

3.16 RECREATION

The Donlin Gold Project Area consists of remote, generally undeveloped lands from the west side of Upper Cook Inlet across the Alaska Range and down the Kuskokwim River basin to Kuskokwim Bay. These lands support a variety of dispersed and trail-based recreational activities, ranging from recreational hunting and fishing, to remote travel by snowmachine, to hiking and camping. This section describes the regulatory setting, with an emphasis on legal access and recreation management plans, as well as summary of current recreational use patterns.

SYNOPSIS

This section describes current recreational use within the Project EIS Analysis Area and evaluates potential project impacts on recreation resources from the proposed action and alternatives. Each alternative is examined by project component: Mine Site; Transportation Corridor; and Pipeline. Recreation resources described here pertain chiefly to non-local users, as local use is primarily for subsistence and livelihood.

EXISTING CONDITION SUMMARY

Overall, the proposed EIS Analysis Area does not receive the large number of visits that other destination-travel recreational areas, such as Denali National Park and Preserve or the Kenai Peninsula, do. Key recreational resources attractive to users include: guided hunting; the Iditarod National Historic Trail (INHT); and selected guided fisheries in the Kuskokwim River drainage.

Mine Site: Recreational use of the proposed Mine Site is currently very low to non-existent. The opportunities for recreation at the site, such as sport (general or non-subsistence) hunting or snowmachining, are widely available elsewhere in the region.

Transportation Corridor: Current recreational use of areas affected by proposed Transportation Corridor is low. The types of recreational opportunities afforded by the affected sites (river body, riverbank, uplands) are widely available in the region.

Pipeline: Over much of the proposed natural gas pipeline route, recreational use of the corridor is low, and the resources would affect recreation in settings designated by legislation but not designated Wilderness. Guided hunting occurs in GMUs 16 and 19, which are crossed by the pipeline. As a principal recreational resource of the area, and one of historic significance to Alaska and the nation, the INHT is of special note with regard to the proposed Pipeline. (See Section 3.17, Visual Resources, for mitigation measures to reduce impacts to INHT users.)

EXPECTED EFFECTS SUMMARY

Alternative 1 - No Action

This alternative would not affect recreation in the area. No changes are expected, beyond those that have already resulted from the exploration and baseline studies work.

Alternative 2 - Donlin Gold's Proposed Action

Mine Site: While activity at the Mine Site would be high during the life of the project (27 years), current recreational use of the area is immeasurable or unapparent. The overall intensity of impacts for the Mine Site component would involve changes in recreation access, setting, activities, or use levels that may not be measurable or apparent.

Transportation Corridor: This component would create intensive disturbance during Construction that would persist during the Construction Phase (3 to 4 years), followed by changes that would last through the life of the project (27 years). The effects would be realized by communities throughout the EIS Analysis Area. The context would affect recreation with broad distribution or wide availability in many areas throughout the EIS Analysis Area. Current recreational use of the area is low and changes may not be measurable or apparent.

Pipeline: Effects would come from disturbance during Construction, clearing of shrubs from the pipeline right-of-way (ROW) at approximately 10-year intervals during Operations or as required to preserve pipeline integrity and to allow for ongoing surveillance and monitoring activities. Recreation use of the pipeline corridor could occur by snowmachine or other off-highway vehicles. The duration of effects vary seasonally and geographically along the pipeline due to differing levels and contexts of recreation use. Changes in recreation access, use setting, or activities would persist during the Construction Phase (3 years), possibly through the life of the project (27 years), and may potentially persist after actions that caused the impacts cease. The pipeline corridor would overlap with the INHT for 2.5 miles, and would be within 1,000 feet of the route for 14.3 miles.

OTHER ALTERNATIVES – Differences of note for other action alternatives include:

Alternative 3A - LNG Powered Trucks

Alternative 3A would decrease the total number of barge trips per season from 122 in Alternative 2 to 83, proportionally reducing impacts on recreational use of the Kuskokwim River.

Alternative 3B - Diesel Pipeline

Alternative 3B would eliminate fuel barging after the Construction Phase, reducing the total number of barge trips per season from 122 in Alternative 2 to 64, and proportionally reducing impacts on recreational use of the Kuskokwim River. To provide capacity for diesel pipeline spill response, portions of the temporary gravel access roads and temporary airstrips used in pipeline construction would be left in place for the Operations Phase. This may prompt new recreational use along the pipeline.

Alternative 4 - Birch Tree Crossing (BTC) Port

Alternative 4 would shorten the distance traveled by river barge from 199 river miles in Alternative 2 to 124, while more than doubling the distance of the mine access road from 30 miles to 76 miles. Construction and travel by trucks during the summer shipping season would impair recreation use of the uplands in a small degree, while the shorter barge distance would lessen impacts on recreational river use.

Alternative 5A - Dry Stack Tailings

The effects of Alternative 5A on recreation would be very similar to the effects of Alternative 2.

Alternative 6A - Dalzell Gorge Route

Alternative 6A would overlap with the INHT for 14.5 miles, an increase from 4.0 miles of Alternative 2, while the pipeline route would be within 1,000 feet of the INHT for 29.4 miles, an increase of 18.9 miles over Alternative 2.

3.16.1 REGULATORY ENVIRONMENT

3.16.1.1 LEGAL ACCESS FOR RECREATION

There are various legal structures regulating public surface access within the EIS Analysis Area for recreation. Across Alaska, recreationists use these opportunities to gain access to terrain that would otherwise be too remote or have prohibited access. The regulatory mechanism to ensure that access is provided is through public easement ROWs. In the EIS Analysis Area, there are R.S. 2477 ROWs, section line easements, Section 17(b) easements, state public access easements, and other encumbrances. Section 3.15.1, Land Ownership, Management, and Use, describes these legal structures.

Land management plans, discussed in more detail in Section 3.15, Land Ownership, Management, and Use, contain important access management provisions such as designating trails, developing travel management plans, and restricting use of motorized vehicles. The footprint of the proposed action and alternatives includes BLM-managed lands within the area covered by the Southwest Management Framework Plan, which is being updated under the Bering Sea-Western Interior Resource Management Plan (Figure 3.15-1). The EIS Analysis Area also includes lands covered by the BLM Ring of Fire Resource Management Plan. Most access to the EIS Analysis Area requires aviation, boat, or off-highway vehicle travel. The BLM's off-highway vehicle management provisions are similar to the State of Alaska's Generally Allowed Uses on State Lands; the BLM provides supplemental guidelines for travel on BLM-managed lands in the Alaska Travel Management Guide (BLM 2009b) and addresses area-specific travel conditions in resource management plans (BLM 2015e). The BLM limits off-highway vehicle use within the Ring of Fire Resource Management Plan area to existing roads and trails whenever possible (BLM 2008b).

The INHT (see Section 3.16.2.1.1) provides winter surface access—although it is recognized that the remoteness and limited number of facilities represent limits on the level of recreational use. In addition, the minimal level improvements and maintenance on this segment of the INHT further limits high levels of winter recreational use. Multiple easements, including R.S. 2477 ROWs and State Public Access Easements, exist for the INHT and provide legal access for recreation use on the trail. Specific easement types are described in more detail below.

The State of Alaska's Generally Allowed Uses on State Land (ADNR 2011a) provides a general explanation of the state's use management framework, although the state has more access provisions than is typical on BLM-managed lands within the EIS Analysis Area. Generally Allowed Uses apply to general state land that is not in a legislatively designated area or in a

special management category or status. Relevant state land use plans are discussed in more detail in Section 3.15, Land Ownership, Management, and Use.

As described in Section 3.15, Land Ownership, Management, and Use, the Mine Site is located on land privately owned by The Kuskokwim Corporation (TKC) and Calista. TKC has existing restrictions on use of its lands by non-shareholders. Any public use on private land would be at the discretion of the landowner.

3.16.2 AFFECTED ENVIRONMENT

3.16.2.1 RECREATION MANAGEMENT

3.16.2.1.1 BUREAU OF LAND MANAGEMENT

Regionally, the BLM manages its lands in the Southwest Alaska Planning Area under the concept of multiple use management, which incorporates land and water recreation. Recreation activities on BLM-managed public lands are multi-faceted and include consumptive activities, such as big game hunting, and non-consumptive, such as photography. Recreation management in the EIS Analysis Area consists of off-highway vehicle use, for all-terrain vehicles in the summer and snowmachines in the winter. The BLM has management and facilitation responsibilities at various places along the proposed pipeline route, including the INHT, and the George River which is managed for recreational uses (BLM 2012c, 1981).

The BLM offers Special Recreation Permits for specific recreational uses of public lands. Permits are required for commercial use, competitive use, vending, use in Special Areas, organized group activities or events, and commercial photography and filming. Guide/outfitter camps must be authorized by a Special Recreation Permit (BLM 2008a).

Iditarod National Historic Trail

The Pipeline component adjoins or intersects the INHT intermittently on state lands. The INHT was designated in 1978 to commemorate the historic sled dog route from Seward to Nome during the gold rush. The purpose of any National Historic Trail is to protect the historic route and its historic remnants and artifacts for public use and enjoyment (NPS 2012). Among the natural qualities of the INHT, the undeveloped or primitive nature of this trail system was identified as a unique feature. The trail is more than 900 miles long, and hundreds more miles of connector trails make up the entire system. A report to the Senate advocating designation stated:

These trails, aggregating 2,037 miles, offer a rich diversity of climate, terrain, scenery, wildlife, recreation and resources in an environment largely unchanged since the days of the stampede. It is the isolated, primitive quality of this historical environment that makes the National Historic Iditarod Trail proposal unique. Nowhere in the National Trail System is there such an extensive landscape, so demanding of durability and skill during its winter season of travel. On the Iditarod, today's adventurer can duplicate the experience and challenge of yesteryear. (BOR 1977)

In addition to the well-known Iditarod Trail Sled Dog Race, the trail system is used for other sled dog races, snowmachine races, and human-powered endurance races.

The INHT is managed through cooperative management plans adopted by federal and state agencies. Under provisions of the National Trails System Act of 1968, the BLM was designated as the trail administrator to coordinate the efforts of all public land managers and volunteers on behalf of the INHT. No one entity directly manages recreation activities along the entire INHT, but the BLM plays an important facilitation role for sustained trail protection and improvement (AGA 2011). Refer to Section 3.15, Land Use, Ownership, and Management for information on how various entities cooperate for INHT management, as well as Section 3.20, Cultural Resources, for more detailed information on the INHT historical context.

3.16.2.1.2 U.S. FISH AND WILDLIFE SERVICE

The Yukon Delta National Wildlife Refuge (NWR) is comprised of low-lying wetlands, and lies to the southwest of the proposed Mine Site and the Transportation Corridor. Bethel and surrounding areas are encircled by the refuge, with public access available via air taxi, private planes, and Alaska Native Claims Settlement Act (ANCSA) Section 17(b) easements. According to the U.S. Fish and Wildlife Service (USFWS), recreational use of the refuge by non-locals is low. However, the lands and waters of the refuge provide opportunities for sport fishing and sport (or general, non-subsistence) hunting. USFWS is promoting recreational use of the refuge through national publications and is expecting the demand for visitor uses to increase over time. The USFWS manages the refuge for conservation of resources, which will benefit recreational use by ensuring that hunting, fishing, and other recreational opportunities can continue in the future. All commercial ventures, including guided fishing and hunting, would be subject to the same special use permit restrictions on refuge land (USFWS 2004a).

3.16.2.1.3 ALASKA DEPARTMENT OF FISH AND GAME

The Alaska Department of Fish and Game (ADF&G) is responsible for managing the sport (or recreational) fishing and hunting activities in the state, including within the EIS Analysis Area. Sport fishing in Alaska requires a fishing license, for both residents and non-residents. Fisheries management in the EIS Analysis Area is divided into the Lower and Upper Management Areas in the Kuskokwim River drainage; both include several tributaries. The majority of lands surrounding the lower Kuskokwim and the Kuskokwim Bay watersheds are within the Yukon Delta NWR or the Togiak NWR. The Upper Kuskokwim Management Area notably includes the George River, which is crossed by the proposed pipeline route (ADF&G 2013h).

Sport (or general) hunting in Alaska requires licenses for both residents and non-residents. Hunting management in the state is divided into Game Management Units (GMUs). The components of the EIS Analysis Area are in GMU 16, 18, and 19. Each GMU has specific harvest limits and other methods and means restrictions. Unit descriptions and restrictions are outlined below (ADF&G 2013d). Each GMU is further divided into Guided Use Areas (GUA), in which permits for big game guides and transporters are issued (ADF&G 2015b).

GMU 16 consists of the drainages into Cook Inlet between Redoubt Creek and the Susitna River, including Redoubt Creek drainage, Kalgin Island, and the drainages on the west side of the Susitna River (including the Susitna River) upstream to its junction with the Chulitna River; the drainages into the west side of the Chulitna River (including the Chulitna River) upstream to the Tokositna River, and drainages into the south side of the Tokositna River upstream to the base of the Tokositna Glacier, including the drainage of the Kanitula Glacier. There are seasonal

restrictions regarding motorized vehicle use in the Susitna Flats State Game Refuge. GMU 16 is divided into two subunits, 16A and 16B. Allowed species are black bear, brown/grizzly bear, caribou, moose, sheep, wolf, and wolverine (ADF&G 2013d). There are 36 permitted big game guides and transporters in the affected GUAs (GUAs 16-01, 16-02, 16-03, and 16-04) in GMU 16 (ADF&G 2015b).

GMU 18 consists of that area draining into the Yukon and Kuskokwim rivers downstream from a straight line drawn between Lower Kalskag and Paimiut and the drainages flowing into the Bering Sea from Cape Newenham on the south to the Pastolik River drainage on the north; Nunivak, St. Mathews, and adjacent islands between Cape Newenham and the Pastolik River. Kalskag Controlled Use Area is closed to the use of aircraft for hunting big game and transporting hunters or gear, except between public airports. Allowed species are black bear, brown/grizzly bear, caribou, moose, muskox, wolf, and wolverine (ADF&G 2013d). There are five permitted big game guides and transporters in the affected GUAs (GUA 180-2 and 18-03) in GMU 18 (ADF&G 2015b).

GMU 19 consists of the Kuskokwim River drainage upstream from Lower Kalskag. It includes the Holitna-Hoholitna Controlled Use Area, which has seasonal restrictions on motorized boating; the Upper Kuskokwim Controlled Use Area, which has restrictions on the use of aircraft for hunting moose and required check stations; the Lime Village Management Area, which has restrictions on caribou hunting; and the Upper Holitna-Hoholitna Management Area, which has required check stations. GMU 19 is divided into four subunits, 19A, 19B, 19C, and 19D. Hunting in GMU 19 is closed to the taking of moose and caribou by nonresidents in two subunits, 19A and 19B. Allowed species are black bear, brown/grizzly bear, bison, caribou, moose, sheep, wolf, and wolverine (ADF&G 2013d). There are 55 permitted big game guides and transporters in the affected GUAs (GUA 19-01, 19-02, 19-03, 19-05, 19-07, 19-08, 19-09, 19-10, and 19-12) in GMU 19 (ADF&G 2015b).

3.16.2.1.4 ALASKA DEPARTMENT OF NATURAL RESOURCES

ADNR manages state lands for multiple uses, including recreation. ADNR identifies its recreation priorities to include securing additional funding, increasing tourism and the economy, maintaining access to resources, and providing for community recreational needs (ADNR 2009d). The state has various permits for authorizing uses on state lands, including commercial recreation permits, ROW leases and easements, trapping cabin permits, land use permits, special use permits, and permits for large group camping.

The State of Alaska owns and manages many sections along the pipeline route. The proposed route lies in two regions of the state, subject to the terms of the Kuskokwim Area Plan, and the Susitna-Matanuska and Southeast Susitna area plans, respectively. The state-owned lands along the eastern portion of the pipeline route, in the Kuskokwim Area Plan jurisdiction, are available for public use. To the west, the proposed winter access roads for the Construction Phase would cross lands managed under the Southeast Susitna Area Plan (ADNR 2015b). Under both plans, State lands are managed for recreation, with some areas open for remote cabin permits. One priority for ADNR in this region is to maintain access to the public lands, primarily through R.S. 2477 easements. The State does not manage the ANCSA Section 17(b) easements found in this region that provide access to state and other publicly owned land (ADNR 1988). (See Section 3.15, Land Ownership, Management, and Use for discussion of the state area plans and R.S. 2477 easements).

In the Susitna-Matanuska Area, ADNR recreation management intent is to protect trails, including the INHT system, the Iditarod Trail Sled Dog Race route, and R.S. 2477 easement. Private commercial recreation facilities (such as lodges) or operations (such as guiding) on state lands can be authorized if they are consistent with the current area plan. Leasing lands for recreational facilities or operations can also be achieved if consistent with planning practices (ADNR 2011b).

The pipeline route passes just north of the headwaters of the Talachulitna River, marking the boundary of the Talachulitna State Recreational River. Recreation Rivers provide a remote setting for many activities including fishing, hunting, boating, camping, hiking, snowmachining, skiing, dog mushing, and viewing wildlife. Users of Recreation Rivers have increased rapidly in recent decades with visitors coming from Alaska, other parts of North America, and worldwide. ADNR requires Recreation River permits for activities that are generally allowed on other state lands but restricted on Recreation Rivers. Some existing types of authorizations, such as land use permits and ROWs, may be used when applicable. The areas allow primitive tent camping with restrictions. Public facilities such as boat launches are consistent with planning efforts if they are necessary to prevent degradation of the natural environment. Public use cabins are allowed in certain management areas and with restrictions. The mouth of the Talachulitna River nearest to the pipeline route is in Unit 5, subunit 5a. This reach extends from the confluence of the Talachulitna and Skwentna rivers to the bottom of the Talachulitna River canyon. The river here is from 75 to 100 feet wide. Upland areas contain few wetlands: 10 percent contiguous and 5 percent non-contiguous. This subunit includes three miles of the Skwentna River. It is owned by the State and has 12 private parcels. The INHT passes through this subunit (ADNR 1991).

3.16.2.1.5 ALASKA NATIVE CORPORATIONS

There are three major Alaska Native Corporation landholders in the EIS Analysis Area: The Kuskokwim Corporation (TKC), Calista Corporation (Calista), and Cook Inlet Region, Inc. (CIRI). TKC owns the surface estate for many land sections along the Kuskokwim River, as well as large portions of the Mine Site. On its lands, TKC does not allow entry for hunting by non-shareholders, and other access to TKC lands is not allowed for non-shareholders during hunting season in order to increase hunting opportunity for shareholders. This sovereign administration of hunting rights would be maintained during the Construction and Operations phases. TKC currently runs a river patrol program during the hunting season to inform the general public of corporation land policies and boundaries. A recreational use permit is available for non-shareholders for overnight camping, sport fishing, and berry gathering on TKC lands. There are also a variety of permits available to access lands, and shareholder permits for trapping and commercial guiding. Shareholders do not need a permit for access, but do need a permit to harvest logs (TKC 2010). Donlin Gold has use rights on the Calista and TKC lands under the long term Surface Use Agreement.

CIRI owns lands near the eastern end of the pipeline route. Potential users may access CIRI lands on a limited basis with written permission. Permits are required for all CIRI land use, including such activities as guiding, sport hunting, sport fishing, camping, operation tours, photography, scientific research, and dog mushing (CIRI n.d.). Section 3.15.1.2, Land Management, Ownership and Use, has more detailed discussion of Alaska Native and Regional and Village Corporation landownership within the EIS Analysis Area.

3.16.2.2 RECREATION AND TOURISM IN THE EIS ANALYSIS AREA

Recreation in the EIS Analysis Area includes a variety of consumptive and non-consumptive activities as described above, with more activity concentrated in the eastern portion of the pipeline corridor. Particularly to the west of the Alaska Range, the vast majority of fishing, hunting, boating, and village-to-village travel in the EIS Analysis Area is subsistence-oriented, managed separately from recreation-oriented activities (see Section 3.21, Subsistence, for further discussion). The discussions below focus on recreation-oriented activities.

3.16.2.2.1 MINE SITE

The Mine Site is located in southwest Alaska, a region that includes the Aleutian Islands, Bristol Bay, the Yukon-Kuskokwim Delta, and Kodiak Island. The Statewide Outdoor Recreation Plan classifies the area in the rural region, which is the most sparsely populated of the recreation regions (ADNR 2009d). In 2011 and 2012, the region cumulatively received less than four percent of the state's visitor volume annually (McDowell Group 2013; LKEDC 2006, 2012). The opportunities for recreation in the Kuskokwim Delta are limited by access, remoteness, and the lack of familiarity with the area by the travel industry. There are no roads connecting the Mine Site with the rest of the state, and there are limited accommodations available to visitors. Some of the communities in the region promote themselves as visitor destinations for cultural tourism and eco-tourism, but the overall lack of marketing has discouraged average visitors (LKEDC 2006, 2012; Ceñaliulriit CRSA 2006).

Much of the publicly owned land around the Mine Site is managed for multiple uses. Recreation is one of the primary designated uses by the State of Alaska in the vicinity of the Mine Site. Recreational use is moderate along the Kuskokwim River, and in the rest of the area use is low or unknown (ADNR 1988).

3.16.2.2.2 TRANSPORTATION CORRIDOR

The Transportation Corridor is in the same recreation region as the Mine Site, and also includes Dutch Harbor. In Bethel, currently, sport fishing and hunting provide a small amount of tourist activity, although an obstacle to expansion of these industries is the potential conflict with subsistence activities (City of Bethel 2006). Local residents use the Kuskokwim River for recreation activities, such as camping, fishing, swimming, berry picking, or boating on the river. Dutch Harbor has a steady demand for small boat moorage, including boats used for recreation purposes. Small, yet stable, numbers of visitors also recreate in the area (Northern Economics 2009).

Table 3.16-1 shows the number of sport harvest anglers in some Kuskokwim River/Kuskokwim Bay drainages from 2006 to 2015. During these years, the total number of estimated anglers in all Kuskokwim River/Kuskokwim Bay drainages ranged from a minimum in 2014 of 3,124 fresh water anglers to a maximum in 2008 of 4,231 anglers annually (ADF&G 2015f). In 2015, there were 3,782 anglers estimated to sport fish in the Kuskokwim River/Kuskokwim Bay drainages. These numbers are low in comparison to other areas of the state, such as the tens of thousands of sport anglers in the Upper Copper River and Tanana River drainages, and hundreds of thousands of anglers on the Kenai Peninsula/Cook Inlet. The Kuskokwim River is turbid, so most sport anglers focus on clear tributary streams or confluence areas.

The most common sport fish caught in selected Kuskokwim River/Kuskokwim Bay drainages were rainbow trout, sheefish, coho salmon, and Chinook salmon when available. Within the Kuskokwim Drainage Management Area, sport anglers fish for Chinook salmon, coho salmon, pink salmon, sockeye salmon, chum salmon, Arctic grayling, rainbow trout, lake trout, Arctic char, Dolly Varden, sheefish, Northern pike, and burbot. Occasionally anglers also target least cisco, humpback whitefish, round whitefish, and broad whitefish (ADF&G 2013h). In recent years, conservation closures of sport Chinook salmon fisheries have lowered harvest numbers of this species. The harvest estimates of Chinook salmon was zero fish for Kuskokwim River drainages below the Aniak River in 2009, 2011, 2012, 2013, 2014, and 2015 (ADF&G 2015f).

**Table 3.16-1: Number of Sport Harvest Anglers in Kuskokwim River/
Kuskokwim Bay Drainages, 2006-2015**

Area Fished	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Aniak River	564	628	683	583	569	412	417	411	N/A	312
Kuskokwim River drainages above Aniak River	574	883	627	432	585	600	674	N/A	N/A	456
Kuskokwim River drainages below Aniak River	313	309	565	539	457	25	758	724	564	464
Goodnews River drainage	603	455	449	387	454	666	845	1,161	893	854
Holitna River drainage	N/A	N/A	N/A	297	223	506	N/A	N/A	N/A	338
Kanektok River drainage	1,136	880	1,310	748	1,078	1,172	1,108	1,551	1,015	1,391
Kisaralik River	N/A	N/A	552	363	482	382	N/A	N/A	419	N/A

Source: ADF&G 2015f.

Anglers typically access Kuskokwim area fisheries by chartered air taxi or riverboat. Bethel, Aniak, McGrath, and Dillingham are the most common air taxi departure communities for sport fishing. There are limited guide and outfitter services for Kuskokwim area fisheries. Although the fishing season is year-round for most species, sport fishing is mostly concentrated in summer and fall seasons for the Kuskokwim River and Kuskokwim Bay (ADF&G 2013h). The most popular rivers in the Kuskokwim area for sport fishing float trips are the Kisaralik, Aniak, Goodnews, Holitna, and Kanektok. For more detailed information on harvest, refer to Section 3.21, Subsistence, and Section 3.13, Fish. For information on how harvests affect the local economy, see Section 3.18, Socioeconomics.

3.16.2.2.3 PIPELINE

Recreation use and potential along the pipeline route varies from east to west. The entire route is limited by its remote location and difficulty of access. Near the Kuskokwim River, recreation use is moderate, and low or unknown in the rest of the region (ADNR 1998). However, harvest data from 2001 to 2012 shows an increase in sport fishing along the Kuskokwim River, and a decrease in hunting (general) harvest in GMUs 16 and 19 (ADF&G 2013e). In the southern

Alaska Range, recreation use is moderate, with moderate potential because of limited hunting, and occasional use of the INHT, while parts of the Alaska Range are popular for flightseeing (ADNR 1998, 2011b). The section of the INHT that has the most use is on the eastern side, due to its proximity to population centers. Additionally, the INHT is used as a venue for three high-profile annual long-distance races. In the Susitna Lowlands, sport hunting occurs in the fall, and snowmachining along frozen rivers and in the many wide, open, flat places that this region provides. Hunting pressure tends to be the greatest near access points, primarily the trails used by all-terrain vehicles and places accessible by boat (ADNR 2011b).

In the summer, recreation occurs along the State-designated Recreational Rivers, including the Talachulitna River. The pipeline route lies just north of the mouth of the Talachulitna River and the Talachulitna State Recreational River boundary. Because of its remote setting, this river receives only moderate use by recreationists during snow-free seasons, with the majority being fly-in rafters, kayakers, and sport anglers. The mouth receives the highest use of the river, and is managed to provide and enhance recreation opportunities (ADNR 1991).

3.16.2.3 RECREATION FACILITIES, SETTING, AND ACTIVITIES

3.16.2.3.1 MINE SITE

As a region, southwest Alaska is attractive to visitors seeking an experience in more remote settings. Specific attractions include wildlife viewing, cultural activities, canoeing, kayaking and river rafting, and sport fishing and hunting (Ceñaliulriit CRSA 2006). Although the total amount of recreation in the region remains low, entrepreneurs have begun local businesses in sport fishing, rafting, and wildlife viewing. The Lower Kuskokwim Economic Development Council sponsors product development tours to the region for state travel representatives to familiarize them with the accommodations and activities available for visitors. Further non-consumptive recreational opportunities could be developed for bird watching and wildlife viewing, particularly if local entrepreneurs partnered with public agencies and needs were identified (LKEDC 2006, 2012).

The recreation setting within a 5- to 10-mile radius of the Mine Site is primarily remote, undeveloped landscapes with limited access. The site is suitable for sport hunting and fishing, snowmachining, and off-road vehicles and could provide recreationists with secluded experiences. In the summer, the area is difficult to access except by air. During the winter, land travel is more suitable, as the ground freezes and snowmachining is possible. At the Mine Site, however, there is some small development and an airstrip, which is mostly used in the summer months for environmental studies for the Donlin Gold Project.

Currently, the most popular activities for visitors are sport fishing and hunting. As of 2013, there are 20 licensed guides in seven communities within the EIS Analysis Area (DCCED 2013a). Access to hunting areas is primarily by boat and air services. Fishing occurs mostly in the summer and fall, but ice fishing also occurs during winter, and hunting primarily occurs in the fall months.

Because of the small resident population and the distance between communities, non-consumptive dispersed recreation activities such as snowmachining, cross-country skiing, hiking, all-terrain vehicle use and boating in the region is low. Off-road vehicles are used in the summer for sport fishing and hunting, and placer mining. Snowmachines are used in the

winter. These activities tend to be concentrated near communities, along rivers, and in the Alaska Range. There are some areas in the region that are open for remote cabin permits (ADNR 1988, BLM 1981).

3.16.2.3.2 TRANSPORTATION CORRIDOR

With respect to recreation, the Transportation Corridor is generally in the same region as the Mine Site. The Kuskokwim River is also part of the affected environment pertinent to recreation for the Transportation Corridor.

In the summer, the recreation setting along the Kuskokwim River is marked by the river itself, which can be wide or narrow as it winds from the headwaters to the Kuskokwim Bay. Access to the river is common from the communities along the shoreline, and upstream from Bethel. Sweeping landscapes along the shore offer scenery and wildlife viewing, and the river offers opportunities for recreational floating. The villages along the river use it for transportation, subsistence activities, and transport of equipment and supplies. For this reason, the setting does not provide the level of solitude as other places in Alaska, but remains quite isolated. The river is frozen during the winter and offers opportunities for snowmachine use, limited in places by thin ice and open water due to inconsistent winter temperatures.

In addition, the affected environment for recreation would include Dutch Harbor and the city of Bethel, which would serve as fuel storage locations and port sites. Bethel is the regional transportation hub with daily jet service to Anchorage, and air connections to the communities in the region, and has the most developed tourism facilities in the region (Ceñaliulriit CRSA 2006). In Bethel, the main recreational facility is 21-acre park (Pinky's Park) and more recently, the Yukon Kuskokwim Regional Aquatic Health and Safety Center. A popular recreation area is H-Marker Lake, which is used for swimming and a variety of other recreation activities. Other recreation areas include Arthur Dull Lake, Hangar Lake, and the Kuskokwim River. The city hopes to eventually secure land to build a riverfront park for further recreation opportunities (City of Bethel 2006).

Anglers in the lower Kuskokwim River and Kuskokwim Bay focus on the tributaries of the Kuskokwim, as they are clearer than the mainstem of the Kuskokwim River, and are more conducive to float trips as well. Access to the fisheries of the Kuskokwim area is by air or boat. Air charters and outfitting services are available in Aniak, Bethel, Dillingham, and McGrath. There are also outfitting and guiding services available that provide equipment rental; however, recreation use levels are low (ADF&G 2013h).

One popular pastime in the Bethel area is sport fishing, primarily along the Kisaralik, Kwethluk, Kasigluk, and Kuskokwim rivers. Another popular activity is the Kuskokwim 300 Dog Sled Race, which is well known in Alaska and increasing in popularity. Volunteers in Bethel provide most of the visitors' accommodations during the race (City of Bethel 2006).

3.16.2.3.3 PIPELINE

Throughout rural Alaska, and along the Pipeline route, there are few community outdoor recreation facilities. The most common facilities in rural villages are playgrounds, boat launches, basketball court facilities, and play fields. In some communities, a play field or playground is the only outdoor recreation facility, and several communities have no facility of any kind. There has been a demand for more camping areas (ADNR 2009d).

Near the eastern end of the Pipeline route, there are more outdoor recreational facilities available than in the interior parts of the route. The Skwentna River is a popular destination for hunting, trapping, and fishing. This river features camping opportunities and take-out points for float trips. The recreation setting is moderately developed with commercial recreation lodges that take advantage of the remoteness for visitor experience, including the Shell Lake area. Private recreation cabins have been developed in the Shell Lake/Onestone Lake area generating floatplane traffic in the summer and snowmachine use for access and recreation in the winter. The recreation cabins found in this area represent the greatest concentration of private recreation development found along the length of the proposed Pipeline. On the Talachulitna State Recreation River, there are a number of lodges and some private cabins (ADNR 2011b). Many of the lodges and cabins were located near the mouth of the river and had improvements associated with them, such as stairs and docks. There is one private air strip in the area, and an area where boats can be stored by the public. The mouth of the river is accessible to both float and wheeled planes and powerboats. There is off-road vehicle use by private landowners both in the summer and winter via all-terrain vehicles and snowmachines (ADNR 1991).

A portion of the eastern end of the Pipeline ROW would also be in the vicinity of the INHT (refer to Section 3.16.3.2.3 below). This segment has the most use along the INHT, due to its proximity to Alaskan population centers and ease of access. Recreation use along the INHT is primarily from trail-dependent winter activities associated with organized race events, although, limited non-event winter and summer uses do occur. Winter use levels vary along the INHT depending upon trail segments, but it is estimated that approximately 3,000 to 5,000 trail passes occur each winter along portions of the trail that have the potential to be affected by the pipeline route (Keeler 2014). Additionally, flightseeing and low levels of non-trail dependent use occur during organized events such as the Iditarod Trail Sled Dog Race. Overall, most use of the INHT is limited by the trail's remote setting and is primarily from motorized users, with occasional non-motorized uses.

3.16.2.4 CLIMATE CHANGE

Recreation has been and will continue to be affected to the extent that other resources have been affected, as described in Section 3.26, Climate Change, including: climatic conditions (atmosphere), water resources, permafrost, and vegetation and wetlands. As the climate changes, the timing and location of recreation activities could change. For instance, if wildlife and/or fish distributions change, sport hunters and anglers may change when and where they recreate to have the best chances for a success at taking fish or game. There is some research that suggests climate change is affecting the distribution of caribou (ADF&G 2008b). Climate change may also exacerbate localized glaciation or aufeis along trails within the EIS Analysis Area, which could affect some recreational trails, including the INHT (see Section 3.26.3.2.2, in Climate Change). To the extent that the visual landscape shifts with vegetation patterns and physical processes, recreational sightseeing (usually conducted in conjunction with float trips or plane flights to reach recreation areas) may be affected by climate change.

3.16.3 ENVIRONMENTAL CONSEQUENCES

This section describes potential impacts to recreation access, setting, activities, and use levels as a result of the project. Table 3.16-2 provides the impact methodology framework applied to

assessing direct or indirect impacts to recreation based on four factors of intensity or magnitude, duration, extent or scope, and context (40 CFR 1508.27, described in Section 3.0, Approach and Methodology).

Table 3.16-2: Impact Criteria for Recreation

Type of Effect	Impact Factor	Assessment Criteria		
Effects on Recreation	Magnitude or Intensity	Changes in recreation access, setting, activities, or use levels may not be measurable or apparent.	Noticeable changes in recreation access, setting, activities, or use levels.	Acute or obvious changes in recreation access, setting, activities, or use levels.
	Duration	Changes in recreation access, use, setting, or activities persist during the Construction Phase (3 to 4 years) and would be expected to return to pre-activity levels after actions causing impacts were to cease.	Changes in recreation access, use, setting, or activities last through the life of the Project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Changes in recreation access, use, setting, or activities persist after actions that caused the impacts cease.
	Extent or Scope	Effects realized by communities within a subregion, such as the Upper Kuskokwim, Central Kuskokwim, etc.	Effects realized by communities throughout the EIS Analysis Area.	Effects realized throughout the EIS Analysis Area and may extend beyond the EIS Analysis Area.
	Context	Affects recreation with broad distribution or widely available in many areas throughout the EIS Analysis Area.	Affects recreation with limited distribution or with few alternate areas available. Recreation setting may be protected by legislation, but is a non-Wilderness setting and managed for responsible multi-use.	Affects recreation in settings designated by legislation as Wilderness and managed strictly so as to preserve its natural conditions without permanent improvements.

3.16.3.1 ALTERNATIVE 1 – NO ACTION

Under the No Action Alternative, the Donlin Gold Project would not be developed, and Donlin Gold would not establish a Mine Site, develop a Transportation Corridor, or construct a Pipeline in the Project Area. Donlin Gold does not plan a complete removal of existing infrastructure, and the exploration camp and airstrip are expected to remain in place. Therefore, no direct or indirect effects to recreation resources would be expected. With no direct or indirect effects, this alternative would not contribute to effects on recreation. Under Alternative 1, existing baseline trends for sport hunting and fishing would continue into the foreseeable future; including a small decrease in sport hunting in GMUs 19 and 16, and an increase of sport fishing on the Kuskokwim River (ADF&G 2013e). Alternative 1 would have no effect on climate change as related to recreation in the EIS Analysis Area.

3.16.3.2 ALTERNATIVE 2 – DONLIN GOLD’S PROPOSED ACTION

Based on comments on the Draft EIS from agencies and the public, one route option has been included in Alternative 2 to address concerns due to pipeline crossings of the Iditarod National Historic Trail (INHT):

- North Option: The MP 84.8 to 112 North Option would realign this segment of the natural gas pipeline crossing to the north of the INHT before the Happy River crossing and remain on the north side of the Happy River Valley before rejoining the alignment near MP-112 where it enters the Three Mile Valley. The North Option alignment would be 26.5 miles in length, compared to the 27.2 mile length of the mainline Alternative 2 alignment it would replace, with one crossing of the INHT and only 0.1 mile that would be physically located in the INHT right-of-way (ROW). The average separation distance from the INHT would be 1 mile.

3.16.3.2.1 MINE SITE – CONSTRUCTION, OPERATIONS, AND CLOSURE

Under Alternative 2, immeasurable or unapparent levels of existing recreation¹ may be affected in the vicinity (within a five-mile radius from the center) of the Mine Site. During the Construction Phase, noise and dust from the operation of heavy equipment and blasting activities would be apparent to recreationists in the vicinity. As a result, the existing very low levels of dispersed recreation use which currently occur at the Mine Site, such as sport hunting or snowmachining, would be prohibited due to mine safety standards and therefore be displaced from an area of approximately 78.5 square miles. This displacement would occur during the Construction Phase and extend throughout the life of the mine. It is likely, however, that the small number of displaced recreationists would find alternate locations for these activities since the recreation settings found at the Mine Site, such as sport hunting habitat and areas for snowmachining, are widespread within the region. The project would likely not affect sport hunting, trapping, or fishing permits since they cover a broad enough area to allow recreationists to avoid the Mine Site. There are currently no permitted big game guides and transporters in the GUA affected by the Mine Site (GUA 19-02).

Displacement of recreation activities during the Construction Phase would also be considered immeasurable or unapparent due to the small number of recreationists that would be potentially affected. Most non-local visitors to this area have already been displaced due to exploration activities over the past 16 years, and 100 percent of the visitors to the Mine Site would be displaced during Construction and Operations (an acute or obvious change to recreation activities). However, as noted, the overall number of users is low relative to other areas used for recreation in the region. The extent or scope of effects would be realized by communities within a subregion and limited to the Mine Site and areas in the immediate vicinity. Overall, the Construction Phase would have a limited effect on recreation resources in the local area due to the current low levels of recreation at the Mine Site and the abundant number of alternative locations for recreation activities in the local area.

Under the Operations Phase of Alternative 2, recreation activities would continue to be prohibited at the Mine Site due to mine safety standards. As with the Construction Phase, existing low levels of recreation use occurring in the vicinity of the Mine Site would likely be displaced throughout the life of the mine due to the noise and mechanical activities associated with operational activities. In addition, Donlin Gold has not proposed to offer public tours (a possible recreation opportunity) of the Mine Site while it is in operation. Similar to the Construction Phase, the extent or scope of impacts would be realized by communities within a

¹ Recreation in this section refers to leisure activities, such as hiking, boating, snowmachine travel or boating, and sport hunting and fishing, primarily by nonlocal residents. Local residents typically consider their travel to be utilitarian in purpose, i.e., to get from one place to another. Local residents typically consider their harvest of local fish and wildlife to be a subsistence use, rather than a sport use.

subregion and would include the Mine Site and within a five-mile radius (78.5 square miles). Displacement of recreation activities during the Operations Phase may not be measurable or apparent due to the existing dispersed recreation use that exists near the Mine Site. The Operations Phase would have a limited effect on recreation resources in the local area due to the abundant number of alternative locations for recreation activities in the local area.

At the Closure Phase, most areas of the Mine Site would become suitable again for many recreation activities, including sport hunting and snowmachining. If deemed necessary by mine safety standards, some buried facilities or other remaining infrastructure could be closed permanently, but this is not planned. The Mine Site, including the Waste Rock Facility and the Tailings Storage Facility would be reclaimed, contoured, and revegetated. However, the open mine pit would fill with water and the pit lake would become a water feature in the landscape. Ground disturbance limitations would restrict potential for recreational mining and extensive cabin development, but these activities are unlikely to occur in the area of the Mine Site. While physical access limits to the Mine Site upon closure will diminish, perceived contamination of the Mine Site may discourage both local and visiting recreationists from utilizing the area.

As discussed in Section 3.15, Land Ownership, Management, and Use, Calista and TKC are coordinating with the BLM and the State of Alaska to terminate five Section 17(b) easements, relocate the Omnibus Route from Crooked Creek to Flat (FAS 231), and potentially close or vacate seven R.S. 2477 easements at the Mine Site for public safety if the Donlin Gold Project were to go forward. The BLM can terminate, relocate, or temporarily close the Section 17(b) easements if it is in the best interest of the public. Where a R.S. 2477 ROW is to be temporarily closed or vacated, alternate access would be provided, where appropriate. Since comparable alternative public access easements would be established, this action would have little overall effect on recreation access; the changes to alternative easement locations would last through the life of the project. The extent or scope of impacts to 17(b) easements and recreation access would be limited to the area near the Mine Site. The context of impacts would affect recreation resources with limited distribution or with few alternate areas available, since the easements are necessary to cross private lands to access public land. As these easements presently see very low levels of use by recreation users, the intensity effects from termination/relocation may not be measurable or apparent.

Mine Site Summary

Under Alternative 2, changes in recreation resources may not be measurable or apparent as recreation use levels at the Mine Site are also unapparent. For those recreation activities currently occurring at the Mine Site, impacts to recreation access and disruption of recreation activities would be noticeable and may involve acute or obvious changes; however, only a small amount of recreation use currently occurs at the Mine Site. After closure of the mine, the change in recreation access and activities may not be measurable or apparent. The displacement of recreation activities would last through the life of the project until Closure and the change to equivalent alternative easements would persist after actions that caused the impacts cease (up to 100 years). The extent or scope of impacts to recreation would be realized by communities within a subregion. The termination, relocation, or temporary closure of 17(b) and R.S. 2477 easements and FAS 231 at the Mine Site would affect recreation with limited distribution or with few alternate areas available; however, recreation resources are widespread throughout the region and displaced recreationists would likely seek alternative locations.

3.16.3.2.2 TRANSPORTATION CORRIDOR – CONSTRUCTION, OPERATIONS, AND CLOSURE

The construction of the Transportation Corridor under Alternative 2 would include development of the mine access road, airstrip, Angyaruaq (Jungjuk) Port, increased river barge traffic, Bethel Port improvements and the Dutch Harbor fuel storage area. Any actions that would occur at Dutch Harbor or the Port of Bethel at the Bethel Yard Dock are not part of the proposed action, and are considered connected actions (see Section 1.2.1, Connected Actions, in Chapter 1, Project Introduction and Purpose and Need). Existing recreation activities occurring near the Transportation Corridor include recreational boating and fishing on the ocean, recreational boating and sport fishing along the Kuskokwim River (although most sport fishing occurs in freshwater tributaries unaffected by barge traffic), sport hunting in the region as a whole, and local activities like swimming in the river. These recreation activities generally occur at low levels in the Kuskokwim River basin, where sport fishing and sport hunting occur in specific drainages where fish or wildlife resources are sufficiently attractive to merit the costs to recreationists of accessing remote areas. The Donlin Gold Project would likely not affect sport hunting, trapping, or fishing permits as recreationists could avoid being impacted by project components within their broader area of permitted use. There are 17 permitted big game guides and transporters in the GUAs potentially affected by the Transportation Corridor (GUAs 18-03, 18-02, 19-01, and 19-03). The construction of the Transportation Corridor would likely temporarily displace some existing low levels of recreation use in the vicinity of the Bethel Port, access roads, and the Angyaruaq (Jungjuk) Port, as the noise and dust associated with the heavy equipment for construction activities would be apparent to recreationists. Specifically, sport hunters, recreational boaters, and sport anglers may seek alternative locations to recreate away from construction activities. However, residents would not be precluded from crossing the mine access road when mine-related traffic is not present. For those recreation users affected, there would be a noticeable change in recreation setting and activities during the Construction Phase. Though limited, recreational boating and sport fishing would be temporarily displaced at the public port in Bethel, but in other places, like the Angyaruaq (Jungjuk) Port, displacement would occur during the Construction Phase and extend through the life of the project (27 years).

Relative to other transportation facilities, recreation use may be slightly higher in the lands and waters surrounding the Bethel Port due to the population size of the community. However, the intensity of impacts would involve changes to recreation resources from the Bethel Port improvements and increased barge traffic in the surrounding waters that may not be measurable or apparent. Existing levels of recreation use near other proposed transportation facilities are low; therefore, potential displacement of recreation uses for these facilities may also not be measurable or apparent. The extent or scope of effects would be realized by communities throughout the EIS Analysis Area from Bethel to the Mine Site. During the Construction Phase of Alternative 2, increased barge traffic on the Kuskokwim River would displace some recreational activities (such as sport fishing and recreational boating) that use resources that are widespread throughout the region. (Displaced recreationists would likely seek alternative locations on other rivers or sections and tributaries of the Kuskokwim River not affected by barges).

Under the Operations Phase of Alternative 2, recreation activities would be prohibited at the various transportation facilities such as the Angyaruaq (Jungjuk) mine access road, Bethel tank farm and fuel terminal (which are privately operated), Dutch Harbor fuel terminal, and Angyaruaq (Jungjuk) Port site. The expansion of the Bethel fuel terminal and Dutch Harbor

tank farm would be used for the Donlin Gold Project and other commercial uses, and would not be available to the public for recreation use (connected actions). Fuel docks would be closed to recreational boating or sport fishing, as is currently the case. The Bethel Port site, the Angyaruaq (Jungjuk) Port site, and the mine access road would likely not attract additional recreationists because proposed transportation facilities would have security measures in place to prohibit public use. In addition, air traffic to and from the proposed airstrip would be limited to transportation associated with the Mine Site, and not available for recreationists. For these reasons, the Operations of the Transportation Corridor under Alternative 2 would not expand or create new recreation opportunities within the region or encourage new or additional visitor use.

During the Operations Phase, existing ocean barge traffic on the lower Kuskokwim River would be increased by approximately 26 round trips annually from Dutch Harbor through the mouth of the Kuskokwim River to Bethel. There would be an additional 122 annual round trips of four-barge tows from Bethel to the Angyaruaq (Jungjuk) Port site in addition to the current estimate of existing barge traffic of approximately 68 barge round trips annually. Similar to impacts associated with the Construction Phase, the presence of additional barge trips on the Kuskokwim River, through additional noise, traffic, and waves, may disturb some recreation activities occurring on the river including rafting, sport hunting, and sport fishing. Consequently, recreationists may seek alternative locations to pursue these recreational activities. However, existing recreation levels on the Kuskokwim River are low (as distinct from subsistence and transportation use); therefore, the additional marine traffic and river barge trips would result in the displacement of recreational activities that may not be measurable or apparent. In addition, displacement of recreation use from barge traffic would affect the Kuskokwim River from the mouth to Bethel and to the Angyaruaq (Jungjuk) Port site. The duration of impacts would last through the life of the project (27 year). The extent or scope of impacts would be realized by communities throughout the EIS Analysis Area.

At Angyaruaq (Jungjuk) Port site, TKC has requested that the BLM terminate or relocate two Section 17(b) easements for public safety if the Donlin Gold Project were to go forward. The BLM can terminate or relocate the Section 17(b) easements if it is in the best interest of the public. Although an alternative equivalent is likely to be established, this action would be a permanent change in the location of the easement. In terms of recreation access, impacts from Section 17(b) easement relocation or termination would be localized to the area near the Angyaruaq (Jungjuk) Port site. Since the easements are necessary to cross private lands in order to access public lands, impacts would affect recreation with limited distribution. As these easements presently see very low levels of use by recreation users and equivalent access is likely to be established, the intensity of termination/relocation may not be measurable or apparent.

Transportation Corridor Summary

Under Alternative 2, the intensity of the changes to recreation access, use, and setting may not be measurable or apparent, displacing low levels of existing recreation use. Given the geographic scale of the EIS Analysis Area and the availability of similar recreation resources available throughout the affected region, displaced recreationists would likely seek alternative locations. Impacts would occur though the life of the Project (27 years) and recreation activities would return to pre-activity levels after actions causing impacts cease (up to 100 years). However, alternative equivalent access to the terminated Section 17(b) easements would remain

after actions that caused impacts cease. The extent or scope of impacts from the Transportation Corridor would be realized by communities throughout the EIS Analysis Area and occur from Dutch Harbor to the Mine Site. With the exception of Section 17(b) easement designations, impacts would affect recreation with broad distribution or wide availability in many areas throughout the EIS Analysis Area.

3.16.3.2.3 PIPELINE– CONSTRUCTION, OPERATIONS, AND CLOSURE

During the Construction Phase for Alternative 2, approximately 316 miles of the Pipeline ROW would be cleared using heavy equipment, and the pipeline would be installed incrementally over a three year period. Direct and indirect effects to recreation uses from the construction of the Pipeline would vary across the length of the Pipeline ROW based on the construction season for each segment and location of the ROW relative to existing recreation uses. During the time period when each segment of the Pipeline ROW is cleared and when the Pipeline is installed, noise and dust associated with the operation of heavy equipment for construction activities would be apparent to recreationists in the surrounding area. These activities would likely result in the temporary displacement of recreationists who would seek alternative locations for sport hunting and fishing, snowmachining, sled dog racing, skijoring, riding OHVs, and other affected recreational activities.

Much of the Pipeline would be conducted during frozen winter conditions, reducing soil disturbance from support equipment (SRK 2013b) that could otherwise encourage the formation of new OHV travelways. In addition, approximately 70 miles of the Pipeline ROW scheduled for summer construction would be on the weathered bedrock of the Kuskokwim Mountains where there is little soil horizon, thus limiting potential impact from soil compaction (SRK 2013b). Summer construction activities not on weathered bedrock would occur in the western portion of the Pipeline (MP 250 to MP 316) close to the Mine Site where recreation OHV use is limited. Construction activities along this portion of the ROW would have greater impacts to soils, but compacted areas would be intermittent (not continuous) along the Pipeline ROW, discouraging user groups from using the ROW as a new summer recreation trail. Detailed impacts to soils along the Pipeline are discussed in Section 3.2.3.2, Soils. Environmental obstacles to travel along the Pipeline ROW, such as wetlands and streams, would not be removed during Construction and would continue to impede OHV travel.

Beyond potentially affected INHT segments (analyzed below), the construction of the eastern portion of the Pipeline, within the Susitna Lowlands, has the potential to temporarily impact the noticeable levels of recreation use in this area, including snowmachining. The Donlin Gold Project would likely not affect sport hunting, trapping, or fishing permits as recreationists could avoid project areas within their broader area of permitted use. There are 79 permitted big game guides and transporters in the GUAs potentially affected by the Pipeline ROW (GUAs 16-01, 16-02, 16-03, 16-04, 19-02, 19-05, 19-07, 19-08, 19-09, 19-10, and 19-12). Conflict would be minimized by the fact that most open seasons for hunting occur in the fall and most Pipeline Construction would occur in the winter. Some lodge owners have expressed concern over potential impacts and requested Donlin Gold to coordinate with them during Construction to minimize impacts. Overall, the Construction of the Pipeline under Alternative 2 would likely induce noticeable changes to recreation resources. These impacts would be concentrated in the 14 miles in which the Pipeline ROW is collocated or proximate to the INHT (between pipeline miles 50 to 55, 84 to 97, and 105 to 106), and where the ROW is near guided hunting operations (particularly

between MP 150 and 180). Since Pipeline Construction would occur during the winter, the duration of these impacts would persist only seasonally. While the majority of the recreation resources along the Pipeline ROW have broad distribution or wide availability in many areas throughout the EIS Analysis Area, the impacted segments of the INHT are congressionally designated by legislation, but not as Wilderness.

During the Operations Phase of Alternative 2, Donlin Gold would clear vegetation from the Pipeline ROW at approximately 10-year intervals or as required to preserve Pipeline integrity and allow for ongoing surveillance and monitoring activities. Shoofly access routes brushed during the Construction Phase of the Donlin Gold Project would be demobilized and left to revegetate. Section 3.10.3.2.2, Vegetation, discusses specific impacts to vegetation for the Pipeline of Alternative 2.

Temporary transportation facilities associated with Construction would be reclaimed after construction is complete, including temporary roads, nine new temporary airstrips, and storage yards. Following Construction, these new temporary airstrips would be “decommissioned in a way to prevent future use,” according to the Donlin Gold Natural Gas Pipeline Plan of Development (SRK 2013b). Facilities and equipment would be removed; and the sites would be stabilized, rehabilitated, and reclaimed, including redistribution of the vegetative mat where it was stripped and stockpiled during construction (see Section 2.3.2.3.6 Pipeline-Decommissioning, Abandonment, and Reclamation, in Chapter 2, Alternatives).

Upgrades made to the Farewell Airstrip (i.e., grading) would remain in place, and this airstrip is now and would remain open to the public. The existing airstrip at Beluga would remain in place after Construction, but it is on private land. The existing 5,000-foot airstrip at the Donlin Camp, used during Construction, would be replaced by a new 5,000-foot airstrip located on the mine access road 9 miles from the Mine Site. The current Donlin Camp airstrip and the future improved airstrip would not be open to public use.

During the Operations Phase, the Farewell Airstrip could have an indirect impact of encouraging recreationists to land at the airport and using the cleared ROW, but the remote nature of the airport would limit potential increases from current use levels. Currently, the airstrip is open to the public, and some use is reported, but without higher incentive, more hunting tags for example, few additional recreationists would be expected. Potential change in use levels as a result of the Donlin Gold Project is not expected to be measurable or apparent. (For discussion of impacts to subsistence uses from new users and competition in the vicinity of the Farewell Airstrip, see Section 3.21.6.3.3 Natural Gas Pipeline, in Section 3.21, Subsistence).

The Pipeline ROW could become an overland access route for OHVs and snowmachines in a remote region that currently lacks easy access (URS 2014e). There is also a small possibility that adjacent and unadjudicated R.S. 2477 easements could see increased use. However, overland access in summer would be difficult due to wetlands, water crossings, and a lack of continuous soil compaction through some areas. These factors would deter summer, surface transportation oriented users of the ROW, including OHV users. Hunting activities occurring along the Pipeline ROW are regulated in some GMUs by the number of permits issued by ADF&G and set harvest limits. Therefore, hunting activities are not anticipated to change substantially nor drive higher OHV use along the ROW. In winter, the ROW may be used for recreational travel, particularly by snowmachines.

The brushed ROW would potentially introduce a new winter access to eastern portions of the Pipeline ROW; however the INHT currently provides a winter route for affected areas of the Alaska Range. The ROW may provide an optional route as attractive to winter recreationists as the INHT, and may increase the use of both the INHT and the Pipeline ROW for commercial guided and dispersed recreation off-road travel, sport hunting, and sport fishing where the two are in close proximity. There may be some additional use in areas where cabins are located. Due to the remoteness, high cost of access at these distances from large population centers, and low population of the area, the increase would likely be minimal. Recreation use would likely remain low in intensity and concentrated around small, rural communities such as Skwentna, Susitna, and Farewell. No new public surface vehicular access would be created by the Pipeline ROW (SRK 2013b). Although the Pipeline would be decommissioned in place as part of Closure, the potential access route could persist beyond the life of the Donlin Gold Project if there was enough use to prevent vegetation regrowth. If this occurred, the impacts could last much longer than the life of the Project. The proposed ROW would extend impacts throughout the EIS Analysis Area and would affect portions of the INHT, which is congressionally designated for historic and recreation purposes. In context, the impacts would affect recreation in settings designated by legislation but are not Wilderness.

Upon Closure of the Mine Site, decommissioning of the Pipeline under Alternative 2 would have no effect on recreation resources. Since the underground sections of the pipeline would be left in place, including those on or near the INHT, no large excavations would occur and thus minimal disturbance to recreational activities would arise. The Pipeline ROW would no longer be cleared; however, access routes could continue to exist after Pipeline abandonment if there was enough use to prevent vegetation regrowth.

Iditarod National Historic Trail

During the Construction Phase, winter access roads, temporary roads, material sites, camps, and temporary use shoofly roads would disrupt users of the INHT. For more information on these facilities, see Section 2.3.2.3, Alternatives. Table 2.3-16 summarizes the winter access route options within the Susitna Valley, and Figure 2.3-23 maps them. Table 2.3-21 provides details on each planned shoofly road (see Chapter 2, Alternatives).

The Pipeline ROW would have a limited effect on the setting of the INHT due to the natural variability in vegetation communities at those portions of where the trail and the ROW intersect and are collocated. In some areas, vegetation clearing for maintenance could alter the recreation setting for the INHT where the trail is collocated with the Pipeline ROW. See Section 3.17, Visual Resources, for more information concerning visual impacts and Section 3.20, Cultural Resources, for more information concerning impacts to cultural resources.

Localized glaciation or aufeis is known to occur in the area where the Pipeline would cross or collocate with the INHT, usually extending less than a quarter mile along the INHT in winter. As noted in Section 3.5, Surface Water Hydrology, this localized glaciation can accumulate about 1 to 10 feet thickness of solid ice (BLM 2015d). For discussion of potential additional effects of projected trends of climate change, see Section 3.26.3.2.2, in Section 3.26, Climate Change. Localized glaciation could be exacerbated by the collocated Pipeline near stream crossings, and the resulting slippery conditions on the INHT could affect the travel of recreationists. Construction measures for non-erosive drainage from existing and new water sources and paths, along with monitoring during Operations of the Pipeline, would minimize

potential increases in localized glaciation where the Pipeline would be collocated with the INHT or cross the INHT near water.

As described above, the Alternative 2 – North Option departs from the proposed alignment at approximately MP 84.8 and crosses to the north of the INHT before the Happy River crossing, remaining on the north side of the Happy River Valley before rejoining the proposed alignment near MP 112 where it would enter the Three Mile Valley. The North Option would also cross the Happy River Remote Recreational Cabin Staking Area and the proposed Happy River Remote Recreational Cabin Staking Area. Effects from the project would be minimal to cabin sites.

Table 3.16-3 lists winter routes in the vicinity of the INHT for both options. The Oil Well Road route would be within 1,000 feet of the INHT for 4.2 miles, collocated with the INHT for 2.8 miles, and cross the trail six times. The Bear Creek route would be within 1,000 feet of the INHT for 1.2 miles, be collocated for 1.3 miles, and would not cross the trail. For the Alexander route, 0.6 miles would be in proximity, for the Deep Creek Route, 0.4 miles would be in proximity, and for the Willow Landing Route, 0.8 miles would be in proximity (see Table 3.16-3). These numbers would be the same for North Option. The Willow Landing route would cross the Kroto and Moose Creek Recreation River and the Willow State Recreation Area. The Alexander winter access route would cross the Alexander Creek Recreation River, and the Oil Well Road winter access route would cross the Lake Creek Recreation River. Very limited sections along the existing Oil Well Road winter route would require limited cut and fill to repair the road where sloughing has occurred and grades are excessively steep.

Table 3.16-3: Miles of Winter Routes Impacting the Iditarod National Historic Trail

	Oil Well Road Route	Bear Creek Route	Alexander Route	Deep Creek Route	Willow Landing Route
Winter Road Total Length	45.6 miles	13.1 miles	8.7 miles	7.8 miles	28.7 miles
Collocated (within 100' of either side of winter route)	2.8 miles	1.3 miles	0.1 miles	0.1 miles	<0.1 miles
Proximate (within 1,000' of either side of winter route)	4.2 miles	1.2 miles	0.5 miles	0.3 miles	0.8 miles
Total Miles:	7.0 miles	2.5 miles	0.6 miles	0.4 miles	0.8 miles
Total Crossings:	6	0	1	1	1

Under the proposed Pipeline alignment, a total of nine temporary use shoofly roads and access sites would affect the INHT in segments, ranging from 0.1 to 1.0 miles (see Table 3.16-4). Shoofly Roads 0070 and 0130 and Water Extraction Access Site 0380 would cross the INHT. They would also be collocated (within 100 feet) of the INHT for between 0.1 and 0.4 mile. Total miles of INHT impacted by the shoofly roads and access sites would range from 0.0 miles to 1.4 miles. The North Option would have fewer total miles of impact, ranging from 0.0 to 0.9.

Table 3.16-4: Miles of Shoofly Roads Impacting the Iditarod National Historic Trail

	Shoofly Road 0065	Shoofly Road 0070	Shoofly Road 0080	Shoofly Road 0130	Shoofly Road 0140	Shoofly Road 0170	Shoofly Road NA 0010	Access Site 0330	Access Site 0380
Proposed Alignment									
Collocated (within 100' of data used for shoofly roads)	0.0 miles	0.2 miles	0.0 miles	0.4 miles	0.0 miles	0.0 miles	0.0 miles	0.0 miles	0.1 miles
Proximate (within 1000' of data used for shoofly roads)	0.4 miles	0.4 miles	0.9 miles	1.0 miles	0.4 miles	0.1 miles	0.0 miles	0.3 miles	0.4 miles
Total Miles:	0.4 miles	0.6 miles	0.9 miles	1.4 miles	0.4 miles	0.1 miles	0.0 miles	0.3 miles	0.5 miles
Total Crossings:	0	2	0	2	0	0	0	0	1
North Option Alignment									
Collocated (within 100' of data used for shoofly roads)	0.0 miles	0.2 miles	0.0 miles	0.0 miles	0.0 miles				
Proximate (within 1000' of data used for shoofly roads)	0.4 miles	0.4 miles	0.9 miles	0.0 miles	0.0 miles	0.0 miles	0.2 miles	0.0 miles	0.0 miles
Total Miles:	0.4 miles	0.6 miles	0.9 miles	0.0 miles	0.0 miles	0.0 miles	0.2 miles	0.0 miles	0.0 miles
Total Crossings:	0	2	0	0	0	0	0	0	0

There are four material sites that are within 1,000 feet of the INHT, with a total of 18.3 acres: MS-10, MS-13, MS-16, and MS-25. Material site locations are shown in Appendix D. There are no material sites specific to the North Option within 1,000 feet of the INHT.

In addition to impacts from the ancillary facilities, the Pipeline ROW would impact the INHT, as the majority of the existing recreation use near the Pipeline ROW takes place on or near the congressionally designated INHT (see Table 3.16-5). A total of 14.3 miles of the 150-foot construction ROW would be in proximity (within 1,000 feet) of the INHT within a 60-mile stretch under the proposed Pipeline alignment, and 2.5 miles of the Pipeline ROW would be collocated with the INHT. The Pipeline route would also cross the INHT a total of 14 times.

Under Alternative 2 – North Option, a total of 5.5 miles of the Construction ROW would be within 1,000 feet of the INHT, and 0.2 mile would be collocated with the INHT. The Pipeline ROW would cross the INHT a total of five times. Refer to Section 3.10, Vegetation, for a discussion on Pipeline ROW clearing.

The INHT trail segments that would be affected occur largely within portions of the ROW that would be constructed during the winter (SRK 2013b) when recreation use is highest, including annual events such as the Iditarod Trail Sled Dog Race, Iditasport, and Iron Dog Race. As a result, some recreation use would be disturbed or displaced during the Construction Phase as the ROW is cleared and the Pipeline is installed. However, given the sites of collocation and the number of crossings, it is likely that construction schedules could be adjusted to avoid impacting recreationists using the trail for scheduled annual events. Instead, impacts would likely be limited to the small number of recreationists using the trail outside of scheduled annual events. In context, these impacts would affect recreation in settings designated by legislation, for the historic and scenic values associated with the INHT trail. The impacts would extend beyond the direct impacts at the locations of crossings or collocations, to indirectly affect the segments of the trail within 200 feet of each crossing or collocation. Section 3.20.2.6.1 describes the impacts to the cultural resources along the INHT, including the Rohn Roadhouse.

Table 3.16-5: Miles of Pipeline Impacting the Iditarod National Historic Trail

	Alternative 2 – Proposed Action
Proposed Alignment	
Collocated (within 100' of either side of 150' buffer)	2.5 miles
Proximate (within 1,000' of either side of 150' buffer)	14.3 miles
Total Miles:	16.8 miles
Total Crossings:	14
North Option Alignment	
Collocated (within 100' of either side of 150' buffer)	0.2
Proximate (within 1,000' of either side of 150' buffer)	5.3
Total Miles:	5.5
Total Crossings:	5

During the Operations Phase, there is the possibility that some indirect users who experience the area vicariously could be affected. This would include remote visitors enjoying the INHT through documentaries, media coverage of events, or otherwise seeing images from on site or overflights. For some indirect users, the existence of, and visual impact from, the Pipeline ROW could negatively impact their experience. In context, the impacts would affect recreation in settings that are designated by legislation but are not Wilderness. The INHT fills a social role of both in-person and vicarious public participation. Because indirect users are enjoying the resource remotely (possibly from other states or countries), the extent or scope of the impact would be realized throughout and possibly beyond the EIS Analysis Area. However, this impact would occur to a varying number of indirect recreationists generally watching the Iditarod Sled Dog Race with a range of impacts based on a user group's familiarity with the landscape and sensitivity to change. The intensity of these impacts may not be measurable or apparent, but may involve noticeable changes in recreation access, setting, activities, or use levels depending on the group's familiarity with the landscape and sensitivity to change. The duration of impacts would last throughout the life of the project (27 years).

Pipeline Summary

Under Alternative 2, impacts would involve noticeable changes to recreation resources. This greatest intensity comes from direct and indirect impacts to recreation along those portions of the ROW near the INHT, due to the potential for increased winter access and use. However, impacts to recreation resources along the majority of the ROW may not be measurable or apparent due to low existing levels of recreation use on most lands adjacent to the Pipeline corridor. Overall the duration of impacts would last through the life of the project (27 years) due to increased winter access along the ROW during the Operations Phase; however, there would also be improvements in access at three airstrips that would persist after actions that caused the impacts cease, and some displacement of recreation activities during Construction. The extent or scope of impacts to recreation from the ROW would be realized by user groups across the EIS Analysis Area, although vicarious users would be affected throughout and possibly beyond the EIS Analysis Area. The context of impacts would affect recreation in settings designated by Congressional legislation but is not a Wilderness; the INHT is rare and fills a social role of both in-person and vicarious public participation. Overall indirect impacts would vary based on a user group's sensitivity to change, with impacts ranging from immeasurable or unapparent to noticeable changes in some recreation access, setting, activities, or use levels for both options.

3.16.3.2.4 CLIMATE CHANGE

The Donlin Gold Project would contribute to climate change as discussed in Section 3.8, Air Quality, through production of greenhouse gasses. The level of greenhouse gas emissions generated by implementation of Alternative 2 is not likely to create climate changes effects to recreation. If current climate change trends persist, impacts recreation would likely be similar to those discussed under the Affected Environment (Section 3.16.2.4).

3.16.3.2.5 SUMMARY OF IMPACTS FOR ALTERNATIVE 2

Construction, Operations, and Closure of the Mine Site would have acute or obvious changes in recreation setting; changes would be most obvious during Construction and Operations, decreasing in intensity upon Mine Site Closure (see Table 3.16-6). Overall intensity of Mine Site impacts to recreation would remain very low due to the very low number of potentially impacted recreationists in the area. Impact duration would last through the life of the project (27 years), with the exception that the likely comparable access routes for Section 17(b) easement termination, relocation, or closure that may persist after actions that caused the impacts cease. The extent or scope of impacts would be limited to the Mine Site. Affected recreation resources have broad distribution or wide availability in many areas throughout the EIS Analysis Area, and recreationists could readily find alternative areas offering similar experiences for their activities. Impacts to Section 17(b) easements would affect recreation with limited distribution or with few alternate areas available, considering their role in recreation access.

Transportation Corridor elements would also displace low numbers of recreationists. The overall intensity of the Transportation Corridor impacts may not be measurable or apparent, with some higher magnitude access restrictions occurring during Construction and Operations. The duration and context of these impacts would be the same as at the Mine Site. The extent or

scope of impacts from the Transportation Corridor would be realized by communities throughout the EIS Analysis Area.

The Construction, Operations, and Closure of the Pipeline would involve noticeable changes in recreation access, setting, activities, or use levels due to potential displacement of existing levels of INHT recreation; however, this would occur primarily during the Pipeline's Construction Phase. The North Option would have fewer total miles of impact to the INHT. Construction would occur seasonally and timing could be adjusted to minimize impacts to recreation activities. Impact intensity would decrease during the Operations Phase of the Pipeline, and would further decrease during Closure. The duration of Pipeline impacts would last through the life of the project (27 years). Three existing airports along the Pipeline route would receive permanent upgrades. The Pipeline corridor would be cleared while in operation, but shoofly access roads for Pipeline construction would not be cleared past Construction. Upon closure, Donlin Gold would no longer clear the Pipeline corridor of vegetation. However, if the corridor received enough use or individual recreationists maintained corridor clearance, it could cause an indirect indefinite effect on recreation access. The extent or scope of Pipeline impacts would be realized by communities throughout the EIS Analysis Area. Potential increases in recreation use levels would be limited due to the remote nature of the Pipeline ROW (disconnected from the road system with very limited recreation facilities), retention of natural obstacles in the corridor (unimproved wetland or river crossings, discontinuous soil compaction), and low population densities. When near the INHT, the context of impacts would affect recreation in settings designated by legislation and otherwise would affect recreation resources with broad distribution or wide availability in many areas throughout the EIS Analysis Area for Pipeline segments away from the INHT.

3.16.3.2.6 MITIGATION AND MONITORING FOR ALTERNATIVE 2

Effects determinations take into account impact reducing design features (Table 5.2-1 in Chapter 5, Impact Avoidance, Minimization, and Mitigation) proposed by Donlin Gold and also the Standard Permit Conditions and BMPs (Section 5.3) that would be implemented.

Design features important for reducing impacts to recreation include:

- The project design includes consultation with the public and tourism and recreation businesses to minimize impacts to current uses and operations;
- Where practicable, the project design includes proposed facilities with earth tone colors characteristic of the natural landscapes during the summer months (browns, tans, warm grays, and greens) with matte-finish to minimize visual impacts. The project design includes features to minimize visual impacts to the natural landscape to extent practicable;
- The project design includes the development and implementation of a Construction Communications Plan to inform the public and commercial operators of construction activities;
- Compressors will be housed in metal-framed and sided buildings with sound insulation designed into the wall thickness, as practicable;

Table 3.16-6: Summary Impacts ¹ of Alternative 2 on Recreation by Project Component

Impact	Assessment Criteria			
	Magnitude or Intensity	Duration	Extent or Scope	Context
Mine Site				
Change in Recreation Access	<i>All Phases:</i> changes in recreation access may not be measurable or apparent.	<i>17(b) easements:</i> changes in recreation access could persist after actions that caused the impacts cease. <i>All other areas:</i> changes in recreation access would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects would be realized by communities within a subregion.	<i>17(b) easements:</i> affects recreation with limited distribution or with few alternate areas available. <i>All other areas:</i> affects recreation with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Change in Recreation Setting	<i>Construction/ Operations:</i> acute or obvious changes in recreation setting. <i>Closure:</i> changes in recreation setting may not be measurable or apparent.	Changes in recreation setting would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects would be realized by communities within a subregion.	Affects recreation setting with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Change in Recreation Activities	<i>Construction/ Operations:</i> acute or obvious changes in recreation activities. <i>Closure:</i> changes in recreation activities may not be measurable or apparent.	Changes in recreation activities would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects would be realized by communities within a subregion.	Affects recreation activities with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Recreation Use Levels	Recreation use levels are not measurable or apparent, and would remain so.			
Transportation Corridor				
Change in Recreation Access	<i>Construction/ Operations:</i> noticeable changes in recreation access. <i>Closure:</i> changes in recreation access may not be measurable or apparent.	<i>17(b) easements:</i> changes in recreation access could persist after actions that caused the impacts cease. <i>Other areas during Operations and Closure:</i> changes in recreation access would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects realized by communities throughout the EIS Analysis Area.	<i>17(b) easements:</i> affects recreation access with limited distribution or with few alternate areas available. <i>All other areas:</i> affects recreation access with broad distribution or wide availability in many areas throughout the EIS

Table 3.16-6: Summary Impacts ¹ of Alternative 2 on Recreation by Project Component

Impact	Assessment Criteria			
	Magnitude or Intensity	Duration	Extent or Scope	Context
		<i>Other areas during Construction:</i> changes in recreation access would persist only during Construction Phase (3 to 4 years) and would be expected to return to pre-activity levels after actions causing impacts were to cease.		Analysis Area.
Change in Recreation Setting	<i>All Phases:</i> changes in recreation setting may not be measurable or apparent.	Changes in recreation setting would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects realized by communities throughout the EIS Analysis Area.	Affects recreation setting with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Change in Recreation Activities	<i>All Phases:</i> changes in recreation activities may not be measurable or apparent.	Changes in recreation activities would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years).	Effects realized by communities throughout the EIS Analysis Area.	Affects recreation activities with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Recreation Use Levels	Recreation use levels are not measurable or apparent, and would remain so.			
Pipeline				
Change in Recreation Access	<i>All Phases:</i> noticeable changes in recreation access.	<i>Brush clearing from Operations Phase:</i> changes in recreation access would last through the life of the project (27 years) and return to pre-activity levels after actions causing impacts cease (up to 100 years). <i>Upgrades to Farewell airports during Construction Phase:</i> Changes in recreation access would persist after actions that caused the impacts cease.	Effects realized by communities throughout the EIS Analysis Area.	<i>17(b) easements:</i> affects recreation access in settings designated by legislation. <i>INHT:</i> affects recreation access in settings designated by legislation but not a Wilderness. <i>All other areas:</i> affects recreation access with broad distribution or wide availability in many areas throughout the EIS Analysis Area.
Change in Recreation Setting	<i>Construction:</i> noticeable changes in recreation setting <i>Operations:</i> changes in recreation setting may not be measurable or apparent. Impacts would be less for the North	Changes in recreation setting would persist during the Construction Phase (3 to 4 years) and would be expected to return to pre-activity levels after actions causing impacts were to cease.	Effects realized by communities throughout the EIS Analysis Area.	Same as above.

Table 3.16-6: Summary Impacts ¹ of Alternative 2 on Recreation by Project Component

Impact	Assessment Criteria			
	Magnitude or Intensity	Duration	Extent or Scope	Context
	Option. <i>Closure: no impact</i>			
Change in Recreation Activities	<i>Construction:</i> noticeable changes in recreation activities. <i>Operations:</i> changes in recreation activities may not be measurable or apparent. <i>Closure: no impact</i>	Changes in recreation activities would persist during the Construction Phase (3 to 4 years) and would be expected to return to pre-activity levels after actions causing impacts were to cease.	Effects realized by communities throughout the EIS Analysis Area.	Same as above.
Recreation Use Levels	Recreation use levels are low in summer and moderate in winter. Indirect access impacts could increase use, particularly in winter.			

Notes:

¹ The impact level assessment accounts for impact reducing design features proposed by Donlin Gold and Standard Permit Conditions and BMPs that would be required. It does not account for additional mitigation measures being considered.

- The project design includes routing decisions to minimize visual impacts to the Iditarod National Historic Trail (INHT) including co-location of the proposed pipeline with the INHT where appropriate to reduce multiple crossings by the pipeline and thereby reduce the possibility that the pipeline ROW becomes used as a separate trail;
- Donlin Gold will work with user groups to promote trail preservation and use. Any actual mitigation measures for impacts to the INHT would be agreed to as a part of the Section 106 compliance process and specified in the Programmatic Agreement;
- Construction would employ design measures to preclude extended soil compaction;
- Donlin Gold has studied various pipeline corridors that would avoid and/or minimize adverse effects to the INHT. The most significant route modifications have been incorporated into the analysis (Jones Route Alternative and the North Route Option);
- Pipeline construction schedules were adjusted to minimize impacts to peak periods of recreation and tourism activities in the area (e.g., recreation uses of INHT for annual events);
- Donlin Gold would coordinate with and help educate people who want to travel in the area during the pipeline construction period through its Public Outreach Plan to either allow controlled access through or within construction zones or identify alternate access;

- The project design includes avoiding areas with tourist-related facilities if reasonably possible. Donlin Gold would engage with lodges and guides in advance of construction to coordinate activities and reduce impacts if practicable during important seasons; and
- The project design includes locked security fencing surrounding aboveground facilities.

Standard Permit Conditions and BMPs important for reducing impacts to recreation include:

- Development and maintenance of Oil Discharge Prevention and Contingency Plans (ODPCPs), Spill Prevention, Control and Countermeasure (SPCC) Plans, and Facility Response Plans; and
- Implementation of Stormwater Pollution Prevention Plans (SWPPPs) and/or Erosion and Sediment Control Plans (ESCPs) and use of industry standard BMPs for sediment and erosion control.

Additional measures are being considered by the Corps and cooperating agencies to further minimize project impacts, as reasonable and practicable, and are further assessed in Chapter 5, Impact Avoidance, Minimization, and Mitigation (Section 5.5 and Section 5.7). Examples of additional measures being considered that are applicable to this resource include:

- Minimize use of an impact pile driver where practicable in noise and vibration-sensitive areas. Drilled piles or the use of a sonic or vibratory pile driver are quieter and cause lower vibration levels where the geological conditions permit their use; and
- Install signs that clearly distinguish trails from the pipeline ROW at points where the pipeline crosses trails to guide trail users to stay on the trail and off of the pipeline ROW where the two are not collocated. As practicable, revegetate, or otherwise block access to, a narrow strip of the pipeline ROW where it crosses the trail to help steer and keep trail users on the trail and reduce the visual effect of the pipeline ROW crossing.

3.16.3.3 ALTERNATIVE 3A – REDUCED DIESEL BARGING: LNG-POWERED HAUL TRUCKS

Under Alternative 3A, LNG-powered haul trucks would replace diesel powered haul trucks. To accommodate this change, an LNG plant and storage tanks would be constructed near the processing plant at the Mine Site. This would reduce the need for diesel consumption, and therefore would decrease the number of barge trips and onsite diesel storage. Effects on recreation resources at the Mine Site and along the Pipeline route would be the same as in Alternative 2, since the Mine Site and Pipeline associated with Alternative 3A would be the same as Alternative 2.

Similar to Alternative 2, the presence of additional barge trips on the Kuskokwim River during Construction and Operations phases has the potential to displace some recreation activities such as rafting, sport hunting, and sport fishing due to additional noise, traffic, and waves. Under Alternative 3A, approximately 83 additional barge trips would occur annually compared to the 122 additional annual trips proposed under Alternative 2. The barge traffic under Alternative

3A would likely displace recreation activities, as described under Alternative 2, but displacement would occur less frequently as a result of the reduced levels of barge traffic relative to Alternative 2. The overall intensity of any displacement may still not be measurable or apparent, despite the reduction from Alternative 2, due to existing low levels of recreation use. As a result, all direct and indirect impacts associated with Alternative 3A would be the same as those outlined in Alternative 2. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features and BMPs, as discussed in Alternative 2. No additional mitigation or monitoring measures have been identified to reduce effects to recreation.

3.16.3.4 ALTERNATIVE 3B – REDUCED DIESEL BARGING: DIESEL PIPELINE

Under Alternative 3B, a diesel pipeline would be constructed in lieu of using barges on the Kuskokwim River for transporting fuel. Following Construction and during the Operations Phase, this alternative would completely eliminate the barge transportation of diesel fuel to the Mine Site. Under Alternative 3B, approximately 64 additional barge trips would occur annually compared to the 122 additional annual trips proposed under Alternative 2.

Alternative 3B would require additional shipments to Tyonek for construction of the fuel terminal and additional Pipeline segment from Tyonek to Beluga. During the Operations Phase, approximately 24 fuel barge round trips per year would deliver diesel fuel to the Tyonek dock for transport through the diesel pipeline to the Mine Site.

Two options to Alternative 3B have been added based on Draft EIS comments from agencies and the public:

- **Port MacKenzie Option:** The Port MacKenzie Option would utilize the existing Port MacKenzie facility to receive and unload diesel tankers instead of the Tyonek facility considered under Alternative 3B. A pumping station and tank farm of similar size to the Tyonek conceptual design would be provided at Port MacKenzie. A pipeline would extend northwest from Port MacKenzie, route around the Susitna Flats State Game Refuge, cross the Little Susitna and Susitna rivers, and connect with the Alternative 3B alignment at approximately MP 28. In this option, there would be no improvements to the existing Tyonek dock; a pumping station and tank farm would not be constructed near Tyonek; and the pipeline from the Tyonek tank farm considered under Alternative 3B to MP 28 would not be constructed.
- **Collocated Natural Gas and Diesel Pipeline Option:** The Collocated Natural Gas and Diesel Pipeline Option (Collocated Pipeline Option) would add the 14-inch-diameter natural gas pipeline proposed under Alternative 2 to Alternative 3B. Under this option, the power plant would operate primarily on natural gas instead of diesel as proposed under Alternative 3B. The diesel pipeline would deliver the diesel that would be supplied using river barges under Alternative 2 and because it would not be supplying the power plant, could be reduced to an 8-inch-diameter pipeline. The two pipelines would be constructed in a single trench that would be slightly wider than proposed under either Alternative 2 or Alternative 3B and the work space would be five feet wider. The permanent pipeline ROW would be approximately two feet wider. This option could be configured with either the Tyonek or Port MacKenzie dock options.

The Port MacKenzie Option would depart from the diesel pipeline route at approximately MP 28 and head east-southeast to an intersection with Ayshire Road. The pipeline would then route to Port MacKenzie.

The additional barging would have a minimal impact on recreation in Cook Inlet, as the increase would be slight compared what already occurs. Portions of the temporary gravel access roads developed during Construction would be left in place to provide increased spill response capabilities after Construction. This alternative would require additional airstrips and staging areas for Pipeline Construction, and most of the airstrips would need to be left in place throughout the operating life of the Pipeline for diesel spill response capacity. Table 2.3-48 shows airstrips for Alternative 3B (see Chapter 2, Alternatives).

Pipeline ROW INHT crossings, collocations, and proximity would be the same as Alternative 2. The pipeline ROW under the option to utilize Port MacKenzie would cross the INHT a total of 17 times, would be collocated for a total of 2.6 miles, and would be within 1,000 feet of the INHT for a total of 16.9 miles.

Effects to recreation from Pipeline Construction, Operations, and Closure may increase impacts to recreation beyond Alternative 2 due to infrastructure left in place during Pipeline Operations for a diesel spill response for all options. The change in recreation access would be greater than Alternative 2, but would remain the same in intensity as the use level would be the same. The change in the recreation setting during Operations would be noticeable, in contrast to the immeasurable or unapparent change under Alternative 2 in which the temporary construction infrastructure would be dismantled. Recreation use levels may rise due to the new infrastructure, but costs and distance would still be limiting factors for this increase.

As a result, the summary direct and indirect effects of Alternative 3B to recreation resources would be similar to the impacts outlined in Alternatives 2 and 3A, with a potential for increased access due to the additional airstrips and access roads left in place during the Operations Phase of the Mine Site. There would be additional Pipeline ROW crossings of the INHT under the option to utilize Port MacKenzie. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features and BMPs, as discussed in Alternative 2. Examples of additional measures being considered that are applicable to this resource are listed under Alternative 2.

3.16.3.5 ALTERNATIVE 4 – BIRCH TREE CROSSING (BTC) PORT

Under Alternative 4, the upriver port site would be located at Birch Tree Crossing (BTC), which is farther downriver than the Angyaruaq (Jungjuk) Port site. The distance travelled by barges along the river would be reduced from 199 river miles under Alternative 2 to 124 river miles under Alternative 4. However, the number of barge trips would be the same; 122 additional round trips annually. Similar to Alternative 2, increased barge traffic on the Kuskokwim River could result in displacement of recreation activities such as rafting, sport hunting, and sport fishing. This displacement would be limited to those sections of the river between Bethel and the BTC Port. As in Alternative 2, the existing low levels of recreation along the river would limit potential recreation displacement from the additional barge trips proposed under Alternative 4. As a result, the direct and indirect effects of increased barge traffic under

Alternative 4 would be the similar to those of Alternative 2, but would occur over a smaller extent or scope given the shorter barging distance.

The BTC Port Road would be 76 miles in length, while the mine access road for the Angyaruaq (Jungjuk) Port site would be 30 miles. For this reason, impacts to activities such as snowmachining and sport hunting would broaden in the area affected, while impacts to boating and fishing would lessen in geographic extent. However, impacts to recreation resources would be similar to those for Alternative 2 due to the comparable existing low levels of recreation use and common availability of alternative recreation sites.

Direct and indirect effects on recreation resources at the Mine Site, Transportation Corridor, and along the Pipeline ROW would be the same as in Alternative 2. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features and BMPs, as discussed in Alternative 2. Examples of additional measures being considered that are applicable to this resource are listed under Alternative 2.

3.16.3.6 ALTERNATIVE 5A – DRY STACK TAILINGS

Alternative 5A would use the dry stack tailing method instead of the subaqueous tailings storage method proposed in Alternative 2. Since the changes would be made within the same Mine Site foot print as Alternative 2, this modification would have the same direct and indirect effects to recreation resources as Alternative 2 for the Mine Site, Transportation Corridor, and Pipeline components of the Donlin Gold Project. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features and BMPs, as discussed in Alternative 2. Examples of additional measures being considered that are applicable to this resource are listed under Alternative 2.

3.16.3.7 ALTERNATIVE 6A – MODIFIED NATURAL GAS PIPELINE ALIGNMENT: DALZELL GORGE ROUTE

For Alternative 6A, the Pipeline would follow an alignment through the Dalzell Gorge. The Pipeline alignment would affect a larger segment of the INHT than Alternative 2 (see Section 3.16.2, Affected Environment, and Section 3.16.3.2, for Alternative 2). Within the overall total, the Pipeline ROW would be collocated with the INHT for 14.5 miles under Alternative 6A, and 4.0 miles under Alternative 2 (Table 3.16-7). Under Alternative 6A, the portion of the Pipeline ROW that would be in close proximity (within 1,000 feet) of the INHT would be 18.9 miles longer, and have 21 more crossings than Alternative 2.

Table 3.16-7: Miles of Iditarod National Historic Trail Impacted, Alt. 6A

	Alternative 2 – Proposed Action	Alternative 6A – Dalzell Gorge Route	Difference Numeric
Collocated (Within 100')	2.5 miles	9 miles	+6.5 miles
Proximate (Within 1,000')	14.3 miles	37.0 miles	+22.7 miles
Total Miles:	16.8 miles	46.0 miles	+29.2 miles
Total Crossings:	14	37	+23

As discussed under Alternative 2, the intensity of impacts to recreation resources from the Construction of the Pipeline would depend when each pipeline segment would be constructed. Under Alternative 6A, Pipeline Construction would occur both during summer and winter months. However, a large portion of those ROW segments in the vicinity of the INHT, MP 114.8 to 134.8, would be constructed during the summer. Since most recreation activities and annual events associated with the INHT occur during the winter, the displacement of recreation activities during the Construction Phase along the modified segments would be minimal relative to Alternative 2. Furthermore, additional users are not likely to be impacted by Alternative 6A; it is likely that the same recreationists would be impacted under Alternative 6A as under Alternative 2.

Regarding permitted big game guides and transporters, the Dalzell Gorge route would not pass through GUA 19-12, and therefore would impact 67 permitted big game guides and transporters, compared to 79 in Alternative 2. The direct and indirect impacts would be same as Alternative 2.

Direct and indirect effects to recreation associated with Alternative 6A would be similar for the Construction, Operations, and Closure of the Pipeline under Alternative 2, except that impacts associated with the recreational use of the INHT would be more extensive during Construction under Alternative 6A due to the increased proximity of the ROW to the INHT. These impacts would be moderated since the majority of Construction along the Alternative 6A Dalzell Gorge alignment would occur during the summer when INHT recreation use is minimal.

Overall, Alternative 6A would have the same direct and indirect effects to recreation resources as Alternative 2 for the Construction, Operations, and Closure of the Mine Site and Transportation Corridor components of the Donlin Gold Project. Impacts associated with climate change would also be the same as discussed for Alternative 2. The effects determinations take into account applicable impact reducing design features and BMPs, as discussed in Alternative 2. Examples of additional measures being considered that are applicable to this resource are listed under Alternative 2.

3.16.3.8 ALTERNATIVES IMPACT COMPARISON

A comparison of the impacts to recreation by alternative is presented in Table 3.16-8.

Table 3.16-8: Comparison of Impacts by Alternative* for Recreation

Impact- causing Project Component	Alt. 2 – Proposed Action	Alt. 3A – LNG-Powered Haul Trucks	Alt. 3B – Diesel Pipeline	Alt. 4 – BTC Port	Alt. 5A – Dry Stack Tailings	Alt. 6A – Dalzell Gorge Route
Mine Site Area Permitted Recreational Hunting	GMU Unit 19 includes permits for black bear, brown bear, bison, caribou, moose, sheep, wolf, wolverine 0 big game permitted guides and transporters	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Transportation Area Permitted Recreational Hunting	GMU Unit 19 (see mine site) GMU Unit 18 includes permits for black bear, brown bear, caribou, moose, muskox, wolf, wolverine 17 big game permitted guides and transporters	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Transportation Area	122 of Kuskokwim River annual barge round trips during Operations 199 river miles barge route 30 mile mine access road	83 Kuskokwim River annual barge round trips during Operations	64 Kuskokwim River annual barge round trips during Operations	Same as Alternative 2, 124 river miles barge route 76 mile mine access road	Same as Alternative 2.	Same as Alternative 2.
Pipeline Area Permitted Recreational Hunting	GMU Unit 19 (see mine site) GMU Unit 16 includes permits for black bear, brown bear, caribou, moose, sheep, wolf, wolverine 79 big game permitted guides and transporters	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	# of big game permitted guides and transporters: 67
Pipeline Effects to INHT	Proposed Alignment: 14 INHT crossings 2.5 Miles of INHT collocation 14.3 Miles of INHT within 1,000' North Option: 5 INHT crossings 0.2 Miles of INHT collocation 5.3 Miles of INHT within 1,000'	Same as Alternative 2.	Proposed Option (Tyonek): Same as Alternative 2 Port MacKenzie Option: 17 INHT crossings 2.6 Miles of INHT collocation 16.9 Miles of INHT within 1,000'	Same as Alternative 2.	Same as Alternative 2.	34 INHT crossings 14.5 Miles of INHT collocation 29.4 Miles of INHT within 1,000'
Impact Summaries						
Mine Site	Activities and infrastructure would affect an immeasurable or unapparent number of existing recreationists, and numbers are expected to remain the same after mine closure. Impacts would be localized to the mine site, and there are many other alternative recreation lands in the area offering similar experiences. Access to the mine site would be restricted during Construction and Operations, but open to recreation activities after mine closure. The road to the mine site would be closed to the general public, and while public access easements (such as 17(b) easements) would remain active, no new recreation access routes would be created. After closure, limits would be placed on ground disturbing recreation activities. Other recreation activities, such as sport hunting and snowmachining, would be allowed. Indirect impacts could include perceived contamination of the area.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.

Table 3.16-8: Comparison of Impacts by Alternative* for Recreation

Impact- causing Project Component	Alt. 2 – Proposed Action	Alt. 3A – LNG-Powered Haul Trucks	Alt. 3B – Diesel Pipeline	Alt. 4 – BTC Port	Alt. 5A – Dry Stack Tailings	Alt. 6A – Dalzell Gorge Route
Transportation Corridor	<p>Activities and infrastructure would affect an immeasurable or unapparent number of existing recreationists, and numbers are expected to remain the same after mine closure. There are many other alternative recreation lands in the area offering similar experiences.</p> <p>Upgrades to existing ports and airports would remain in place after mine closure, and could facilitate recreation access. However, this would likely spur imperceptible increases in use due to the remote nature of the EIS Analysis Area that lacks recreation facilities or connections to the road system.</p> <p>Access to the Bethel Port would be restricted during construction (connected action).</p> <p>Section 17(b) easements in the area would necessitate permanent termination or relocation by the BLM for safety reasons.</p>	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.	Same as Alternative 2.
Pipeline	<p>Activities and infrastructure would affect a noticeable number of existing INHT recreationists, with the majority using the trail during the winter season.</p> <p>Construction would employ design measures to preclude extended soil compaction, interruption of scheduled races and events, or trail improvements that would ease passage.</p> <p>There would be long-term clearing of shrubs from the pipeline ROW at approximately 10-year intervals or as required to preserve pipeline integrity and allow for ongoing surveillance and monitoring activities during mine Operations which could make an attractive route for snowmachine and OHV users in winter. The corridor would not be cleared after closure, but individuals could maintain clearance on their own initiative. However, use levels would not be likely to increase over current levels as the area would remain remote (disconnected from the road system), lacking recreation facilities, and with low population densities. Impacts to recreation would vary seasonally and geographically along the pipeline corridor due to differing levels and contexts of recreation use.</p> <p>Shoofly road and landing strips would be demobilized and revegetated. Existing airport improvements would remain and could be employed by recreationists.</p>	Same as Alternative 2.	Same as Alternative 2 except that some infrastructure would be left in place after construction, so impacts to setting would last the life of the mine.	Same as Alternative 2.	Same as Alternative 2.	Activities and infrastructure would affect a noticeable number of existing INHT recreationists, but over a greater area than Alternative 2, with the majority using the trail during the winter season. Other impacts would be the same or similar to Alternative 2.

Notes:

* The No Action Alternative is presumed to have no impacts.