4.5 RECREATION

For the purposes of this section, the region around the project site is defined as the area from Lake Clark National Park and Preserve south to Katmai National Park and Preserve, and from the Nushagak River east to the western Kenai Peninsula. See Figure 3.2-1 for generalized land status. Potential impacts include:

- Adverse effects to recreation opportunities and experiences for recreationists participating in hunting, fishing, wildlife viewing, and boating activities
- Displacement of recreationists participating in hunting, fishing, wildlife viewing, boating activities, and snowmachine use
- Adverse effects to recreation experiences for visitors flying over the project area
- Changes to recreational settings.

Comment [A1]: Please add camping, backpacking, hiking for this and the next bullet.

4.5.1 No Action Alternative

Under the No Action Alternative, the Pebble Project would not be developed. No construction, operation, or closure activities would occur at the mine site or Amakdedori Port, or in the transportation corridor or the natural gas pipeline corridor. Therefore, no future direct or indirect effects on recreation resources would be expected. Exploration activities currently associated with the project may continue; however, helicopter traffic related to these exploration activities may decrease. Although recreational use at the mine site is minimal, such a decrease in helicopter traffic would be noticeable to recreation users of the Newhalen River and the northern shoreline of Iliamna Lake near Iliamna. The decrease in noise could benefit the quality of recreation opportunities in these areas.

4.5.2 Action Alternative 1 – Applicant's Proposed Alternative

The following sections describe anticipated recreational impacts from the project. For economic impacts related to commercial and recreational fishing, see Section 4.6, Commercial and Recreational Fisheries.

Comment [A2]: There have been over 200 known aircraft accidents in and around the park and preserve documented in park's draft Aviation Safety Plan. The impact to aviation safety of park visitors should be addressed. Both Alternatives 1 and 2 would lead to significantly increased aircraft travel through Lake Clark Pass and in uncontrolled air space over the Park and Preserve. Aviation safety that may impact the safety of park visitors using Lake Clark's 34 CUA permitted Air Taxi operators that transport park visitors throughout the park from increased overflights of the Park and Preserve due to transport of employees and freight. Small aircraft are the primary access method for recreational visitors to Lake Clark National Park, including the western side of the Park and Preserve that would share the aviation corridor with employee and freight transporters. These aircraft primarily fly through Lake Clark Pass. It is unclear from this what the level of increased air traffic over the park and through Lake Clark is expected to be with a significant industrial operation expecting to operate via a fly in fly out employee model and what the safety impacts to the park's recreational visitors would be.

4.5.2.1 Mine Site

Recreational use at the mine site is likely minimal, consisting of some sport hunting, sport fishing, and occasional snowmachine use. Flights taking recreationists to various destinations in the region and the state may also pass over the mine site.

Construction, operations, and closure at the mine site may affect sport hunting and fishing on state lands surrounding the project area. Project-related activities, such as blasting and operation of heavy equipment and helicopters, would adversely affect the recreational experience for hunters and anglers by changing the setting from a quiet undisturbed landscape to a developed industrial area in visual and auditory distance of the mine site. The noise generated by these activities would also displace wildlife from the immediate mine site area, and likely from lands immediately surrounding the project area, thus reducing the likelihood of hunting success close to project components. Noise from construction and operations at the Mine Site could cause sleep disruption for hunters and other recreationists up to 3 to 3.5 miles away from the mine site and would be 10 decibels (dBA) higher than the ambient noise level up to 2.3 to 2.4 miles away from the mine site. An increase of 10 dBA would sound, based on human perception, "twice as loud." Therefore, hunters, anglers, or guides who currently use the immediate vicinity would likely stop using these areas and would be displaced to other areas during construction, operations, and closure activities.

Comment [A3]: With the proposed alternative, this area would no longer be available for recreational use. This section should be reframed as such. Is there documentation of the current state of recreation activity in the area to justify the use of the term "minimal"?.

Given the low estimated use of the mine site and immediate surrounding area for sport hunting and fishing, project-related noise and activities at the mine site would result in minimal displacement of sport hunting and fishing use, likely to other state lands in the area with similar habitat. However, project-related noise and aircraft traffic that would be noticeable to recreation users on the Newhalen River, Upper Talarik Creek, and the upper north and south forks of the Koktuli River would detract from the quality of the recreation experience, potentially resulting in some displacement of activities to other areas. For further analysis, see Section 4.11, Aesthetics; Section 4.19, Noise; and Section 4.23, Wildlife Values.

Project construction, operations, and closure at the mine site would also physically remove acreage available for recreation. However, given the likely low use of the site for recreation, the loss of 8,129 acres (i.e., size of the mine site footprint) for recreation would likely result in minimal displacement of recreational use to other nearby state lands where similar recreation opportunities and settings exist.

The mine site would be approximately 15 miles from the border of Lake Clark National Park and Preserve, the nearest regional recreation destination and known recreational use area to the mine site. Project-related noise and activities would not be likely to affect recreational settings or activities in the preserve. As stated in Section 4.11, Aesthetics, the mine site would be visible from a small portion of this park unit (from high elevations in southwestern corner near Roadhouse Mountain); however, visibility from this distance would be weak. As described in Section 4.19, Noise, mine site construction and operations noise would not affect sensitive receptors there.

Activities at the mine site would be visible and potentially audible to visitors flying over the area to reach regional recreation destinations such as Lake Clark National Park and Preserve or nearby lodges, fishing at the Upper Talarik Creek, and accessing the North Fork and South Fork Koktuli rivers for recreational river floating purposes. The presence of the mine, a large industrial use in an otherwise generally primitive area, may adversely affect the recreational experience for visitors flying over the mine site by causing a change in the recreational setting. Because of the mine's location relative to nearby lodges and airstrips/airports, only a few flight paths would cross the mine site itself; thus, few visitors flying into the area would be affected by the presence of the project, but the intensity of the impact would be substantial. The recreational experience for visitors on these flights would be adversely affected during project construction, operations, and closure.

Recreation by construction and operations staff would be expected to occur outside of the mine site, because site rules would prohibit hunting, fishing, or gathering on site to minimize impacts on local subsistence resources. Since the mine would operate on a fly-in, fly-out basis, non-resident staff members would not likely contribute to an increase in recreational use, although some may occasionally stay in the area or visit for recreational trips to nearby destinations. As described in Section 4.3, Needs and Welfare of the People—Socioeconomics, operation of the mine is not expected to generate a large increase in the number of full-time residents.

4.5.2.2 Transportation Corridor

Near the transportation corridor there is recreational use of Roadhouse Mountain to the northeast of Iliamna, as well as use of some ATV trails around the Iliamna area for transportation, subsistence, and recreation. There are also recreational use opportunities of extremely high quality in the general transportation corridor area, particularly along the Newhalen River and Upper Talarik Creek by the north access road, and in the Gibraltar River and Gibraltar Lake portions of the south access road corridor, which some local lodges advertise as offering guided fishing, hunting, and sightseeing trip options (Haugen, Bush, and

Comment [A4]: Please provide evidence of modeled noise impacts similar to what was provided for viewshed to substantiate this statement. The NPS finds the use of sleep disturbance in this context an appropriate measure of impact to recreationists given it expresses one of the functional effects of noise on the population in question. However, parks must additionally use the natural ambient level ("the environment of sound that exists in the absence of human-caused noise") as the baseline from which to measure impacts. Nowhere is this more appropriate than in the context of long-duration noise suddenly being added to the setting of a remote Alaskan park. To better understand impacts to Lake Clark, please include the radius at which noise from construction and operations will drop below the natural ambient level.

Comment [A5]: Is there documentation of the current state of recreation activity in the area to justify the use of the term "minimal"?.

Comment [A6]: There is limited mention of other recreation activities on state land in the area. For example –fishing and non-motorized boating on the Chulitna River.

Comment [A7]: The analysis should provide a model or visualization indicating from where the mine site and related infrastructure will be visible, not limited to 15 miles.

Comment [A8]: NPS Management Policies §4.10 requires that "The [National Park] Service will preserve, to the greatest extent possible, the natural lightscapes of parks, which are natural resources and values that exist in the absence of human-caused light." Proactive lighting design can minimize the environmental impacts of skyglow and preserve the ability o ...

Comment [A9]: Megan Richotte Comment: Potential impacts on visitor experiences outlined in the 2010 Long Range Interpretive Plan for Lake Clark National Park and Preserve from fugitive dust in the portion of Lake Clark National Preserve that is down wind of the mine site should be addressed. Specifically, poten ...

Comment [A10]: To better understand the impact of each alternative, please describe how aviation support of the mine is expected to change during the construction, operations, and closure phases of the project. Aviation in the vicinity of mine infrastructure is expected to contribute to cumulative noise impacts in the ...

Comment [A11]: This section lacks discussion about the impact of construction and operations staff on the recreational opportunities/experience for local residents and visitors and natural resources, including on quality of experience.

Comment [A12]: Impacts from employee and freight transport via aircraft between Anchorage and the mine site and transportation corridor should be addressed here. Transportation by aircraft will have significant affects on overall air traffic in the region. The region is comprised of primarily uncontrolled airspace where increas ...

Rice 2003). Recreational sport hunting and snowmachine use may occur occasionally in these road corridors. At Iliamna Lake, some boating takes place (both motorized and non-motorized), both as an activity in itself and as a means of accessing other recreation opportunities, primarily fishing, which is the main recreation activity at Iliamna Lake. Due to its current inaccessibility and location of nearby high quality recreation opportunities, recreational use of the north and south mine access road corridors, the Kokhanok Airport spur road, and the Iliamna spur road is likely low.

Noise and activities along the transportation during project construction, operations, and closure would affect the quality of sport hunting, fishing, and other recreational activities on state lands and along creeks in and surrounding the project area by generating potential noise and visual impacts. Impacts on sport hunting and fishing opportunities and experiences would be similar to those described above for the mine site.

Project-related noise and activities would not affect recreational settings or activities in Lake Clark National Park and Preserve. As stated in Section 4.11, Aesthetics, the transportation corridor would be visible from a small portion of this this park unit (from high elevations in southwestern corner near Roadhouse Mountain); however, visibility from this distance would be weak, and construction and operational noise would not affect sensitive receptors there.

The road and ferry terminals would also physically remove acreage available for recreation during project construction, operations, and closure. However, given the likely low use of these portions of the corridor for recreation, the loss of 916 acres for recreation would likely result in minimal displacement of recreational use to other state lands in the general area with similar habitat.

As stated in Section 4.3, Needs and Welfare of the People—Socioeconomics, limited access to the roadways and ferry terminal would be available to local residents and businesses only. Therefore, the transportation corridor facilities would not induce recreation or expose previously inaccessible areas to public access and use (PLP 2018-RFI 027).

Activities in the transportation corridor may be visible and potentially audible to visitors flying over the corridor to reach regional recreation destinations such as Lake Clark National Park and Preserve, float trip destinations (on the Mulchatna, Gibraltar, and other rivers), or nearby lodges. The presence of roads, ferry terminals, and ferry in an otherwise generally primitive area may adversely affect the recreation experience for visitors flying over the corridor because of the change in the recreation setting from remote and primitive to more developed and seemingly accessible. Because of the narrow road corridor and vegetation along the roadways and the size of the ferry terminals, the corridor would likely be visible to most visitors only briefly. The recreation experience for visitors on these flights could be adversely affected.

The transportation corridor may be intermittently visible from the far northern edges of Katmai National Park and Preserve at high elevations; however, visibility from this distance would be weak. The transportation corridor would be visible in some portions of the McNeil River State Game Refuge, at higher elevations. See Appendix K4.11 for complete viewshed figures. There is minimal use of the northern borders of these two recreation areas; however, the construction, operations, and closure of the corridor could adversely affect the recreation experience for visitors along the northern border of both recreation areas from the change in recreation setting to a more developed and less remote and primitive area. Given the distance of the transportation corridor from these areas, intermittent visibility, and the likely low level of recreational use of the northern borders of both recreation areas, impacts to recreation experiences would be limited.

Comment [A13]: Please cite source.

Comment [A14]: Would this area be removed use and thus not available. This should be explicitly stated.

Comment [A15]: Please see comment on lightscapes in 4.5.2.1.

Comment [A16]: As discussed above, modelling results and/or a visualization of impacted area for sound and visual disturbance should be included in this section.

Comment [A17]: Recommend a different term – e.g., limited. and then provide information on areas impacted. Why is viewshed analysis limited to 15 mile? Visibility can be far greater than 15 miles in this area.

Comment [A18]: Please provide information to support a conclusion of "minimal use".

Comment [A19]: This section lacks evidence or does not discuss impacts to those recreationists that do use this area.

The project may also affect incidental wildlife viewing along the transportation corridor; although the primary recreation use in these areas is likely from other activities, such as fishing. Movement and distribution of bears and other terrestrial mammals through the transportation corridor to the McNeil River State Game Refuge and Katmai National Park and Preserve may be disrupted; therefore, construction and operations activities in the south access corridor may have some adverse impacts on wildlife viewing in both of those recreation areas. See Section 4.23, Wildlife Values, for more information on impacts to bear movement and distribution.

Iliamna Lake provides opportunities for wildlife viewing, although there are no known opportunities specific to the proposed ferry terminal locations, ferry route, or pipeline route. Fishing is the primary recreational use of the lake, and extensive opportunities for fishing are available given the lake's size. The project would likely displace wildlife and fish from the locations of the ferry terminals and ferry route during all phases, thus reducing the likelihood of viewing any wildlife or catching fish in and immediately adjacent to the project area. Project noise would also change the recreation setting of the terminal sites from quiet and remote to developed and active. Therefore, all project phases would adversely affect wildlife viewing and fishing experiences and opportunities around the Iliamna Lake portions of the transportation corridor. Other locations around the lake would be available for displaced wildlife viewing and fishing use.

Project-related noise and activities during construction, operations, and closure could adversely affect boating on Iliamna Lake. Construction of the pipeline and ferry terminals and operation of the ferry would likely displace boaters from the area immediately surrounding the equipment, ferries, and facilities. Boaters would likely be displaced to other areas of the lake during construction, operations, and closure to avoid the noise and hazards presented by the equipment and activities. Project-related noise and equipment would particularly affect non-motorized boating use, which is generally a quieter activity that requires more time and effort to circumnavigate in-water obstructions. One ferry trip per day would occur during operations, which would not be expected to contribute considerably to boat traffic on the lake. Although recreational lake boat traffic may slow down and avoid the ferry, alternative open water would be available for boating use during ferry operations. The ferry terminals would be visible from portions of the lake (within about 3 to 5 miles of the terminal) and would change the recreation setting of these areas of the lake to a more developed setting, though there is extensive lake area and shoreline for any boaters that would prefer a less developed setting.

During the winter, there is heavy snowmachine use of the lake. Although most of this use is considered transportation use, there may be some recreational snowmachine use of the lake. Ferry traffic may displace snowmachine use in and adjacent to the ferry route across the lake; however, the remainder of the lake would be available for snowmachine use, although recreationists may need to take longer routes to avoid open water from the ice-breaking ferry. The Kokhanok east ferry terminal variant would result in similar impacts to those described above. The summer-only ferry operations variant would avoid impacts to snowmachine use of the lake. See Section 4.12, Transportation and Navigation, for impacts to non-recreational lake traffic.

Comment [A20]: What impacts would an ice-breaking ferry have on the rest of the lake? It seems likely that this operation would keep more than the travel route unfrozen. Travel across the lake between Kokhanok and Iliamna/Newhalen by snow machine would be unavailable with the ice-breaking ferry option.

4.5.2.3 Amakdedori Port

The Amakdedori Port site is located on state lands designated for habitat use by the Kenai Area Plan (ADNR 2001). The Kenai Area Plan does not discuss recreational use, although there may be recreational boating, overflights, hunting, fishing, and incidental wildlife viewing near the port site. Boat traffic to and from the port would be minimal: up to 27 concentrate vessels and 33 supply barges per year during operations. There would be a larger number of boats during construction; however, Cook Inlet is large and there is a long expanse of shoreline available

nearby for any boaters displaced from the port site. Therefore, activities at Amakdedori Port would result in minimal adverse impacts on recreational boat traffic, and thus, on boating experiences and opportunities around the port site and in Cook Inlet. The visual impacts of the port would affect the recreational setting for boaters.

The project may affect incidental wildlife viewing, hunting, and fishing opportunities at the port site, to the extent that they occur. Noise and activities would displace wildlife and fish from the immediate area, thus adversely affecting wildlife viewing, hunting, and fishing opportunities and experiences by reducing the likelihood of seeing wildlife or catching fish.

In addition, project-related noise and activities during construction, operations, and closure at Amakdedori Port would adversely affect the recreational experiences of visitors within visual and auditory distance of the port site because of the change from a quiet, undeveloped area to a developed site with visible facilities, generators, and in-water facilities. The adverse effects would displace from this area those visitors who prefer a quiet, undisturbed recreation setting, or who participate in recreation opportunities such as wildlife viewing, hunting, and fishing, which typically require a quiet, undisturbed recreation setting.

Overall, because recreational use of the Amakdedori Port site is likely low, project-related wildlife and fish displacement, noise, and activities would result in minimal displacement of wildlife viewing and fishing uses to other nearby shoreline areas.

The port site, including construction, operations, and closure activities, would be visible from the Cook Inlet shoreline area further north of the port, but visibility would decrease with distance and would be weak at 10 miles. It may be visible from some portions of the McNeil River State Game Refuge, as well as from flights over the site to regional recreation destinations such as Katmai National Park and Preserve, or towns farther west such as King Salmon or Naknek. The port site may be visible from the Chenik Creek area of the McNeil River State Game Refuge (this site is within the viewshed of the port) and would affect views from this recreation area. However, the port would not be visible from McNeil Camp (see Appendix K4.11), the main recreation area in the McNeil River State Game Sanctuary, and would therefore not affect views from this recreation site, though vessel traffic may be evident and may intermittently affect the recreation setting at the camp. The port would not be visible from Augustine Island, but may affect views from Cook Inlet shoreline areas surrounding the port. Although recreational use of McNeil River State Game Refuge is limited by permit numbers, and the use of nearby shoreline areas is low, on-water sightseeing and/or wildlife viewing may occur in these locations. Construction, operations, and closure at Amakdedori Port could adversely affect the recreational experience for visitors participating in sightseeing or wildlife viewing opportunities in these surrounding areas, by causing a change in the recreational setting to a more developed and less remote, primitive area. However, given the distance of the port site from these areas, which would reduce the port's visibility, as well as the likely low level of recreation use at these nearby locations, impacts on recreation experiences would be limited.

The project would not result in changes in access to McNeil River State Game Refuge or Sanctuary. Visitors fly in to the sanctuary, where the main recreational use areas are located. McNeil Camp, the main access point to the sanctuary and refuge, is located 12 miles south of the Amakdedori Port site. The port would remove 25 acres from use for recreation opportunities.

4.5.2.4 Natural Gas Pipeline Corridor

Potential impacts on recreation have been described above for the transportation corridor where it shares a footprint with the natural gas pipeline. Existing recreational use along the pipeline alignment in Cook Inlet and on the Kenai Peninsula consists of boating in the inlet and recreational use on the peninsula. Boating in Cook Inlet is both an activity in itself and a means

of accessing other recreation opportunities such as fishing, wildlife viewing, birdwatching, and beachcombing.

Equipment present in Cook Inlet during project construction and closure would be visible and audible to recreational boaters within a certain distance, and would likely temporarily displace any boating and fishing use from the area immediately surrounding the equipment and construction activity; however, alternate open water is available for use by displaced boaters or anglers. Recreation experiences for non-motorized boaters would also be temporarily adversely affected by noise and activity by equipment used during construction or closure, which would affect the recreation setting of the state recreation area for these users. Due to the distance of the land-based recreation facilities at the state recreation area from the compressor station and pipeline, impacts to land-based recreational experiences from noise and construction activities would be minimal.

Noise and activities during project construction and closure may also temporarily adversely affect recreation experiences for visitors to the Stariski State Recreation Site, which is located approximately 1.5 miles north of the proposed compressor station. Visitors participating in camping, picnicking, and hiking may also be adversely affected by the change in the recreation setting caused by the noise and project activities, thus adversely affecting their recreation experiences. Some visitors may be temporarily displaced from the site to other state parks or locally managed recreation sites along the Kenai Peninsula because of the change in recreational setting. There would be no impacts to recreation during operations.

The pipeline would be located south of Augustine Island in Cook Inlet. Although no recreation occurs on the island itself, some sightseeing of the island's volcano and wildlife occurs from the water. Therefore, equipment and noise associated with construction and closure may temporarily adversely affect sightseeing opportunities and experiences along the south side of the island. However, displaced boats would be able to view the island from other locations around the island that were not affected by project equipment and noise.

The pipeline would not be visible above ground and would not remove any acreage from use for recreation opportunities. Recreation experiences for on-water or state park unit visitors may be temporarily affected during pipeline operations because of the presence of boat traffic during pipeline maintenance.

4.5.3 Action Alternative 2 – North Road and Ferry

4.5.3.1 Mine Site

Impacts on recreation from the mine site would be the same as discussed under Action Alternative 1.

4.5.3.2 Transportation Corridor

There are likely opportunities for hunting bear and moose in and adjacent to the transportation corridor. Impacts on sport hunting opportunities and experiences from project-related noise and activities would be similar to those described above for the mine site under Alternative 1.

Similar to the mine site, project-related noise and activities along the Alternative 2 transportation corridor would not likely affect recreational settings or activities in Lake Clark National Park and Preserve. As noted in Section 4.11, Aesthetics, the transportation corridor would not be visible from this park unit except at high elevations on the southern border; and as described in Section 4.19, Noise, transportation corridor construction and operations noise would not affect sensitive receptors there.

Comment [A21]: Again, this analysis should include a modeling of sound impact analysis similar to the viewshed analysis.

Comment [A22]: Figure_K4_11_12_Alt2_TransportationCorridor_Viewshed – does not show the NPS boundary – please add.

Activities in the ferry terminal portions of the transportation corridor would also physically remove 18 acres available for recreation during project construction, operations, and closure. Visitors would likely be displaced to other lands in the general area with similar habitat.

The transportation corridor facilities would not induce recreation or expose previously inaccessible areas to public access and use (PLP 2018-RFI 027) as stated in Section 4.3, Needs and Welfare of the People—Socioeconomics.

Impacts to visitors flying over the corridor would be the same as those described under the transportation corridor for Alternative 1. The north road would be visible from Roadhouse Mountain, where there is some known recreational use. Therefore, the project could alter the setting for recreationists on Roadhouse Mountain by decreasing the naturalness of the area and increasing visible human development of the area.

Northern Iliamna Lake and the surrounding area provide opportunities for wildlife viewing, although there are no known opportunities specific to the proposed ferry terminal locations, ferry route, or road corridor. However, the movement and distribution of bears and other marine and terrestrial mammals throughout the transportation corridor may be disrupted. Thus, construction and operations activities in the transportation corridor may have some adverse impacts on wildlife viewing, including viewing of the Iliamna Lake harbor seals. See Section 4.23, Wildlife Values, for more information on impacts to wildlife movement and distribution.

Impacts to fishing under Alternative 2 would be the same as those described under Alternative 1, but there are more guided fishing operations that could be impacted.

Impacts to boating and snowmachine use on Iliamna Lake would be the same as those discussed under Alternative 1. The summer-only ferry variant would avoid impacts to snowmachine use of the lake. See Section 4.12, Transportation and Navigation, for impacts to non-recreational lake traffic.

The transportation corridor would be located, in part, on the Williamsport-Pile Bay Road and the Pile Bay ferry terminal site would be located near the existing road ending at Pile Bay. Therefore, use of the transportation corridor and Pile Bay ferry terminal site may impact the annual transport of boats from Homer to Bristol Bay. Increased road and boat traffic and noise, as well as project-related activities on the transportation corridor and at the Pile Bay ferry terminal may adversely affect recreational experiences for anglers during their boat transport. However, few of those boats are recreational vessels.

Construction of the natural gas pipeline along the north road would result in similar impacts to those described below for Alternative 3 transportation corridor.

4.5.3.3 Diamond Point Port

Construction, operations, and closure noise and activities may displace wildlife and fish from the Diamond Point Port area, thus adversely affecting wildlife viewing, hunting, and fishing opportunities and experiences by reducing the likelihood of seeing wildlife or catching fish. However, there are already some industrial activities occurring in the area. Project-related noise and activities during construction, operations, and closure at Diamond Point Port would add to the adverse effects to recreational experiences of visitors within visual and auditory distance of the port site and existing activity. The adverse effects would displace from this area those visitors who prefer a quiet, undisturbed recreational setting, or who participate in recreational opportunities such as wildlife viewing, hunting and fishing, which typically require a quiet, undisturbed recreation setting.

Impacts to boating from the Diamond Point Port would be similar to those described under Alternative 1 for the Amakdedori Port, except during the period of time when many commercial and some recreational fishing boats are transported from Willamsport to Pile Bay. During this transport, boats can get backed up in Iliamna Bay and project-related boat traffic, particularly during construction when more boats may be accessing the port site, would have a more noticeable effect on boat traffic during this time. However, Iliamna Bay is large and would provide enough space for all boat traffic.

Because there is a higher likelihood of recreational use of the Diamond Point Port site given the known hunting use of Ursus Cove nearby, commercial fishing use of Iliamna Bay, and known wildlife resources in the general area (ADNR 2001) compared to the Amakdedori Port site, the Diamond Point Port site would likely affect more recreationists than the Amakdedori Port site.

The Alaska Maritime National Wildlife Refuge is the only designated recreation area where the port site, including construction, operations, and closure activities, would be visible. The recreation setting from the affected areas of the refuge would change from views of natural, undeveloped areas with mostly fishing boat traffic, to a view with visible developed facilities and larger vessel traffic.

4.5.3.4 Natural Gas Pipeline

Impacts on recreation from construction of the natural gas pipeline through Cook Inlet (except near Ursus Cove) would be the same as discussed under Action Alternative 1, except that the pipeline would pass north of Augustine Island.

Under Alternative 2, the natural gas pipeline would come into Ursus Cove and then cross land north to reach Cottonwood Bay and the Diamond Point Port site. Ursus Cove is a known bear hunting location (H&H Alaskan Outfitters 2018) and both Ursus Cove and Cottonwood Bay are known commercial fishing locations (ADNR 2001). Both Ursus Cove and Cottonwood Bay may also be used for other hunting activities, recreational fishing, and wildlife viewing.

Noise and activities related to construction of the natural gas pipeline through Ursus Cove and up through Cottonwood Bay to the Diamond Point Port site would likely temporarily displace wildlife and fish from the Cove and Cottonwood Bay surrounding the construction area, thus reducing the likelihood of viewing or hunting any wildlife or catching fish in and immediately adjacent to the project area. Hunters, anglers, or guides who currently use these areas would likely stop using these areas and would be displaced to other areas during construction activities.

Similar to the pipeline under Alternative 1, the pipeline in Alternative 2 would not be visible above ground and would not remove any acreage from use for recreational opportunities. Impacts to boaters would be similar to those described for Alternative 1.

4.5.4 Action Alternative 3 – North Road only

Impacts on recreation would be the same as discussed under Action Alternative 2 for the mine site, Diamond Port, construction of the natural gas pipeline, and portions of the north road that overlap with the transportation corridor of Alternative 2.

Impacts on sport hunting opportunities and experiences from project-related noise and activities would be similar to those described above for the mine site under Alternative 1. Impacts to visitors flying over the corridor would be the same as those described under the transportation corridor for Alternative 1. Impacts to recreational settings or activities in Lake Clark National Park and Preserve would be the same as those described for Alternative 2.

Activities in the transportation corridor would also physically remove 1,085 acres available for recreation during project construction, operations, and closure. Visitors would likely be displaced to other lands in the general area with similar habitat.

The transportation corridor facilities would not induce recreation or expose previously inaccessible areas to public access and use (PLP 2018-RFI 027).

The project may also affect incidental wildlife viewing along the transportation corridor; although most recreational use in the corridor is likely from other activities, such as fishing. Movement and distribution of bears and other terrestrial mammals through the corridor may be disrupted, thus construction and operations activities in the corridor may have some adverse impacts on wildlife viewing. See Section 4.23, Wildlife Values, for more information on impacts to bear movement and distribution.

There are fishing opportunities on the rivers and streams that cross the Alternative 3 transportation corridor, particularly along the Newhalen and Iliamna rivers due to the quality of the fishing on these rivers and the presence of lodges in the Pedro Bay area. Construction noise and activities would likely displace fish at river/stream crossings, which would particularly affect fishing at the road crossing on the Newhalen and Iliamna rivers. Project noise would also change the recreation setting of the road corridor from quiet and remote to developed and active. Therefore, all project phases would adversely affect fishing experiences and opportunities along the transportation corridor. Other portions of the streams crossed by the transportation corridor would be available for anglers that prefer a remote experience away from the roadway.

Impacts to the boat portaging on the Williamsport-Pile Bay Road would be similar to those described for Alternative 2, but would only affect the experience of anglers while transporting boats on the sections of the road that would also carry project traffic.

4.5.5 Summary of Key Impacts

See Table 4.5-1 for a summary of key issues.

Table 4.5-1: Summary of Key Issues for Recreation

Category	Alternative 1 (+ variants)	Alternative 2 (+ variants)	Alternative 3 (+ variants)
Recreation experience	Project-related noise and aircraft traffic may adversely affect recreation experiences for hunters and anglers by changing the recreation setting and displacing wildlife throughout the project area. Adverse effects on recreational experiences for visitors within visual and auditory distance and may displace visitors that prefer a quiet, undisturbed recreation setting	Same as Alternative 1	Same as Alternative 1
Recreation setting	Recreationists flying over project components would be adversely impacted, as the project would be visible	Impacts would be similar to Alternative 1, except it would not affect the McNeil River State Game Refuge	Same as Alternative 2 except there would be no ferry terminals.

Table 4.5-1: Summary of Key Issues for Recreation

Category	Alternative 1 (+ variants)	Alternative 2 (+ variants)	Alternative 3 (+ variants)
	from planes. The recreational setting from Iliamna Lake would be impacted by ferry terminals. Vessel traffic may intermittently affect the recreation setting of McNeil Camp	but may affect views from portions of the Alaska Maritime National Wildlife Refuge and change the recreational setting for visitors to Roadhouse Mountain.	
Recreation activities	There would be adverse effects on wildlife viewing, hunting, and fishing opportunities and experiences by displacing wildlife. Boating and snowmachine use on Iliamna Lake could be displaced or altered.	Same as Alternative 1 except that more guided fishing opportunities would be impacted. There would also be adverse effects to activities in Ursus Cove and Cottonwood Bay during construction.	Same as Alternative 2 except with additional adverse effects on fishing opportunities and experiences at road river/stream crossings, particularly at Newhalen and Iliamna rivers. There would be no adverse effect to recreation on Iliamna Lake.

4.5.6 Cumulative Effects

The reasonably foreseeable future actions identified in Section 4.1 carried forward in this analysis include mining claims; oil and gas development within Cook Inlet; road improvement projects; and continuance of recreation activities in the greater regional area, as summarized below:

- Pebble Project buildout- develop 55% of the resource over 78 year period
- Pebble South/PEB
- Big Chunk South*
- Big Chunk North*
- Fog Lake*
- Groundhog*
- Johnson Tract*
- Copper Joe*
- Diamond Point Rock Quarry
- Alaska Stand Alone Pipeline Project
- Alaska LNG
- Cook Inlet Lease Sales
- Onshore Hydrocarbon Exploration*
- Lake and Peninsula Transportation, Infrastructure and Energy Project
- National Parks and Preserves, Wildlife Refuges, State of Alaska Special Management Areas, Alaska Native Corporation Lands

*Indicates exploration activities only.

Reasonably foreseeable mineral development could contribute cumulatively to reducing the undeveloped nature of the region, and thereby reduce opportunities available for recreation activities like hunting, fishing, and wildlife viewing in remote areas. There would be additive effects to recreation experiences for visitors flying over the region, as the landscape as a whole is more visible from a higher elevation, and all development would be more noticeable.

The Diamond Point Rock Quarry could contribute cumulatively to impacts to recreational opportunities and experiences, boat traffic, and changes to the recreation setting in Iliamna Bay. Oil and gas projects in Cook Inlet could contribute cumulatively to temporary adverse impacts to boating, fishing, and boat traffic in the inlet if construction periods overlapped. Transportation projects could contribute cumulatively to changes in the recreational setting of the region and decrease opportunities for recreation in remote areas.

The project would contribute to cumulative impacts to recreation and there would be a higher contribution to cumulative impacts for Alternatives 2 and 3 from activities in Iliamna Bay.

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