13.2 Parks and Recreation Resources

This section describes parks and recreation resources that the proposed Port MacKenzie Rail Extension could affect. These resources include park lands and recreational activities – boating, hunting, fishing, wildlife viewing, hiking, winter sports, and a variety of others. Section 13.2.1 describes regulations governing parks and recreation resources; Section 13.2.2 describes the study area; Section 13.2.3 describes the methodology used to analyze impacts to parks and recreation resources; Section 13.2.4 describes the affected environment (existing conditions); Section 13.2.5 describes potential environmental consequences (impacts); Section 13.2.6 summarizes the U.S. Department of Transportation Act of 1966 section 4(f) and the Land and Water Conservation Fund Act section 6(f) evaluations; and Section 13.2.7 describes unavoidable environmental consequences of the proposed action to parks and recreation resources.

13.2.1 Regulatory Setting

13.2.1.1 Federal Regulation

Bureau of Land Management

- Iditarod National Historic Trail Comprehensive Management Plan (BLM, 1986) – This is a Congressionally-mandated management plan for the collection of trail resources collectively known as the "Iditarod National Historic Trail." Under the Plan, no single agency or organization manages the entire trail; instead, the plan calls for cooperative management by Federal, state, and local agencies. The plan establishes a common guide used to promote the preservation, enjoyment, use, and appreciation of the trail. It also identifies trails and sites comprising the historic trail system, and recommends possible management actions for protecting significant segments, historic remnants, and artifacts for public use and enjoyment. The Bureau of Land Management (BLM) coordinates the cooperative management of the Iditarod National Historic Trail land and is the primary point of contact for matters involving the entire trail. BLM duties under the Plan include reviewing for appropriateness and consistency any draft regulations affecting segments of the Iditarod National Historic Trail. State, city, municipal, or borough land managers responsible for trail segments or historic sites identified in the Plan are encouraged to enter into cooperative agreements with the Federal government and to collaboratively define actions that are consistent with the Plan's management objectives on a segment-by-segment or site-by-site basis (BLM, 1986).
- Revised Statute 2477 (Mining Law of 1866) – This law promoted the settlement of the American West in the 1800s and provided access to mining deposits on Federal lands. Congress adopted Revised Statute 2477 as part of the Mining Law of 1866. Revised Statute 2477 granted rights-of-way for the construction of highways across public land not reserved for public uses. The statute was repealed in 1976 with enactment of the Federal Land Policy and Management Act, 43 U.S.C. § 1701, but Congress did not terminate valid ROWs existing on the date the Act was enacted (GAO, 2004). The ADNR Division of Mining, Land, and Water has researched more than 2,000 routes and determined that approximately 647 historic routes qualify under Revised Statute 2477 (ADNR, 2008a). Once established, a Revised Statute 2477 ROW cannot be abandoned by non-use or removed without undergoing a legal easement-vacation process. By statute, the Alaska legislature must approve an

application to vacate a Revised Statute 2477 ROW if there is no reasonable, comparable alternative ROW or means of access.

U.S. Department of Transportation

The U.S. Department of Transportation (USDOT) regulation known as "section 4(f)" is not applicable to actions of the STB or the Board; however, it is applicable to the proposed rail line through the potential involvement of the Federal Railroad Administration (FRA).[1] Section 4(f) was originally established in the U.S. Department of Transportation Act of 1966 (49 U.S.C. § 1653(f) and later recodified as 49 U.S.C. § 303. In 2005, Congress enacted legislation that required the USDOT to issue additional regulations that clarify section 4(f) standards and procedures (USDOT, 2005). These new regulations were finalized in March 2008, at 23 C.F.R. part 774.[2] Section 4(f) mandates that the Secretary of Transportation shall not approve any transportation project requiring the use of publicly-owned parks, recreation areas, wildlife or waterfowl refuges, or significant historic sites, regardless of ownership, unless (1) there is no prudent and feasible alternative to using that land and (2) the program or project includes all possible planning to minimize harm to the public park, recreation area, wildlife or waterfowl refuge, or significant historic site, resulting from that use.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2003: A Legacy for Users (SAFETEA-LU), 23 U.S.C. § 101, amended existing section 4(f) legislation to simplify the processing and approval of projects that have only *de minimis* impacts on resources protected by section 4(f). The Federal Railroad Administration (FRA) follows 49 U.S.C. § 303(d) for *de minimis* findings. A *de minimis* finding refers to a finding that a project would have little or no influence to the activities, features, and/or attributes of the section 4(f) resource. This revision provides that once USDOT determines that the transportation use of any section 4(f) property would result in a *de minimis* impact on that property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, an analysis of avoidance alternatives is not required and the section 4(f) evaluation process is complete for that resource.

Appendix M of this Environmental Impact Statement (EIS) includes the complete section 4(f) evaluation, which is summarized in Section 13.2.6.

National Park Service

Section 6(f) of the Land and Water Conservation Fund, 16 U.S.C. § 4601, applies to all public areas that have received Conservation Fund monies to acquire or develop public recreation facilities. Section 6(f)(3) requires that these areas be maintained in perpetuity for public outdoor recreation use, unless the National Park Service approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value. This statute would

[1] The lead agency for this EIS is the STB. The FRA chose to participate as a cooperating agency in the preparation of the EIS because the Applicant could request FRA funding for the proposed rail line, and FRA funding of the project would be considered a Federal action. Because section 4(f) does not apply to the STB, FRA is acting as the lead agency for the section 4(f) analysis completed for the EIS. To date, however, the Applicant has not indicated any intent to apply for FRA funding for the proposed rail line.

[2] 23 C.F.R part 774 is a Federal Highway Administration (FHWA) regulation that does not apply to FRA. FRA follows 49 U.S.C. § 303 and uses this FHWA regulation as guidance.

apply for any land that has received Conservation Fund assistance that could be converted to use through implementation of the proposed action.

Appendix M includes the complete section 6(f) evaluation, which is summarized in Section 13.2.6.

13.2.1.2 State Regulations

Alaska Department of Natural Resources

Section 13.1 describes the land use and management plans listed below in more detail; the table in Section 13.1.4.4 summarizes those plans.

- Susitna Area Plan (ADNR, 1985, amended 1993) – This is the guiding document for the ADNR management of state lands in the vicinity of the study area. However, the Southeast Susitna Area Plan (described next) provides specific management policies for the study area, as defined in Section 13.2.2.
- Southeast Susitna Area Plan (ADNR, 2008b) – This plan establishes land use designations, management intent, and management guidelines for more than 250,000 acres of state uplands, shorelands, and tidelands in the lower Susitna Valley, and encompasses the entire study area. It includes discussion of fish and wildlife habitat and harvest areas; recreation, tourism, and scenic resources; shorelands and stream corridors; and public access, among others. It revises the entire Willow Sub-Basin Area Plan (1982) and a portion of the South Parks Highway Subregion of the Susitna Area Plan.
- Fish Creek Management Plan (ADNR, 1984, amended 1987) – This is a joint land management plan between the ADNR and the MSB for an area between the Little Susitna and Susitna rivers, generally north of Susitna Flats State Game Refuge and southwest of Nancy Lake State Recreation Area. The plan designates site-specific land use allocations for the area, and pertains to both state and MSB lands in accordance with the joint planning and adoption process. It includes resource descriptions and management policies for transportation, fish and wildlife, and recreation, among others.
- Susitna Basin Recreation Rivers Management Plan (ADNR, 1991) – This plan governs land and water management practices for state-owned lands along the Little Susitna State Recreation River, including water and riparian habitats and a 1-mile-wide corridor of land surrounding the rivers. The plan includes goals and management practices for recreation, fish and wildlife habitat, and public access, among others.
- Nancy Lake State Recreation Area Master Plan (ADNR, 1983) – This is the management document for Nancy Lake. It provides information about natural and cultural resources in the area, regional recreation resources, and visitor use and projections. It also analyzes resource areas and provides management and development recommendations for the recreation area.
- Alaska Recreational Trails Plan (ADNR, 2000) – This plan is a resource that provides guidance for volunteers and trail advocates in working with landowners and land managers to "save, secure and improve existing trails, develop new trails, deal with conflicts among diverse trail users vying for limited space and dollars, and to improve trailhead parking,

sanitation and information." The plan thoroughly describes statutory regulations for legal access and trail protection.

- Riparian buffers – ADNR Regulation 11 Alaska Administrative Code (Alaska Admin. Code 11 § 51.045) establishes the ADNR right to reserve an access easement of at least 50 feet from either side of a mean high water line for all rivers determined to be public or navigable water, before ADNR grants a lease or conveys land adjacent to inland waters.
- Access to water – Alaska Statute (Alaska Stat. § 38.05.127) defines the ADNR role to provide public access along and to public or navigable waters prior to lease, sale, grant, or other disposal of state interest.
- Generally allowed trails – ADNR Regulation 11 (Alaska Admin. Code 11 § 96.020) allows individuals to construct and maintain trails up to 5 feet wide on state land. Individuals are not required to report the location or purpose of this type of trail to the ADNR, so there are no detailed records of them. They are considered a legal public use.
- Section line easements – ADNR Regulation 11 (Alaska Admin. Code 11 § 51.025) establishes that the ADNR will reserve a 50- to 100-foot public easement along section lines before selling, leasing, or otherwise disposing of the surveyed land estate, unless and until it is vacated under Alaska Admin. Code 11 § 51.065. The Alaska Recreational Trails Plan describes the section line as the center of the dedicated ROW, and if a section line qualifies under law and has not been vacated, a publicly-owned section line easement exists north-south and east-west every mile. The regulation also establishes a policy that section line easements leading to public waterbodies shall not be vacated (ADNR, 2000).

Alaska Department of Fish and Game

Susitna Flats State Game Refuge Management Plan (ADF&G, 1988) – This plan provides long-range management guidance for the Susitna Flats State Game Refuge. It provides goals, objectives, and policies to guide management activities, including discussion of public access, hunting, fishing, and other recreation activities as they relate to Alaska Department of Fish and Game (ADF&G) wildlife management goals.

This analysis does not review the guiding management plan for Goose Bay State Game Refuge, because the Refuge is east of the Mac East Segment and it would not be affected by the proposed rail line.

The ADF&G sets seasons and hunting bag limits for Game Management Unit 14A, which includes the entire study area. Sportfishing regulations and catch limits are set annually for the Southcentral Alaska Knik Arm Drainage Area, which encompasses the study area. The ADF&G Division of Sportfishing designates specific rules and regulations for the major fishing rivers the proposed rail line could cross – the Little Susitna River, Willow Creek, and Fish Creek (draining Big Lake).

13.2.1.3 Local Regulations

Matanuska-Susitna Borough

- Matanuska-Susitna Borough Comprehensive Plan (MSB, 1970, amended 2005) – This plan provides goals and policy recommendations aimed at addressing future growth and land management. It includes discussions of goals and policies for transportation and parks and open space, among others. The plan emphasizes maintaining the quality of parks, open space, and natural resource quality as key features that draw people to the area to live and recreate. The plan includes local community planning areas, which in turn have produced their own local area plans that provide more specific goals and policy guidance for these areas. For the study area, these local plans include the Big Lake Comprehensive Plan (2009), Knik-Fairview Comprehensive Plan (1997), City of Houston Comprehensive Plan (amended 2003), Willow Comprehensive Plan (1970, currently being updated), Meadow Lakes Comprehensive Plan (2005), Fish Creek Management Plan (final draft July 2008), and Point MacKenzie Comprehensive Plan (draft vision statement and goals May 2008).
- Matanuska-Susitna Borough Recreational Trails Plan (MSB, 2000, amended 2007) – This plan outlines the MSB goals and policies for the study and management of primitive, unpaved, backcountry recreational trails. The plan evaluates and maps principal trail corridors in the MSB, sets priorities for trail development, identifies and analyzes major hindrances to trail development and preservation, and evaluates public demand for trails and trail development.

13.2.2 Study Area

The study area is north of Anchorage across the Knik Arm, and stretches north to Parks Highway and the cities of Wasilla, Houston, and Willow. The landscape is primarily forest, with numerous wetland areas, lakes, and rivers. It includes several designated recreation areas, including the Willow Creek State Recreation Area, Nancy Lake State Recreation Area, Little Susitna State Recreation River, and 2 state recreation sites on the northern and southern shores of Big Lake. Many recreational trails cross the area, and there are varied recreation opportunities available to the public. The area is well suited for both winter and non-winter outdoor recreation activities. In general, there is more private property and greater population density toward the eastern portion of the study area (in the vicinity of Big Lake) and to the north near the communities adjacent to Parks Highway than in the southern and western portions of the study area. The degree of development in these areas affects the recreation resources available, with more open space and trail resources in the less-developed areas.

Figures 13.2-1 through 13.2-6 show the general area and specific recreation resources along the proposed rail line segments. The figures include officially recognized and unofficial trails that were digitally available. Trails shown on Figures 13.2-1 through 13.2-3 could also be used for snowmachining, but are not shown on Figures 13.2-4 through 13.2-6, which are based on detailed information submitted in a public comment (Gaffey unpublished data, 2007).

For the purposes of this EIS, an officially recognized trail is defined as a trail that has been specifically established within currently adopted plans by the ADNR and/or the MSB or is

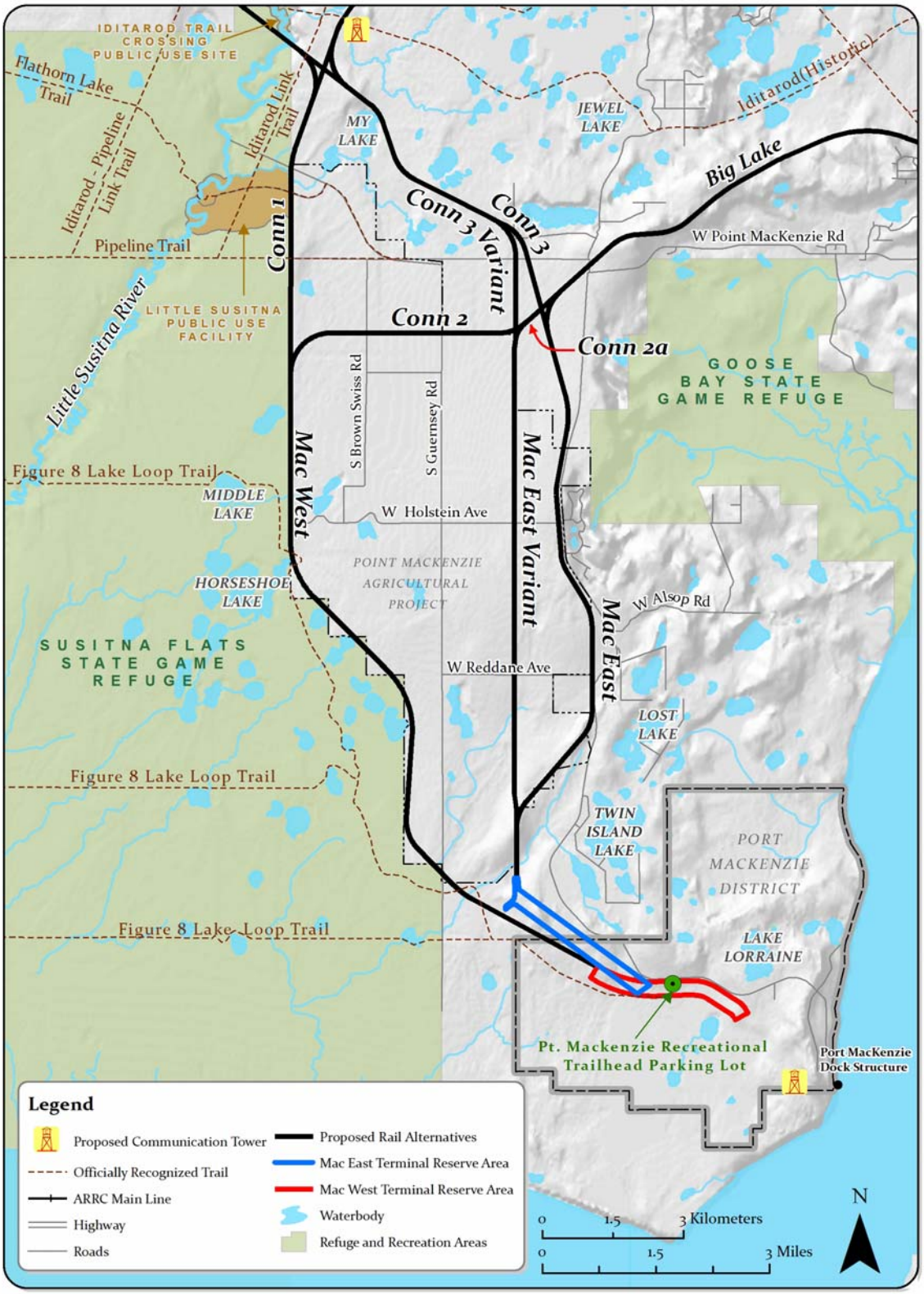

Figure 13.2-1. Recreation Resources along the Mac East, Mac West, and Connector Segments

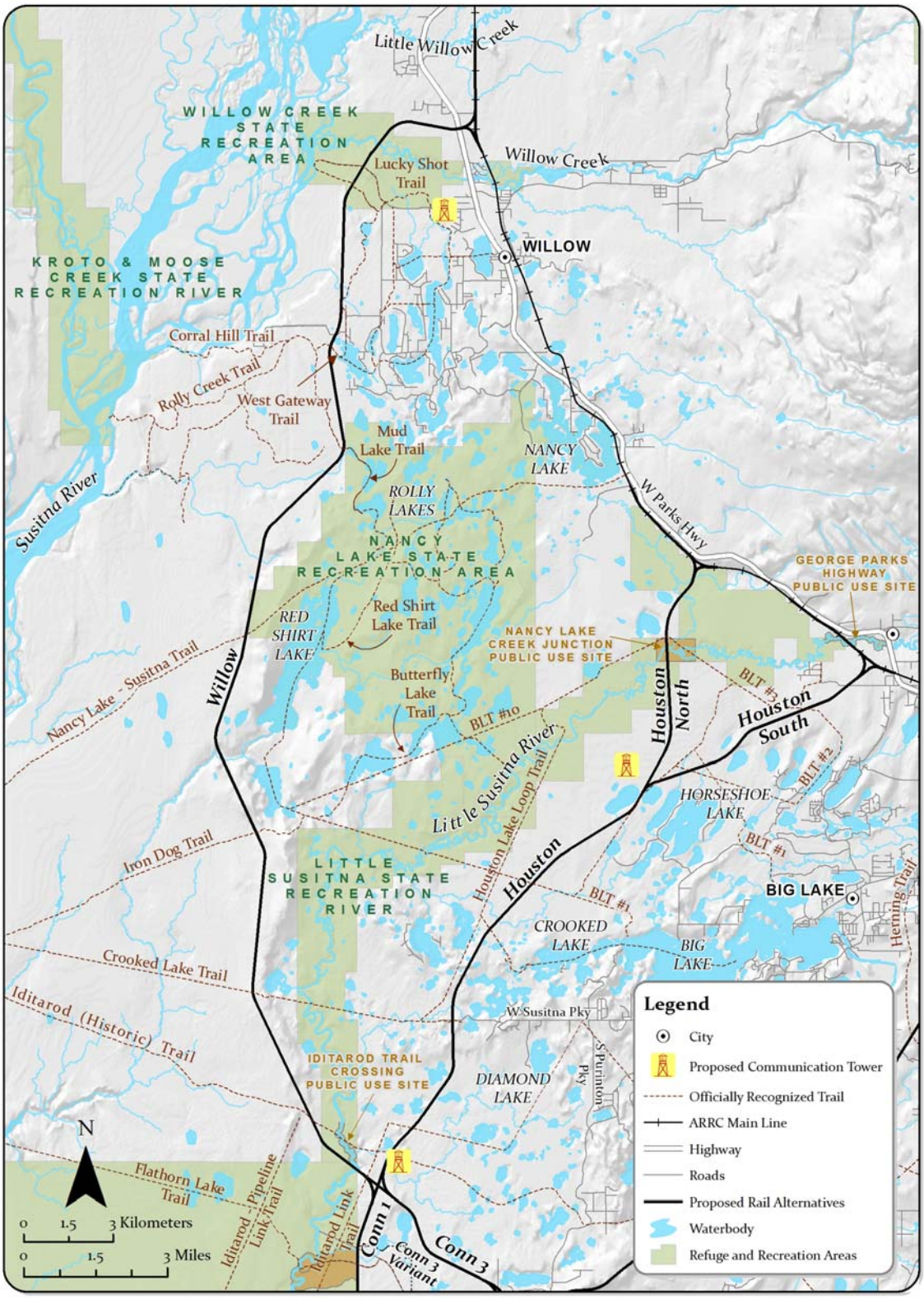

Figure 13.2-2. Recreation Resources along the Willow, Houston, Houston North, and Houston South Segments

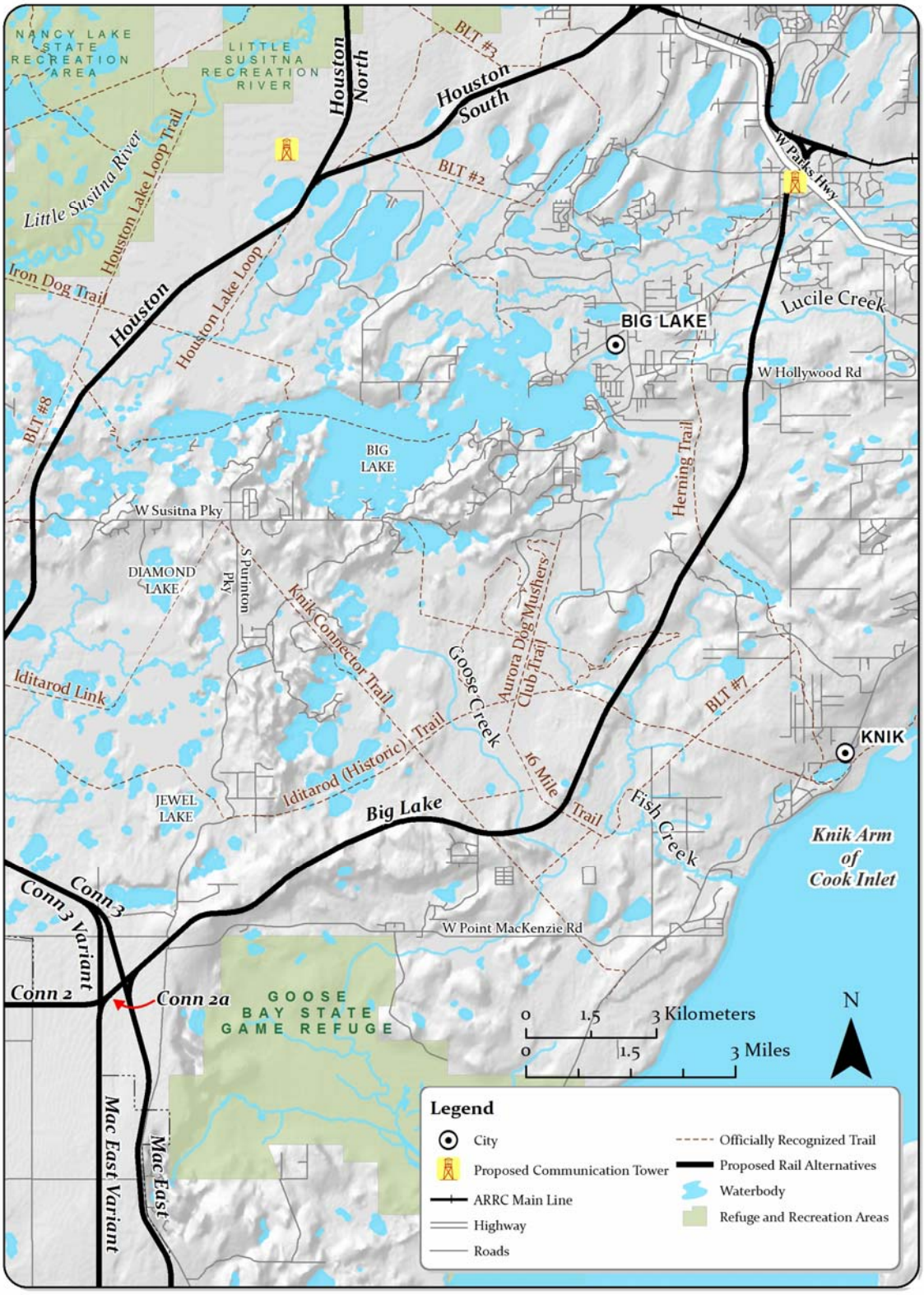

Figure 13.2-3. Recreation Resources along the Big Lake Segment

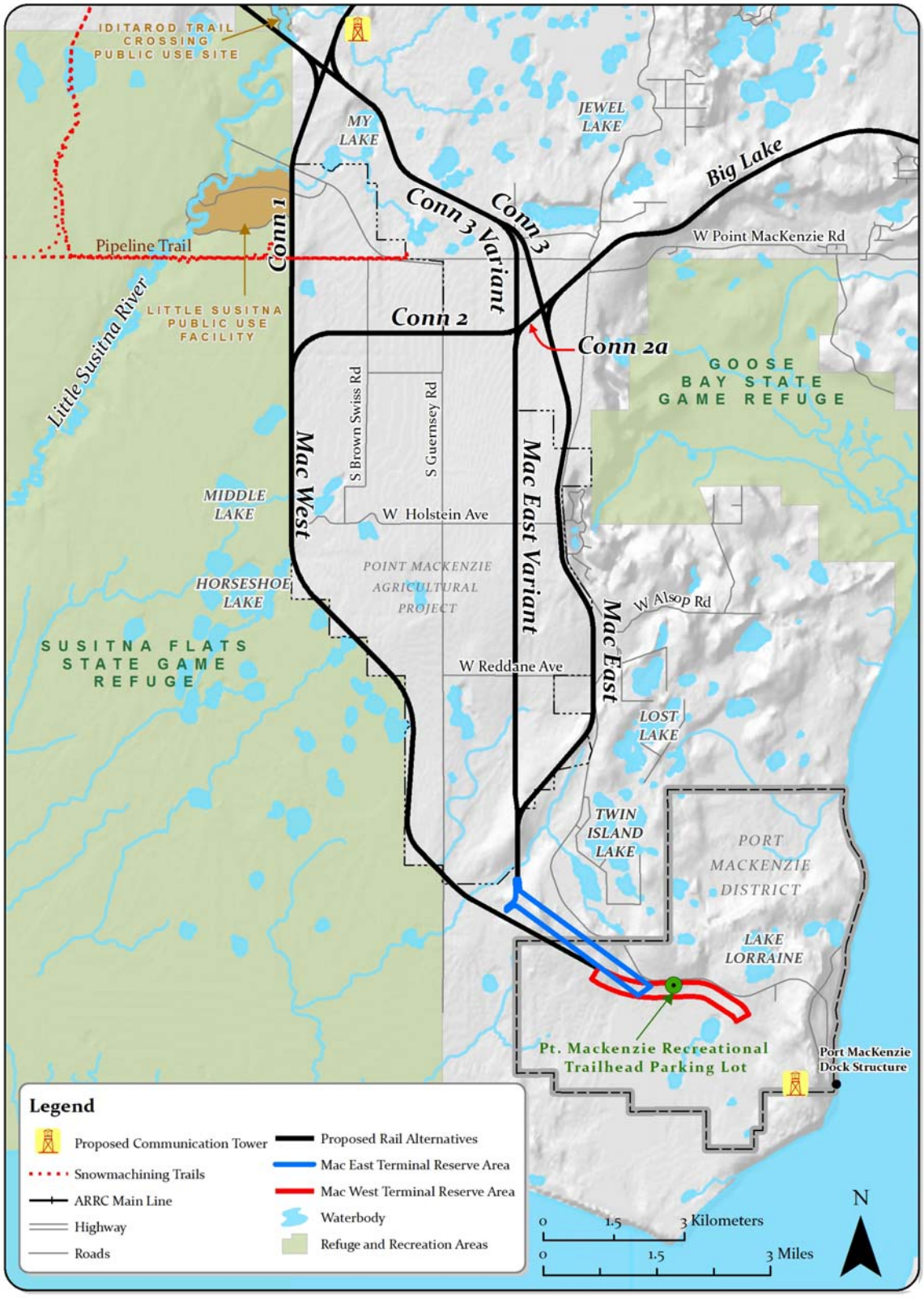

Figure 13.2-4. Snowmachining Trails along the Mac East, Mac West, and Connector Segments

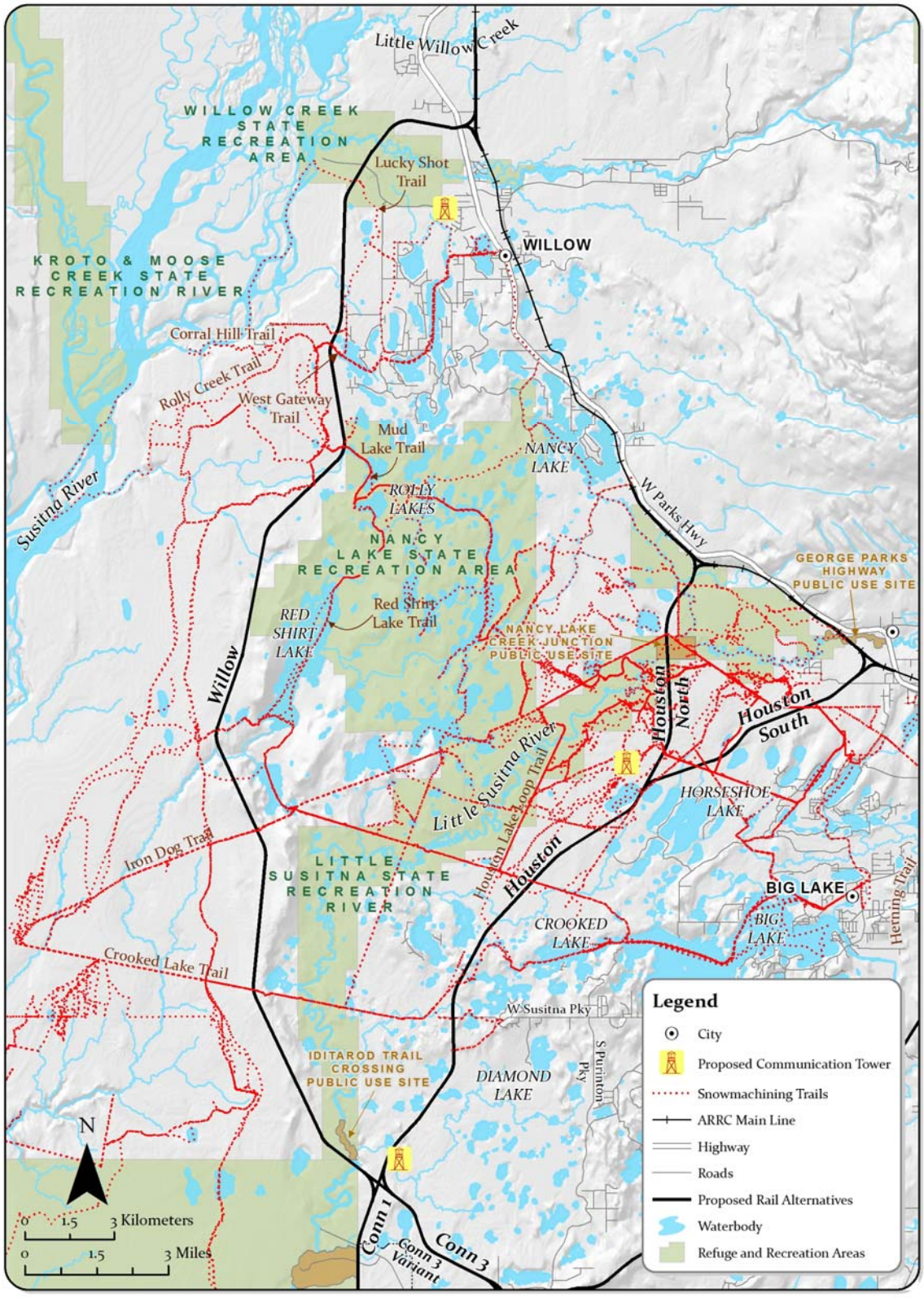

Figure 13.2-5. Snowmachining Trails along the Willow, Houston, Houston North, and Houston South Segments

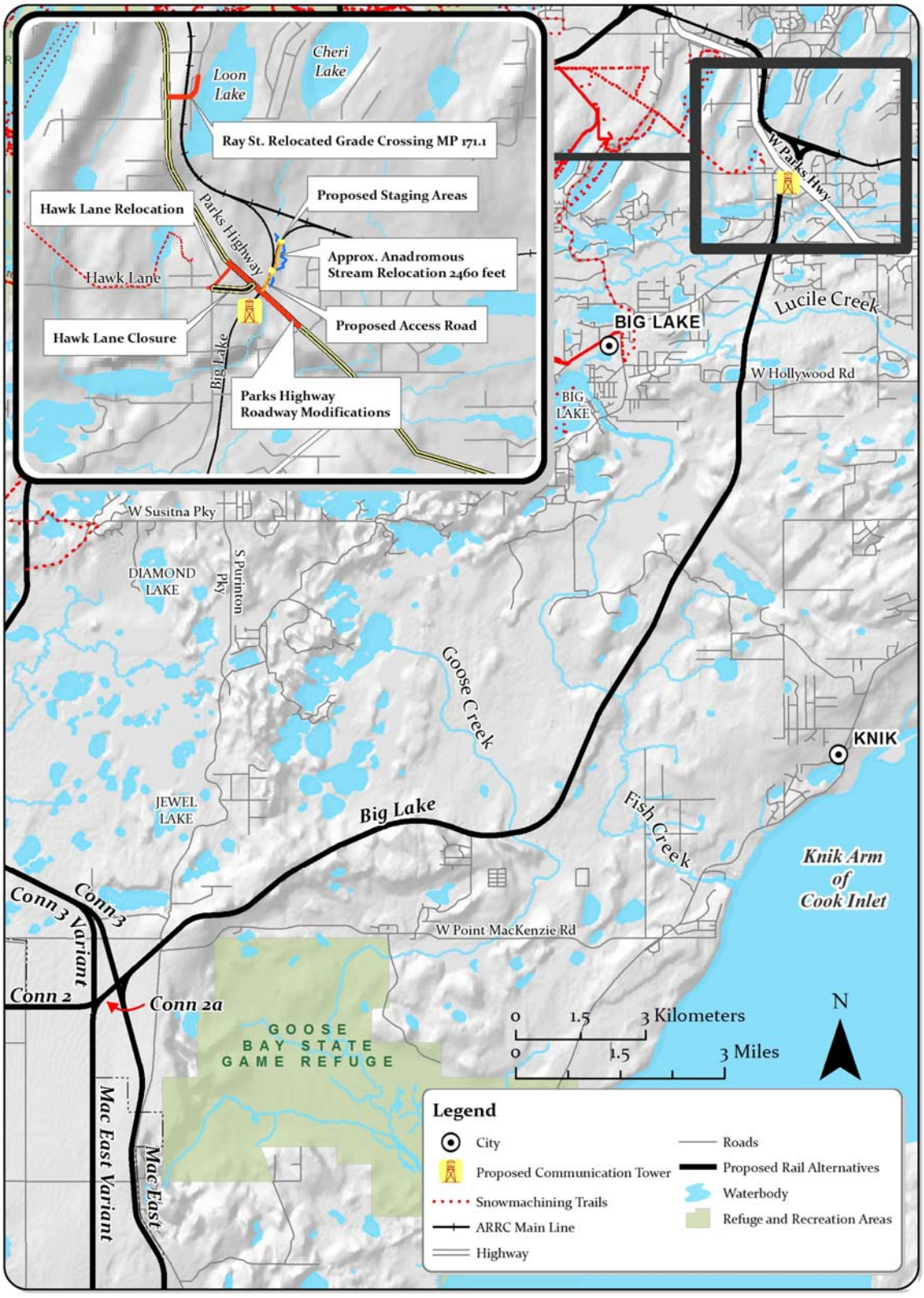

Figure 13.2-6. Snowmachining Trails along the Big Lake Segment

established within an ADNR or MSB plan at the time of rail line construction or rail line ROW acquisition by the applicant (whichever occurs first).

In addition, officially recognized trails in this section are used primarily for recreational activities. In some cases, trails may be adopted by and mapped in a recognized trails plan, but a recorded easement or ROW instrument may not exist. Such trails would meet the definition of officially recognized because of their inclusion in a trails plan. Conversely, the presence of a recorded easement or ROW instrument alone is not a sufficient condition to meet the criteria for officially recognized trails. For example, there are a number of section line easements throughout the project area that are officially recognized as trails by the state. Unless these have also been included in a recognized trails plan or other official documentation has been produced to indicate that these easements are used primarily for recreational purposes, they do not meet the definition for officially recognized trails that is integral to the Applicant's proposed action and, thus, are not considered officially recognized trails in this analysis.

13.2.3 Analysis Methodology

This analysis utilized recreation data available from the ADNR, MSB, BLM, and ADF&G. OEA reviewed plans and documents to identify site-specific recreation activities (such as parks and actively planned recreation areas), the nature of dispersed-use recreation activities (such as fishing or hunting), and surface land use designations for general state and MSB lands. The analysis incorporated a review of existing ARRC project descriptions (up-to-date at the time of the analysis) and analysis of recreation resource map features using the Geographic Information System analysis. The review included meetings and telephone conversations with land use managers for all of the aforementioned agencies.

OEA reviewed maps of the rail line segments in coordination with land managers to identify potentially affected areas and key recreation access points and paths.

13.2.4 Affected Environment

13.2.4.1 Federal Recreation Facilities

The Iditarod National Historic Trail is managed as a joint endeavor between the BLM and state and local agencies. The Iditarod National Historic Trail was established in 1978 when the National Trails System Act of 1968 was amended to include National Historic Trails. The trail connects Seward, Alaska with Nome, Alaska, more than 900 miles to the northwest. The original trail and hundreds of miles of branching trails comprise the Iditarod National Historic Trail System. The term "Iditarod" is now principally associated with the famous Iditarod Sled Dog Race, but the trail system also hosts numerous other races, such as the Iron Dog Snowmachine Race, many shorter sled dog races, and Iditarod Race qualifying competitions, and the Iditasport endurance races for runners, skiers, and mountain bikers (BLM, 1986), in addition to widespread non-competition usage. The trail system also includes a number of historic sites associated with the trail, such as road houses and cabins.

A portion of the Iditarod National Historic Trail crosses the study area east to west, generally south of the Big Lake area and north of the Point MacKenzie Agricultural Project and Susitna

Flats State Game Refuge. According to the Willow Sub-Basin Area Plan (ADNR, 1982), the trail has been certified with a 1,000-foot-wide corridor (500 feet to either side of the trail centerline) on state and MSB lands.

13.2.4.2 State Recreation Areas and Facilities

Willow Creek State Recreation Area

This popular area is at the northern end of the study area, west of Parks Highway near the City of Willow. The Willow Creek State Recreation Area is approximately 3,000 acres in size. The park encompasses almost all of Willow Creek from Parks Highway to its confluence with the Susitna River. Willow Creek receives intensive sport fishing activity, especially during the king salmon season. Recreation activities available in the area include fishing, camping, floating/boating, winter trails, wildlife viewing, and hunting. Willow Creek receives approximately 42,000 visitors per year, with most of the visits occurring during non-winter months. Winter usage focuses primarily on trail use (ADNR, 2007). The area includes a portion of the West Gateway Trail System, a highly developed grouping of trails used for a variety of winter trail sports, dog sledding in particular. The West Gateway Trail System is frequently the official start point for the Iditarod Sled Dog Race.

Nancy Lake State Recreation Area

The 22,685-acre Nancy Lake State Recreation Area is west of Palmer Highway between the cities of Willow and Houston. This popular and easily accessible recreation area is characterized by interconnected lakes and rolling landscapes. Some of the recreation activities available include canoeing, picnicking, fishing, hiking, camping, dog sledding, skiing, snowshoeing, and snowmachining. The Little Susitna State Recreation River passes through the southeast portion of the Nancy Lake State Recreation Area, and canoers can portage to Nancy Lake to utilize the ample water trail system within the park. The Nancy Lake State Recreation Area receives approximately 40,000 visitors per year, with the highest use occurring in the summer (ADNR, 2007). There are also known cultural and historic sites in the vicinity of the Nancy Lake State Recreation Area (ADNR, 1983).

Little Susitna State Recreation River

Because of easy access and the quality of the fishery, the Little Susitna State Recreation River is a very popular fishing and boating resource. Peak recreation periods coincide with the king and coho salmon runs on the river (generally May to September), and salmon fishing is restricted to the lower portion of the river (south of Parks Highway, which coincides with the section within the study area). The Little Susitna River is home to the second largest coho harvest in the state (ADF&G, 2004). The most popular fishing area on the river is near Little Susitna Access Road, which provides entry to the Little Susitna Public Use Facility at the northeast corner of the Susitna Flats State Game Refuge. Other access points include Parks Highway, Miller's Reach Road, and the mouth of the Little Susitna River at Point MacKenzie (which boaters reach by crossing the Knik Arm from Anchorage). There is camping along the river at the Little Susitna Public Use Facility, Nancy Lake Creek Junction Public Use Site, a City of Houston campground at Parks Highway, and at numerous, undeveloped campsites. There is also significant moose and

black bear hunting in the river corridor. Boats on the river include canoes, kayaks, rafts, and powerboats. Floaters frequently put in at Parks Highway and float to the Nancy Lake portage or to the Little Susitna Public Use Facility. Powerboats access the river from the Little Susitna Public Use Facility. Motorized and nonmotorized boats alternate use on weekends during summer (ADNR, 1991). There are an estimated 2,000 to 3,000 float trips on the river each year (ADNR, 2007).

Trails

Table 13.2-1 lists the trails that OEA has identified as officially recognized within the sections of land through which the proposed rail line would pass. The trails listed in Table 13.2-1 are a subset of a highly developed regional trail system throughout the study area. These trails are used for a variety of motorized and nonmotorized activities in all seasons, or serve as means to access lakes, rivers, hunting areas, or other recreation resources. In the study area, some trails follow seismic lines. In addition to providing local recreation opportunities, Matanuska-Susitna Valley trails serve as a major recreation resource for a large percentage of Alaska's population. Many of these trails host high-profile dog sledding, skiing, skijoring, snowmachining, and other types of races, and many others function as training grounds for race participants. The MSB Community Development and Economic Development departments identified trails as centrally important to the economic vitality of the MSB (MSB, 2008a).

Table 13.2-1
All Officially Recognized Trails Crossed by Rail Line Segments[a]

Segment	Officially Recognized Trails
Big Lake	Aurora Dog Mushers Club Trail, Iditarod National Historic Trail, Herning Trail, 16 Mile Trail, Knik Connector Trail
Connector 1	Flathorn Lake Trail, Pipeline Trail
Connector 2	
Connector 3	
Connector 2a	
Connector 3 Variant	
Houston	Crooked Lake Trail, Iditarod National Historic Trail, Flat Lake Connector Trail, Iron Dog Connector Trail (Big Lake Trail #5), Purinton Junction and Susitna River Loop Trail (Big Lake Trail #14)[c]
Houston North	Houston Lake Loop Trail
Houston South	Houston Lake Loop Trail, Klondike Inn & Call of the Wild Trail (Big Lake Trail #1), Beaver Lakes & North Little Su Trail (Big Lake Trail #2)[c]
Mac East	
Mac West	Figure 8 Lake Loop Trail
Mac East Variant	
Willow[b]	Iron Dog Trail, Crooked Lake Trail, West Gateway Trail, Iditarod Link Trail, Iditarod National Historic Trail, Mud Lake Trail, Lucky Shot Trail, Nancy Lake – Susitna Trail

[a] Source: ADNR, 2009, MSB, 2008b, BLPT, 2009.
[b] The MSB Trails Plan Amendment identified Almond Lake Trail near the Willow Segment, but it does not state the precise location of the trail. Due to the uncertain nature of the trail location, Almond Lake Trail is not included in this analysis.
[c] In the interest of brevity, trails identified as part of the Big Lake Trails Plan will be referred to by their Big Lake Trail number, rather than their full name; for example, Klondike Inn & Call of the Wild Trail will be referred to as "Big Lake Trail #1" or "BLT#1."

On state lands, the ADNR's generally allowed trail policy (Alaska Admin Code 11 § 96.020) applies, whereby any individual may construct a trail up to 5 feet wide on state land. Unofficial trails of this type can be found along all proposed rail line segments. Unofficial trails can also include means of accessing public or navigable waters on state land (Alaska Stat. § 38.05.127), riparian buffers along those waters (Alaska Admin Code 11 § 51.045), or trails along section lines (Alaska Admin Code 11 § 51.025).

Susitna Flats State Game Refuge

The Susitna Flats State Game Refuge encompasses approximately 300,800 acres of land supporting a large population of migratory birds, moose and bear habitat, and high-quality salmon rivers. It attracts many waterfowl, moose and bear hunters, sport fishermen, and trappers. It is estimated that approximately 10 percent of all waterfowl harvest in Alaska takes place within the Susitna Flats State Game Refuge. Approximately 45,000 angling days are spent each year on the Little Susitna River within the Susitna Flats State Game Refuge. The refuge also supports limited wildlife viewing activities. The primary access point to the refuge is via the Little Susitna Public Use Facility at the Little Susitna River (ADF&G, 1988). The Public Use Facility is within the Susitna Flats State Game Refuge but is managed by the ADNR Division of Parks and Outdoor Recreation. The facility includes an improved boat launch, 3 parking areas, angler trails and boardwalks, and more than 40 campsites with picnic tables and fireplaces (ADF&G, 2003). Upstream from the Public Use Facility, the ADF&G has developed 7 boat-accessible and improved campsites, and the refuge is open to remote public camping (ADF&G, 2008a). Public access to the refuge is also available where the western end of Holstein Avenue joins a north-south section line easement that is the eastern boundary of the refuge at this point. Holstein Avenue and the easement provide four-wheel drive access to the refuge and an unimproved boat launch area, suitable for canoes and skiffs, located on Horseshoe Lake.

Dispersed Recreational Uses

Numerous recreation activities take place on state land outside of park and recreation boundaries and might not be specifically associated with trails. Dispersed recreation can include such activities as hunting, fishing, hiking, berry gathering, wildlife viewing, and many other activities described as generally allowed uses under Alaska Admin. Code 11 § 96.020. The Willow Basin Sub-Area Plan includes recommended land uses for management units, some of which describe recreation as a recommended primary land use (ADNR, 1982).

13.2.4.3 Matanuska-Susitna Borough Recreation Areas and Facilities

The MSB owns and manages the Point MacKenzie Trailhead Parking Lot near the southern terminus of the proposed rail line. The site includes signage and an information kiosk. The parking lot provides access to the Figure 8 Lake Loop Trail, a multi-use winter trail system that heads west toward the Susitna Flats State Game Refuge and the Susitna River (MSB, 2000). The Figure 8 Lake Loop Trail is not surveyed and does not have a recorded easement, although the MSB has recommended acquiring an easement (MSB, 2008b).

The MSB trails plan details officially recognized trails and describes their easement status. In general, trails frequently cross public and private lands. Easements have been set aside for trails where they cross public lands and discontinuously where they cross private land. The MSB trails plan includes a goal of working with private landowners to obtain legal protection for trails recorded as regionally significant (MSB, 2000, as amended). Table 13.2-2 lists officially recognized trails with recorded easements or ROW instruments that intersect the rail line.

Table 13.2-2
Officially Recognized Trails with Recorded Easements or ROW Instruments Crossed by Rail Line Segments[a]

Name	Type of Use	Location
16 Mile Trail	Multi-use	South of Big Lake
Aurora Dog Mushers Club Trail	Winter, Nonmotorized	Southeast of Big Lake
Crooked Lake Trail	Winter, Multi-use	West from Crooked Lake to the Susitna River (west of Big Lake)
Flat Lake Connector Trail	Winter, Multi-use	West of Big Lake
Flathorn Lake Trail	Winter, Multi-use	North of the Susitna Flats State Game Refuge
Herning Trail	Year-round, Multi-use	North-south parallel to Parks Highway on the eastern side
Houston Lake Loop Trail	Winter, Multi-use	Northeast of the Little Susitna Recreation River
Iditarod Link Trail	Winter, Multi-use	North of the Susitna Flats State Game Refuge
Iditarod National Historic Trail	Winter, Multi-use	North of the Susitna Flats State Game Refuge and Point MacKenzie Agricultural Project, south of Big Lake and the Nancy Lake State Recreation Area
Iron Dog Trail	Winter, Multi-use	North of the Little Susitna Recreation River
Mud Lake Trail	Winter, Multi-use	Northwest of the Nancy Lake State Recreation Area
Nancy Lake – Susitna Trail	Winter, Multi-use	West of the Nancy Lake State Recreation Area
Pipeline Trail	Winter, Multi-use	East-west through northern portion of the Susitna Flats State Game Refuge
West Gateway Trail	Winter, Multi-use	Southwest of Willow

[a] Source: MSB, 2008b.

A number of other official trails do not have a recorded easement or ROW instrument. Trails of this type are known to receive a significant amount of recreational use. Table 13.2-3 lists these trails.

The MSB Recreational Trails Plan includes only a portion of all the trails that the public uses for recreation on MSB lands and private land. The MSB defers to local community councils, users, and other groups in the identification of locally significant trails, which are less likely to attract the public from outside a local community. Although these are not included in the MSB trails plan, the MSB provides technical assistance toward establishing public access (MSB, 2000, as amended). In addition, the trails data represented here are by nature incomplete, because the development of the MSB trail system is a dynamic process. Trails are regularly added and removed, with the eventual goal of achieving a comprehensive, interconnected, and legally dedicated system that serves the recreation needs of MSB residents and visitors (MSB, 2008a).

Table 13.2-3
Officially Recognized Trails without Recorded Easements or ROW Instruments Crossed by Rail Line Segments[a]

Name	Type of Use	Location	Identifying Data
Figure 8 Lake Loop Trail	Winter, Multi-use	West of Point MacKenzie	Identified in Matanuska-Susitna Borough Trails Plan, no survey or easement, although easement is recommended by the MSB.
Knik Connector Trail	Winter, Multi-use	Southeast-Northwest from Goose Creek to W. Susitna Parkway	Identified in Matanuska-Susitna Borough Trails Plan, no survey or easement.
Lucky Shot Trail	Winter, Multi-use	Mostly within the Willow Creek State Recreation Area	Identified in Matanuska-Susitna Borough Trails Plan, no survey or easement, although easement is recommended by the MSB.
Big Lake Trail #1	Winter, Multi-use	Northeast of the Little Susitna Recreation River	Identified in Big Lake Community Council Area Comprehensive Plan Update, no survey or easement
Big Lake Trail #2	Winter, Multi-use	Northeast of the Little Susitna Recreation River	Identified in Big Lake Community Council Area Comprehensive Plan Update, no survey or easement
Big Lake Trail #5	Winter, Multi-use	Northeast of the Little Susitna Recreation River	Identified in Big Lake Community Council Area Comprehensive Plan Update, no survey or easement
Big Lake Trail #14	Winter, Multi-use	North of the Susitna Flats State Game Refuge and Point MacKenzie Agricultural Project, south of Big Lake and the Nancy Lake State Recreation Area	Identified in Big Lake Community Council Area Comprehensive Plan Update, no survey or easement

[a] Source: MSB, 2008b; BLPT, 2009.

Trails identified in the Big Lake Community Council Area Comprehensive Plan Update (BLPT, 2009) have been adopted into the MSB Recreational Trails Plan and are examples of this dynamic process. They are considered officially recognized trails for the purpose of this analysis.

The MSB also owns a substantial amount of land in the study area outside of parks and recreation areas. These areas receive similar recreational use as the state lands outside parks and recreation areas described above. The Susitna Area Plan (ADNR, 1985) and Southeast Susitna Area Plan (ADNR, 2008b) include recommendations that guide recreation opportunities in undeveloped MSB lands.

13.2.4.4 Contributing Trails

The *Iditarod Dog Sledding Historic District/Historical Vernacular Landscape* (Iditarod Dog Sledding Historic District) is a historic resource that has been identified within the project area. Trails associated with dog sledding that retain their integrity are contributing elements to the Iditarod Dog Sledding Historic District. The historic value and integrity of these trails are associated with their continued use for dog sledding enthusiasts and circulation within the larger landscape. There are 15 identified trails in the project area that are considered to contribute to the historic value of the Iditarod Dog Sledding Historic District. These contributing trails

include the Iditarod National Historic Trail, Iditarod Sled Dog Race Trail, Lucky Shot Trail, Corral Hill Trail, Flat Horn Lake Trail, Nancy Lake – Susitna Trail, Red Shirt Lake-Nancy Lake Trail System,[3] Herning Trail, Aurora Dog Mushers Club Trail System, USGS Base Map Transmission Line Trail, and 5 USGS Base Map Winter Trails. Several of the contributing trails are officially recognized and are identified in Table 13.2-1 and Table 13.2-2. In addition, several trails are subject to section 4(f) provisions as significant recreational resources. Appendix M and Chapter 6 of this Final EIS contain a detailed discussion of the contributing trails of the Iditarod Dog Sledding Historic District.

13.2.4.5 Rivers and Lakes

In addition to lakes and rivers in parks and recreation areas, the study area has numerous lakes and rivers used for a variety of recreation activities. Though none of the waterbodies the project would affect are designated as National Wild and Scenic Rivers, some are important sport fisheries or are associated with rich wetland resources that provide habitat both for fisheries and game animals. Others have high value as navigable waterways and receive substantial amounts of boating.

The Little Susitna River is a prime coho salmon fishery, producing the second largest freshwater coho harvest in Alaska (ADF&G, 2004), and it supports a strong king salmon population. It is also a popular motorized and nonmotorized boating river. Access is available at the Cook Inlet river mouth, the Little Susitna Public Use Facility, the Millers Reach Boat Launch, and at Parks Highway near Houston. The Little Susitna Public Use Facility is the most popular boating location. The ADNR estimates that there are between 2,000 and 3,000 float trips on the river each year (ADNR, 2007), and the ADF&G estimates that the Little Susitna River receives approximately 45,000 angling days[4] per year in the Susitna Flats State Game Refuge (ADF&G, 1988).

Willow Creek is one of the most important king salmon fisheries along Parks Highway. It is heavily fished, with boaters putting in near Parks Highway and floating west to the Susitna River (ADF&G, 2008b). The ADNR estimates that there are almost 9,000 floats per year on Willow Creek (ADNR, 2007).

Fish Creek, the main outlet for Big Lake, provides quality fishing near its mouth at the Knik Arm. At present, the Creek is closed to fishing where the Big Lake Segment would cross, and the fishery is considered impaired (ADF&G, 2008b).

The study area includes numerous other small streams and creeks, some of which support populations of rainbow trout or other sport fish. The study area is dotted with many lakes that have wild or stocked sport fisheries and are used extensively for fishing and boating. Lakes provide important fly-in access for float and ski planes and the study area is known to experience heavy aircraft use.

Section 13.2.1.2 describes state policy on access to and along waterbodies. The ADNR planning documents for the study area also include guidance regarding bridge clearance on navigable

[3] One trail in this trail system, Mud Lake Trail, would be crossed by the Willow Segment.
[4] An angling day is the time spent fishing by 1 person for any part of the day.

waterways for boats, wildlife, and riders on horseback, and along the banks of navigable rivers and lakes. Chapter 12 of the EIS describes navigable waterbodies in the study area.

13.2.5 Environmental Consequences

13.2.5.1 Proposed Action

Common Impacts

Construction Impacts

The following construction-related impacts would be common to all alternatives and would be temporary:

- Individuals attempting to access recreation areas and resources via trails and waterways would be temporarily impeded during rail line construction, including during construction of any designated crossings and bridges and installation of culverts for smaller waterways. Access across the rail corridor via roads would be temporarily impeded during construction. These impediments would affect all types of surface transportation, including by foot, boat, dog sled, and motorized vehicle (automobile, all-terrain vehicle, snowmachine).
- Rail line construction activities would generate additional noise, which would be more noticeable in areas with generally low levels of noise and development, where trucking and rail activity is low or nonexistent. Users such as hikers, boaters, and campers could hear this additional noise. However, such increased noise due to construction would be temporary and would not constitute an adverse noise impact.
- Areas of active construction work in proximity to recreation resource areas could present a nuisance to users. They could experience increased dust and changes in access patterns, and discordant visual elements in the landscape from land clearing and the presence of construction equipment.
- Construction activities could result in temporary impacts to water quality, such as increased turbidity, which could affect recreational fishing.
- Construction activities could result in the temporary alteration of local distribution of wildlife, which could affect the experience of users engaging in recreational hunting and wildlife viewing. Impacts to hunters would primarily depend on the timing of construction in relation to the hunting season.
- Construction activities would require the use of staging areas, the exact location of which would be determined during final design. ARRC would establish staging areas primarily in the rail line ROW and would endeavor to utilize previously disturbed areas. Some staging areas, such as for construction of grade-separated crossings, might utilize space outside the ROW. These areas would be cleared for staging of construction materials and would likely be a locus of human activity that local wildlife would avoid. Recreationists in proximity to these staging areas could experience aesthetic impacts and noise levels temporarily higher than ambient levels. Once construction was complete, these staging areas could be returned to their prior uses.

Operation Impacts

The following impacts would occur after construction during rail operation:

- ARRC proposes to provide public access to officially recognized trails with a grade-separated crossing where practicable, or the trail could be relocated by ARRC to avoid crossing the rail line. The design of the crossing would accommodate existing trail users at the time of rail line construction or ROW acquisition by the Applicant (whichever occurs first). ARRC would coordinate with the trail owner and consult with user groups as appropriate where the crossing location may have to be relocated to accommodate a grade-separation, or multiple crossings within 1 mile might be consolidated. Relocation and consolidation would generally occur to avoid trail crossings by the rail line and to retain the connectivity of specific trails and trail systems in the area. Relocation and consolidation of trails would result in minor modifications to trail locations.
- ARRC does not propose to provide crossings for all unofficial trails. This includes developed or undeveloped trails established on state land under the generally allowed uses policy, which are numerous and present along all proposed rail line segments. ARRC would not provide at-grade or grade-separated crossings for all of these trails. Further, ARRC trespassing and safety policies dictate that individuals could not cross or enter the rail line ROW without first obtaining approval from ARRC and could not use the access road, walk along the tracks, or cross the tracks. Crossings of the rail line outside of public crossing locations would be considered trespass and subject to enforcement. Blockage of unofficial trails would be considered a permanent, adverse impact to recreational trails, trail use, and recreational access. However, hikers could utilize trails that have provided crossings in response to trail closings.
- The presence of 3 new 180-foot communication towers could permanently alter the localized movement of recreational aircraft. The precise location of the communication towers is not yet known.
- The rail line could obstruct access to and along public and navigable waterbodies. This could result in a change in recreational access patterns to certain waters. Because of the frequency of these access points, it is anticipated that users would identify an alternative location for recreational access to navigable and public waters that was not affected by the proposed rail line. Furthermore, the ADNR is granted rights under Alaska law to ensure access through the establishment of easements. Alaska Admin. Code 11 § 51.045 establishes the ADNR right to reserve an access easement of at least 50 feet from either side of a mean high water line for all rivers determined to be public or navigable water before the ADNR grants a lease or conveys land adjacent to inland waters. The ADNR may also reserve and establish an alternative upland access route if the establishment of the aforementioned access easement is difficult because of topography or obstruction. The ADNR's role to provide public access along and to public or navigable waters prior to lease, sale, grant, or other disposal of state interest are defined in Alaska Stat. § 38.05.127.
- In many parts of the ROW, routine maintenance would ensure vegetation was cleared and kept in an open condition for the life of the proposed rail line. The linear corridor of cleared vegetation for the rail line footprint, which includes the rail bed, access road, and communications towers, would constitute a visual intrusion on the landscape. If the rail line

were visible from scenic viewpoints within the study area, these physical changes and new build features could affect the enjoyment of recreationists. However, there are already similar discordant visual elements, such as utility corridors and roadways, in the study area that would also be visible from scenic viewpoints. Details on impacts to visual resources are presented in Section 13.3.

- The loss of habitat due to clearing for rail line construction would not be expected to affect productivity of the habitat for purposes of fishing, hunting, trapping, and wildlife viewing because of the abundance of habitat in the study area. However, rail line footprint vegetation removal could affect wildlife movement. The embankment could affect the hydrological features of the landscape; however, ARRC would design and construct the proposed rail line in such a way as to maintain natural water flow and drainage patterns to the extent practicable so that fish passage would not be inhibited. Therefore, user enjoyment of fisheries resources (sport fishing) would not be expected to decrease as a result of the project.
- The ADF&G indicated that all stream and river crossings have the potential to harm fish passage, and that the ADF&G is still addressing significant fish passage issues on the existing ARRC rail line corridors (ADF&G, 2008b). ARRC would design and construct stream crossings that provide fish passage and maintain the hydrologic functioning of the waterbody; however, any river crossing that adversely affects fish passage has the potential to cause a negative impact on sport fishing resources.
- Rail line operation could result in inadvertent spilling of petroleum products or other hazardous materials in natural areas in the unlikely event of a train derailment or collision. However, the likelihood of a release would be low because ARRC anticipates few shipments of hazardous materials, and rail cars used for transportation of hazardous materials are designed to withstand various types of impacts. In the unlikely event of a spill, this would result in negative impacts to water quality and wildlife habitat, thereby adversely affecting the user experience of fishing, hunting, and wildlife viewing.
- Rail line operation would introduce a new source of noise to some relatively undeveloped areas. Existing noise sources that can be found essentially everywhere (although intermittently at times) and include all-terrain vehicles, snowmachines, motor boats, floatplanes, and other personal, commercial, and military aircraft. Wayside noise from trains and noise from maintenance vehicle traffic would be infrequent and of short duration, but would be audible to people in the vicinity of the ROW during a train or vehicle passby. Train horns would constitute a new, intermittent source of high-intensity noise at at-grade crossings, where sounding the train horn would be required. ARRC anticipates 2 trains per day would use the new line. Decreased user enjoyment and avoidance behavior could result from train horn noise in passive recreation areas, primarily those areas within parks and at recreation sites, such as campgrounds, in proximity to an intersection of the proposed rail line with an at-grade road crossing.

Impacts by Segment and Segment Combination

Southern Segments and Segment Combinations

Mac West-Connector 1 Segment Combination

Construction of the Mac West-Connector 1 Segment Combination could result in the permanent conversion of 91 acres of the Susitna Flats State Game Refuge to rail line use and rail line operation and would result in severe noise impacts, as defined by the FRA,[5] to approximately 1,944 acres of the game refuge. The Mac West Segment also would result in the separation of approximately 26 acres of the Susitna Flats State Game Refuge along the eastern boundary from the remainder of the refuge. Although the reduction in habitat resulting from conversion of the ROW to rail use would affect game refuge user experience and recreational enjoyment, the affected acreage would be a small fraction of the total 300,800-acre game refuge. The Mac West Segment would cross the Point MacKenzie Trailhead Parking Lot near the southern terminus of the proposed rail line. ARRC has proposed moving the trailhead and parking lot. The segment combination would cross the Figure 8 Lake Loop Trail at 4 points. ARRC would either provide grade-separated crossings, or, more likely, relocate the portions of the trail that cross the proposed rail line. There would be 2 crossings at a bend of the trail where it passes by the northeast branch of Horseshoe Lake. The remaining 2 crossings would occur at another bend in the trail – one just east of and one just west of an unidentified stream at Mile Post 4.6 along the rail alignment. In addition, a portion of the Mac West Segment would be located along a north-south section line that connects to the western end of Holstein Avenue and provides public four-wheel drive access to the refuge. The Applicant has not proposed to provide a grade crossing at this location, so the proposed rail line would prevent access to the refuge, including an unimproved boat launch on Horseshoe Lake, from Holstein Avenue and along this section line.

The Mac West Segment includes the Mac West Terminal Reserve located at the southern end of the segment. The terminal reserve would affect the Point MacKenzie Trailhead Parking Lot and the Figure 8 Lake Loop Trail.

After branching off of the Mac West Segment, the Connector 1 Segment would flank the eastern boundary of the 720-acre Little Susitna Public Use Facility and would cross the access road leading to the facility, where the ADNR characterizes that it would affect users arriving at the site's "front door", and it would displace a north-south trail that recreationists use to access the Susitna Flats State Game Refuge (ADNR, 2007). The impact that the Connector 1 Segment would have on the Susitna Flats State Game Refuge can be considered its most significant impact to recreation resources. The parking lot, boat launch, and campsites in the Little Susitna Public Use Facility would not be directly affected by the ROW; however, recreationists near this portion of the facility might experience increased noise levels due to train horn soundings at the at-grade crossing for the access road. The Connector 1 Segment alone would result in severe

[5] Based on FRA criteria, noise levels that would cause a "severe" impact depend on the ambient noise level and the type of land use. For this analysis, the section 4(f) properties were considered to be in land use Category 3 (for primarily daytime and evening use) except for camping areas, which were considered to be Category 1 (where quiet is an essential element in their intended purpose). The increase in noise that would constitute a "severe" impact for each land use depends on the ambient noise level and is defined in Table 3-1 of the FRA impact assessment document (FRA, 2005).

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noise impacts, as defined by the FRA, to 568 acres of the game refuge. The Connector 1 Segment also would cross officially recognized trails, which include the Pipeline and Flathorn Lake (collocated with the Little Susitna Public Use Facility access road) trails. ARRC has indicated that these trails would have continued connectivity through grade-separated crossings, the design of which would be determined during final design and permitting.

Mac West-Connector 2 Segment Combination

Construction of this segment combination would result in the permanent conversion of approximately 56 acres of the Susitna Flats State Game Refuge to rail line use and would result in severe noise impacts, as defined by the FRA, to 1,376 acres of the game refuge. The Mac West Segment would cross the Point MacKenzie Trailhead Parking Lot and the Figure 8 Lake Loop Trail at the same 4 points as described above for the Mac West-Connector 1 Segment Combination, resulting in identical impacts to these resources. The Connector 2 Segment would not be anticipated to result in impacts to identified parks and recreation resources.

Mac East-Connector 3 Segment Combination

The Mac East Segment, including the Mac East Terminal Reserve, would not cross the Figure 8 Lake Loop Trail. Although activities within the terminal reserve could be seen or heard from the trail, the proximity of the terminal reserve area to the trail would not be anticipated to discourage the use of the trail, lead to decreased use of all segments of the Figure 8 Lake Loop Trail, or divert recreationists to other trails in the area. The Connector 3 Segment would not be expected to result in impacts to identified parks and recreation resources.

Mac East Segment

This segment would not be anticipated to result in impacts to identified parks and recreation resources. This segment, including the Mac East Terminal Reserve Area, would result in similar potential impacts to the Figure 8 Lake Loop Trail as the Mac East-Connector 3 Segment Combination.

Mac East Variant-Connector 2a Segment Combination

This combination of segments would not be anticipated to result in impacts to identified parks and recreation resources. This segment combination, including the Mac East Terminal Reserve Area, would result in similar potential impacts to the Figure 8 Lake Loop Trail as the Mac East-Connector 3 Segment Combination.

Mac East Variant-Connector 3 Variant Segment Combination

This combination of segments would not be anticipated to result in impacts to identified parks and recreation resources. This segment combination, including the Mac East Terminal Reserve Area, would result in similar potential impacts to the Figure 8 Lake Loop Trail as the Mac East-Connector 3 Segment Combination.

Northern Segments

Willow Segment

Construction of the Willow Segment would result in the permanent conversion of 7 acres of the northeast corner of the Susitna Flats State Game Refuge, 17 acres in the southern part of the Little Susitna State Recreation River, 12 acres of the northwest corner of the Nancy Lake State Recreation Area, and 43 acres of the Willow Creek State Recreation Area to rail line use. The Willow Segment would result in severe noise impacts, as defined by the FRA, to approximately 388 acres of the Susitna Flats State Game Refuge, 556 acres of the Little Susitna State Recreation River, 305 acres of the Nancy Lake State Recreation Area, and 429 acres of the Willow Creek State Recreation Area. These lands are dedicated to wildlife habitat preservation and public recreation. The Willow Segment would cross the Little Susitna River, which would have the potential to impact valuable sport fishing resources and recreational access (via boat and upland), in addition to decreasing user enjoyment of the natural setting. The Willow Segment would also cross a 12-acre portion of the Nancy Lake State Recreation Area west of Red Shirt Lake. No known trails, campsites, or other active recreation sites are associated with the affected area, but the crossing would separate a 10-acre portion of the recreation area west of the proposed rail line ROW from the remainder of the recreation area.

This segment would bisect the Willow Creek State Recreation Area, affecting recreation activities within the park, including hiking along various trails, sport fishing, snowmachining, dog sledding, and general user enjoyment. The Willow Segment would cross the Lucky Shot Trail, which is a part of the larger system of trails accessed from the Willow West Gateway Trailhead or the Willow Community Center and is heavily used in winter months when trails are groomed. Six of the 8 Iditarod Sled Dog Races held between 2000 and 2007 have begun in Willow and have utilized the West Gateway Trail System (Mat-Su Convention and Visitors Bureau, 2007). This area is also a popular training ground for dog sledding. Three trails within the West Gateway Trail System, Lucky Shot, Mud Lake, and West Gateway trails, would receive grade-separated crossings or relocations. The segment would cross Willow Creek, one of the most important salmon harvest rivers in the region, which could harm valuable sport fishing resources.

The Willow Segment would cross officially recognized trails, including the Iditarod National Historic, Crooked Lake, Iron Dog, West Gateway, Mud Lake, Lucky Shot, Nancy Lake – Susitna, and Iditarod Link trails. ARRC has indicated that it would maintain trail connectivity through grade-separated crossings or relocations, the design of which would be determined during final design and permitting.

Big Lake Segment

The Big Lake Segment would cross officially recognized trails, including the Aurora Dog Mushers Club, Herning, Knik Connector, 16 Mile, and Iditarod National Historic trails. This segment would cross various parts of the Aurora Trail System a total of 4 times (including once where a segment of the Aurora Trail is collocated with the Iditarod National Historic Trail). ARRC has indicated that it would maintain trail connectivity through grade-separated crossings or relocations, the design of which would be determined during final design and permitting.

Houston-Houston North Segment Combination

The Houston-Houston North Segment Combination would cross officially recognized trails, including the Iditarod National Historic, Big Lake #5, Big Lake #14, Crooked Lake, Houston Lake Loop, and Flat Lake Connector trails. ARRC has indicated that it would maintain trail connectivity through grade-separated crossings or relocations, the design of which would be determined during final design and permitting. Construction of the segment combination also would result in the permanent conversion of 66 acres of the Little Susitna State Recreation River to rail line use and would result in severe noise impacts, as defined by the FRA, to approximately 976 acres of the Little Susitna State Recreation River. The Houston North Segment would cross the Little Susitna River, which would result in potential impacts to valuable sport fishing resources and recreational access (via boat and upland), in addition to decreasing user enjoyment of the natural setting. The river crossing point would traverse the Nancy Lake Creek Junction Public Use Site within the Little Susitna River Recreation River, a popular camping and fishing location. Within the 200-foot ROW, this site would require the conversion of any public use land to rail line use.

Houston-Houston South Segment Combination

This segment combination would cross officially recognized trails, including the Iditarod National Historic, Crooked Lake, Houston Lake Loop, Flat Lake Connector, Big Lake # 1, Big Lake #2, Big Lake #5, and Big Lake #14. ARRC has indicated that it would maintain trail connectivity through grade-separated crossings or relocations, the design of which would be determined during final design. The Houston Lake Loop Trail would be crossed by the rail line 3 times, and a portion would run in proximity to the rail line. This could affect users' experience through visual impacts. The Houston South Segment would result in the construction of a bridge over the river in the Little Susitna State Recreation Area; however, the potentially impacted area is located immediately adjacent to the existing ARRC main line at Parks Highway. These improvements would occur within the existing main line ROW.

Summary of Potential Impacts by Rail Line Alternative

Table 13.2-4 summarizes the recreation areas and trails that each of the proposed rail line alternatives would affect. All of the alternatives would intersect the Iditarod National Historic Trail and all alternatives that include the Mac West Segment (4 of the 12 alternatives) would cross the Point MacKenzie Trailhead and Parking Area and the Figure 8 Lake Loop Trail.

The officially recognized trails that would be provided with a grade-separated crossing or relocated are shown along with the anticipated locations of rail bridges over water and crossings that would be provided for roads in Table 13.2-5 and Figures 13.2-7 through 13.2-10. All of the crossings shown would provide access across the proposed rail line. Provisions for additional trail crossings are included in the recommended mitigation measures in Chapter 19.

Table 13.2-4
Affected Recreation Areas, Trails, and Refuges by Alternative

Alternative	Willow Creek State Recreation Area	Nancy Lake State Recreation Area	Little Susitna State Recreation River	Susitna Flats State Game Refuge	Point MacKenzie Trailhead and Parking Lot	West Gateway Trail	Iron Dog Trail	Crooked Lake Trail	Iditarod National Historic Trail	Houston Lake Loop Trail	Flat Lake Connector Trail	Aurora Dog Mushers Club Trail	Mud Lake Trail	Iditarod Link Trail	Flathorn Lake Trail	Pipeline Trail	Figure 8 Lake Loop Trail	Lucky Shot Trail	Nancy Lake – Susitna Trail	Herning Trail	16 Mile Trail	Knik Connector Trail	Big Lake Trail #1	Big Lake Trail #2	Big Lake Trail #5	Big Lake Trail #14
Mac West-Connector 1-Willow	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X							
Mac West-Connector 1-Houston-Houston North			X	X	X			X	X	X	X				X	X	X								X	X
Mac West-Connector 1-Houston-Houston South			X	X	X			X	X	X	X				X	X	X						X	X	X	X
Mac West-Connector 2-Big Lake				X	X				X			X					X			X	X	X				
Mac East-Connector 3-Willow	X	X	X			X	X	X	X				X	X				X	X							
Mac East-Connector 3-Houston-Houston North			X					X	X	X	X														X	X
Mac East-Connector 3-Houston-Houston South								X	X	X	X												X	X	X	X
Mac East-Big Lake									X			X								X	X	X				
Mac East Variant-Connector 2a-Big Lake									X			X								X	X	X				
Mac East Variant-Connector 3 Variant-Willow	X	X	X			X	X	X	X				X	X				X	X							
Mac East Variant-Connector 3 Variant-Houston-Houston North			X					X	X	X	X														X	X
Mac East Variant-Connector 3 Variant-Houston-Houston South								X	X	X	X												X	X	X	X

Table 13.2-5
Access Points Across Rail Line Segments (Page 1 of 2)

Rail Line Segment	Mile Post	Name	Crossing Type
Mac West	MW-10.2	Figure 8 Lake Loop Trail	Grade-separated crossing of officially recognized trail
	MW-10.0	Figure 8 Lake Loop Trail	Grade-separated crossing of officially recognized trail
	MW-5.7	S. Guernsey Road	At-grade crossing of public road
	MW-4.7	Figure 8 Lake Loop Trail	Grade-separated crossing of officially recognized trail
	MW-4.5	Figure 8 Lake Loop Trail	Grade-separated crossing of officially recognized trail
	MW-1.7	Figure 8 Lake Loop Trail	Grade-separated crossing of officially recognized trail
Mac East	ME-9.8	W. Holstein Ave	Grade-separated crossing of public road
	ME-4.9	Baker Farm Rd	Grade-separated crossing of public road
	ME-4.5	Unnamed Stream	Rail bridge over waterway
Mac East Variant	MEV-9.8	W. Holstein Ave	At-grade crossing of public road
	MEV-7.4	W. Reddane Ave	At-grade crossing of public road
	MEV-4.9	Baker Farm Rd	Grade-separated crossing of public road
	MEV-4.5	Unnamed Stream	Rail bridge over waterway
Connector 1	C1-2.6	Unnamed Stream	Rail bridge over waterway
	C1-2.5	Flathorn Lake Trail	Grade-separated crossing of officially recognized trail
	C1-2.4	Little Su River Rd	At-grade crossing of public road
	C-1.5	Pipeline Trail	Grade-separated crossing of officially recognized trail
Connector 2	C2-2.3	S. Guernsey Road	At-grade crossing of public road
Connector 3	C3-1.0	Carpenter Lake Road	At-grade crossing of public road
	C3-0.7	Ayrshire Ave	At-grade crossing of public road
Connector 3 Variant	C3V-1.0	Farmers Road	At-grade crossing of public road
	C3V-0.7	Ayrshire Ave	At-grade crossing of public road
Willow	MP-190.3	Unnamed Stream	Rail bridge over waterway
	MP-189.0	Rogers Creek	Rail bridge over waterway
	W-25.9	Parks Highway	Grade-separated crossing of public road
	W-24.0	Willow Creek	Rail bridge over waterway
	W-23.4	Willow Creek Pkwy	At-grade crossing of public road
	W-23.3	Lucky Shot Trail	Grade-separated crossing of officially recognized trail
	W-23.0	Lucky Shot Trail	Grade-separated crossing of officially recognized trail
	W-19.8	W. Deshka Landing Road	At-grade crossing of public road
	W-19-6	West Gateway Trail	Grade-separated crossing of officially recognized trail
	W-17.4	Mud Lake Trail	Grade-separated crossing of officially recognized trail
	W-12.7	Nancy Lake – Susitna Trail	Grade-separated crossing of officially recognized trail
	W-8.4	Iron Dog Trail	Grade-separated crossing of officially recognized trail
	W-5.2	Crooked Lake Trail	Grade-separated crossing of officially recognized trail
	W-2.0	Iditarod National Historic Trail	Grade-separated crossing of officially recognized trail

Table 13.2-5
Access Points Across Rail Line Segments (Page 2 of 2)

Willow (cont.)	W-0.6	Little Susitna River	Rail bridge over waterway
	W-0.3	Iditarod Link Trail	Grade-separated crossing of officially recognized trail
Houston South	MP-174.3	Little Susitna River	Rail bridge over waterway
	HS-5.0	W. Millers Reach Road	At-grade crossing of public road
	HS-4.0	Big Lake Trail #2	Grade-separated crossing of officially recognized trail
	HS-1.5	Big Lake Trail #1	Grade-separated crossing of officially recognized trail
	HS-1.2	Big Lake Trail #2	Grade-separated crossing of officially recognized trail
	HS-0.4	Houston Lake Loop Trail	Grade-separated crossing of officially recognized trail
Houston	H-6.0	Big Lake Trail # 5	Grade-separated crossing of officially recognized trail
	H-5.5	Flat Lake Connector Trail	Grade-separated crossing of officially recognized trail
	H-4.0	W Papoose Twins Road	At-grade crossing of public road
	H-4.0	Crooked Lake Trail	Grade-separated crossing of officially recognized trail
	H-3.3	W Susitna Parkway	At-grade crossing of public road
	H-1.4	Big Lake Trail #14	Grade-separated crossing of officially recognized trail
	H-0.7	Iditarod National Historic Trail	Grade-separated crossing of officially recognized trail
Houston North	HN-4.8	Unnamed Stream	Rail bridge over waterway
	HN-3.3	Houston Lake Loop Trail	Grade-separated crossing of officially recognized trail
	HN-3.2	Little Susitna River	Rail bridge over waterway
Big Lake	MP-171.2	Ray St	At-grade crossing of public road
	MP-170.2	Herning Trail	Grade-separated crossing of officially recognized trail
	B-17.8	Herning Trail	Grade-separated crossing of officially recognized trail
	B-17.1	Parks Highway	Grade-separated crossing of public road
	B-17.0	Herning Trail	Grade-separated crossing of officially recognized trail
	B-16.8	Herning Trail	Grade-separated crossing of officially recognized trail
	B-16.7	W. La Rae Road	At-grade crossing of public road
	B-16.4	W. Calonder Way	At-grade crossing of public road
	B-15.8	W. Big Lake Road	Grade-separated crossing of public road
	B-14.0	W. Hollywood Road	Grade-separated crossing of public road
	B-11.5	Herning Trail	Grade-separated crossing of officially recognized trail
	B-11.1	S. Larrys Lane	At-grade crossing of public road
	B-10.0	Aurora Dog Mushers Club Trail	Grade-separated crossing of officially recognized trail
	B-9.7	Aurora Dog Mushers Club Trail	Grade-separated crossing of officially recognized trail
	B-8.8	Iditarod National Historic Trail	Grade-separated crossing of officially recognized trail
	B-7.2	16 Mile Trail	Grade-separated crossing of officially recognized trail
	B-6.1	Knik Connector Trail	Grade-separated crossing of officially recognized trail
	B-5.0	Homestead Road	At-grade crossing of public road
	B-3.2	Homestead Road	At-grade crossing of public road
	B-0.8	S. Burma Road	At-grade crossing of public road

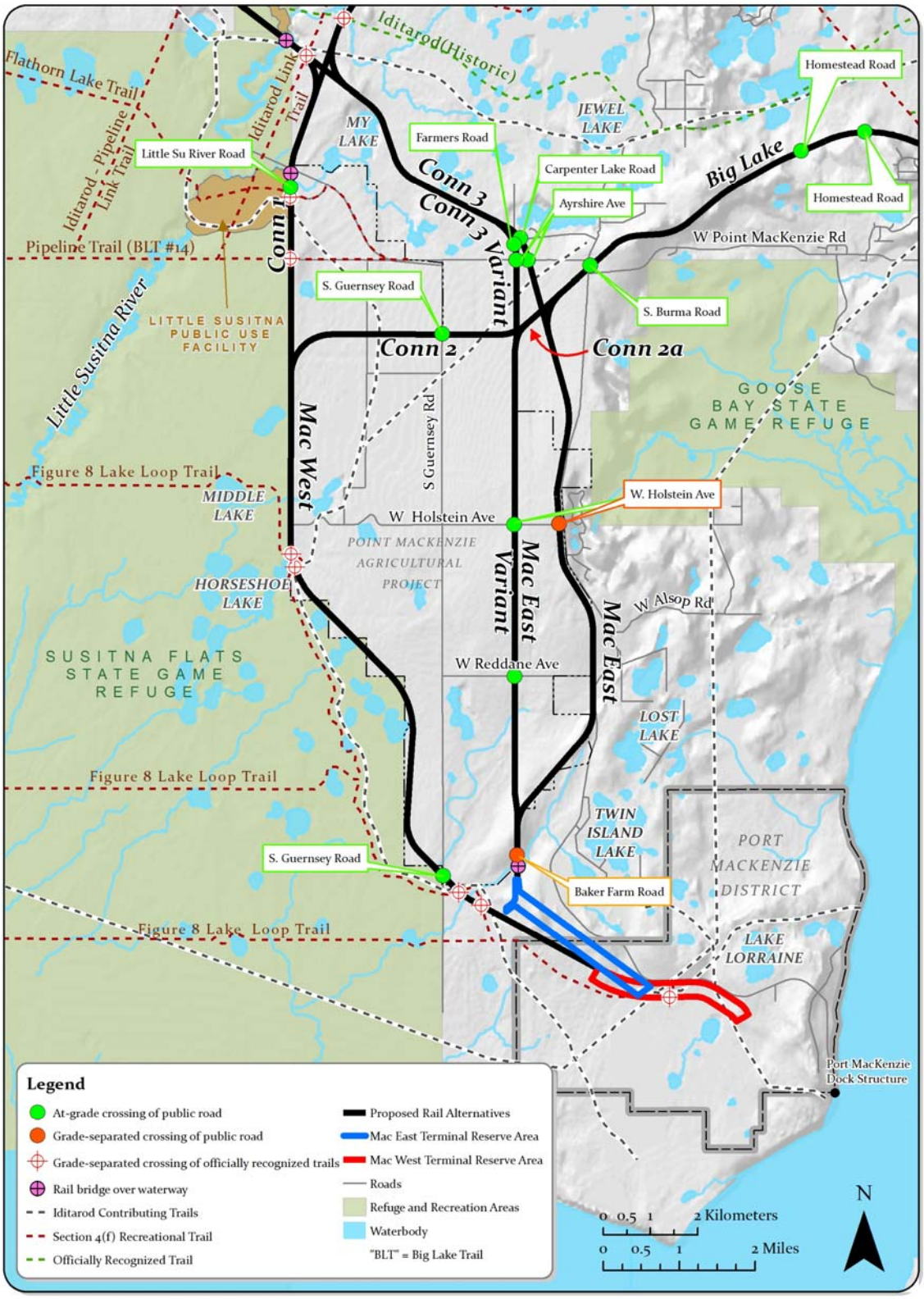

Figure 13.2-7. Access Points across the Mac East, Mac West, and Connector Segments

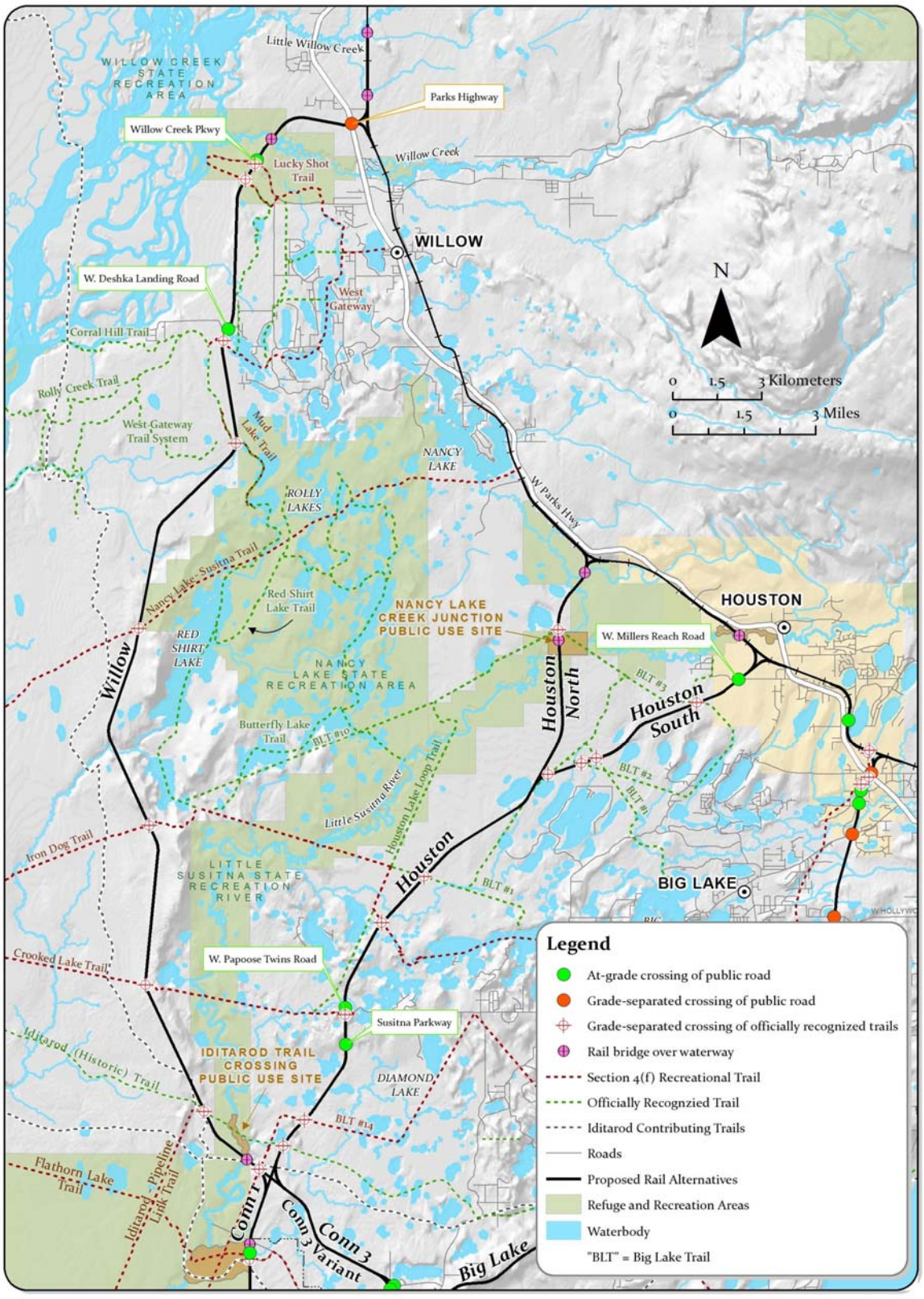

Figure 13.2-8. Access Points across the Willow, Houston, Houston North, and Houston South Segments

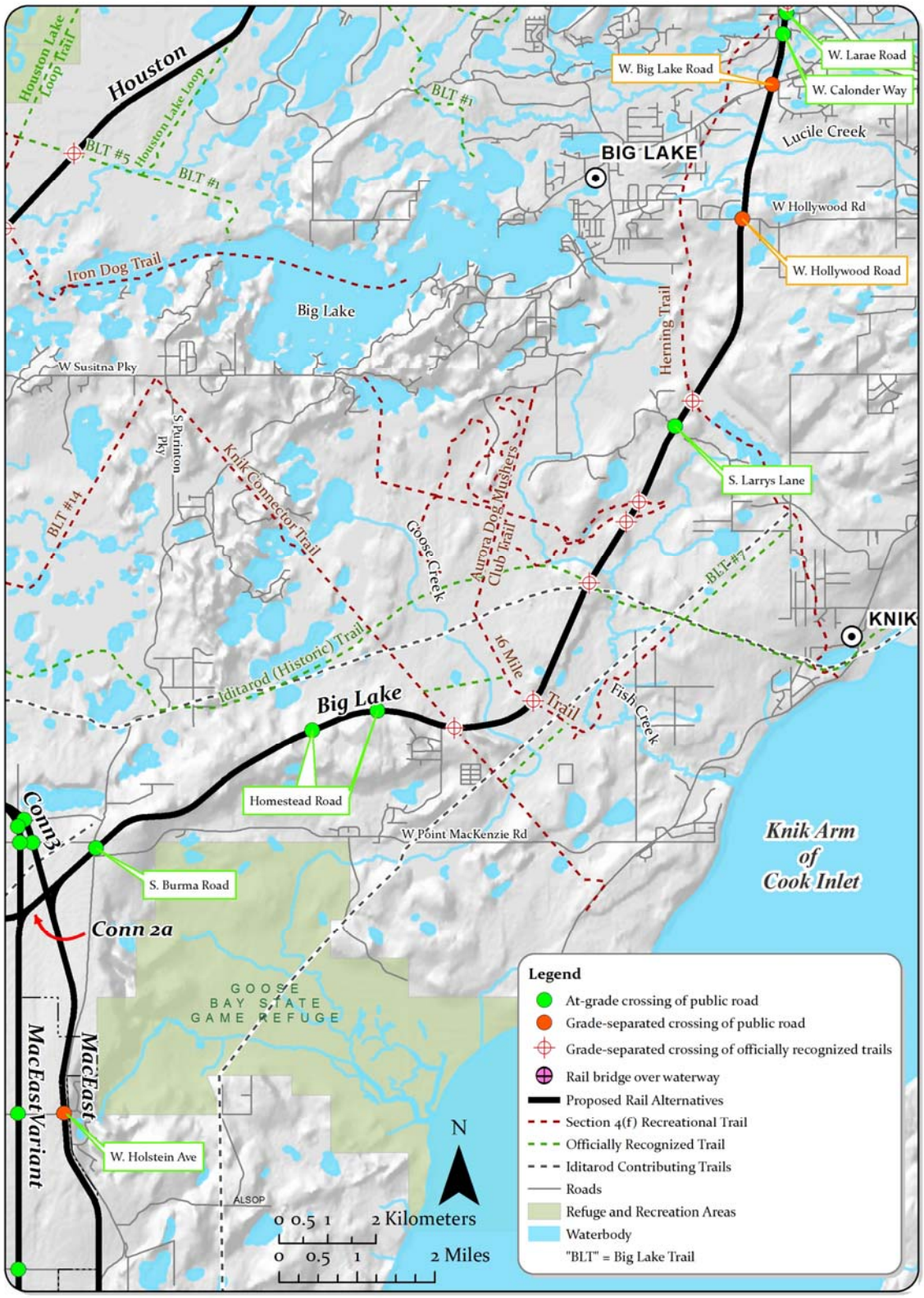

Figure 13.2-9. Access Points across the Southern Extent of the Big Lake Segment

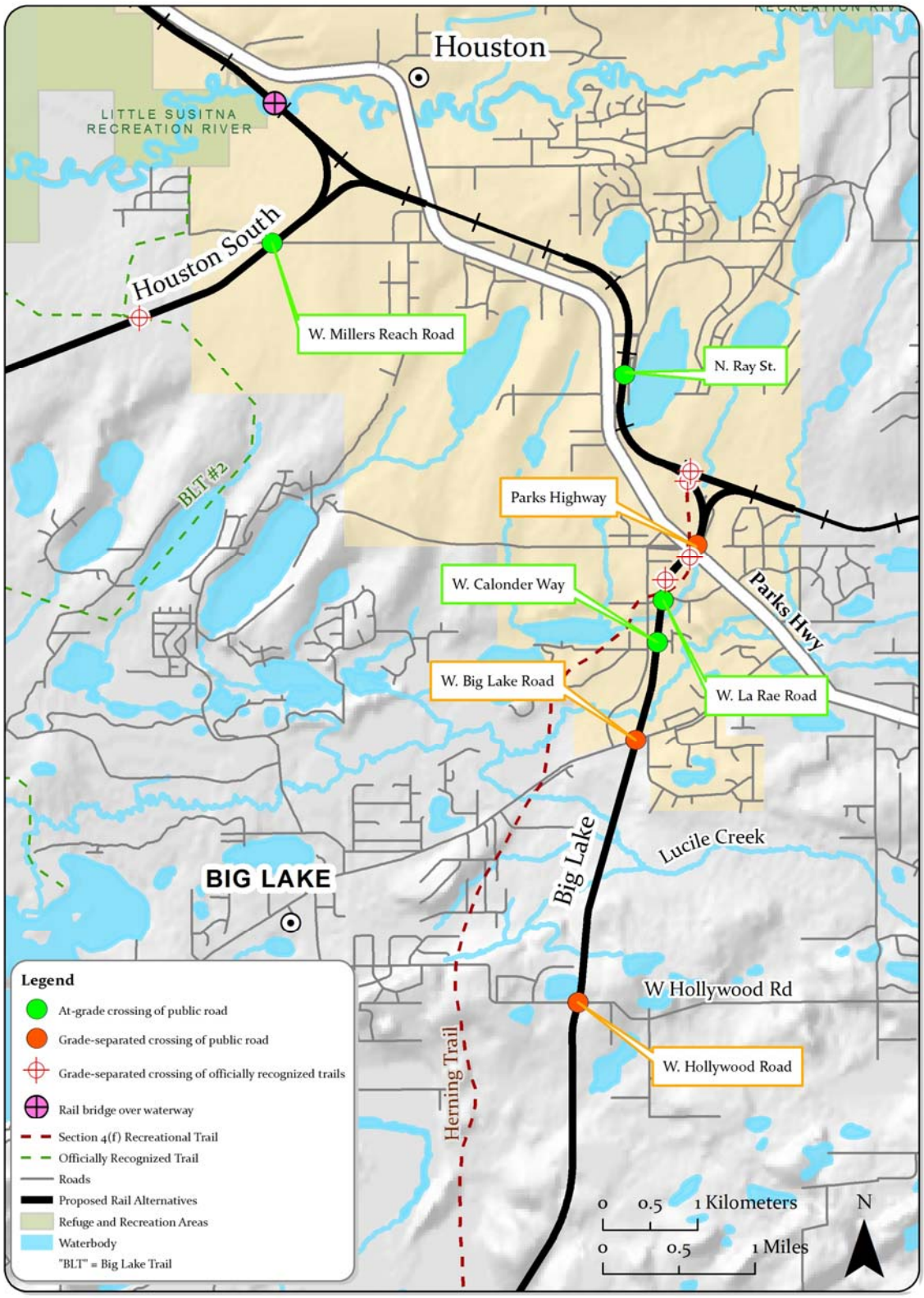

Figure 13.2-10. Access Points across the Northern Extent of the Big Lake Segment

The Mac East-Connector 3-Houston-Houston South Alternative would not result in the conversion of any recreation area and would intersect 8 officially recognized trails. The Mac East Variant-Connector 3 Variant-Houston-Houston South Alternative would have identical impacts. Both the Mac East-Big Lake Alternative and the Mac East Variant-Connector 2a-Big Lake Alternative would not impact any recreation areas or refuges and would intersect 5 officially recognized trails. The Mac-West-Connector 1-Willow Alternative would result in the conversion of 171 acres of 4 recreation areas/facilities and 11 officially recognized trails. The other 7 alternatives would result in impacts greater than the Mac East-Connector 3-Houston-Houston South Alternative or the Mac East Variant-Connector 3 Variant-Houston-Houston South Alternative and less than the Mac West-Connector 1-Willow Alternative, as indicated in Table 13.2-4. Chapter 19 describes recommended measures to mitigate potential impacts of the proposed rail line on parks and recreation resources.

13.2.5.2 No-Action Alternative

Under the No-Action Alternative, ARRC would not construct and operate the proposed Port MacKenzie Rail Extension, and there would be no impacts to recreation areas, refuges, or trails from the project. Restricted-use covenants that various governing bodies have put in place to facilitate the development of a potential rail line could be lifted, thus allowing for other types of use and/or development.

13.2.6 Sections 4(f) and 6(f) Evaluation Summary

This section summarizes the findings of the evaluation of potential impacts to recreation properties protected under section 4(f) of the U.S. Department of Transportation Act of 1966 and section 6(f) of the Land and Water Conservation Fund Act. Appendix M provides the full evaluation of potential impacts to these properties, as well as cultural and historic resources that are protected under section 4(f).

13.2.6.1 Section 4(f) Evaluation Summary

All potential rail line alternatives would cross resources protected by section 4(f) of the Department of Transportation Act of 1966 as significant recreational resources and properties. All of the proposed rail line segments evaluated in this Final EIS and discussed in the Draft Section 4(f) Evaluation (Appendix M) are technically feasible to build and any combination of the segments that would connect the existing main line to Port MacKenzie would satisfy the project's purpose and need. However, there are 4 alternatives that would result in *de minimis* impacts on recreational section 4(f) resources: the Mac East Variant-Connector 2a-Big Lake, Mac East Variant-Connector 3 Variant-Houston-Houston South, Mac East-Big Lake, and Mac East-Connector 3-Houston-Houston South alternatives. Of these 4 alternatives, the Mac East-Connector 3-Houston-Houston South Alternative and the Mac East Variant-Connector 3 Variant-Houston-Houston South Alternative would intersect the fewest number (1) and length (204 feet) of recreational section 4(f) trails[6], while the Mac East-Big Lake Alternative would intersect the greatest number (4) and length (2,202 feet) of recreational section 4(f) trails. None of these 4

[6] The length of some the affected 4(f) trails that are considered contributing elements to the *Iditarod Dog Sledding Historic District/Historic Vernacular Landscape* will not be known until further investigation is conducted under the Programmatic Agreement. Trail length crossing values are included where trail locations have been verified.

alternatives would affect the Susitna Flats State Game Refuge, Little Susitna State Recreation River, Nancy Lake State Recreation Area, or Willow Creek State Recreation Area.

Of the remaining alternatives that would cross recreational section 4(f) resources, the Mac West-Connector 1-Willow Alternative would intersect the greatest number (9) and the longest length (3,436 feet) of recreational trails. The operation of trains along this alternative would result in severe noise impacts, as defined by the FRA, to an estimated 3,622 acres of section 4(f) properties – the most of any alternative. The ROW from the Mac West-Connector 1-Houston-Houston North Alternative would affect the greatest acreage of parks and recreation areas and of wildlife refuge (158 acres total). Of the remaining alternatives, the Mac East-Connector 3-Houston-Houston North and the Mac East Variant-Connector 3 Variant-Houston-Houston North alternatives would intersect the lowest number of recreational trails (1) and length (204 feet) of recreational trail. The Mac West-Connector 2-Big Lake Alternative would have the lowest impact on acreage of parks and recreational areas and of wildlife refuge (57 acres total).

Recommended measures for minimizing impacts to section 4(f) recreational resources include timing construction to minimize impacts on recreation, designing water crossings to accommodate recreational navigation and access to waterbodies, ensuring adequate trail crossings, minimizing impacts to recreation areas and refuges, relocating the Port MacKenzie Trailhead and Parking Lot, and incorporating practices for management of fugitive dust during construction activities. Implementation of the recommended measures to minimize harm included in Chapter 19 and consultation with the managing agencies for eligible section 4(f) resources would reduce overall impacts to certain section 4(f) resources and properties, including officially recognized trails, to a level that is considered *de minimis*. The construction and operation of the proposed rail line could result in adverse impacts to the Willow Creek State Recreation Area, Nancy Lake State Recreation Area, Little Susitna State Recreation River, and Susitna Flats State Game Refuge depending on the alternative authorized, if any.

13.2.6.2 Section 6(f) Evaluation Summary

A portion of the Nancy Lake State Recreation Area, which has received funding from the Land and Water Conservation Fund Act (LWCF) (16 U.S.C. 4601-4 *et seq*.), would be permanently converted from recreational to non-recreational uses in the event that either the Mac West-Connector 1-Willow, Mac East Variant-Connector 3 Variant-Willow, or Mac East-Connector 3-Willow alternatives were authorized by the Board. No properties protected by section 6(f) would be affected by any other rail line alternative.

13.2.7 Unavoidable Environmental Consequences of the Proposed Action

To avoid or minimize the potential environmental impacts to parks and recreation resources from the proposed rail line as described above in sections 13.2.4.1 and 13.2.5, OEA is recommending that the Board impose up to 13 mitigation measures, including 4 measures volunteered by the Applicant and 4 alternative-specific mitigation measures (see Section 19.9). These measures include requiring: restoration of public lands to their former use or original condition; maintenance of a public information Web site during construction; warning devices to notify boaters of bridge construction; creation of a plan to identify officially recognized trails,

appropriate timeframes for construction and temporary access points; the design of bridges to accommodate winter modes of transportation; grade-separated trail crossings with an average distance of 3 miles between crossings; ROW acquisition in conformance with appropriate Federal and state regulations; minimization of impacts to the Susitna Flats Game Reserve, Point MacKenzie Trailhead, Figure 8 Loop Trail, Nancy Lake State Recreation Area, Little Susitna State Recreation River, Willow Creek State Recreation Area, and Nancy Lake Creek Junction Public Use Site; preparing a report on any officially recognized trails that the Applicant proposes to relocate; and the identification of trails to be given grade-separated crossings within the historic district.

Notwithstanding the recommended mitigation measures, there still would be potential unavoidable impacts to parks and recreation resources from the proposed rail line. Potential impacts would include: diminished experience for users engaged in activities such as recreation, hunting, fishing, and wildlife viewing; a loss of connectivity of trails for which grade-separated crossings would not be provided; the conversion of lands within the rail line ROW to rail line use; and the restriction of access within the ROW without an ARRC entry permit.

There also would be potential unavoidable impacts to section 4(f) and 6(f) [7] properties. Construction and operation of the following 8 alternatives would result in greater than *de minimis* impacts on recreational 4(f) properties: the Mac West-Connector 1-Willow; Mac East-Connector 3-Willow; Mac East Variant-Connector 3 Variant-Willow; Mac West-Connector 1-Houston-Houston North; Mac East-Connector 3-Houston-Houston North; Mac East Variant-Connector 3 Variant-Houston-Houston North; Mac West-Connector 1-Houston-Houston South; and Mac West-Connector 2-Big Lake alternatives. The section 4(f) properties include the Willow Creek State Recreation Area, the Nancy Lake State Recreation Area, the Little Susitna State Recreation River, and the Susitna Flats State Game Refuge, depending on the alternative authorized, if any. A portion of the Nancy Lake State Recreation Area, a section 6(f) property, would be permanently converted from recreational to non-recreational uses in the event that either the Mac West-Connector 1-Willow, the Mac East Variant-Connector 3 Variant-Willow, or the Mac East-Connector 3-Willow alternatives were authorized by the Board.

[7] Section 6(f) of the Land and Water Conservation Fund, 16 U.S.C. § 4601, applies to all public areas that have received Conservation Fund monies to acquire or develop public recreation facilities. Section 6(f)(3) requires that these areas be maintained in perpetuity for public outdoor recreation use, unless the National Park Service approves substitution property of reasonably equivalent usefulness and location and of at least equal fair market value.