory conducts monitoring and other scientific investigations in order to assess the nature, timing, and likelihood of volcanic activity. It also assesses volcanic hazards associated with anticipated activity, including kinds of events, their effects, and areas at risk, and provides warnings of impending dangerous activity, to local, state, and federal officials and the public.²⁹

2.3.2 Earthquakes

Alaska is one of the most seismically active regions in the world, and 11 percent of the world's earthquakes occur in the state.

Earthquakes of magnitude 7 or greater occur in Alaska on average of about once a year; magnitude 8 earthquakes occur on average once every 13 years.³⁰ The majority of earthquakes occur in the southern part of Alaska or in the Aleutian Islands, although they can occur anywhere in the state.

The majority of earthquakes in Alaska are low consequence events, with minimal damage to communities and infrastructure. However, low probability, high consequence earthquakes may cause significant damage to infrastructure and structures, as well as loss of life. Damage to transportation infrastructure due to earthquakes can be caused by surface faulting, liquefaction, or landslides.³¹ In addition, permafrost melt increases liquefaction potential, so these hazards are interrelated. Pacific earthquakes can also cause tsunamis, which can impact coastal areas. Earthquakes can also cause dam or levee failure and lead to flooding.

The most powerful earthquake ever recorded in the United States, and the second largest worldwide, occurred in the Prince William Sound region of Alaska in 1964. The magnitude 9.2 earthquake was accompanied by massive tsunamis, and led to 131 deaths and \$2.3 billion in property loss.³² In



Figure 6: Damage at the waterfront in Kodiak after the 1964 earthquake and tsunami (Source: Alaska Hazard Mitigation Plan, 2013).

²⁹ Alaska Volcano Observatory. "About AVO." <https://www.avo.alaska.edu/about/index.php>

³⁰ Alaska Hazard Mitigation Plan, 2013

³¹ Ibid

³² U.S. Geological Survey. "The Great M9.2 Alaska Earthquake and Tsunami of March 27, 1964." <https://earthquake.usgs.gov/earthquakes/events/alaska1964/>

November 2018, a 7.0 magnitude earthquake occurred near Anchorage³³, and caused major damage to property and transportation infrastructure in the area.

2.4 SUMMARY OF NATURAL HAZARDS IN ALASKA

The following table summarizes the natural hazards discussed in the previous sections. In addition to describing the hazards and discussing the implications for transportation systems on federal lands, the table provides links to resources for those looking to learn more or access data.

Hazard	Description	Resources for More Information	Implications for Federal Lands Transportation
Thawing permafrost	Warming of previously permanently frozen soils below the surface, leading to freeze-thaw cycles or permanent thawing.	<ul style="list-style-type: none"> • National Climate Assessment • Alaska Climate Science Center • FHWA Alaska Climate Trend Vulnerability Study 	Travel on and access to roads, airports, and other infrastructure built on permafrost could be disrupted, or the infrastructure could be permanently damaged. FLMAs may need to conduct more frequent maintenance on infrastructure built on permafrost or consider relocating facilities.
Erosion	Coastal or riverine shoreline erosion.	<ul style="list-style-type: none"> • National Climate Assessment • FHWA Alaska Climate Trend Vulnerability Study 	Transportation infrastructure in close proximity to coastal and riverine areas may face risks such as damage to the structural integrity of roads or an accelerated degradation of infrastructure. Infrastructure vulnerable to erosion may require more frequent repair and maintenance, or relocation. Access to communities and FLMA units vulnerable to erosion may be disrupted.

³³ U.S. Geological Survey. “2018 Anchorage Earthquake.” <https://www.usgs.gov/news/2018-anchorage-earthquake>

Hazard	Description	Resources for More Information	Implications for Federal Lands Transportation
<p>Flooding</p>	<p>Coastal or riverine flooding due to heavy precipitation, snowmelt, or storm surge.</p>	<ul style="list-style-type: none"> • Alaska Hazard Mitigation Plan • FHWA Hydraulic Engineering Circular No. 17: Highways in the River Environment • FHWA Hydraulic Engineering Circular No. 25: Highways in the Coastal Environment • Forest Service Storm Damage Risk Reduction Guide for Low-Volume Roads • FHWA Emergency Relief Program and Emergency Relief for Federally Owned Roads • Federal Emergency Management Agency Flood Hazard Mapping 	<p>Flooding can cause temporary disruption or long-term damage to transportation infrastructure through road washouts and overtopping of bridges and culverts. The cumulative effect of smaller, more frequent precipitation events can increase the structural vulnerability of transportation infrastructure.</p>
<p>Wildfires</p>	<p>Wildfires may occur in both boreal forest and Arctic tundra environments. Wildfires in remote areas may burn undetected, while wildfires near more populated or heavily visited areas may require fire suppression.</p>	<ul style="list-style-type: none"> • National Climate Assessment • Alaska Hazard Mitigation Plan • Active Fire Information – Incident Information System 	<p>Thick smoke from wildfires can temporarily disrupt visibility for vehicles and airplanes. Extensive wildfires can also threaten safety, damage or destroy structures, and change ecosystems and habitats.</p>
<p>Volcanic Hazards</p>	<p>Volcanoes can lead to risks such as volcanic ash, debris avalanches, mudflows (lahars), and debris flows.</p>	<ul style="list-style-type: none"> • Alaska Hazard Mitigation Plan • Alaska Volcano Observatory 	<p>Volcanoes may temporarily or permanently displace entire communities, damage infrastructure, and disrupt all modes of travel. Volcanic ash can damage or collapse structures, and can be a significant hazard to aircraft and maritime vessels.</p>

Hazard	Description	Resources for More Information	Implications for Federal Lands Transportation
Earthquakes	Earthquake damage can be caused by surface faulting, liquefaction, landslides, or subsequent tsunamis. Thawing permafrost increases liquefaction potential.	<ul style="list-style-type: none"> • Alaska Hazard Mitigation Plan • USGS Earthquake Hazards Program • National Tsunami Hazard Mitigation Program 	Severe earthquakes may cause significant damage to infrastructure and structures, as well as loss of life. Pacific earthquakes can also cause tsunamis, which can impact coastal areas.

3 IMPACT OF NATURAL HAZARDS ON FLMA TRANSPORTATION SYSTEMS

The extreme weather and geologic hazards discussed above have the potential to affect FLMA transportation systems. The following sections provide a high-level overview of ways in which these hazards may impact FLMA visitation, infrastructure, operations and maintenance activities, planning of future infrastructure projects, and safety and emergency response. They also discuss some strategies that FLMAs can pursue to address these risks, and resources that provide information on adapting and building resilience to extreme weather and other natural hazards.

3.1 VULNERABILITY OF EXISTING TRANSPORTATION INFRASTRUCTURE

Erosion, permafrost melt, and flooding are likely to damage existing FLMA transportation infrastructure, including roads, bridges, and parking lots. Facilities that provide access to FLMA units, including access roads and airports, may also face damage due to these natural hazards. While most infrastructure affected by these hazards will be only temporarily impacted and be able to be repaired, some infrastructure may be permanently damaged or become unusable.

To understand these impacts, FLMAs could identify which of their assets lie in areas vulnerable to permafrost melt or erosion, which are two of the hazards that are most likely to cause permanent damage to transportation infrastructure. They could also identify which access routes are vulnerable, and if there are alternate routes or alternate modes of transportation if these access routes become damaged and are temporarily or permanently unusable. To address these vulnerabilities, agencies could identify adaptation strategies to harden existing infrastructure, such as shoreline protection infrastructure or changing pavement types.

Geospatial analysis can help identify the vulnerability of critical assets. Geospatial analytics allows a determination of high risk facilities using maps that show areas at risk for natural hazards such as permafrost loss, wildfires, floods, and seismic activity. The data gathered from these analyses can be used to bolster agency facility risk data.

A number of resources can help FLMAs in Alaska identify and rank vulnerabilities to natural hazards and extreme weather. These include:

- The FHWA [Vulnerability Assessment and Adaptation Framework](#) provides transportation agencies and their partners with an in-depth and structured process for assessing vulnerabilities to extreme weather and climate effects and for identifying ways to protect, preserve, and improve transportation assets and services. The [Alaska Vulnerability Assessment pilot project](#) was a joint effort by Alaska DOT&PF and FLMAs to look at the vulnerability of three transportation projects to climate risks: thawing permafrost on the Dalton Highway, storm damage at an airport in Kivalina, and landslide risk along Denali Park road.
- NPS partnered with the Program for the Study of Developed Shorelines at Western Carolina University to create a [Coastal Hazards and Climate Change Asset Vulnerability Assessment Tool](#).³⁴ This tool establishes a standard methodology and set of best practices for conducting vulnerability assessments in the built environment. The assessments are currently focused on assets at risk to coastal hazards and sea-level rise within coastal parks. Assessments using this methodology have been done at several national parks, including Sitka National Historical Park in Alaska.
- The Forest Service has conducted a series of vulnerability assessments that bring together scientific research and observations from multiple disciplines to identify and quantify the expected impacts of climate change.³⁵ Results of these assessments are summarized in National Climate Vulnerability Assessment Story Map³⁶, which includes interactive maps for each Forest Service region that allow users to see specifics of various vulnerability assessment projects and filter information by 13 different resource topic areas.
- The Forest Service Climate Change and Transportation Resiliency Guidebook aims to provide the field with a process to assess and address climate change impacts on Forest Service transportation assets at the local and regional levels. The Guidebook provides information and resources on identifying climate vulnerabilities within the forest service transportation network, reducing transportation vulnerability, and linking climate change preparedness with existing Forest Service programs and funding sources.
- FLH is partnering with NPS and FWS to conduct a statewide, asset-level vulnerability assessment. This effort is in progress.

3.2 MAINTENANCE AND OPERATIONS NEEDS

FLMA transportation assets may need more intensive maintenance due to extreme weather and other natural hazards. For example, coastal roads, parking lots, bridges, and trails may need to be more frequently maintained due to erosion, permafrost thaw, and storm surge. Increased flooding and erosion may also lead to increased soil and waste deposition, which will necessitate more regular cleaning for roadways, culverts, and other draining systems. Culverts and other drainage systems may

³⁴ National Park Service. "Climate Change Vulnerability and Adaptation." Updated September 10, 2018.

<https://www.nps.gov/subjects/climatechange/vulnerabilityandadaptation.htm>

³⁵ U.S. Forest Service. "Vulnerability Assessments." <https://www.fs.fed.us/managing-land/sc/vulnerability-assessments>

³⁶ [Ibid](#)

also be undersized for the magnitude of precipitation and extreme storms expected in the future, leading to the need for more frequent maintenance.

FLMAs and transportation agencies may also need to adjust their maintenance activities in some of the following ways to address these hazards:³⁷

- Increasing regular maintenance activities, such as cleaning debris out of culverts and storm drains to allow more water to flow when increased precipitation and flooding occurs.
- Planning for workforce needs, including taking into consideration increased maintenance needs due to extreme weather, and changing seasonal maintenance patterns.
- Budgeting for operations and maintenance in a way that takes into account extreme weather and climate change.
- Determining future maintenance needs and methods in a way that considers expected future conditions, including those related to pavement rehabilitation, bridge maintenance, construction and maintenance work timelines and timeframes, and vegetation control.

3.3 ADAPTATION STRATEGIES AND IMPLICATIONS FOR FUTURE INFRASTRUCTURE PROJECTS

Taking expected extreme weather impacts into account when planning new transportation infrastructure can help ensure that the infrastructure is built to last. This planning could involve not building in vulnerable areas, such as areas vulnerable to erosion, or designing projects in a way that increases system redundancy, for example by providing an alternate route to an FLMA unit.

When designing new infrastructure, it is important to consider the life span of the asset and the expected climate conditions during that timeframe. Investment analysis should occur throughout the asset life cycle to ensure that infrastructure remains in acceptable condition throughout its useful life. Adjusting project design to account for expected future conditions (for example, by building larger culverts to accommodate expected increases in precipitation) can reduce the risk of a project. Considering the costs and benefits of inaction and adaptation can help agencies weigh whether designing more resilient infrastructure is worth it for them.

In addition, changing conditions may reduce the expected life span of an asset, so agencies should consider how to account for this in their asset management programs. A risk-based asset management system can help agencies anticipate and effectively respond to extreme weather events and climate threats.³⁸ Such a system helps transportation agencies evaluate the costs of managing an asset over its entire life cycle, with the goal of minimizing costs while preserving or improving the condition of the asset.

FLMAs may also need to consider relocating existing infrastructure in response to changes to natural features such as retreating glaciers. For example, Mendenhall Glacier is retreating and will likely not be visible from the existing visitor center by the middle of this century. The Forest Service is developing plans to build a new visitor center near the location of the current one, and considering opportunities to

³⁷ Federal Highway Administration. Vulnerability Assessment and Adaptation Framework, 3rd Edition. 2017. https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/index.cfm

³⁸ Ibid

implement a mobile interpretive center and ferry service that will allow visitors to get close to the glacier in its new location.³⁹

Several resources can help Alaska FLMAs take into account expected future climate impacts in project design. FHWA's [Transportation Engineering Approaches to Climate Resiliency \(TEACR\) Study](#) aims to develop recommended engineering practices for identifying and evaluating project-level vulnerabilities from future extreme weather events, and designing solutions to respond and adapt to those vulnerabilities. The project includes a series of engineering assessments relating to coastal impacts, pavement and geotechnical analysis, and economic analysis. One project involves a study of permafrost thaw and roadway embankment design along a stretch of the Dalton Highway in Alaska.

NPS has published a [Coastal Adaptation Strategies Handbook](#) that summarizes the state of NPS climate adaptation and key approaches to guide adaptation planning in coastal parks.⁴⁰ A series of case studies from 24 coastal adaptation efforts in 15 states detail actions that coastal parks are taking to prepare for and respond to climate change.⁴¹ The Forest Service report [Storm Damage Risk Reduction Guide for Low-Volume Roads](#) discusses treatments to existing low-volume roads that can reduce the potential for resource impacts and damage or failure of a road feature or road system resulting from storm events. These treatments can reduce the risk of future damage, reduce the magnitude of damage that occurs when major storms occur, add redundant systems to protect roads receiving less frequent maintenance, and improve hydraulic efficiency and resilience of existing road drainage features.⁴²

3.4 SAFETY AND EMERGENCY RESPONSE

Many of the natural hazards discussed above have the potential to negatively affect safety in FLMA units. Geologic hazards such as earthquakes and volcanoes as well as climate impacts such as increased flooding, wildfires, and landslides will likely result in more frequent closures of area resources. Such events are likely to threaten human safety and health, particularly in remote areas that are less accessible to emergency responders. Land and infrastructure owners will need to develop emergency response plans for various impact scenarios that will allow for critical amenities and infrastructure to remain available during extreme events, as well as plans for how to respond when extreme weather events and other natural hazards threaten visitor and staff safety.

FLMAs can take steps to make visitors aware of emergency procedures, including those resulting from natural hazards. FLMAs and DOTs can post signage and maps to communicate alternate and safe access routes in the event of emergency events. They can also use other types of warning systems such as alarms or announcements to help keep visitors safe and informed during events and avoid damage to threatened infrastructure. FLMAs can also work with real-time travel information providers to disseminate information about road closures and safety advisories.

³⁹ Mendenhall Glacier Recreation Area/Visitor Center: Planning Efforts. <http://mgra-mgvc.us/>

⁴⁰ National Park Service. Coastal Adaptation Strategies Handbook. 2016.

<https://www.nps.gov/subjects/climatechange/coastalhandbook.htm>

⁴¹ National Park Service. Coastal Adaptation Strategies: Case Studies. September 2015.

<https://www.nps.gov/subjects/climatechange/coastaladaptationstrategies.htm>

⁴² U.S. Forest Service. Storm Damage Risk Reduction Guide for Low-Volume Roads. October 2015.

<https://www.fs.fed.us/t-d/pubs/pdfpubs/pdf12771814/pdf12771814dpi100.pdf>

3.5 CHANGING SEASONAL TRAVEL AND TOURISM PATTERNS

A warmer climate, melting sea ice, and longer summers may lead to changing travel and tourism patterns. The summer season during which FLMA units get the majority of their tourists will likely lengthen into the spring and fall. This may lead to more tourists or the same number of visitors spread out over a longer period of time. For parks that are accessed primarily by boat, less sea ice may make it easier for visitors to access the parks for more of the year.

A warmer climate also means that locations that are now accessed by ice roads for winter travel may be inaccessible by car or truck for more of the year in the future. Changing conditions and shorter seasons for other winter activities, such as snowmobiling or ice fishing, may also reduce tourism during the winter season.

Climate change may also impact the natural features that draw many visitors to Alaska's FLMA units. For example, with glaciers disappearing or declining in size, fewer visitors may want to visit the public lands that currently have significant glaciers; visitor centers built for glacier viewing may decline in popularity as glaciers retreat.

These changing seasonal travel and tourism patterns may lead to more intensive use of resources and infrastructure, and a need for FLMAs to change operations and maintenance patterns. For example, if visitors are spread out over a longer portion of the year, FLMA units may choose to hire seasonal workers for longer periods of time, affecting budgets and the ability to attract qualified employees. Shorter winters and demand from visitors may allow parks to open roads or boat docks earlier in the season, leading to changing timeframes for maintenance on these facilities.

4 NATURAL HAZARD RISK REDUCTION IN ALASKA

Within the state of Alaska, a number of research projects and initiatives are being undertaken to build the resilience of the State's infrastructure and resources to natural hazards. The following section discusses efforts by the state government as a whole and Alaska DOT&PF in particular, as well as research efforts undertaken in Alaska that can help agencies understand risks from natural hazards and develop strategies to reduce those risks.

4.1 STATE GOVERNMENT EFFORTS

In 2007, the Alaska Governor created the Climate Change Sub-Cabinet to advise the Office of the Governor on the preparation and implementation of an Alaska climate change strategy. Information about the sub-cabinet and related efforts can be found on the [Climate Change in Alaska](#) web page.⁴³

In November 2017, Alaska Governor Bill Walker signed [Administrative Order 289](#), which established an Alaska Climate Change Strategy and a Climate Action for Alaska Leadership Team to develop a recommended plan of action.⁴⁴ The Strategy focuses on mitigation, adaptation, research, and response.

⁴³ Alaska Department of Environmental Conservation. "Climate Change in Alaska."
<http://climatechange.alaska.gov/>

⁴⁴ Office of Governor Michael J. Dunleavy. Administrative Order No. 289. October 31, 2017.
<https://gov.alaska.gov/admin-orders/administrative-order-no-289/>

The order also calls for State departments to review their previous work on climate change and identify immediate adaptation and response actions they can take.⁴⁵

Alaska's Hazard Mitigation Plan provides information about natural and other hazards in Alaska and strategies that the state is pursuing to mitigate or lessen the impacts of these hazards. The plan is developed as a partnership between local government, Alaska Division of Homeland Security and Emergency Management, the Federal Emergency Management Agency (FEMA), and other State and Federal agencies.⁴⁶

4.2 ALASKA DOT&PF

Alaska DOT&PF is addressing the risks that extreme weather poses to the state's transportation system through its long range transportation plan and asset management plan. The long range transportation policy plan, Let's Keep Moving 2036, discusses climate trends and risks. The plan states that climate change will increase infrastructure vulnerability, but it may also increase development opportunities in the Arctic Ocean. To address these risks, Alaska DOT&PF includes policy statements that emphasize monitoring climate trends and their impacts on transportation infrastructure, and incorporating these impacts into project design, asset management, construction and maintenance. For example, an action from the Safety and Security policy goal area of the plan is to, "Address lack of redundancy and climate change resiliency in asset management plans, project identification, and prioritization within area, corridor and metropolitan plans."

Alaska DOT&PF's [asset management plan](#) also discusses how changes in precipitation and temperature are likely to affect asset management. It states that construction costs will be higher to maintain frozen permafrost as temperatures rise, and maintenance and operations costs will increase if the warming trend continues. For example, in 2015 the Dalton Highway had major flooding due to ice build-up that caused water to flow over the highway, and spring breakup caused another round of flooding that washed away sections of the gravel road. This flooding caused road closures and resulted in \$17 million in emergency repairs. Alaska DOT&PF expects similar and worsening impacts in the future.

4.3 RESEARCH EFFORTS

The [Alaska Climate Science Center](#) (AK CSC) – one of eight climate science centers managed by the United State Geological Survey – is located at the University of Alaska Fairbanks and works to provide managers with the tools and information they need to develop and execute management strategies that address the impacts of climate change on natural and cultural resources.⁴⁷ The AK CSC has a number of research projects relevant to FLMA's in Alaska, including climate modeling, methods to assess the vulnerability of species, habitats, and human communities, and decision support tools.

The US Army Corps of Engineers (USACE) [Cold Regions Research and Engineering Laboratory \(CRREL\)](#) aims to solve scientific and engineering challenges in cold and complex environments through

⁴⁵ Office of Governor Michael J. Dunleavy. Administrative Order No. 289. October 31, 2017. <https://gov.alaska.gov/admin-orders/administrative-order-no-289/>

⁴⁶ Alaska Hazard Mitigation Plan, 2013.

⁴⁷ Alaska Climate Adaptation Science Centers. <https://csc.alaska.edu/about>

effective, interdisciplinary solutions. Laboratory's work includes: research and experimental engineering reports; state-of-the-art review papers; and other specialized publications.⁴⁸ The CRREL project office in Fairbanks focuses on permafrost research.

The [Scenarios Network for Alaska and Arctic Planning \(SNAP\)](#), part of the University of Alaska Fairbanks, works to develop and communicate plausible scenarios for potential conditions in an evolving climate. SNAP has produced a number of research studies and datasets relevant to FLMA in Alaska. They have also developed analysis tools that allow researchers and members of the public to view and explore data on topics such as wildfires, climate projections, precipitation, historical and modeled sea ice, and extreme weather.⁴⁹ One project, in partnership with the Wilderness Society, involved creating climate change summary reports for each national park in Alaska, including projected changes in temperature and precipitation.⁵⁰

Denali National Park has undertaken several recent studies related to natural hazards and climate impacts. In November 2016, Denali conducted a multi-hazard risk assessment that analyzed and prioritized a wide range of geological, infrastructure, maintenance, and management risks that may impact the Denali Park Road in the future. The park also conducted an analysis of geographic hazards focused on unstable slopes, using the Unstable Slope Management Program (USMP) rating criteria.⁵¹ The park ranked 141 sites along the 92 mile park road, and found that 24 percent were in poor condition based on the rating criteria. The park used the results of this analysis to inform its long-range transportation plan, which was published in draft form in August 2017.

The Forest Service produced the "Climate Change Vulnerability Assessment for Aquatic Resources in the Tongass National Forest."⁵² The assessment looked at the vulnerability of five resources: snow, ice, water features, riparian vegetation, and fish species. The study assessed resource vulnerability by considering exposure to climate change (in particular snowpack, precipitation, water temperature, and fish), sensitivity to climate and non-climate stressors, and adaptive capacity. The results of the assessment can be used to help guide and support managers or planners in 1) identifying which aquatic resources are likely to be most affected by changing climate conditions; 2) improving understanding as to why those resources are likely to be vulnerable; and 3) provide insights into potential management actions.

⁴⁸ U.S. Army Corps of Engineers. Cold Regions Research and Engineering Laboratory.

<http://www.erdc.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/476744/cold-regions-research-and-engineering-laboratory/>

⁴⁹ Scenarios Network for Alaska and Arctic Planning (SNAP). Analysis Tools. <https://www.snap.uaf.edu/tools-and-data/all-analysis-tools>

⁵⁰ Scenarios Network for Alaska and Arctic Planning (SNAP). Climate change summary reports for National Parks, Preserves and Monuments. <https://www.snap.uaf.edu/projects/summary-reports>

⁵¹ National Park Service. Denali National Park and Preserve Long Range Transportation Plan. 2018.

<https://parkplanning.nps.gov/document.cfm?documentID=82607>

⁵² EcoAdapt. A Climate Change Vulnerability Assessment for Aquatic Resources in the Tongass National Forest. November 2014.

http://ecoadapt.org/data/documents/EcoAdapt_Tongass_VulnerabilityAssessmentReport_FINAL_22Nov214_small_res.pdf



Appendix F

Risk Assessment Workshop





Alaska Federal Land Management Agency
Collaborative Long Range Transportation Plan
Risk Assessment
Workshop Summary

U.S. Fish and Wildlife Service Regional Office
December 12-14, 2017

AKR FLMA CLRTP
Risk Assessment
Workshop Summary
Denali National Park and Preserve

December 12-14, 2017

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FOREWORD

This workshop summary presents the findings for the Alaska Federal Land Management Agency (FLMA) Long Range Transportation Plan (LRTP) Risk Assessment project. The workshop participants convened at the U.S. Fish and Wildlife Service Regional Office located in Anchorage, Alaska on December 12-14, 2017.

This is to certify that the workshop was led by the undersigned National Park Service Facilitator and was conducted in accordance with National Park Service principles and guidelines.

Paul Schrooten
Facilitator



EXECUTIVE SUMMARY

Four federal land management agencies (Bureau of Land Management (BLM), National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), and U.S. Forest Service (USFS)), in cooperation with the Federal Highway Administration (FHWA) – Western Federal Lands Highway Division (WFLHD) and State of Alaska Department of Transportation and Public Facilities (ADOT&PF), is completing an assessment for the purpose of evaluating how long range transportation planning is affected or should be influenced by management of risk.

The CLRTP was originally completed in 2012 and is currently being updated. A LRTP for Denali National Park and Preserve is also nearing completion and as a part of that process, a prototypical risk assessment workshop was held to determine if it would provide additional focus and purpose for that document. Since there appeared to be a direct correlation to that plan's recommendations for park management and the fact that the results of the workshop were well received by its participants, the application to the CLRTP seems logical.

The Alaska Region has experienced numerous geophysical events through history that have significantly impacted transportation infrastructure, facilities, and systems. Major seismic activity, wildfires, floods, avalanches, and other similar catastrophic occurrences have occurred with such frequency and in varying magnitudes, thereby damaging or destroying transportation assets managed by the FLMAs. Many less dramatic events have consistently blocked traffic, undermined road surfaces, and caused damage to motor vehicles. Therefore, a comprehensive risk analysis was recommended to identify the highest risks so they can be properly identified, addressed, and prioritized before future events occur. Risks from other geophysical hazards, departures from facility/asset standards, changes in vehicle specifications, reduction in maintenance/operations, and changes in agency management were risk categories identified to be addressed.

Risk categories:

FLMA staff worked with FHWA to complete a comprehensive risk assessment in light of updating a strategic transportation document. The risk assessment workshop consisted of: (1) risk identification; (2) qualitative evaluation of risks; (3) responses to risks; (4) monitoring and control recommendations; and (5) consideration as to whether risk should be a part of the CLRTP update. The FLMAs and FHWA plan to use results to guide areas of emphasis and incorporate the findings into the park's long range transportation plan (2018-2038).

Workshop Objectives

The purpose of multi-day session was to 1) describe all types of risk exposure (including, but not limited to, geophysical hazards, alteration of facility assets/standards, revised vehicle specifications, changes in maintenance or

operations, and succession of agency management), 2) evaluate each type of risk to thoroughly vet qualitative impacts and likely responses, and 3) strategize how and when the final document (product) would be best completed, including task assignments.

Summary of Recommendations

The workshop participants evaluated a broad range of hazards, including geophysical hazards, departures from facility/asset standards, changes in vehicle specifications, reduction in maintenance/operations, and changes in park management. Recommendations on each risk category is included within each descriptive section.

Risk Assessment Workshop

Introduction and Purpose

Facilitator Paul Schrooten opened the workshop with introductions including a welcome by USFWS Regional Transportation Coordinator David Morton. The purpose of the workshop was reiterated with the following objectives as:

- 1) describing all types of risk exposure (including, but not limited to, geophysical hazards, alteration of facility assets/standards, revised vehicle specifications, changes in maintenance or operations, and succession of park management),
- 2) evaluating each type of risk to thoroughly vet qualitative impacts and likely responses, and
- 3) strategizing how and when the final document (product) would be best completed, including task assignments.

The risk assessment workshop group consisted of staff from BLM, NPS, USFWS, USFS, WFLHD, ADOT&PF, the U.S. DOT Volpe National Transportation Systems Center (Volpe), and Western Carolina University.

The workshop contingent was composed of a mix of professional disciplines and individuals with experience in planning, engineering, geographic information systems, project management, geotechnical engineering, and transportation resources.

The facilitator acknowledged that no risk assessment workshop, to his knowledge, had been applied as a precursor to a regional strategic planning effort (LRTP), nor used to evaluate such a broad spectrum of risk types. A brief presentation on the basics of risk was used to introduce the topic.

The group discussed how another layer of verification may be needed from technical experts after the workshop. Actual decision makers or representation from all of the FLMA's in the room were not present. The facilitator reiterated that the intent of workshop was not to make decisions, but to provide recommendations.

Quinn N. (FHWA) asked if agencies use risk as part of project prioritization. Paul S. (NPS) said no formal risk criteria are used, but it is reviewed somewhat informally. Larger projects that go through the NPS Line Item Construction program are reviewed for risks on a case by case basis. David M. (USFWS) said for construction over a certain dollar value, his agency looks at risk formally. Other projects may be considered informally. Molly M. (NPS) said the Denali NP workshop helped recognize bringing risk into the park management culture (i.e. the idea that the Denali Park Road may need to be realigned to a new location to reduce a number of risks to resources and visitors). Results of the risk workshop translated into a management decision for a project on the road this coming summer. Erica S. (Volpe) said it was important to think about risk management at different scales. There may be more programmatic needs/ways to address risk.

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Risk Culture Summary

Utilizing small work groups, four statements were discussed that helped to define current attitudes about risk. All participants are asked to rate the same four statements on a Likert scale (strongly agree, agree, neither agree/disagree, disagree, strongly disagree). Each work group reported out with the following results:

Group 1: (Mark A., Laura B., Blair T.)

1. *I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

Agree (mostly). Depends on position in the organization. If a new risk is identified, there is a challenge of fitting it into an old list of priorities.

2. *Agency management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

Disagree (NPS); strongly agree (WCU). Risk is a new concept for discussion/focus in some of the agencies. Talked a lot about how new administration makes some terms/ideas related to risk challenging (e.g., climate change).

3. *I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

Agree. It's our job to identify risks in program area and communicate to agency management.

4. *Agency management fosters an open and collaborative discussion around risk.*

Neither agree or disagree; and agree. Risk is a new way of looking at problems. Risk hasn't permeated agency culture yet, including to management levels.

Group 2: (Erica S., David M., Brian C.)

1. *I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

Agree. DENA risk assessment has informed the conversation there. Engineers have tools for looking at risk at the project level. But may not be comprehensive for other types of risks (e.g., organizational structure).

2. *Agency management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

Strongly agree (FHWA); agree (FWS, FS). FHWA has project risk analysis framework. FWS and FS have strong culture for assessing resource risk, but not for transportation risk. There are good national resources (National LRTP, national transportation program), but not at regional level. Alaska is a small region for most of the agencies in terms of staff, resources, etc. (compared to other regions). FS is stronger than FWS from a transportation perspective.

- 3. I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

Strongly agree (FHWA) – risk is looked at for the project and subproject level. Agree (FWS) – considered in the road inventory and assessment process. Could be more communication with management. Agree (FS) – challenge if risk doesn't relate to resources or recreation.

- 4. Agency management fosters an open and collaborative discussion around risk.*

FHWA – neither agree nor disagree. FWS/FS- agree. In some instances, the agency does a good job. For a high priority project, there may be lack of willingness to disrupt to discuss risk. Risk may be discussed, but may not affect the final decision.

Group 3: (Eric T, Zack W., Amy P., and Paul S.)

- 1. I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

Agree. Concern over qualitative identification of risk vs. having the data to assess risk. AKDOT may consider frequency more than impact when assessing risk. How does risk play a role in environmental compliance?

- 2. Agency management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

Agree. NPS – risk talked about in project design, but not necessarily at unit level. AKDOT – have processes in preconstruction manual; multimodal agency so have different language for each mode and each federal agency they are funded by.

- 3. I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

Agree (AKDOT) and strongly agree (NPS). NPS has an open door policy for identifying risks early. Importance of getting the right people from a park in the room. AKDOT – risk is built into LRTP planning process.

- 4. Agency management fosters an open and collaborative discussion around risk.*

NPS (Paul) – Disagree. Park superintendents are not coming to regions to ask about risk.

AKDOT – agree. DOT is open to hearing about risk, but leadership doesn't always foster discussion. NPS (Zack) – agree. Office looks at risk through lens of visitor safety, not always risk to infrastructure. Lack of resources at state level is a huge risk.

Group 4: (Amit A., Randy G., Quinn N., and Joe R.)

Group 4 discussion:

- Discussion about how each agency perceives risk assessment. No set process in BLM at the programmatic level, only at the project level. FHWA does qualitative risk assessment every 2 years.
- BLM national level – travel management plans. This is happening in Alaska too, but within BLM there is a hierarchy - administrative sites get priority over recreation sites. This is not done through a formal process.
- Structure of LRTP process is a good framework for thinking about risk. Can lead towards a risk assessment process as part of scenario planning.

1. *I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

Agree. FHWA very focused on risk assessment, but often qualitative.

2. *Agency management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

Neither agree nor disagree. Discussed the word “framework”, and whether a NEPA document constitutes a risk assessment.

3. *I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

Agree.

4. *Agency management fosters an open and collaborative discussion around risk.*

Agree.

Group 5: (Betty C., Roxanne B., and Ryan S.)

1. *I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

AKDOT – Agree; WFL planning – agree; WFL project delivery – strongly agree. NPS – agree. USDOT promotes a culture of risk assessment from secretary level on down. Land management agencies don't have that same model from the secretary's level down. Risk

assessment is built into project management.

2. *Agency management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

WFL planning – agree. WFL project delivery – strongly agree. WFL – built into their job. NPS- neither agree nor disagree. Working on it.

3. *I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

WFL - strongly agree. Risk is a component of long range planning. NPS – strongly agree. Because of the work we are doing with partners to assess climate-related risks to infrastructure/assets.

4. *Agency management fosters an open and collaborative discussion around risk.*

Strongly agree. NPS - in certain circles within the office – not every park wants to do it. May be more opportunity for partnership between FHWA and FLMA's. Individuals in a management role may be willing to accept more/less risk than others.

Summarized results would appear to support the following:

1. *I feel comfortable with my ability to identify and assess risks that may materially impact my program or area of responsibility.*

Generally, the workshop groups **Agreed**, specifically citing a broad acknowledgement of abilities.

2. *Park management has provided a framework (common language and methodology) with which I can evaluate risks and controls in my program or area of responsibility.*

Groups expressed a full array of responses, probably contributing to the fact that FHWA has risk deeply embedded in its policies, while the FLMA's are concerned with risk, but more from an operational leadership and resource stance. Transportation centric risks are somewhat more new to the discussion.

3. *I periodically identify key risks in my program or area of responsibility and communicate them to agency management.*

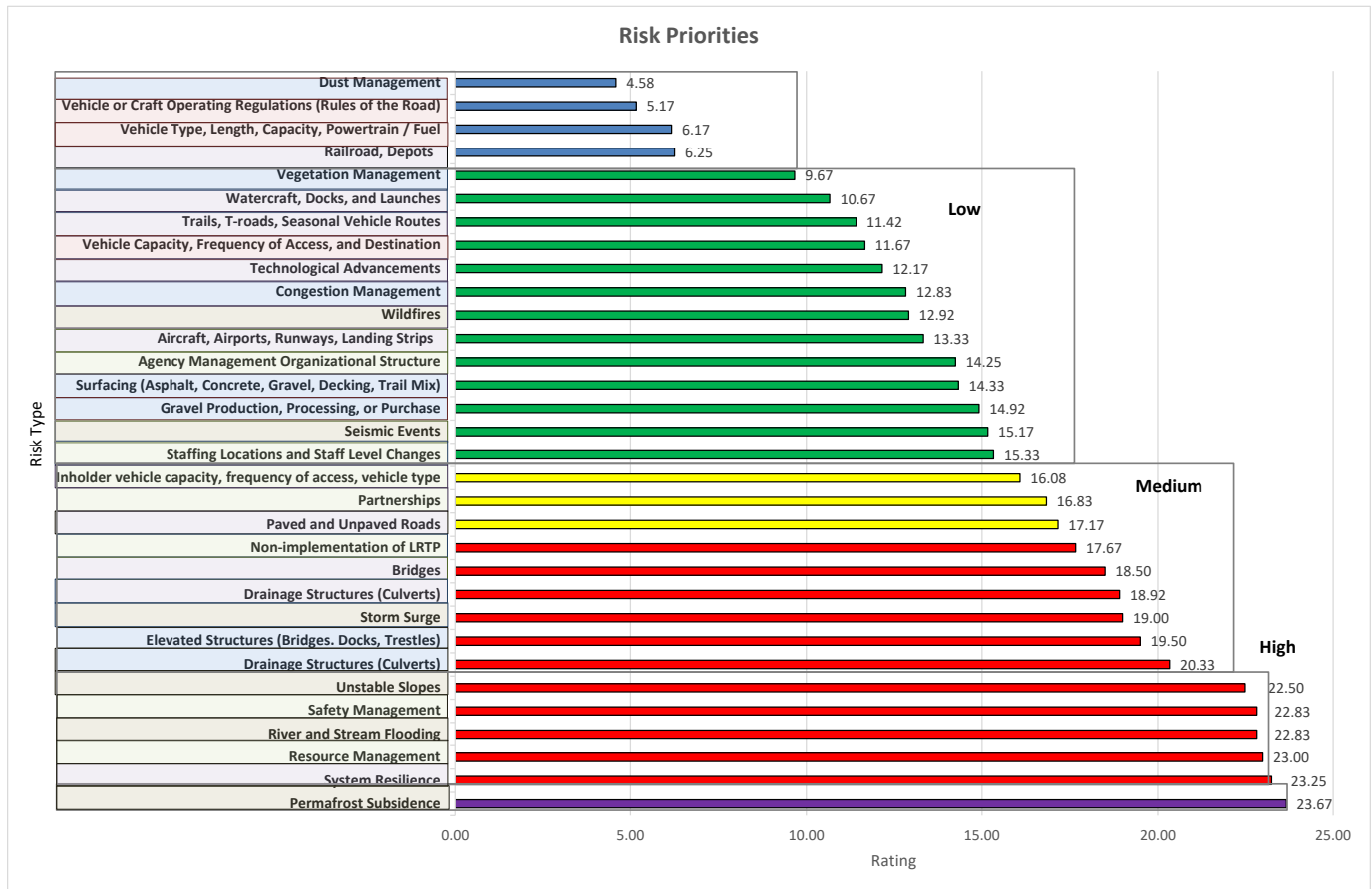
Almost every group **Agreed** to **Strongly Agreed** that the opportunity for communicating identified risks exists and is encouraged.

4. *Agency management fosters an open and collaborative discussion around risk.*

This response also prompted diverse responses ranging from Strongly Agree to Disagree, indicating an organizational inconsistency about safety versus risk. There is a need for proper, comprehensive risk management at all levels as well as outreach to other stakeholders with a proactive philosophy rather than reactive. The agencies are adequately addressing risk in a number of ways, but hierarchical development should be stronger.

Risk Management Survey Results

The facilitator reviewed the results of the risk priority survey completed by about half of the participants prior to the workshop. The purpose of the survey was to compare risk types directly against one another (as referred to as “Paul’s Matrix of Torture”) to determine those risk types that were considered of highest priority. Using the survey results enabled the workshop participants to discuss, reprioritize and select the highest for further consideration in the Alaska CL RTP.



Risk Identification Work Group Activity

Five work groups were formed to address the risks identified in each risk category to a) confirm validity, b) agree on cause(s), and c) brainstorm all effects.

In summary, all risk categories were validated and confirmed for further consideration. Causes and effects were refined to reflect actual conditions at the park. Final changes are reflected in Attachment B: Alaska CLRTP Risk Management Plan Spreadsheet.

Specific discussion included:

- Top risks were based on the pre-workshop rankings: permafrost subsidence, system resilience, resource management. System resilience and resource management were not part of DENA risk assessment.
- Gravel management is rated low, but was one of top risks in the DENA risk assessment and is a constant topic of conversation in Alaska FLMA units.
- Noteworthy was that NPS and FHWA had the most people submit a completed matrix. No one from USFS responded and BLM submittal was received too late to be incorporated.

Workgroup #1: (Erica S., David M., Brian C.)

GEOLOGIC HAZARDS

1. Unstable Slopes

- Confirm validity: Add to risk category – “and avalanches”.
- Agree on causes: Nothing to add
- Brainstorm all effects: Add: “closure or loss of access; potential natural and cultural resource impacts including...”

2. Permafrost Subsidence

- Confirm validity: Yes
- Agree on causes: Add: climate change, loss of shallow permafrost
- Brainstorm all effects: Add: thaw instability, which leads to the effects listed under unstable slopes; added maintenance costs; methane gas release; effects on drainage patterns.

3. River and Stream Flooding

- Confirm validity: Yes
- Agree on causes: Add: ice breakup patterns, spring thaws
- Brainstorm all effects: Add: Floating debris damage, loss of infrastructure, damages to fish habitat, undermining unstable slopes

4. Seismic Events

- Confirm validity: Add to risk category: “and volcanic”
- Agree on causes: Add volcanic effects.
- Brainstorm all effects: Seismic – add ground subsidence, damage to buildings, unstable slopes; volcanic – add air quality, damage to aviation, injury or death for nearby individuals, effects of residual ash on the landscape

5. Wildfire

- Confirm validity: Yes
- Agree on causes: No changes
- Brainstorm all effects: Add: effects on air travel, water quality, diversion of helicopter resources, diversion of agency resources.

6. Storm Surge

- Confirm validity: Yes
- Agree on causes: Add sea level rise (although may be less of a cause in many parts of AK due to uplift).
- Brainstorm all effects: add cultural resource loss

Workgroup #2: (Eric T, Zack W., Amy P., and Paul S.)

VEHICLE SPECIFICATIONS

1. Vehicle Type, Length, Capacity, and Powertrain/Fuel

- Confirm validity: Yes (e.g., larger cruise ships that current docks can't accept, or larger airplanes; shift from single axle to articulated bus)
- Agree on causes: Add: autonomous vehicles
- Brainstorm all effects: Add: for autonomous vehicles – impact on visitor services, parking lot design/capacity, speed limits.

2. Vehicle Capacity, Frequency of Access, and Destination

- Confirm validity: Yes (e.g., Mendenhall glacier in Juneau)
- Agree on causes: Add: media and perception about Alaska
- Brainstorm all effects: Add: visitor use

3. Vehicle or Craft Operating Regulations (Rules of the Road)

- Confirm validity: Recommend eliminating (risk is specific to Denali)
 - BLM –regulations are mostly related to visitor preparedness (e.g., Dalton highway)
 - Rules around access by snow mobile for subsistence use
 - BLM regulates off-road use; FWS varies by region; Weather-dependent for when people are allowed to access
 - Rename this risk category “Rules of Access” (to include ATV and off-road in addition to rules of the road)

- Agree on causes: No change

- Brainstorm all effects: No change

Workgroup #3: (Betty C., Roxanne B., and Ryan S.)

REDUCTIONS OR CHANGES IN MAINTENANCE AND OPERATIONS

1. Gravel Production, Processing, or Purchase

- Confirm validity: Yes

- Agree on causes: Add: proximity of appropriate gravel for M&O and project needs is the cause for it being a risk factor. Not enough or appropriate data to understand the problem and solutions (for all risk factors in this category). Multiple gravel rock sources statewide contain asbestos. Regional travel corporations own most subsurface rights (for tribal lands or state land).

- Brainstorm all effects: Add: Quality, cost, viewshed, etc. are affected by location of the gravel. Permitting delays if agency doesn't own gravel source.

- The group noted that risk matrix ranked this very high, but group's pre-workshop ranking is low.

2. Surfacing (Asphalt, Concrete, Gravel, Decking, Trail Mix)

- Confirm validity: Yes

- Agree on causes: Add: Increased extreme weather, permafrost melt, etc.; lack of data about where the permafrost is melting

- Brainstorm all effects: Add: Shortened asset lifespan, increased cost of repair and rehab

3. Vegetation Management

- Confirm validity: Yes

- Agree on causes: Add: lack of resources (staff, equipment, funding).

- Brainstorm all effects: Add: affects the natural and cultural resources (animals eating roadside vegetation can lead to animal vehicle collisions); degradation of the asset; safety conditions (sightline, etc.); blocking the viewshed; integrity of native vegetation; effect of chemical sprays on wildlife (e.g., fish eggs)

The group was surprised that this risk category was low on the list. Discussion of how no one involved in day to day M&O filled out the matrix.

4. Elevated Structures (Bridges, Docks, Trestles)

- Confirm validity: Yes
- Agree on causes: Add: lack of resources, lack of appropriate data. Unknown foundations leading to uncertainty about performance in storm events and susceptibility to scour.
- Brainstorm all effects: Add: increased cost of rehab/repair; inhibits access to FLMA and visitation; impacts to local economy

5. Drainage Structures (Culverts)

- Confirm validity: Yes
- Agree on causes: Add: lack of data on location and condition of the culverts (lack of an inventory);
- Brainstorm all effects: Add: Inhibiting access due to flood events

6. Congestion Management

- Confirm validity: Yes
- Agree on causes: High/increase in visitation; lack of data that is specific about why increased visitation is occurring (national/international events – political situation, world economy).
- Brainstorm all effects: No changes

7. Dust Management

- Confirm validity: Yes
- Agree on causes: Lack of resources (high cost of dust control materials)
- Brainstorm all effects: No change.

Workgroup #4: (Amit A., Randy G., Quinn N., and Joe R.)

FLMA MANAGEMENT

1. Non-implementation of LRTP

- Confirm validity: Yes

- Agree on causes: Add: Missed opportunities of joint alliance; consensus of political will/political influence

- Brainstorm all effects: Add: missed funding opportunity; connectivity

Group discussed what implementation means. It is meeting their performance measures.

Roxanne noted that the Statewide CLRTP is being updated; NPS is the only agency that is updating the statewide agency-specific LRTP; FWS, FS, BLM are doing national LRTPs, which will influence work at the state level.

2. Resource Management

- Confirm validity: Yes

- Agree on causes: Add: shifts in local economy/employment, technology advances, political will. Can be both threat and opportunity

- Brainstorm all effects: Add: Changes in employment and skilled labor opportunities; changes in use of land.

3. Safety Management

- Confirm validity: Yes

- Agree on causes: Group took issue with language “ignoring accidents”. Change to “ability to address facility improvement to accommodate level of use.”

- Brainstorm all effects: Add: change in use management (recreation vs. industrial use).

4. Staffing, Locations and Staff Level Changes

- Confirm validity: Yes

- Agree on causes: Add: changes in demand (increased users may require additional personnel). This risk is also tied to budget, policy, and politics.

- Brainstorm all effects: Add: Higher amenity demands; housing for staff. Ability to monitor or regulate programs.

5. Agency Management Organizational Structure

- Confirm validity: Yes

- Agree on causes: no changes

- Brainstorm all effects: no changes

6. Partnerships

- Confirm validity: Yes
- Agree on causes: No changes
- Brainstorm all effects: Add: Lack of stewardship and advocates; decreased ability to leverage funding; shift to contracting rather than partnerships with graduate students, etc.

7. Inholder Vehicle Capacity, Frequency of Access, and Vehicle Type

- Confirm validity: Yes
- Agree on causes: No changes
- Brainstorm all effects: Add: retaining access to lands and equitable use.

Workgroup #5: (Mark A., Laura B., Blair T.)

FACILITY ASSETS / STANDARDS

1. Paved and Unpaved Roads

- Confirm validity: Yes
- Agree on causes: No change
- Brainstorm all effects: Add: decreased lifespan of road; increased maintenance and repair; liability issues.

2. System Resilience

- Confirm validity: Yes
- Agree on causes: No change
- Brainstorm all effects: Add: increased maintenance and repair costs

3. Bridges

- Confirm validity: Yes
- Agree on causes: No change
- Brainstorm all effects: Lifespan of bridge might not be what you expect; increased maintenance; liability; issues with historic bridges (Alaska is currently considering what to do with bridges that are almost eligible to be listed on national register).

4. Watercraft, Docks, and Launches

- Confirm validity: yes. Add navigational aids (e.g., channel markers). Add drones / automated watercraft.
- Agree on causes: Add watercraft agency like coast guard?
- Brainstorm all effects: Add: Lifespan considerations, maintenance, liability issues.

5. Aircraft, Airports, Runways, and Land Strips

- Confirm validity: Yes. Add drones/UAV.
- Agree on causes: No change.
- Brainstorm all effects: Add: Lifespan, maintenance, liability. Drones and their effects – noise, wildlife issues, visitor experience, safety, surveillance (e.g., wildfires)

6. Railroad Depots

- Confirm validity: Yes
- Agree on causes: No change.
- Brainstorm all effects: Lifespan, maintenance, liability. Historic structures.

Qualitative Risk Assessment Exercise

Individuals were asked to confirm the probability and impact of each risk, ultimately querying all participants if there was consensus on its priority in park decision-making. The probability (frequency), impact, a matrix to depict each, and a general priority was assigned to each as depicted in Attachment B: Alaska CLRTP Road Risk Management Plan Spreadsheet.

Prior to beginning the conversation, the following discussion included:

- What is the value in prioritizing these risks? This all leads up to the final work activity to identify the most important risks so management knows what to address now, and what to deal with when it happens. Prioritization can help identify which risk should be integrated with LRTP. Risk categories of high priority should show high probability and impact. Another way to think about risk is a cost benefit analysis and agency management's capacity to manage risk. Priority identification may be different than what is indicated in the probability / impact matrix.
- This is a "report card" that focuses on the FLMA's priorities. There are probably 11 to 12 risks that can be influenced or impacted with minimal funding. Most of these are funded through agency management already, but they can be fine-tuned based upon awareness.
- It is important to remember that the current discussion is a slice in time and that the outcomes are being affected by such indicators as climate change, funding levels, etc.

Geologic Hazards:

1. Unstable slopes (and avalanche) (Blair T.)

1. Probability (Frequency) – may drop because only an issue for NPS and ADOT&PF
2. Impact – high impact
3. Risk Matrix Selection - no change to high and high
4. Priority – discussion of whether to move down. Keep as high priority for this portion of the workshop; may revisit.

Note: May be limited locations where this is an issue – Denali NP, a few at Tongass NF, none at USFWS. Some locations on state highway system (e.g., Dalton Highway) – but ADOT&PF has this under control.

Unstable Slope Management Program (USMP) tool is in place to help manage assets with unstable slopes.

This is a high priority in certain locations – need to show this is a risk to make the case for developing tools.

Unstable slopes are a good indicator of other risks or hazards to transportation.

2. Permafrost subsidence (Randy G.)

- 1 Probability (Frequency) - high
- 2 Impact - high
- 3 Risk Matrix Selection – no change to high and high; this risk is becoming an increasing issue as transportation systems expand.
- 4 Priority – no change to high

Note: University of Alaska research shows permafrost is melting. Permafrost melting has a drying effect of the land and is leading to migrating ecosystems. Transportation impacts include cutbacks on roads.

3. River and stream flooding (Zack W.)

1. Probability (Frequency) – high; compounding layers that could affect the probability; propose moving to very high
2. Impact – medium
3. Risk Matrix Selection – no change to high probability and low impact
4. Priority – change to high priority

4. Seismic events (and volcanic) (Erica S.)

1. Probability (Frequency) – no change
2. Impact – very high; add disruption to aviation due to volcanic ash
3. Risk Matrix Selection – range of potential impacts depending on the size of the earthquake/volcano; could show as an array – a line across the matrix covering low to high, medium to medium, and high to low (probability and impact)
4. Priority – keep as medium priority

Note: There are statewide impacts of earthquakes and volcanoes regardless of where they occur. Disruptions to air quality and to aviation from volcanoes. Thinking from a transportation perspective, it may make sense to focus this category on low probability, high impact events. High frequency events are unlikely to impact transportation systems.

5. Wildfires (Amit A.)

1. Probability (Frequency) – low
2. Impact – high (related to safety, evacuation, emergency response) - but minimal long-term impact on FLMA transportation infrastructure; has impact on travel (aviation, marine)
3. Risk Matrix Selection – no change to low probability and low impact
4. Priority – propose to keep at lower end of medium; may revisit.

Note: Connection between permafrost melt and wildfire – negative feedback loop. With less permafrost, wildfire will burn for longer and hotter.

6. Storm surge (Laura B.)

1. Probability (Frequency) – agree – can be at a local scale or widespread.
2. Impact – add impact to resources, visitor use experience.
3. Risk Matrix Selection – no change to medium probability and high impact
4. Priority – high end of medium ranking; impact on transportation systems mostly relates to marine travel. This risk is localized to certain areas of the states. Some want to drop it lower so will revisit.

Facility Assets/Standards:

7. Paved and unpaved roads (Mark A.)

1. Probability (Frequency) – medium
2. Impact – very low
3. Risk Matrix Selection – no change to medium probability and low impact
4. Priority – keep at medium priority; several want it moved lower.

8. System resilience (Quinn N.)

1. Probability (Frequency) – no change

2. Impact – no change
3. Risk Matrix Selection – no change to high probability and medium impact
4. Priority – should be very high; leave where it is for now.

Note: Encompassing of many other factors. Should this be its own category? There is not much redundancy in the transportation systems in Alaska. There are integrated and interdependent transportation systems between FLMAs and the state's system.

System redundancy is a related issue. There is some redundancy in that you can switch to different modes.

What would be the specific action resulting from this risk?

Resilience is related to LOS for desired level of access and visitor use.

9. **Bridges** (Roxanne B.)

1. Probability (Frequency) – low (change from very low because lots of bridges have deficiencies and are aging)
2. Impact – change to high
3. Risk Matrix Selection – no change to very low probability and medium impact
4. Priority – medium (consistent with survey); three people want it moved into the higher category.

Note: Does this include non-inspected bridges? Yes.

This risk category relates to bridge standards, so the probability of deviating is low.

10. **Watercraft, launches, and docks** (Brian C.)

- 1- Probability (Frequency) – Add changing vessel sizes
- 2- Impact – no change
- 3- Risk Matrix Selection – low as far as FLMAs are concerned, but keep as very low probability and medium impact.
- 4- Priority – no change

11. Aircraft, airports, runways, landing strips (and drones) (Betty C.)

1. Probability (Frequency) – higher than listed; it is already happening - should be medium
2. Impact – medium
3. Risk Matrix Selection – no change to very low probability and medium impact
4. Priority – should be slightly higher than listed; keep where it is.

Note: Look at social media, extreme weather and how they are opening up access to FLMA by float planes and small aircraft

12. Railroads and depots (Paul S.)

1. Probability (Frequency) – Agree
2. Impact – may be slightly higher impact, but propose keeping it as is.
3. Risk Matrix Selection - no change to very low probability and medium impact
4. Priority – agree – should remain low priority

13. Technological advancements (David M.)

1. Probability (Frequency) – high
2. Impact – medium
3. Risk Matrix Selection – no change to high probability and medium impact
4. Priority – No change (keep at low for now)

Note: Likely advancements include fuel changes in cars, autonomous cars, and electric bikes. Intelligent Transportation Systems (ITS) is a component of this.

There are both opportunities and threats related to this risk. The category is very broad – can find aspects in other category. It doesn't look like Alaska is going to get a lot of money to deal with this issue.

14. Trails, t-roads, seasonal vehicle routes (Joe R.)

1. Probability (Frequency) – no change

2. Impact – no change
3. Risk Matrix Selection – no change to medium probability and medium impact
4. Priority – medium-low; proposal to move higher – towards higher end of medium.

Note: Not just a recreational issue – this is transportation for many people living in Alaska. Issues that impact this – increased visitation and use. May lead to deterioration of resources, visitor conflicts, and effect on economy.

T-roads are more prevalent in interior and northern parts of Alaska. Important for subsistence use.

This is a resource risk and safety risk. Not an investment risk (except for BLM).

Discussion included the potential for development of t-roads and trails.

15. Drainage structures (culverts) – asset (Ryan S.)

1. Probability (Frequency) – medium, broad occurrence
2. Impact – opportunity to mitigate weather related damages; high impact
3. Risk Matrix Selection – change to medium probability, retain high impact
4. Priority – medium; proposal to move higher – one of the biggest risks in the whole system is undersized culverts (per David M.); keep at high end of medium priority for now.

16. Vehicle type, length, capacity, and powertrain/fuel (Eric T.)

1. Probability (Frequency) – low
2. Impact – high
3. Risk Matrix Selection – no change to very low probability and high impact
4. Priority – low; keep at low priority for now; may need to revisit.

Note: Issue of vehicle/bus type on Denali Park Road.

Autonomous vehicles will eventually get to Alaska.

Also issue of larger cruise ships docking in ports constructed for current sized vessels.

Fuel type is also an issue.

17. Vehicle capacity, frequency of access, and destination (Blair T.)

1. Probability (Frequency) – varies from very low to high. Expect to see upward trend in vehicle frequency. Move to medium. Cruise ship access is leading to congestion. Communities like Skagway are split about whether to have more cruise ship access.
2. Impact – medium; issue of vehicle-wildlife collisions, congestion, etc.; move to high.
3. Risk Matrix Selection – change to medium probability and retain medium impact
4. Priority – low end of medium. Move up a little bit in priority – to medium.

18. Rules of the road/rules of access (Randy G.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – retain low probability, medium impact
4. Priority – low priority (agencies have a lot of control)

19. Gravel production, processing, or purchase (Zack W.)

1. Probability (Frequency) – should be higher
2. Impact- between medium and high – issues related to asbestos, invasive species, etc.
3. Risk Matrix Selection – no change
4. Priority – in the middle. Proposal to make it higher – a common problem across partner agencies. With limited budget, has a big impact on project costs. Move to medium-high.

20. Surfacing (Erica S.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – medium probability and medium impact
4. Priority – medium;

Note: an important issue, but not catastrophic. NPS – not a huge shift or change to what is being done since not paving any more roads. Discussion/question: if this should be higher than O&M or not.

21. Vegetation management (Amit A.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – no change
4. Priority – in low end of medium; keep where it is.

Note: Issue of invasive species; compromises that need to be made – safety, etc; BLM on Dalton Highway – insisting that there is a wash station for trucks to stop invasive species spread and also finding that invasive species are coming through hay supply for sled dogs on the Iditarod race stops.

22. Elevated structures (Laura B.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – probability low, impact as medium – could potentially go to high
4. Priority – top end of medium – keep where it is.

23. Drainage structures (culverts) (Mark A.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – high probability, medium impact. Agree
4. Priority – rated high on the list. The impact of not doing a small amount of maintenance can lead you to lose a road – huge risk. No change.

24. Congestion management (Quinn N.)

- 1- Probability (Frequency) – could be high

- 2- Impact – high as it relates to transportation; may not be super high related to other aspects of visitation
- 3- Risk Matrix Selection – no change
- 4- Priority – good to keep where it is.

Note: Severe congestion is limited to areas where large cruise ships dock. Visitors and local residents have the expectation that they won't see anyone else and that is not the case.

Visitor survey shows expectations are met; didn't hear a lot about congestion.

There are also resource impacts and safety impacts related to congestion, which is not happening in too many places in the state.

May need to revisit. Congestion management is a driver of many things in the state; important to establish performance measures.

25. Dust management (Roxanne B.)

1. Probability (Frequency) – high
2. Impact – medium
3. Risk Matrix Selection – no change
4. Priority – lowest ranked according to the survey. Should be moved higher- to medium category/medium-low.

Note: Major problem in Alaska because there are so many gravel surfaced roads. A risk to visitor visibility, air quality, health (naturally occurring asbestos). ADOT&PF also has issues with dust. Considerable research has been done on how to apply dust control with minimal environmental impact.

This is something that FLMAs can influence, because it is an issue common to all.

26. Non-implementation of LRTP (Brian C.)

1. Probability (Frequency) – no change
2. Impact – add missed funding opportunities
3. Risk Matrix Selection – low probability, medium impact
4. Priority – keep in medium category. No change.

Note: We already have an LRTP, so not necessarily one of the top risks

27. Resource Management (Betty C.)

1. Probability (Frequency) – also relates to staffing levels and changes
2. Impact – no change
3. Risk Matrix Selection – no change
4. Priority – rated high in survey. Keep where it is.

Note: resource management is at the core of FLMA missions.

What is the risk of resource management on the transportation system? Transportation system can impact the resources, and also help to successfully manage the resources. There is a tension between conservation and visitor access, and the risk factor is maintaining the balance.

This relates to the tension between natural and cultural resources staff and transportation O&M staff – resources staff feel like they are left out of the funding stream dedicated to transportation.

Need to identify and understand what mitigation is needed for a project. Communication is important between resources staff and transportation staff.

28. Safety Management (Paul S.)

1. Probability (Frequency) – likely
2. Impact – minimal to moderate
3. Risk Matrix Selection – High probability and high impact; some suggested low probability
4. Priority – In high category – move to medium-high

Note: Could be low priority b/c we already do a good job tracking it; not many road fatalities on FLMA roads in Alaska.

Safety is a component of facility assets and standards, a component of everything we do. Safety is a way of thinking in Alaska. Safety is key to mission of ADOT&PF, FAA, U.S. Coast Guard, concessionaires, and tribal governments. There is not a high risk that we are not paying attention to safety. Suggest moving to medium.

Difference between being reactive and proactive related to safety.

29. Staffing locations and staff level changes (David M.)

1. Probability (Frequency) – medium/high. Especially given current political climate at the national level. Alaska is a hard draw for a lot of people, so they have trouble attracting staff.
2. Impact – High
3. Risk Matrix Selection – no change
4. Priority – survey results showed in the middle.

Note: This is a key component of system resilience. This is a reality check on our ability to affect other aspects on the chart.

30. Agency Management/Organizational Structure (Joe R.)

1. Probability (Frequency) – no change
2. Impact – no change
3. Risk Matrix Selection – no change
4. Priority – medium; no change

Note: Influenced by the political situation. An infrastructure bill could lead to agency shifts in priorities and allocation of resources

31. Partnerships (Ryan S)

1. Probability (Frequency) - low currently, but challenge of people retiring. Are there going to be champions in the future?
2. Impact -
3. Risk Matrix Selection
4. Priority – keep where it is

Note: Many FLMAs have had partnerships for decades – conservation groups, cruise ship industry, ADOT&PF, etc.; risk is that if partnerships were to go away, it would have detrimental effects.

An example of a partnership is that USFS recently released plan for Iditarod National Historic Trail partnering with ADOT&PF.

32. Inholder vehicle capacity, frequency of access, vehicle type (Eric T.)

1. Probability (Frequency) – Medium - Almost every NPS unit has inholdings; USFWS has

ANWR, Cold Bay – both have transportation implications; USS has inholdings on waterways and mining areas, cabins, etc.

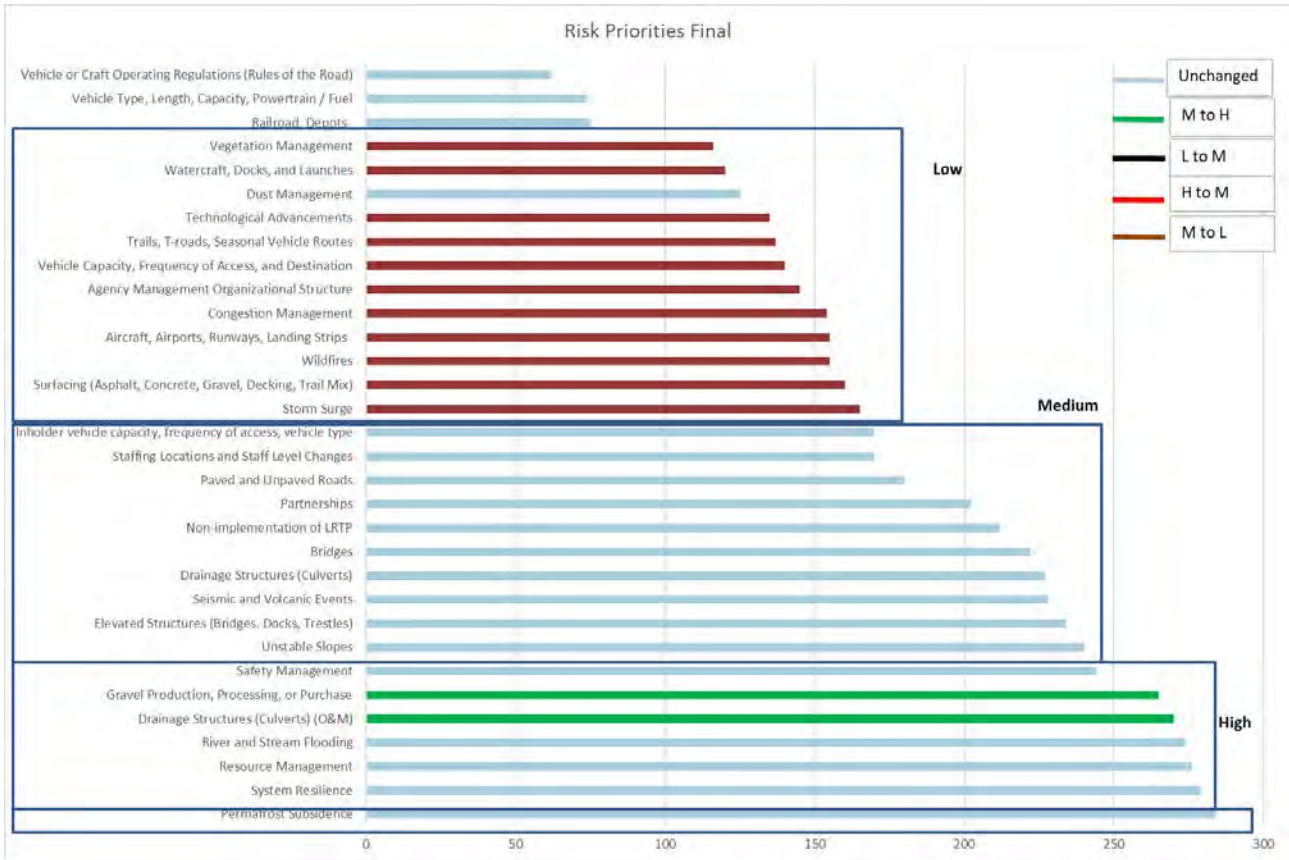
2. Impact – medium
3. Risk Matrix Selection – no change
4. Priority – move to lower end of medium

Note: The issue for FLMA's is how to manage when someone tries to access inholdings. If someone is living there, there is probably a tried and true transportation system.

USFWS inholdings are almost impossible for the region to manage because they have reached the political level in Washington, D.C. Transportation relates to concerns about inholdings.

BLM – in-holders pay for transportation costs (e.g., annual lease)

As a result of this exercise the risk priority was revised as follows:



Response and Monitoring Work Group Exercise

The five work groups were once again formed to address the responses and monitoring of risks identified in each risk category to a) identify appropriate response strategies and actions, b) agree on monitoring and controls, and c) name responsible parties for follow through.

There was also a discussion as to suggestions regarding any re-prioritization with the following noted:

- combine both culvert categories (standards and maintenance & operation)
- move gravel production to a high priority
- combine vegetation management and dust management, and consider as a subset of resource management
- risks in the very high and high category should be directly addressed in the LRTP update
- form groupings of categories that will have similar response strategies (e.g., river and stream flooding and culverts)
- swap priorities of seismic and volcanic events with storm surge; move seismic events to medium priority and storm surge to low priority; it was noted that volcanic be added to seismic, and these could be split up when considering level of risk and response strategies
- make a distinction between things that are *at* risk and things that *are* risks (i.e. elements impacted by risk versus stressors of risk)
- safety management is an actionable item for FLMA's and should be in the high category
- proposal to create buckets with the top risks (i.e. system resilience incorporates culverts, river and stream flooding, etc.); system resilience and resource management could be overall buckets/umbrellas for the other risks

In summary, all previous risk categories were discussed, with those highest and higher prioritized risks emphasized for further response and monitoring. It should be noted that the (#) numeral for each does not reflect the original survey risk ID but rather its actual priority. Final changes are reflected in Attachment B: AK CL RTP Risk Management Plan Spreadsheet.

Workgroup #1: (Erica S., David M., Brian C.)

8. Unstable Slopes

- Response Strategies / Actions: Expand unstable slope identification to other areas in Alaska; train O&M staff to report on conditions; monitor more frequently after triggering events like wildfires
- Responsible Entities: add maintenance staff
- Monitoring / Control Intervals or Milestones: n/a

1. Permafrost Subsidence

- Response Strategies / Actions: more research, continued climate forecasting, partnerships with universities and research agencies; start to plan for long-term

contingencies for impacted roads; look at where permafrost is coming into contact with infrastructure using a geospatial overlay.

- Responsible Entities: Add maintenance staff
- Monitoring / Control Intervals or Milestones: n/a

4. River and Stream Flooding

- Response Strategies / Actions: Establish a hydraulics baseline; inventory drainage structures; collect data about flood events to recognize areas with multiple damage events
- Responsible Entities: Add hydrologists, maintenance staff, ERFO coordinators
- Monitoring / Control Intervals or Milestones: n/a

10. Seismic Events (and volcanic)

- Response Strategies / Actions: identify structures for seismic risk, review emergency response plans, set up coordination with emergency response teams, update and share maps with agencies; prepare communications in advance
- Responsible Entities: public affairs, structural engineers, emergency response
- Monitoring / Control Intervals or Milestones: n/a

Workgroup #2: (Eric T, Zack W., Amy P., and Paul S.)

VEHICLE SPECIFICATIONS

24. Vehicle Capacity, Frequency of Access, and Destination

- Response Strategies / Actions: Consider this risk along with congestion management, access to in-holdings
- Responsible Entities: LRTP planning team, implementers of visitor use studies (CVTS)
- Monitoring / Control Intervals or Milestones: 5 year update of LRTP

Workgroup #3: (Betty C., Roxanne B., and Ryan S.)

REDUCTIONS OR CHANGES IN MAINTENANCE AND OPERATIONS

6. Gravel Production, Processing, or Purchase

- Response Strategies / Actions: Put team together with key partners (BLM, regional climate partners, AKDOT, WFL materials lab); identify potential common sources for gravel; develop MOUs for agencies using gravel; develop best practices, etc.

Every FLMA could inventory material sites, stockpile sites, size, capacity, etc. in a GIS format. This information could be compiled when they do testing.

- Responsible Entities: n/a
- Monitoring / Control Intervals or Milestones: n/a

5. Drainage Structures (Culverts)

- Response Strategies / Actions: Form a multi-modal, multi-agency team to inventory location and condition of culverts (need to prioritize in areas where potential hazard is greatest); look at different hazards that are impacting culverts – develop a tool or expand USMP to evaluate culverts.
- Responsible Entities: n/a
- Monitoring / Control Intervals or Milestones: n/a

22. Congestion Management

- Response Strategies / Actions: Use the NPS congestion management toolkit to do a pilot using the toolkit in an area like Russian River with multiple agencies that are concerned with congestion. This is relatively easy to try – may discuss on LRTP conference call.
- Responsible Entities: n/a
- Monitoring / Control Intervals or Milestones: n/a

Workgroup #4: (Amit A., Randy G., Quinn N., and Joe R.)

FLMA MANAGEMENT

3. Resource Management

- Response Strategies / Actions: Balance with agency missions. Minimize impacts of transportation systems to natural and cultural resources.
- Responsible Entities: Add resource specialists
- Monitoring / Control Intervals or Milestones: change to ... “align with resource management strategies.”

7. Safety Management

- Response Strategies / Actions: Reduce, maintain, or enhance safety risk. Focus on safety of the public.

Incorporate a safety focus/perspective in all actions we take in the LRTP.

In a previous meeting, the group discussed forming a multi-agency safety assessment team. They are aiming to have one consistent source of data for safety/crash data

collection. An issue with incident reporting is the lack of consistency across the agencies.

Discussion about the potential to use phone apps to collect safety information, including anecdotal data and information from park staff about the incident. They already have an app for reporting incidents in USMP (for landslides) – this could be used for safety.

In previous experience with the wildlife vehicle collision app, there was minimal usership when they piloted it.

- Responsible Entities: All agencies.
- Monitoring / Control Intervals or Milestones: n/a

Workgroup #5: (Mark A., Laura B., Blair T.)

FACILITY ASSETS / STANDARDS

15. Paved and Unpaved Roads

- Response Strategies / Actions: Response strategies would be similar to bridges.
- Responsible Entities: Add construction managers
- Monitoring / Control Intervals or Milestones: Review or monitoring prior to and during construction

2. System Resilience

- Response Strategies / Actions: Being proactive, doing advanced planning such as scenario planning and vulnerability assessments.

Come up with criteria for how to improve/measure resilience. How are individual assets contributing to system resiliency?

- Responsible Entities: n/a
- Monitoring / Control Intervals or Milestones: n/a

Desired Product

Items captured during the workshop on what the participants saw as valued, tangible results coming out of this workshop:

- More research is needed on permafrost with continued climate forecasting completed using partnerships with universities and research agencies;
- Begin planning for long-term contingencies of roads impacted by permafrost subsidence;
- Examine where permafrost is coming into contact with infrastructure using geospatial analysis
- Proactively perform advanced planning such as scenario development and vulnerability assessments for sites and assets; develop criteria for how to improve/measure resilience, including how individual assets are contributing to system resiliency;
- Balance strategic transportation planning with agency missions with regards to resource management; emphasize minimizing impacts of transportation systems to natural and cultural resources;
- Continue monitoring and determine migration zones of the rivers and streams;
- Develop emergency plans specific to flood events, including proactively planning for increased precipitation, establishing hydraulics baselines, completing an inventory of drainage structures (culverts), and collecting data about flood events to recognize areas with multiple damage events;
- Facilitate the creation of a multiagency, multi-discipline team to implement an inventory of locations and conditions of culverts, perform a culvert inventory risk assessment, create hydrological models of risk to culverts, create a culvert management program similar to a USMP, and create a set of “best practices” for culvert maintenance (catch basin and ditch maintenance);
- Facilitate the creation of a multiagency, multi-discipline team to implement identification of potential common gravel sources in key locations to streamline acquisition of gravel material;
- Align multiagency projects that are in close proximity to each other and negotiate shared use of gravel material;
- Develop a program to identify and appropriately treat gravel sources and a set of “best practices” and memorandums of agreement to facilitate coordinated contracting of gravel sources to meet project/maintenance needs (team should include BLM (regulatory agency), regional tribal corporations (owners of subsurface rights), ADOT&PF, WFL Materials Lab, and NPS, USFWS, and USFS);
- Incorporate a safety focus/perspective for all actions taken in the LRTP; and
- Form a multi-agency safety assessment team whose purpose is to have one consistent source of data for safety/crash data collection, which is an issue across the agencies

Participant Comments

Round robin thoughts on workshop format, recommendations for improvement, etc. were prompted by the following questions: How does risk assessment influence LRTP? What part of the workshop was most insightful or most annoying? How will you utilize findings for other efforts?

Participant comments:

- Issue of scale was discussed throughout the workshop. There are things that certain agencies are currently doing that are needed to maintain, regardless of the risk ranking.
- Role of risk in LRTP – is part of purpose of the LRTP planning for risk?
- Issue of confirmation bias – group confirmed the risks already known about, but other agencies/disciplines may have different ideas about risk.
- Possible to map risk through the TINA analysis.
- Importance of getting the right agencies and broad representation involved, which is always challenging. It was noted that there was overrepresentation from NPS and FHWA.
- Lack of resources is a huge challenge (BLM, FHWA, NPS).
- With a multi-agency process, there is the challenge of different agency missions and scales. It may be important to keep the full list of risks in buckets, rather than only the top risks.
- Risk assessment helped hone in on needs and severity of needs.
- Importance of making sure the right people are in the room and balance is right in expertise and agencies involved.
- Possible to tie actions in CLRTP to risk categories.
- How will results of workshop influence management decisions?
- Mapping tools will be useful at the unit level.
- List of risks can be incorporated into the TINA analysis.
- Categories identified upfront are significant and influence the rankings and what was discussed.
- ADOT&PF could take top risks and see how it fits in with its LRTP.
- Connection between the LRTP and getting to the available and appropriate funding sources.
- Challenge of communicating the process and results to stakeholders who are not in attendance and educating them about what is risk assessment.
- There might be too many risks to discuss in a workshop such as this. Instead, there could be a categorization or elimination of low-ranking risks earlier in the process.
- Suggestion to make lack of data a risk category for future risk assessments.

Final Summary Statement

The risk assessment workshop was acknowledged to be a group exercise that had not yet been applied for the purpose of informing regional management on hazards to primary transportation systems. This was also experimental in that results would be integrated into a regional level multiagency long range transportation plan to more fully address strategic decision-making. Based upon the procedural results and the reactions from participants, the effort provided full recognition that risk management should play a major role in transportation planning.

ATTACHMENTS

- A. Risk Assessment Workshop Agenda
- B. Risk Management Plan Spreadsheet
- C. Additional Presentations

Attachment A.

Risk Assessment Workshop Agenda

Risk Assessment Workshop

DRAFT Agenda

December 12-14, 2017

USFWS Regional Office (Gordon Watson Conference Room)

Participants:

Mark Anderson (NPS WASO)
Amit Armstrong (FHWA)
Laura Babcock (NPS DSC)
Roxanne Bash (FHWA)
Betty Chon (FHWA)
Brian Collins (FHWA)
Randy Goodwin (BLM)
Molly McKinley (NPS)*
David Morton (USFWS)
Quinn Newton (FHWA)
Amy Plovnick (Volpe)
Joe Regula (NPS)
Ryan Scavo (NPS)
Paul Schrooten (NPS)
Erica Simmons (Volpe)
Eric Taylor (ADOT&PF)
Blair Tormey (WCU)
Zack Wood (NPS DSC)

*Teleconference Attendee

Tuesday, December 12th

- 9:00 – 9:30 am **Pre-Workshop Arrival**
Objective: Arrival, informal greetings, and becoming seat-ready
- 9:30 – 9:45 **Greetings, Room Logistics, Safety Message (Paul Schrooten)**
Objective: Orient attendees to bathroom facilities, emergency exits, etc.
- 9:45 – 10:00 **Welcome (David Morton)**
Objective: Introduce us to USFWS Alaska Region, maybe tell us a bit about the importance of transportation and the role it plays in management.
- 10:00 – 10:30 **Agenda Review and Participant Callout (Paul Schrooten)**
Objective: Introductions, review and make any adjustments to the agenda as necessary; announcements, etc.
- 10:30 – 10:45 **Purpose of Workshop (Paul Schrooten)**
Objective: 1) describe all types of risk exposure (including, but not limited to, geophysical hazards, alteration of facility assets/standards, revised vehicle specifications, changes in

maintenance or operations, and succession of park management), 2) evaluate each type of risk to thoroughly vet qualitative impacts and likely responses, and 3) strategize how and when the final document (product) would be best completed, including task assignments. Explain ground rules.

- 10:45 – 11:00 **Risk Assessment 101 (Paul Schrooten)**
Objective: Listen to the basics of risk assessment and why it is important to include in management decisions.
- 11:00 – 12:00 noon **Risk Culture Work Group Activity (Moderator)**
Objective: utilizing small work groups, discuss four statements that reflect the current attitudes about risk and prepare a goal statement with supporting objectives for incorporating risk management into future decision-making.
- 12:00 – 1:15 pm **Lunch (at completion of activity or work through)**
- 1:15 – 2:15 **Work Group Reports (TBD)**
Objective: report out, by work group, responses to the four statements and presentation of the goal statement with supporting objectives.
- 2:15 – 2:45 **Risk Management Survey Results (Paul Schrooten)**
Objective: Provide a brief overview of the participant responses to comments on pre-workshop risk categories and their prioritization.
- 2:45 – 3:00 **Break**
- 3:00 – 4:00 **Risk Identification Work Group Activity (Moderator)**
Objective: Discuss risks identified in each risk category to a) confirm validity, b) agree on cause(s), and c) brainstorm all effects.
- 4:00 **Adjourn (at completion of activity)**

Wednesday, December 13th

- 8:00 – 8:05 am **Greetings/Announcements (Paul Schrooten)**
- 8:05 – 8:15 **Update Agenda (Paul Schrooten)**
Objective: Introductions, review and make any adjustments to the agenda as necessary; announcements, etc.
- 8:15 – 9:15 **Work Group Reports (TBD)**
Objective: report out, by work group, the validity, cause(s), and effects for the risks in the assigned category.
- 9:15 – 9:30 **Break**
- 9:30 – 11:30 **Qualitative Risk Assessment Exercise (Moderator)**
Objective: Confirm the probability and impact of each risk, ultimately querying of all participants if there is consensus on its priority for decision-making by the Alaska FLMA's and ADOT&PF.
- 11:30 – 1:00 pm **Lunch (TBD)**

- 1:00 – 2:00 **Qualitative Risk Assessment Consensus (Moderator)**
Objective: Reaching consensus on those risks that did not meet majority of participant responses from the exercise.
- 2:00 – 3:00 **Response and Monitoring Work Group (Moderator)**
Objective: Discuss actions that the Alaska FLMAs and ADOT&PF should take to respond to risks, including identification of responsible entity or person, monitoring intervals and milestone checks, and listing of controls (documented plans and processes) that will guide performance results.
- 3:00 – 3:15 **Break**
- 3:15 – 4:15 **Work Group Reports (TBD)**
Objective: report out, by work group, the recommended response to the risks in the assigned category.
- 4:15 **Adjourn**

Thursday, December 14th

- 8:30 – 8:45 am **Greetings/Announcements/ Update Agenda (Paul Schrooten)**
- 8:45 – 9:30 **Desired Product (Paul Schrooten)**
Objective: Discuss type of results and output from this workshop to inform the Alaska CLRTP process.
- 9:30 – 10:15 **TINA (Doug Wilder)**
Objective: Discuss results and output from this workshop to determine what is needed from the TINA process.
- 10:15 – 10:30 **Break**
- 10:30 – 11:15 **Timelines and Next Steps (Paul Schrooten)**
Objective: Decide on schedule for completion of the risk assessment documentation and follow up action items.
- 11:15 – 11:45 **Participant Comments (Paul Schrooten)**
Objective: Round robin thoughts on workshop format, recommendations for improvement, etc.
- 11:45 – 12 noon **Clean Up and Adjourn**

Attachment B.

Risk Management Plan Spreadsheet

Alaska Collaborative Long Range Transportation Plan Risk Management Worksheet

Alaska Collaborative Long Range Transportation Plan Risk Management Worksheet																
Risk Identification						Risk Response Plan					Monitoring and Control		Review			
#	Risk Category	Cause	Effect	Threat or Opportunity	Primary Objective	Primary Objective	Probability (Frequency)	Impact	Risk Matrix	Priority	Response Strategy	Response Actions	Responsible Entity	Interval or Milestone Check	Status: Date and Review Comments	Concurrence (✓) or Comments (xxxxx)
Geologic Hazards																
1	Unstable Slopes (landslides, rock fall, avalanches, and debris flows)	<ul style="list-style-type: none"> Combination of saturated soils and variable soil types subject to sloughing off steep terrain An individual hazard can be local or originate from far up a drainage, such as in the case of debris flows OR an increase in driving forces (e.g. heavy rain, additional fill material) and/or decrease in resisting forces (e.g. permafrost thaw, undercutting slopes) Additional include heavy precipitation/snow melt, seismic activity, permafrost degradation, wildfire, freeze-thaw activity, sheep grazing, exposure, weathering, overly steep construction, cut/fill slopes 	<ul style="list-style-type: none"> Causes deposition of debris upon, and/or erosion of road surfaces and/or damage to road or other infrastructure Causes delays in motor vehicle or other traffic, closure or loss of access, potential damage to motor vehicles or other modes of transportation, and possible injury or casualties to motorists, passengers, bicyclists, or pedestrians Causes potential natural and cultural resource impacts 	Threat	Probably reduce risk and possibly adapt		Likely, with limited spatial extents, but limited occurrence being addressed at NPS, USFS, and ADOT&PF	Moderate to significant delays to traffic but possible damage / destruction to transportation assets/rolling stock; perhaps even personal injury or casualty		M	Study, reduce and adapt	<ul style="list-style-type: none"> Impact to road or other surfacing is typically minimal, requiring removal of debris. Impact to road or other infrastructure is minimal, requiring clean out of culverts and repair to headwalls; Impact to motor vehicle or other traffic is temporary, requiring evacuation or staged exiting either side of the slide location and public announcement updates on status of conditions; Impact to motor vehicle or other modal damage moderate to severe if caught in slide event, requiring extraction; Impact to road or other modal users may result in direct or indirect injury or casualty, requiring emergency medical treatment or retrieval of deceased victims. Continue current monitoring program. Agencies can record past events. Staff continuity is important; harvest information from staff and put in database. Newly developed federal program. Most entries worldwide now. Need help with funding. Database and google map interface. Will have login options for management. Complete risk assessment for highest ranking sites. Cost assessment of risk areas. Cost benefit analysis. Worst is not necessarily the first. Work cross-divisionally, with FHWY and contractors. Need to develop emergency evacuation plans and hazard protocols. Inform staff on how to report incidents. Provide safety protocols for maintenance staff cleaning roads, etc. Recognize part of the experience of traveling remote, primitive areas is understanding there is a higher risk of death; part of the context and should include an educational component. Expand unstable slope identification to other areas in Alaska; Train O&M staff to report on conditions; Monitor more frequently after triggering events like wildfires 	Transportation System Supervisors, Geologists, Maintenance Staff	<ul style="list-style-type: none"> Annual Inspections (Frequency of inspection at a particular site could be informed from scientific evaluation and/or the USMP) Frequency of inspections should happen more often depending on the season - where landscape level changes have an increased potential? (Scavo); (Simmons); (Torney); GIS spatial analysis could be conducted to overlay areas of steep slopes adjacent to the transportation network (Wood); (Chon) 	<ul style="list-style-type: none"> Annual Inspections (Frequency of inspection at a particular site could be informed from scientific evaluation and/or the USMP) Frequency of inspections should happen more often depending on the season - where landscape level changes have an increased potential? (Scavo); (Simmons); (Torney); GIS spatial analysis could be conducted to overlay areas of steep slopes adjacent to the transportation network (Wood); (Chon) 	<p>✓✓✓✓✓</p> <p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); (Collins); (McKinley); probability is very site specific; would rate it as Medium/Likely 50% chance (Morton); frequency of inspections should happen more often depending on the season - where landscape level changes have an increased potential? (Scavo); (Simmons); (Torney); GIS spatial analysis could be conducted to overlay areas of steep slopes adjacent to the transportation network (Wood); (Chon)</p>
2	Permafrost Subsidence	<ul style="list-style-type: none"> Rise in ground temperatures change constant or intermittent frozen material to a melted or melting state OR causing thaw of rock or soil that has been at/below freezing for two or more years Climate change contributing increased rate of thaw, particularly affecting surficial permafrost 	<ul style="list-style-type: none"> Causes subsidence of road profile or other transportation structures and/or damage to associated infrastructure such as bridges, culverts, embankments, buildings, and drainageways Thaw instability, which leads to the effects listed under unstable slopes, along with added maintenance costs, methane gas release, effects on drainage patterns Subsidence can often be detected without drilling, through crack monitoring, pavement, concrete, and other ground surfaces will develop cracks, often growing or increasing in frequency as subsidence progresses 	Threat	Probably reduce risk or adapt		Very likely with localized occurrence	<ul style="list-style-type: none"> Slowly to moderately developing delays to traffic due to change in running and lateral road slope, collapse or tilting of other transportation assets; may develop slowly, but it usually goes unnoticed until failure is catastrophic. University of Alaska research shows permafrost is melting. Permafrost melting has a drying effect of the land and is leading to migrating ecosystems. Transportation impacts include cutbacks on roads. 		VH	Study, adapt, and reduce	<ul style="list-style-type: none"> Impact to road or other surfacing is typically minimal, but may contribute to catastrophic failures requiring addition of processed gravel material and/or repair of pavement to reduce change in grade. Impact to road or other infrastructure is moderate although typically slow to develop, requiring periodic adjustment to bridge supports, culvert inverts and repair to headwalls. Impact to motor vehicle or other modal traffic is temporary, requiring staged movement during reconstruction at location and public announcement updates on status of conditions Impact to motor vehicle or other modal damage minimal if mitigation efforts are maintained. Difficult to monitor. Learn about it through drilling into the ground. Target areas already known to have issues. Plan on permafrost will continue to thaw. Agencies can put down insulation, but that is limited. Agencies can proactively mitigate impacts. More research, continued climate forecasting, partnerships with universities and research agencies; Start to plan for long-term contingencies for impacted roads; Look at where permafrost is coming into contact with infrastructure using a geospatial overlay. 	Transportation System Supervisors, Geologists, Road Maintenance Staff	Annual Inspections and real time monitoring		<p>✓✓✓✓✓</p> <p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); "buildings" added to Effect column since many parks have infrastructure outside roadway that should be considered; Impact is medium rather than high since most roads built over SHALLOW permafrost have already experienced the effects of permafrost degradation (Collins); and real time monitoring (McKinley); (Morton); (Scavo); concus, but worth noting the risk varies substantially across the state (Simmons); subsidence can often be detected without drilling, through crack monitoring; pavement, concrete, and other ground surfaces will develop cracks, often growing or increasing in frequency as subsidence progresses (Torney); determining proper response will require best available climate change modeling (Wood); (Chon)</p>
3	River and Stream Flooding	<ul style="list-style-type: none"> Increase in precipitation exceeds normal surficial rate of runoff in recognized natural drainages, sometimes carrying earth and organic debris River channel migration, when it occurs over a very short time or as a part of a flood event Break up patterns of ice or spring thaws 	<ul style="list-style-type: none"> Causes overtopping of road and other asset surfaces and/or damage to road and other infrastructure, sometimes due to floating debris Causes delays in motor vehicle and other modal traffic, potential damage to motor vehicles and other modes of transportation, possible injury or casualties to motorists, passengers, bicyclists, or pedestrians Causes severe bank erosion, undermining unstable slopes, and damage to fish habitat 	Threat	Probably reduce risk and possibly adapt		Very likely with widespread occurrence	Minimal to moderate delays to traffic but possible damage / destruction to park assets/rolling stock; perhaps even personal injury or casualty		H	Study, reduce and adapt	<ul style="list-style-type: none"> Impact to road or other surfacing is typically minimal to moderate, requiring removal of debris material and/or road material replacement. Impact to road or other infrastructure is minimal, requiring clean out of culverts and repair to headwalls; Impact to motor vehicle or other modal traffic is short to intermediate term, requiring evacuation or staged exiting on either side of the flood location and public announcement updates on status of conditions; Impact to motor vehicle or other modes of transportation damage moderate to severe if caught in slide event, requiring extraction; Impact to road or other modal users may result in direct or indirect injury or casualty, requiring emergency medical treatment or retrieval of deceased victims. Continue monitoring. Determine migration zones of the rivers. Need emergency plans specific to floods. Proactively plan for increased precipitation. Establish a hydraulics baseline; Inventory drainage structures; Collect data about flood events to recognize areas with multiple damage events 	Transportation System Supervisors, Geologists, Hydrologists, Maintenance Staff, ERFO Coordinators	Annual Inspections, increased inspections during moisture events		<p>✓✓✓✓✓</p> <p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); Impact is medium or High since overtopping can erode road embankment to point that it is out of commission for days, weeks, or even years (Collins); increased inspections during moisture events (McKinley); priority is High; also Impact would be High, especially for washed out culverts (Morton); column C sentence could end at "earth and organic debris"; also, in column U, depending on time of year, there could be an increased likelihood of damage occurrence - could this be highlighted -maybe seasonally or twice a year? (Scavo); (Simmons); consider adding river channel migration (bank erosion) as a geophysical hazard - it is different from river flooding (Torney); could see the impact increasing to Medium based on accelerated warming trends in climate change (Wood); (Chon)</p>

Geologic Hazards (cont'd)															
4	Seismic and Volcanic Events	Plate tectonics, volcanic eruptions, or magma migration shifting at key fault lines or zones	<ul style="list-style-type: none"> Causes cracking, displacement, ground subsidence, slope failure, and/or liquefaction of road and other surfacing and/or damage to road and other infrastructure (bridges, etc.) Causes delays in motor vehicle or other modal traffic, potential damage to motor vehicles and other modes of transportation, and possible injury or casualties to motorists, passengers, bicyclists, or pedestrians Causes degradation of air quality (ash), interruption of or damage to aircraft traffic, injury or casualties to anyone in proximate location, and residual ash deposits on leafy vegetation Possibly causes tsunamis, which are potentially devastating to coastal zones 	Threat	Be more resilient and adapt		Somewhat likely with broad occurrence depending upon events that require review / updates; range of potential impacts depending on the location and magnitude of the earthquake/volcano event	Minimal to moderate delays to all modes of traffic with possible damage / destruction to transportation assets/rolling stock; perhaps even personal injury or casualty		M	Reduce and gather information from external researchers	<ul style="list-style-type: none"> Impact to road and other surfacing is typically minimal to moderate, requiring earthwork and recompaction of subgrade material. Impact to road and other infrastructure is minimal to moderate, requiring repair of bridges, culverts and headwalls; Impact to motor vehicle and other modal traffic is temporary, requiring evacuation or staged exiting on any side of the affected locations and public announcement updates on status of conditions; Impact to motor vehicle and other transportation mode damage minor to moderate if caught in areas affected by a seismic event, possibly requiring extraction; Impact to road and other modal users may result in direct or indirect injury or casualty, requiring emergency medical treatment or retrieval of deceased victims. Identify infrastructure for seismic risk, review emergency response plans, set up coordination with emergency response teams, update and share map data with agencies; prepare communications in advance 	Transportation Supervisors, Geologists, Public Information Officials, Structural Engineers, Emergency Responders	Periodic Inspections of Bridges and other structures; otherwise post events	<p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); risk matrix has an array of possibilities - the very low to low probability EQ events will have a high impact whereas the more frequent, high to very high probability events have a low to very low impact (Collins); (McKinley); (Morton); (Scavo); (Simmons); should include tsunamis, which are potentially devastating to coastal zones (i.e. study at Sitka NHP showed relatively low vulnerability to coastal hazards overall, but tsunami threat, could be devastating; based on this recommended higher probability and impact in risk matrix (Torrey); fault zones and areas of volcanic activity could be overlaid with the transportation network to identify potential hotspots; supporting data to execute analysis is more reliable than other risks such as those related to climate change, fault zones, and observed volcanic activity (Wood); (Chon)</p>
5	Wildfires	Combination of climatic conditions (drought or lightning strikes), human activities (unplanned ignition), and mature dead or dying vegetative fuel subject to burning off large acreages in areas with remote access	<ul style="list-style-type: none"> Causes limited visibility and reduction in air quality and/or damage to road and other infrastructure (bridges, timber headwalls, and timber barriers). Causes degradation of and contribution to unstable slopes; degradation to water quality Causes delays in motor vehicle and other modal traffic, potential damage to motor vehicles and other modes of transportation, and possible injury or casualties to motorists, passengers, bicyclists, or pedestrians Causes interruption of air traffic, diversion of helicopter resources, and undue burdens on agency resources Connection between permafrost melt and wildfire – negative feedback loop. With less permafrost, wildfire will burn for longer and hotter. 	Threat	Reduce and adapt		Somewhat less likely with broad occurrence	Minimal to moderate delays to all modes of traffic with possible damage / destruction to assets/rolling stock; perhaps even personal injury or casualty; significant when related to safety, evacuation, emergency response, but minimal long-term impact on FLMA transportation infrastructure; has more impact on travel (aviation, marine)		L	Reduce and adapt	<ul style="list-style-type: none"> Impact to road corridors and other transportation facilities is typically minimal and short-lived, requiring removal of ash or slash material. Impact to road and other infrastructure is often minimal, requiring establishment of clear zones around buildings, cleaning of bridges, repair to timber structures, and replacement of signs; Impact to motor vehicle and other modal traffic is temporary, requiring evacuation or staged exiting out of the affected locations and public announcement updates on status of conditions; Impact (damage) to motor vehicle and other modes of transportation can be minimal to moderate to severe if caught in wildfire event, requiring extraction; Impact to road and other modal users may result in direct or indirect injury or casualty, requiring emergency medical treatment or retrieval of deceased victims. Similar to seismic and volcanic events – focus on emergency response 	Transportation Supervisors and Fire Managers	Periodic Inspections of Fuel Loads in Proximity to Road Corridors and Other Transportation Facilities	<p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); (Collins); probability of wildfires might be slightly higher than low based on what is known of expected climate trends (McKinley); (Morton); (Scavo); (Simmons); (Torrey); could add revegetation efforts to burn areas particularly in areas where transportation network lies below unstable slopes; minimize debris flows in denuded areas (Wood); (Chon)</p>
6	Storm Surge	Combination of climatic conditions (warmer temperatures or more frequent storms), human activities (continued development on coastlines), sea level rise, and melting ice or lack of ice resulting in unusual or atypical bombardment by wave action	<ul style="list-style-type: none"> Causes erosion and destabilization of shoreline or coastline resulting in exposure or damage to docks, airports, road corridor, road infrastructure (bridges, timber headwalls, and timber barriers), and other buildings/structures; Causes probable degradation of and contribution to unstable slopes; Causes delays in motor vehicle or other modal traffic, potential damage to motor vehicles and other transportation modes, and possible injury or casualties to motorists, passengers, bicyclists, or pedestrians Causes damage to cultural and natural resources 	Threat	Adapt and relocate, if necessary		Likely with localized to widespread occurrence	Moderate to significant delays to all modes, but primarily marine, of traffic with possible damage / destruction to assets/vessels/aircraft/rolling stock; perhaps even personal injury or casualty; can affect resources an visitor experience		L	Adapt and relocate, if necessary	<ul style="list-style-type: none"> Impact to coastal facilities is typically seasonal and long-lived, requiring removal of debris and tidal cast material, repairs to infrastructure, and possible relocation of assets. Impact to assets is moderate to significant, requiring cleaning of flat surfaces, repair to structures, and replacement of transportation components; Impact to motor vehicle and other modal traffic may be seasonally temporary but long-lived, requiring repetitive evacuation or staged exiting out of the affected locations and public announcement updates on status of conditions; Impact (damage) to motor vehicle and other transportation modes can be minimal to moderate to severe if caught in a storm event, requiring extraction; Impact to road and other modal users may result in direct or indirect injury or casualty, requiring emergency medical treatment or retrieval of deceased victims. 	Facilities Supervisors and Marine Resource Managers	Periodic Inspections of Water Based Assets in Proximity to Coastlines; Planned Relocation of Facilities and Assets Where Necessary	<p>Geospatial buffer and overlay analysis opportunities if data exists (Babcock); (Collins); (McKinley); would rank overall Priority as Low (Morton); (Simmons); (Torrey); (Wood); (Chon)</p>
Facility Assets / Standards															
7	Paved and Unpaved Roads	Departure from established road design and construction standards used by FHWA and FLMA	<ul style="list-style-type: none"> Causes cultural and natural resource degradation of the road corridor, depending on whether the surface is paved or unpaved, and/or any changes may shift the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Causes decreased lifespan of road, increased maintenance and repair, and liability issues 	Threat or Opportunity	Maintain, adjust, or enhance		Somewhat likely with localized occurrence	Minimal, incremental changes to roads resulting in alteration to historical character, cultural landscape, and natural resources proximate to the road corridor; excessive changes may prompt unexpected changes to driving patterns contributing to traffic accidents		M	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to road corridor is typically minor and somewhat incremental due to the nature of contracted construction and day labor projects; Impact to road infrastructure can be minimal, but sometimes culvert extensions and other site elements affect road dimensions; Impact to motor vehicle traffic is substantially inconsequential as most road users will not perceive slight, incremental changes, but subtle driving patterns may also be affected cumulatively; Impact to natural resources is minimal, requiring focused oversight of construction projects and periodic reclamation of gravels from side slopes or expanded road surfaces due to repetitive plowing and grading; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 	Design and Engineering Managers, Construction Managers, Compliance Managers, Section 106 Coordinators, Road Supervisors, and Resource Managers	Project Reviews; Periodic Evaluation and Update to Road Design Standards and during and after construction of projects	<p>Potential to identify resource degradation hotspots along road corridor (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); (Wood); (Chon)</p>

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Facility Assets / Standards (cont'd)														
8	System Resilience	Combination of asset vulnerability to damage or deterioration, lack of network redundancies, or failure to comply with capital investment and other operational strategies	<ul style="list-style-type: none"> Causes more frequent emergency or drastic responses which are more time consuming, expensive, and inconvenient to the public because alternative options or procedures are not readily available Causes increases in cost to maintenance and repairs to infrastructure. 	Threat	Mitigate or maintain through emergency planning or network enhancement	Likely with localized occurrence	Moderate short to long term changes to infrastructure and facilities; excessive need due to frequency, intensity, or area of impact may require considerable funding or operational adjustments; due to lack of redundant systems in Alaska, resiliency is even more relevant		H	Mitigate or maintain through emergency planning or network enhancement	<ul style="list-style-type: none"> Impact to assets, networks, and systems is typically moderate and can be short to long term due to the nature of available funding, extent and intensity of geohazard or weather events, or status of policy regarding intergovernmental cooperation; Impact to other modes of traffic can substantially consequential as most road and other users will experience changes, some inconvenient and others more debilitating and expensive; Impact to natural and cultural resources is moderate, requiring anticipatory responses; Being proactive, doing advanced planning such as scenario planning and vulnerability assessments. Come up with criteria for how to improve/measure resiliency. How are individual assets contributing to system resiliency? 	Asset Managers, Transportation Program Managers, Facility Supervisors, and Resource Managers	Periodic Evaluation and Update to Transportation Systems and Network	<p>Potential to show asset vulnerability ranking if data exists (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); (Wood); (Chon)</p>
9	Bridges	Departure from established bridge design and construction standards used by FHWA and FLMA	<ul style="list-style-type: none"> Causes physical or visible changes to river and stream crossings that may affect natural or cultural resources within the road corridor and/or any changes may shift the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Lifespan of bridge might not be what is expected; increased maintenance; liability; issues with historic bridges (Alaska is currently considering what to do with bridges that are almost eligible to be listed on national register). 	Threat or Opportunity	Maintain, adjust, or enhance	Unlikely with rare occurrence (but changing as bridges age)	A change to bridge construction type, treatment, repair, replacement, or elimination resulting in alteration to riverine resources or the historical character and cultural landscape of the road corridor		M	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to road corridor is typically minor to moderate depending on the nature of contracted construction and day labor projects or the specific location; Impact to road infrastructure can be moderate to substantial; Impact to motor vehicle traffic is substantially inconsequential as most road users will not perceive changes, but subtle driving patterns may also be affected cumulatively; Impact to natural resources is usually not an issue but can be a contributing factor, requiring focused oversight of construction projects and periodic maintenance; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 	Design and Engineering Managers, Compliance Managers, Section 106 Coordinators, Road Supervisors, and Resource Managers	Periodic Inspections and Project Reviews; Periodic Update to Bridge Design Standards	<p>Potential to identify resource degradation hotspots along road corridor (Babcock); (Collins); (McKinley); would rank the impact as Very High (Morton); (Scavo); (Simmons); (Torney); historic aerial imagery could be used to assess changes in stream/river channels and crossings (Wood); (Chon)</p>
10	Watercraft, Docks, Launches, Navigational Aids, Autonomous Watercraft and Drones	Departure from established design and construction standards used by FHWA, FLMA, and USCG	<ul style="list-style-type: none"> Causes physical or visible changes to water environments that may affect natural or cultural resources within the area and/or any changes may shift the recognized safety paradigm for watercraft, motorists, passengers, recreationists, and pedestrians Causes additional consideration of infrastructure lifespan, maintenance, and liability 	Threat or Opportunity	Maintain, adjust, or enhance	Unlikely with rare occurrence (but changing as water access infrastructure ages and vessels become larger)	A change to access construction type, treatment, repair, replacement, or elimination resulting in alteration to water resources or the historical character and cultural landscape of the area		L	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to water access is typically minor to moderate depending on the nature of contracted construction and day labor projects or the specific location; Impact to infrastructure can be moderate to substantial; Impact to motor vehicle and other modes of traffic can substantially consequential as most road and other users will experience changes, some inconvenient and others more debilitating and expensive; Impact to natural and cultural resources is moderate, requiring anticipatory responses; 	Design and Engineering Managers, Compliance Managers, Section 106 Coordinators, Facilities Supervisors, and Resource Managers	Periodic Inspections and Project Reviews; Periodic Update to Design Standards	<p>Potential to identify assets and impacted areas (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); historic aerial imagery could be used to assess changes in aviation related environments (Wood); (Chon)</p>
11	Aircraft, Airports, Runways, Landing Strips, Drones and Unmanned Aerial Vehicles (UAVs)	<ul style="list-style-type: none"> Departure from established design and construction standards used by FHWA, FLMA, and FAA Extreme weather events Lack of regulations regarding drones Changing climate conditions opening new remote areas to aviation (floatplane) access 	<ul style="list-style-type: none"> Causes physical or visible changes to land and water environments that may affect natural or cultural resources within the area and/or any changes may shift the recognized safety paradigm for aircraft, motorists, passengers, recreationists, and pedestrians Causes issues with lifespan, maintenance, and liability of infrastructure Causes noise, wildlife issues, visitor experience, safety, surveillance (e.g., wildfires) due to drones 	Threat or Opportunity	Maintain, adjust, or enhance	Unlikely with rare occurrence (but changing as airport or aircraft infrastructure ages or as use of drones increases)	A change to access construction type, treatment, repair, replacement, or elimination resulting in alteration to land and water resources or the historical character and cultural landscape of the area; look at social media, extreme weather and how they are opening up access to FLMA by float planes and small aircraft		L	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to aircraft access is typically minor to moderate depending on the nature of contracted construction and day labor projects or the specific location; Impact to infrastructure can be moderate to substantial; Impact to aircraft and other modes of traffic can substantially consequential as most pilots and other users will experience changes, some inconvenient and others more debilitating and expensive; Impact to natural and cultural resources is moderate, requiring anticipatory responses; 	Design and Engineering Managers, Compliance Managers, Section 106 Coordinators, Facilities Supervisors, and Resource Managers	Periodic Inspections and Project Reviews; Periodic Update to Design Standards	<p>Potential to identify assets and impacted areas (Babcock); (Collins); Risk Impact Rankings all reference "road" specifically; should terminology reflect other transportation infrastructure as mentioned in this column and how about support facilities? (McKinley); would rank the Impact as Very High (Morton); should there be any consideration for specifically calling out potential wildlife/migration impacts here? (Scavo); (Simmons); (Torney); (Chon)</p>
12	Railroad, Depots	Departure from established design and construction standards used by FHWA, FLMA, and the Alaska Railroad	<ul style="list-style-type: none"> Causes physical or visible changes to land and water environments that may affect natural or cultural resources within the area and/or any changes may shift the recognized safety paradigm for rail, motorists, passengers, recreationists, and pedestrians Causes changes to lifespan, maintenance, liability, and historic structures. 	Threat or Opportunity	Maintain, adjust, or enhance	Unlikely with rare occurrence (but changing as railroad infrastructure ages)	A change to access construction type, treatment, repair, replacement, or elimination resulting in alteration to land and water resources or the historical character and cultural landscape of the area		VL	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to rail access is typically minor to moderate depending on the nature of contracted construction and day labor projects or the specific location; Impact to infrastructure can be moderate to substantial; Impact to rail and other modes of traffic can substantially consequential as most users will experience changes, some inconvenient and others more debilitating and expensive; Impact to natural and cultural resources is moderate, requiring anticipatory responses; 	Design and Engineering Managers, Compliance Managers, Section 106 Coordinators, Facilities Supervisors, and Resource Managers	Periodic Inspections and Project Reviews; Periodic Update to Design Standards	<p>Potential to identify assets and impacted areas (Babcock); (Collins); (McKinley); would rank the Impact as Very High (Morton); (Scavo); (Simmons); (Torney); historic aerial imagery could be used to assess changes in railroad infrastructure (Wood); (Chon)</p>

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Facility Assets / Standards (cont'd)															
13	Technological Advancements	Adopting new applications and standards for communications, media, interpretation, and geospatial networking	Causes shifts in public use patterns, user impacts on resources, and traditional safety paradigm for multimodal traffic, travel to and within public lands, transit passengers, bicyclists, and pedestrians	Threat or Opportunity	Maintain, adjust, or enhance		Very likely with broad occurrence (rapidly changing technologies, media service companies, and emerging demographics)	A change to how users access public lands resulting in alteration to infrastructure, utility providers, informational and interpretive messaging, and operational needs; likely advancements include fuel changes in cars, autonomous cars, and electric bikes. Intelligent Transportation Systems (ITS) is a component of this; doesn't look like Alaska is going to get a lot of money to deal with this issue.		L	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to transportation is typically minor to moderate and somewhat incremental due to the nature of emerging technologies and gradual adoption by demographics; Impact to infrastructure can be minimal, but sometimes change in IT or media can alter structural needs; Impact to multimodal traffic is consequential as most users will perceive slight, incremental changes, but subtle travel patterns may also be affected cumulatively; Impact to natural resources is minimal, requiring focused oversight of IT construction projects, periodic changes to operational methods, and removal of pruning or removal of vegetation that may interfere with utility installation (i.e. cell towers); Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 	Communications / Media Managers, Facilities Supervisors, and Resource Managers	Periodic Evaluation and Update to Media and IT	<p>(Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); this risk is an opportunity rather than a threat; opportunities exist to better inform visitors of their impact on resources and there are also opportunities to make less expensive reactive adjustments to the technologies (as opposed to re-engineering an airport runway) as they relate to changing visitor use patterns (Wood); (Chon)</p>
14	Trails, T-roads, Seasonal Vehicle Routes, Winter Trail Markers	Lack of Federally recognized standards for T-roads; Departure from established trail design and construction standards used by FLMAs	Causes cultural and natural resource degradation of the trail corridor, depending on whether the surface is paved or unpaved, and/or any changes may shift the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians	Threat or Opportunity	Maintain, adjust, or enhance		Somewhat likely with localized occurrence	Moderate, incremental changes to trails resulting in alteration to historical character, cultural landscape, and natural resources proximate to the trail corridor; excessive changes may prompt unexpected changes to driving patterns contributing to accidents; not just a recreational issue – this is transportation for many people living in Alaska with increased visitation and use; may lead to deterioration of resources, visitor conflicts, and effect on economy; T-roads are more prevalent in interior and northern parts of Alaska and are important for subsistence use; a resource risk and safety risk -not an investment risk (except for BLM)		L	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to trail corridor is typically moderate and somewhat incremental due to the nature of trail branching to avoid wet or impassable track or due to contracted construction and day labor projects; Impact to trail infrastructure can be moderate, but sometimes culvert extensions and other site elements affect trail dimensions; Impact to multimodal traffic is substantially consequential as most trail users will experience incremental changes and use patterns may also be affected cumulatively; Impact to natural resources is moderate to substantial, requiring focused oversight of construction projects and periodic adjustment or correction of branching or expanded trail surfaces due to repetitive tire or hoof wear; Impact to cultural resources is moderate to substantial, requiring review and compliance with Section 106 	Design and Engineering Managers, Compliance Managers, Section 106 Coordinators, Trails Supervisors, and Resource Managers	Project Reviews; Periodic Evaluation and Update to Trail Design Standards	<p>Potential to identify assets, impacted areas, and driving patterns if data exists (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); historic aerial imagery could be used to assess changes in trails, T-Roads and seasonal vehicle routes; Defined trail class in FMSS could also be used to determine degree of change from original trail class intent (Wood); (Chon)</p>
15	Drainage Structures (Culverts)	Departure from established culvert design and construction standards used by FHWA and FLMAs	Causes restrictive flows if blocked or damaged that may affect cultural and natural resources within the road corridor and/or a shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians	Threat or Opportunity	Maintain, adjust, or enhance		Unlikely, but with broad occurrence	A change to culvert size, construction type, treatment, repair, or replacement resulting in alteration to historical character, cultural landscape, or natural setting of the road corridor		M	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to road corridor is typically minor depending on the nature of contracted construction and day labor projects or the specific location; Impact to road infrastructure can be moderate to substantial; Impact to motor vehicle traffic is substantially inconsequential as most road users will not perceive changes; Impact to natural resources is usually not an issue but can be a contributing factor, requiring focused oversight of construction projects and periodic maintenance; fish and wildlife passage needs to be considered as well as proper sizing for flood and debris flow events; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 Re-evaluate drainage patterns, peak flow events, and channel stability in response to extreme hydrological events; Create awareness with road edges; Condition assessment reports for culverts should be done annually; technical language and expertise required and since condition is currently somewhat subjective a culvert inspection guide is needed; An app exists that helps maintenance staff ask questions to get applicable information on culvert conditions and then automatically downloads. App developed for less than \$10k. Is this an option? 	Road Supervisors, Hydrologists	Periodic Inspections of Culverts; period of inspection could be informed by a formal inventory and comparison to debris flow/flood analysis.	<p>Potential to identify culvert locations if data exists (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); how common is it for culverts to be properly sized for debris flows -this seems unlikely (Torrey); GIS could be used to evaluate drainage patterns based on historic aerial imagery and GIS modeling could lay a foundation to predict effects of extreme hydrological events (Wood); (Chon)</p>

Vehicle Specifications																					
16	Vehicle Type, Length, Capacity, and Powertrain / Fuel	<ul style="list-style-type: none"> Change from current motor vehicles, craft, or transit fleet to other vehicle types Increase in length or capacity of current motor vehicles, craft, or transit fleet that exceeds design allowances Any type of powertrain or fuel that changes the visitor experience Autonomous vehicles may likely influence or impact the Alaska road system Larger cruise ships may likely influence or impact the Alaska ports 	<ul style="list-style-type: none"> Causes wheel tracks to go beyond the extent of the existing road and parking limits affecting cultural and natural resources Places extra weight and compressive action on an active, changing road base Restrictive motor vehicle movement to oncoming traffic within the road corridor with a resulting shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Changes in potential for fuel spills, air quality, and noise Alternative types of aircraft and watercraft require different facilities sometimes resulting in new, altered, or minimized infrastructure 	Threat or Opportunity	Maintain, adjust, or enhance		Unlikely, but with broad occurrence	A change to type, length or capacity resulting in alteration to historical character, cultural landscape, or natural setting; change in safety paradigm; and additional O&M to transportation assets		VL	L	M	H	VH	<p>Impact</p>	VL	Maintain, adjust, or enhance	<ul style="list-style-type: none"> Impact to road corridors are minor to moderate depending on the extent of the wheel base encroachment beyond surface limits, the extent of base material compression in locations where soft or wet conditions exist, and where extra intangible pullouts will be needed to allow oncoming traffic to pass; Impact to road infrastructure is minor to moderate; Impact to motor vehicle traffic is substantial as most road users will need to allow extra space and time to maneuver for oncoming vehicles; Impact to natural and cultural resources is an issue and can be a contributing factor, requiring focused oversight of motor vehicle specifications; Impact from use of new types of aircraft, watercraft or personal use conveyances remains unpredictable and requires considerable investigation and piloting before adoption 	Compliance Managers, Concessions Managers, and Resources Managers	Periodic Update to Vehicle Management Plans, Commercial Use Authorizations, Access Permits, and/or Concession Contracts	<p>✓✓✓✓✓</p> <p>Potential to map where impacts would be high (Babcock); (Collins); (McKinley); would rank the Probability as Medium (Morton); (Scavo); (Simmons); (Torrey); recommend moving probability from Very Low to Low; as climate change opens up additional navigable land a higher demand for infrastructure would be expected and therefore requiring materials to be transported via large capacity semi trailer trucks (Wood); (Chon)</p>
17	Vehicle Capacity, Frequency of Access, and Destination	<ul style="list-style-type: none"> Change from or adjustment to current motor vehicles, craft, or transit fleet in number or frequency and destination of service alters impacts to wildlife movement, habitat, visitor experience and viewing opportunities, and O&M of facilities Increase in motor vehicle and other modal traffic also increases potential exposure to geophysical hazards 	<ul style="list-style-type: none"> Causes interruption or reduction in natural movement and migration of wildlife across and within road corridors, landing zones, and docking locations Affects air quality, dust accumulation on vegetation, driver/visitor visibility, and soundscape/noise Changes the number and frequency of wildlife viewing opportunities Requires adjustment of operations and maintenance schedules, funding needs, and personnel 	Threat or Opportunity	Reduce, maintain, enhance, or avoid		Likely with broad occurrence	Change to numbers or frequency of motor vehicles, aircraft or watercraft resulting in reduction or interruption of wildlife migration or movement; change in airborne dust; affected visitor viewing of wildlife and their habitat; adjustment to O&M; cruise ship access is leading to congestion - communities like Skagway are split about whether to have more cruise ship access		VL	L	M	H	VH	<p>Impact</p>	L	Reduce, maintain, enhance, or avoid	<ul style="list-style-type: none"> Impact to wildlife is minor to significant depending on the number and frequency of motor vehicles, craft, and transit fleet; Impact to infrastructure is minor to moderate as any change in number and frequency of motor vehicles, craft, and transit fleet will alter road surfacing, etc.; Impact to motor vehicle and other modal traffic is substantial as most users encounters with other users will increase/decrease; Impact to natural and cultural resources is an issue and can be a contributing factor, requiring focused oversight of transportation management; How does maintenance change as facilities reach capacity? Recommendation: Implement vehicle/craft/fleet management plans and concession contracts, collect data, review and analyze data. Take action after five years, and annually following: Action can include working more on scheduling to achieve optimal wildlife viewing, resource protection, etc.; Consider this risk along with congestion management, access to in-holdings 	Compliance Managers, Concessions Managers, L RTP Planning Team, and those implementing visitor use studies (CVTS)	Periodic Update to Vehicle Management Plans, Commercial Use Authorizations, Access Permits, and/or Concession Contracts; 5 year update to L RTP	<p>✓✓✓✓✓</p> <p>Potential to map where impacts would be high (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); probability is High; would expect to see an upward trend in vehicle frequency to all destinations (Wood); (Chon)</p>
18	Vehicle or Craft Operating Regulations (Rules of the Road)	<ul style="list-style-type: none"> Changes to operational regulations, lack of training, public adherence, or how delivery of training is conducted 	<ul style="list-style-type: none"> May cause interruption or reduction in natural movement and migration of wildlife across and within the road corridors or landing zones; Changes the number and frequency of wildlife viewing opportunities; Requires adjustment of operations and maintenance schedules, funding needs, and personnel; Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians 	Threat or Opportunity	Maintain or enhance		Somewhat likely with broad occurrence depending upon events that require review / updates	A change to the regulations resulting in change to the character of road corridors, landing zones, or visitor experience; excessive changes may prompt inconsistent travel patterns resulting in personal injury or casualties; and adjustment to O&M required due to extra wear on road and other surfaces		VL	L	M	H	VH	<p>Impact</p>	VL	Maintain or enhance	<ul style="list-style-type: none"> Impact to natural resources is minor to moderate depending on the change to the rules; Impact to motor vehicle and other modal traffic is moderate to significant as most users will need to adjust to any changes in the rules and although most users will not perceive slight, incremental changes, subtle travel patterns may also be affected cumulatively; 	Compliance Managers, Concessions Managers, Law Enforcement, and Transportation Supervisors	Periodic Update to Transportation Management Plans, Concession Contracts, and/or "Rules of the Road"	<p>✓✓✓✓✓</p> <p>Potential to map where impacts would be high (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); (Wood); (Chon)</p>
Reductions or Changes in Maintenance and Operations																					
19	Gravel Production, Processing, or Purchase	<ul style="list-style-type: none"> Departure from established gravel management used by FHWA and FLMA's to maintain or improve unpaved road surfaces and other facilities Proximity of appropriate gravel sources in key locations at affordable prices; Lack of agreements and standard procedures for multiagency coordination regarding gravel sources. Asbestos and other hazardous materials found naturally in gravel sources 	<ul style="list-style-type: none"> Causes physical changes to gravel source locations; Affects road and other construction since the source for raw and processed gravels greatly influences cost, availability, and quality; Influences vehicle management, congestion, and road degradation depending upon where gravel is extracted from or purchased/imported; Affects other natural resources if imported gravel includes invasives; Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians depending upon gravel transport traffic levels within FLMA or from external locations 	Threat or Opportunity	Maintain or enhance		Likely with broad occurrence	A change to the policy and practices resulting in change gravel source locations and/or the character of road corridors and other transportation facilities; excessive changes may prompt inconsistent travel patterns resulting in personal injury or casualties; and adjustment to O&M required due to extra wear on road and other surfaces		VL	L	M	H	VH	<p>Impact</p>	H	Maintain or enhance	<ul style="list-style-type: none"> Impact to road corridors is moderate and somewhat undefined due to the nature of the exact movement of gravel resources and by what means; Impact to road infrastructure can be minimal to moderate depending on internal or external source; Impact to motor vehicle traffic is minimal if continued processing and delivery method is used but moderate to substantial if gravel delivered from outside the FLMA thereby affecting driving patterns; Impact to natural resources is moderate to substantial whatever gravel source is used, requiring focused oversight of extraction, processing, delivery and quality control; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 <p>Facilitate the creation of a multiagency, multi-discipline team to implement the following:</p> <ol style="list-style-type: none"> Identify potential common gravel sources in key locations to streamline acquisition of gravel material Align multiagency projects that are in close proximity to each other and negotiate shared use of gravel material Develop a program to identify and appropriately treat gravel sources Develop a set of "Best Practices" and memorandums of agreement to facilitate coordinated contracting of gravel sources to meet project/maintenance needs <p>Note: team should include BLM (regulatory agency), Regional Tribal Corporations (owner of subsurface rights), ADOT&PF, WFL Materials Lab, NPS, FWS, FS</p>	Compliance Managers, Road Supervisors, and Resource Managers	Project Reviews; Periodic Update to Gravel Acquisition Plans and Road Design Standards; Link "Special Team" pilot project success to L RTP updates; Project Reviews; Periodic Update to Gravel Acquisition Plans and Road Design Standards	<p>✓✓✓✓✓</p> <p>Potential to map gravel source locations and where the gravel goes (Babcock); impact is high to very high; many NPS sites in AK are remote and therefore having material sources available within facility is key to keeping construction costs reasonable (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); historic aerial imagery could be used to assess changes in gravel quarry environments; soundscape analysis conducted at gravel processing locations could determine APE on wildlife (Wood); (Chon)</p>

Reductions or Changes in Maintenance and Operations (cont'd)															
20	Surfacing (Asphalt, Concrete, Gravel, Decking, Trail Mix)	<ul style="list-style-type: none"> Departure from established pavement and surfacing management used by FHWA and FLMA to maintain or improve road and trail surfaces, parking lots, plazas, decks, elevated boardwalks, and other facilities Extreme weather, permafrost melting, storm surge, blocked culverts, etc. Lack of data to predict future condition and inform current conditions 	<ul style="list-style-type: none"> Causes natural and cultural resource degradation of road and trail corridors and other transportation facilities Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Shorten asset life span Increased cost of repair or rehab 	Threat or Opportunity	Reduce, maintain or enhance		Likely with localized occurrence	Minimal, incremental changes to road or trail crown, lateral slope, superelevations, and elimination of pronounced longitudinal gradients ("bumps") resulting in alteration to historical character and cultural landscape resources within the sectional profile; excessive changes may prompt increased speeds resulting in personal injury or casualties		L	Reduce, maintain or enhance	<ul style="list-style-type: none"> Impact to road and trail corridors is typically minor and somewhat incremental due to the nature of contracted maintenance and day labor projects; Impact to motor vehicle and other modal traffic is substantially inconsequential as most users will not perceive slight, incremental changes, but subtle travel patterns may also be affected cumulatively; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 	Road Supervisor, Resources Manager	Periodic Inspections and Project Reviews; Periodic Update to Road and Trail Maintenance Standards	 (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); (Wood); (Chon)
21	Vegetation Management	<ul style="list-style-type: none"> Departure from established vegetation management used by FHWA and FLMA to control vegetative growth, encroachment, and aesthetic qualities; Lack of resources to address vegetation management 	<ul style="list-style-type: none"> Causes cultural and natural resource degradation of road corridors and other transportation facilities; Changes to the subgrade when root systems spread into the road profile; Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Affect natural and cultural resources (chemical treatments could affect fish eggs; natural vegetation, etc.) Degradation of assets 	Threat or Opportunity	Reduce, maintain or enhance		Somewhat likely with broad occurrence	Minimal, incremental changes to road shoulders, ditch lines, back and foreslopes resulting in alteration to historical character, cultural landscape, and natural resources proximate to the road corridor; excessive changes may prompt inconsistent driving patterns resulting in personal injury or casualties; and adjustment to O&M required due to managed vegetative growth		L	Reduce, maintain or enhance	<ul style="list-style-type: none"> Impact to road corridors is typically minor and somewhat incremental due to the nature of contracted construction and day labor projects; Impact to road infrastructure can be minimal, but sometimes culvert extensions and other site elements affect vegetation; Impact to motor vehicle traffic is substantially inconsequential as most users will not perceive slight, incremental changes, but subtle travel patterns may also be affected cumulatively; Impact to natural resources is minimal to moderate, requiring focused oversight of construction projects, timely and periodic removal or pruning of vegetation from ditch lines and side slopes that may interfere with drainage or extend into road subgrade; Impact to cultural resources is minimal to moderate, requiring review and compliance with Section 106 	Compliance Managers, Road Supervisors, and Resource Managers	Project Reviews; Periodic Update to Vegetation Management Standards	 Potential to map impacted areas (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); (Wood); (Chon)
22	Elevated Structures (Bridges, Docks, Trestles)	<ul style="list-style-type: none"> Departure from established bridge management used by FHWA and FLMA Lack of resources to maintain structures Extreme weather events, storm surge 	<ul style="list-style-type: none"> Causes visible and physical changes to bridge structures and approaches that may affect cultural resources within a road or trail corridor Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Unknown foundations (could be susceptible to scour) Increased cost to repair or rehab Inability to access FLMA Decrease visitation, local economy, etc. 	Threat or Opportunity	Reduce, maintain or enhance		Somewhat likely with localized occurrence	Minimal to moderate changes to bridge maintenance and operations associated with keeping bridges functional resulting in alteration to historical character and cultural landscape of the road corridor; excessive changes may prompt inconsistent driving patterns resulting in personal injury or casualties		M	Reduce, maintain or enhance	<ul style="list-style-type: none"> Impact to road or trail corridor is typically minor depending on the nature of contracted or day labor maintenance projects and the specific bridge location; Impact to road infrastructure can be moderate to substantial depending upon the maintenance involved; Impact to motor vehicle or other modes of traffic is substantially inconsequential as most users will not perceive changes, but subtle travel patterns may also be affected cumulatively; Impact to natural resources is usually not an issue but can be a contributing factor, requiring focused oversight of periodic maintenance; Impact to cultural resources is typically minimal, requiring review and compliance with Section 106 	Bridge Engineers, Road Supervisors, Hydrologists	Periodic Inspections and Project Reviews; Periodic Update to Bridge Maintenance Standards	 Potential to map impacted areas (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); (Wood); (Chon)
23	Drainage Structures (Culverts)	<ul style="list-style-type: none"> Departure from established culvert management used by FHWA and FLMA Lack of location and condition data for culverts Extreme weather events Wildfires producing more debris material clogging culverts during storm events 	<ul style="list-style-type: none"> Causes restrictive flows if blocked, restricted by ice, or damaged that may affect cultural and natural resources within the road corridor Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians Increased cost of repair or replacement of culvert Facilitate damage to road asset Inhibit access to FLMA 	Threat	Reduce or maintain		Somewhat likely with broad occurrence	A change to culvert maintenance resulting in alteration to historical character, cultural landscape, or natural setting of the road corridor; excessive changes may prompt inconsistent driving patterns resulting in personal injury or casualties		H	Maintain	<ul style="list-style-type: none"> Impact to road corridor is typically minor depending on the nature of contracted or day labor maintenance projects and the specific culvert location; Impact to road infrastructure can be moderate to substantial depending upon the maintenance involved; Impact to motor vehicle traffic is substantially inconsequential as most users will not perceive changes, but subtle driving patterns may also be affected cumulatively; Impact to natural resources is usually not an issue but can be a contributing factor, requiring focused oversight of periodic maintenance; Impact to cultural resources is typically minimal, requiring review and compliance with Section 106 Facilitate the creation of a multiagency, multi-discipline team to implement the following: <ol style="list-style-type: none"> Inventory locations and conditions of culverts Investigate potential hazards (culvert inventory risk assessment) Create hydrological models of risk to culverts Create a culvert management program, similar to a USMP Create a set of "Best Practices" for culvert maintenance (catch basin and ditch maintenance) 	Road Supervisors, Hydrologists	Periodic Inspections and Project Reviews; Periodic Update to Road Maintenance Standards; period of inspection could be informed by a formal inventory and comparison to debris flow and/or flooding analysis	 Potential to identify culvert locations if data exists (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); (Wood); (Chon)

Reductions or Changes in Maintenance and Operations (cont'd)																																								
24	Congestion Management	<ul style="list-style-type: none"> Ignoring emerging trends in locations of high visitation or where facilities are unable to accommodate current or projected level of use; Adopting new methods, techniques, and practices for addressing or reducing vehicular congestion, overcrowding, and peak loading conditions High visitation for a sustained period of time 	<ul style="list-style-type: none"> Causes natural resource degradation in and around transportation facilities due to soil compaction, vegetative damage, and concentrated surface flows; Cultural resource degradation due to disturbance of archaeology, cultural landscapes, etc.; User experience dissatisfaction due to perceived or real overcrowding; Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians 	Threat or Opportunity	Reduce, maintain or enhance		Likely with localized occurrence	Minimal to moderate impacts resulting in alteration to natural, historical character and cultural landscape resources within specific FLMA locations; excessive changes may prompt increased damage to resources and user experience, and affect access and mobility resulting in limited visibility, possible personal injury or casualties	<table border="1"> <tr><td>VH</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>H</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>M</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>L</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>L</td><td>M</td><td>H</td><td>VH</td></tr> </table>	VH	Green	Yellow	Red	H	Green	Yellow	Red	M	Green	Yellow	Red	L	Green	Yellow	Red	VL	Green	Yellow	Red	VL	L	M	H	VH	L	Reduce, maintain or enhance	<ul style="list-style-type: none"> Impact to resources, transportation systems, and user networks is typically moderate and somewhat incremental due to the gradual or periodic nature of increased or peak visitation; Impact to motor vehicle traffic is substantial as most users will perceive changes where congestion is apparent, but subtle travel patterns may also be affected cumulatively; Impact to natural and cultural resources is minimal to moderate, requiring review and compliance Adapt the NPS Congestion Management Toolkit for use at multi-agency congested sites Conduct a pilot congestion assessment using the NPS toolkit (for example at the Russian River site maintained by Chugach NF and Kenai NWR in coordination with the ADOT&PF) 	Compliance Managers, Road Supervisors, and Resource Managers	Periodic Inspections and Project Reviews; Periodic Update to Transportation Management Plans, signs, messaging to the public	<ul style="list-style-type: none"> ✓✓✓✓✓✓✓✓ Potential to identify high visited areas if data exists (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); probability seems a little high for AK parks, but not from AK (Torney); would change probability from Medium to High (Wood); (Chon)
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25	Dust Management	<ul style="list-style-type: none"> Departure from established dust control techniques used by FHWA and FLMAs along with alteration of admixing CaCl Lack of affordable surface treatment options to manage dust 	<ul style="list-style-type: none"> Causes natural resource degradation of the road corridor due to leaching of chemical compounds while simultaneously reducing dust pollution Shift in the recognized safety paradigm for motor vehicle traffic, motorists, passengers, bicyclists, and pedestrians as well as impacts to visitor experience Degradation of visitor's experience (vistas and wildlife viewing inhibited, poor air quality, etc.) 	Threat or Opportunity	Reduce, maintain or enhance	Somewhat likely with targeted occurrence	Minimal to moderate incremental changes to road surfacing composition resulting in alteration to natural, historical character and cultural landscape resources within the road corridor; excessive changes may prompt increased damage to natural resources and affect driving speeds resulting in various extents of visibility, possible personal injury or casualties	<table border="1"> <tr><td>VH</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>H</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>M</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>L</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>L</td><td>M</td><td>H</td><td>VH</td></tr> </table>	VH	Green	Yellow	Red	H	Green	Yellow	Red	M	Green	Yellow	Red	L	Green	Yellow	Red	VL	Green	Yellow	Red	VL	L	M	H	VH	L	Reduce, maintain or enhance	<ul style="list-style-type: none"> Impact to road corridor is typically moderate and somewhat incremental due to the nature of contracted maintenance and day labor projects; Impact to motor vehicle traffic is substantial as most road users will perceive changes where calcium chloride admix is used, but subtle driving patterns may also be affected cumulatively; Impact to natural and cultural resources is minimal to moderate, requiring review and compliance Support/contribute to research of cost effective dust abatement alternatives 	Road Supervisors	Periodic Inspections and Project Reviews; Periodic Update to Road Maintenance Standards	<ul style="list-style-type: none"> ✓✓✓✓✓✓✓✓ (Babcock); (Collins); (McKinley); (Morton); as well as impacts to visitor experience (Scavo); (Simmons); (Torney); (Wood); (Chon) 	
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26	Non-implementation of LRTP	<ul style="list-style-type: none"> Not following recommended strategies depending on the current funding and visitation scenarios Not committing to certain levels and types of transportation system maintenance or development 	<ul style="list-style-type: none"> Causes all FLMA programs to not conform to opportunities Constraints created by decisions regarding transportation infrastructure, facilities, and systems 	Threat or Opportunity	Adopt and implement	Unlikely	Minimal to moderate commitments to transportation goals/objectives resulting in various influences on resource protection, user experience, system optimization, access, climate change initiatives, missed funding opportunities, and partnerships	<table border="1"> <tr><td>VH</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>H</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>M</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>L</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>L</td><td>M</td><td>H</td><td>VH</td></tr> </table>	VH	Green	Yellow	Red	H	Green	Yellow	Red	M	Green	Yellow	Red	L	Green	Yellow	Red	VL	Green	Yellow	Red	VL	L	M	H	VH	M	Adapt and implement	<ul style="list-style-type: none"> Impact to transportation is minimal to substantial due to the nature of how the LRTP is utilized in short and long-term decision-making; Impact to motor vehicle and other modal traffic is substantial as most users will perceive changes where LRTP implementation translates into construction projects, vehicle management, or O&M practices; Impact to FLMA staffs is moderate to substantial as successional planning is defined by personnel trends, workforce stability, and conflict resolution methodologies; Funding will incentivize management, as long as funding is distributed based on compliance with LRTP; then managed units will work it in. 	Regional Transportation Program Managers	Periodic Performance Reports and Updates to LRTP	<ul style="list-style-type: none"> ✓✓✓✓✓✓✓✓ (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torney); this risk is an opportunity to implement the strategies outlined in the LRTP (Wood); (Chon) 	
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27	Resource Management	<ul style="list-style-type: none"> Federal budget levels: bureau policy, regulations, and guidance; Distribution of discretionary funding; Turnover and retirement of personnel 	Causes all park resource programs to conform to opportunities and/or constraints created by decisions by staff reliant on or responsible for transportation infrastructure, facilities, and systems	Threat or Opportunity	Stabilize	Somewhat likely with broad occurrence	Minimal to moderate commitments to transportation goals/objectives resulting in various influences on resource protection, inventory and monitoring, climate change initiatives, and partnerships	<table border="1"> <tr><td>VH</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>H</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>M</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>L</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>Green</td><td>Yellow</td><td>Red</td></tr> <tr><td>VL</td><td>L</td><td>M</td><td>H</td><td>VH</td></tr> </table>	VH	Green	Yellow	Red	H	Green	Yellow	Red	M	Green	Yellow	Red	L	Green	Yellow	Red	VL	Green	Yellow	Red	VL	L	M	H	VH	H	Stabilize	<ul style="list-style-type: none"> Impact to transportation systems is minimal to substantial depending upon staffing levels, roles and responsibilities, and distribution of FTE by geographic area; Impact to motor vehicle traffic is substantial as most road users will perceive changes where staff levels translates into construction/maintenance projects, vehicle management, or O&M practices; Impact to FLMA staffs is moderate to substantial as successional planning is defined by personnel trends, workforce stability, and conflict resolution methodologies Balance with agency missions. Minimize impacts of transportation systems to natural and cultural resources. 	Regional and Unit Managers, Resource Program Managers, Transportation Program Managers, Resource Specialists	Align with resource management strategies	<ul style="list-style-type: none"> ✓✓✓✓✓✓✓✓ Goal area GIS questions can be used for visual analysis (Babcock); (Collins); (McKinley); would rank impact as Medium; sometimes changes and new persons with new ideas/skills are beneficial (Morton); (Scavo); (Simmons); (Torney); opportunity to implement Resource Stewardship Strategies (Wood); (Chon) 	
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FLMA Management (cont'd)														
28	Safety Management	<ul style="list-style-type: none"> Ignoring accidents in locations of high visitation or where facilities are in need of improvement to accommodate current or projected level of use; Adopting new methods, techniques, and practices for addressing or reducing vehicular accidents, personal injuries, or fatalities 	Causes all park programs to conform to opportunities and/or constraints created by decisions regarding staff reliant on or responsible for transportation infrastructure, facilities, and systems	Threat or Opportunity	Reduce, maintain or enhance	Likely with limited occurrence	Minimal to moderate impacts resulting in alteration primarily to user experience, access, and mobility, but also to natural, historical character and cultural landscape resources within specific FLMA locations; excessive changes may prompt increased damage to resources but benefiting the user by improving visibility, thereby reducing possible personal injury or casualties		H	Reduce, maintain or enhance safety risk. Focus on safety of the public.	<ul style="list-style-type: none"> Impact to transportation facilities is minimal to substantial depending upon degree to which infrastructure changes are needed; Impact to motor vehicle and other modal traffic is substantial as most users will perceive changes from construction/maintenance projects, vehicle management, or O&M practices; Impact to all park staff is moderate to substantial as safety management is defined by personnel trends, workforce stability, and enforcement or educational methodologies; Comprehensive, multi-agency effort is required Incorporate safety focus/perspective in all actions taken in the LRTP Form a multi-agency safety assessment team whose aims to have one consistent source of data for safety/crash data collection; an issue with incident reporting is the lack of consistency across the agencies Potential to use phone apps to collect safety information, including anecdotal data and information from park staff about incidents; already have an app for reporting incidents in USMP (for landslides) – this could be used for safety Experience with the wildlife vehicle collision app indicated minimal usership when piloted 	Law Enforcement, Transportation Managers in all agencies	Periodic Review and Adjustment to Safety Management Plans	<p>Goal area GIS questions can be used for visual analysis (Babcock); should be low-medium probability because safety drives a lot of projects and a good job is done to track accidents and determine or address safety deficiencies in transportation corridors (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); overlay of accident locations with transportation network could produce accident hotspots (Wood); (Chon)</p>
29	Staffing Locations and Staff Level Changes	<ul style="list-style-type: none"> Federal budget levels; bureau policy, regulations, and guidance; Distribution of discretionary funding and staff throughout operational centers; Turnover and retirement of personnel; Housing shortage / limitations 	Causes all FLMA transportation programs to conform to opportunities and/or constraints created by decisions regarding staff reliant on or responsible for transportation infrastructure, facilities, and systems and staff performance to respond to resulting workload and assigned tasks at specific locations	Threat or Opportunity	Change or enhance efficiency of response time	Somewhat likely with limited occurrence	Minimal to moderate commitments to staffing to support transportation resulting in various influences on resource protection, user experience, system optimization, access, climate change initiatives, and partnerships		M	Change or enhance efficiency of response time	<ul style="list-style-type: none"> Impact to transportation facilities is minimal to substantial depending upon staffing levels, roles and responsibilities, and distribution of FTE by geographic area; Impact to motor vehicle and other modal traffic is substantial as most users will perceive changes where staff levels translates into construction/maintenance projects, vehicle management, or O&M practices; Impact to all FLMA staff is moderate to substantial as successional planning is defined by personnel trends, workforce stability, and conflict resolution methodologies 	Administrative / Personnel Managers	Periodic Review and Adjustment to Successional Planning, Organizational Initiatives, and Operations Plans	<p>Potential to map impacted areas (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); (Wood); Probability should be Medium; overall priority is still High (Chon)</p>
30	Agency Management Organizational Structure	<ul style="list-style-type: none"> Federal budget levels; park staffing policy and guidance; Assignment of staff and their roles/responsibilities throughout operational centers 	Causes FLMA operations to conform to staffing opportunities and/or constraints and to respond to resulting supervisory workload and assigned tasks at specific locations	Threat or Opportunity	Maintain or enhance stability and expertise of staff	Somewhat likely with broad occurrence	Minimal to moderate commitments to operational management resulting in various influences on resource protection, user experience, system optimization, access, climate change initiatives, and partnerships		L	Maintain or enhance stability and expertise of staff	<ul style="list-style-type: none"> Impact to transportation facilities is minimal to substantial depending upon staffing levels, roles and responsibilities, and distribution of FTE by geographic area; Impact to motor vehicle and other modal traffic is substantial as most users will perceive changes where staff levels translates into construction/maintenance projects, vehicle management, or O&M practices; Impact to all FLMA staff is moderate to substantial as successional planning is defined by personnel trends, workforce stability, and conflict resolution methodologies 	Administrative / Personnel Managers	Periodic Review and Adjustment to Successional Planning, Organizational Initiatives, and Operations Plans	<p>(Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); (Wood); probability should be Medium; overall priority will be changed to Medium (Chon)</p>
31	Partnerships	<ul style="list-style-type: none"> Combination of not seeking out partnerships from which to leverage funding and collaborate on mutually beneficial projects and Not committing to financial arrangements which would help to ensure transportation system maintenance or development 	<ul style="list-style-type: none"> Causes FLMAs to operate in isolation and without benefit of coordinating on public use, safety and experience; Current and projected funding tied to shared matched funding initiatives 	Threat or Opportunity	Maintain or enhance partnering efforts	Somewhat likely with broad occurrence	Minimal to moderate commitments to transportation management resulting in various influences on partnerships, resource protection, user experience, system optimization, access, and climate change initiatives		M	Maintain or enhance partnering efforts	<ul style="list-style-type: none"> Impact to transportation is minimal to substantial depending upon management roles and responsibilities; Impact to motor vehicle and other modal traffic is substantial as most users will perceive changes where partnered management translates into construction/maintenance projects, vehicle management, or O&M practices; Impact to all FLMA staff is moderate to substantial as successful partnering is defined by persistent, long-term communication, workforce stability, and periodically - conflict resolution 	Administrative / Transportation Program Managers	Periodic Review and Adjustment to MOUs, IAs, and Project Agreements	<p>Goal area GIS questions can be used for visual analysis (Babcock); (Collins); (McKinley); (Morton); (Scavo); (Simmons); (Torrey); five year FLMA project map would facilitate discussion on how to optimize project funding across the FLMAs (Wood); (Chon)</p>
32	Inholder vehicle capacity, frequency of access, and vehicle type	Increased desire of inholders and access type into Federal managed public lands (commercial, mining, etc.)	Adds to complexity of managing for all users while protecting FLMA natural and cultural resources	Threat or Opportunity	Mitigate, maintain or enhance POV / commercial vehicles	Somewhat likely with limited occurrence	A minimal potential change to numbers or frequency of motor vehicles and other transportation modes resulting in reduction or interruption of wildlife migration or movement; change in airborne dust; affected visitor viewing of wildlife and their habitat...		M	Mitigate, maintain or enhance	<ul style="list-style-type: none"> Impact to wildlife is minor to significant depending on the number and frequency of vehicles; Impact to road infrastructure is minor to moderate as any change in number and frequency of motor vehicles; Impact to motor vehicle and other modal traffic is possible as most users encounters with other users will increase/decrease; impact to natural and cultural resources is also possible; Significant challenge that FLMAs have for next ten years are new points of entry and continued economic demands/opportunities by private inholders; Need to better define access permits; 	Administrative, Compliance Managers, Concessions Managers, Law Enforcement, and Transportation Supervisors	Periodic review per FLMA Access Plans; review of cumulative commercial and mining ROW use.	<p>Potential to map impacted areas (Babcock); (Collins); this is a growing issue that would be a High priority at Denali NP; this may or may not be generally relevant across all FLMAs (McKinley); (Morton); (Scavo); (Simmons); (Torrey); (Wood); (Chon)</p>

Attachment C.

Additional Presentations

Unstable Slope Management Program (USMP) – Brian Collins

- FHWA developed the USMP with partners. It has mostly been used by NPS; FS has done a few pilot studies; counties and local govt. have also used it.
- Using the tool NPS identified over 100 sites on Denali Park Road with unstable slopes.
- Units can input the data themselves using a rating form, a new slope event form, or a maintenance form. Data can be inputted using an app.
- The website/app is a generic system – a similar interface could be set up for roads and trails. The app works offline, and then lets you upload the data into the website. They designed it to be easy to fill out – you don't need to be a geotech engineer to use it.
- The tool lets you do a quantitative assessment of risk for specific slopes.
- Q: Could this type of platform be easily adopted for safety management or culverts?
 - A: Yes. You would need GIS experts and technical experts to make the tool.

Vulnerability Assessment Protocol – Blair Tormey

- WCU and NPS developed the vulnerability assessment protocol and used it on 19 pilot projects. These projects were all coastal, but are now moving inland.
- Vulnerability of infrastructure = exposure + sensitivity; adaptive capacity considered at the end of the process.
- The coastal hazard/exposure indicators in the tool are: flooding potential, extreme event flooding, SLR flooding, shoreline change, and reported coastal hazards (non-GIS information reported by people on the ground).
- Sitka is the only project they've done in Alaska.
- The protocol looks at vulnerability of structures and transportation assets. The result is an exposure map showing assets that are in areas of low, medium, or high risk.
- To evaluate the sensitivity of an asset, the park completes a questionnaire (e.g., historical damage, protective engineering).
- WCU did an annotated bibliography of types of vulnerability assessments across different agencies.
- Exposure score + sensitivity score = vulnerability score
 - Don't weight any of the factors
- The reports include a list of potential adaptation strategies. Ideally parks would use vulnerability assessment results to implement adaptation strategies.
- Yellowstone is the first inland park they are looking at. Slope stability will be an issue, as will a number of other factors relevant to AK.
- They use a 30 year time window for climate impacts, since this is a relevant planning timeline for parks.
- All of the GIS data, spreadsheets, and databases are made available to the park at the end of the process. The NPS facilities division also has the data, and is trying to figure out where to store it.

Transportation Resource Stewardship Planning Tool (TRSP) - Ryan Schavo

- NPS is using this tool in coordination with TINA to identify natural and cultural resources w/in 300 ft. of road corridor that could be influenced by transportation. The tool generates response strategies.
- The tool was originally developed for NPS, but they have broadened it to include all LRTP agencies. They have tested it on one unit per agency.
- The TRSP wants to do data validation with FWS, FS, and BLM units.
- This includes permafrost data and maps – new within last year. They are also incorporating this data into TINA.
- Christy at NPS is working on this. The next step is to engage with each of the agencies to validate. Proposal to put the results on the agenda for one of the monthly LRTP calls.
- Discussion on the need to coordinate on maps for the LRTP between TRSP, TINA, Volpe.
- Suggestion to have a comprehensive list of data sources for all of these tools. Erica can be the clearinghouse of keeping track of this data.
- Ryan has executive summary about the TRSP project and can share with the group soon.

TINA – Zack, Laura, and Doug

- TINA is a weighted overlay hotspot layer. NPS has used it at Denali and Golden Gate.
- Recently, they looked at goals from the LRTP, and stacked together GIS layers to identify hotspots/priority areas. Then they overlaid this with the transportation network.
- The goal is to find specific locations for investment needs.

- Discussion on the issue of scale when doing a statewide analysis. They may focus on priority hotspots and then look at what data they need there (otherwise, there is a chance that the hotspots will just be the areas with the most data available).
- Related projects can be incorporated into TINA layers – vulnerability assessments, congestion management, etc.

Discussion

- Moving forward with the LRTP, how are the different tools going to inform the process? Are the different tools appropriate for different scales?
- Data in high risk areas can be identified in TINA tool (to the extent possible/data is available).