

3.19 NOISE

Information on applicable noise and vibration concepts and methodologies used in characterizing noise of the affected environment is provided by AECOM (2018c).

“Noise” is typically characterized as unwanted sound. Because the natural existing ambient sound is generally not considered a problem, it is not typically classified as noise. The ambient sound level is a composite of sound from all sources, including the natural background and anthropogenic sources; it is the total sound received by the microphone of a sound level meter. Existing ambient sound levels are often the starting point for analyzing project-associated noise impacts, because such environmental noise analysis typically compares project-associated noise to either existing ambient or natural background sound based on applicable adverse effect or impact assessment criteria.

The Environmental Impact Assessment (EIS) analysis area for this section includes the mine site, transportation corridor, port, and natural gas pipeline corridor for each alternative and variants, and the surrounding area where project-associated noise could have a direct effect on human receptors. A radius of 10 miles from the mine site was used as a screening distance for potential noise impacts; based on preliminary conservative calculations (assuming typical equipment to be used and acoustical propagation rates), noise effects are expected to be not readily detectable beyond 10 miles. Similarly, for all other non-mine site project components (transportation corridor, port, ferry terminal sites, and natural gas pipeline corridor), including all alternatives and variants, a conservative screening distance of 2 miles from the project feature or alignment was used to help locate and identify potential noise-sensitive receptor (NSR) property parcels.

Impacts to other resources from noise are addressed in Section 4.5, Recreation; Section 3.9, Subsistence; Section 3.11, Aesthetics; Section 4.23, Wildlife Values; Section 4.24, Fish Values; and Section 4.25, Threatened and Endangered Species.

The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of each day and throughout the week and year. This variation is caused not only by various noise source activities, but also by conditions such as changing weather conditions, seasonal vegetative ground cover, presence of ice or flowing water from nearby creeks and rivers, and wind.

Examples of outdoor and indoor noise levels that could be experienced by current residents in or near the EIS analysis area are provided in Table 3.19-1 as context for describing existing conditions. These levels are measured in terms of “A-weighted” decibels (dBA), which are used to quantify sound and its effect on people (EPA 1978), and emphasize frequencies best heard by humans. AECOM 2018c provides explanation of the principles of acoustics and weighted sound levels. Noise levels listed in Table 3.19-1 represent day-night sound levels (L_{dn}), an energy-averaged value over a 24-hour period that reflects increased sensitivity to noise when people are usually sleeping.

Existing sound levels in the areas of each project component are discussed below, as compared to the examples of typical noise levels shown in Table 3.19-1. For this analysis, an NSR is generally defined as an area where human use likely occurs, such as human dwellings, seasonal shelters, and temporary campsites (defined in more detail in Section 4.19, Noise). Native Allotments are the most likely types of land parcels that may have NSRs within the 2-mile analysis distance. These lands may be expected to include permanent or temporary structures to support a residence or hunting and fishing activities. Current definitive information regarding individual dwellings or other buildings is not available for all the Native Allotments; therefore, occurrence is used as a means to conservatively estimate NSRs in the analysis area by assuming all Native Allotments may have at least one NSR.

Table 3.19-1: Examples of Noise Levels

Outdoor	Noise Levels (dBA, L _{dn})	Indoor
Jet flying over at 1,000 feet	100	Rock band
Gas lawn mower at 3 feet	90	Blender at 3 feet
Next to busy highway	88	N/A
0.75 mile from touchdown at major airport	86	Garbage disposal at 3 feet
Noisy urban area during the day	70	Vacuum cleaner at 10 feet
Wooded suburban residential	51	Refrigerator at 3 feet
Rural residential	39	N/A
Wilderness Ambient	35	Library

Notes:

dBA = A-weighted decibel

L_{dn} = day-night sound level, expressed in dBA

N/A = not applicable

Source: EPA 1978; Caltrans 2009

Figure 3.19-1 shows the noise analysis area using the 10-mile distance for the mine site area and 2-mile distance for all other components for all alternatives, census-designated places (USCB 2017, 2018a, 2018c, 2018d), and Native Allotments.

The following sections describe the existing sound in areas for all alternatives, as well as a section summarizing potential NSRs associated with each alternative and variants. For the variants, both existing sound and potential NSRs are discussed in separate sections in comparison to Alternative 1a.

3.19.1 Alternative 1a

3.19.1.1 Mine Site—Existing Sound

The mine site would be in a remote region of Alaska, characterized as having no development. No existing ambient sound data were collected in the vicinity of the mine site. However, data on ambient sound levels for generic land use types are available (Table 3.19-1). The values in Table 3.19-1 can be used to estimate the existing (pre-project) ambient sound level for corresponding land use types in the EIS analysis area. Due to its remoteness and lack of development, the existing land use in the vicinity of the mine site corresponds to the “wilderness ambient” classification in Table 3.19-1, with baseline ambient sound level of 35 L_{dn} (Table 3.19-2).

Table 3.19-2: Baseline Outdoor Sound Levels at Mine Site

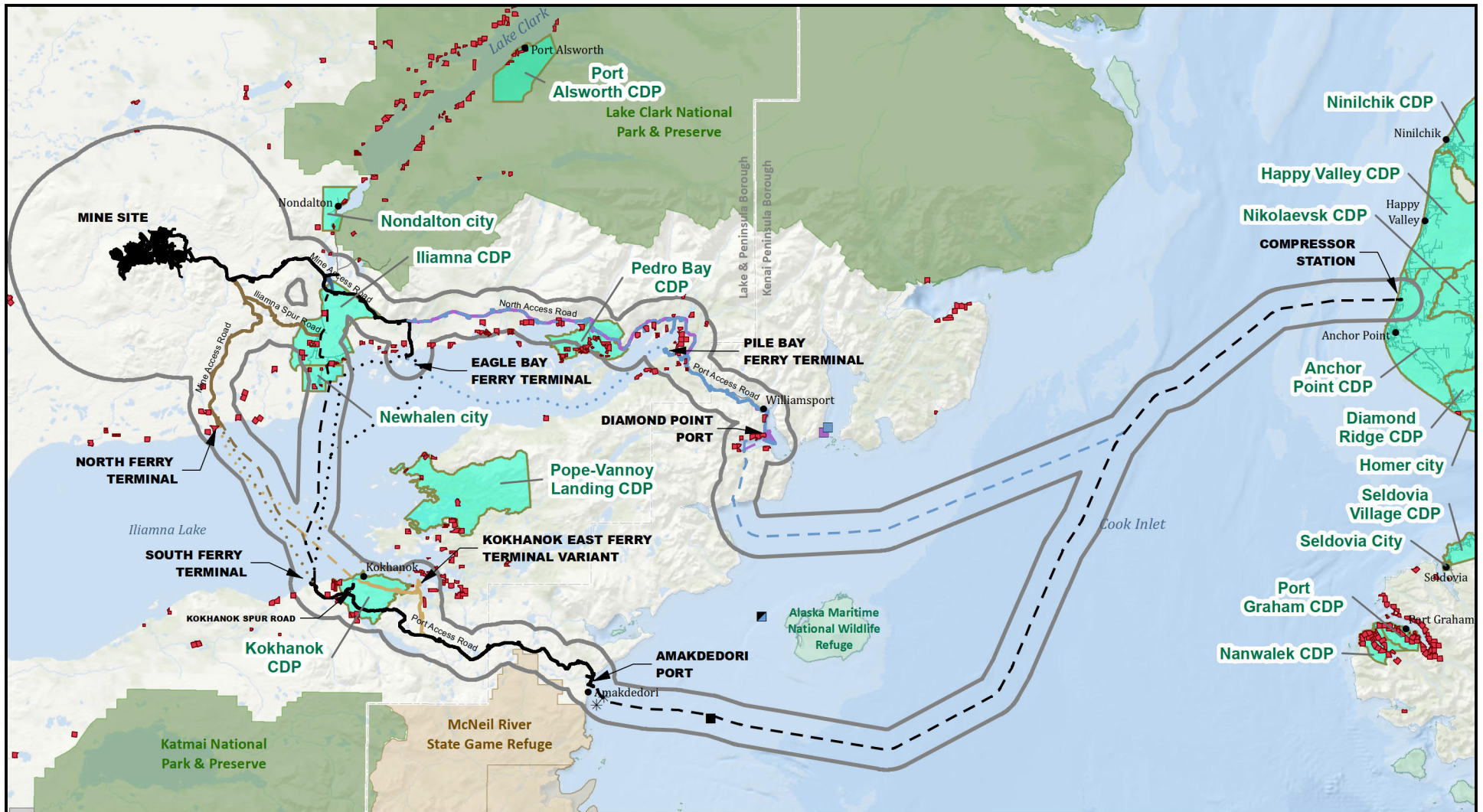
Pebble Project Component	Baseline Outdoor Ambient Sound Level (dBA)	Basis
Mine site includes all features in the mine site footprint: open pit, mill and ore processing, water treatment plants, water management ponds, bulk and pyritic tailings storage facilities, power plant, utilities, services and infrastructure, mine maintenance, and safety controls.	35 L _{dn}	Typical L _{dn} for Wilderness (EPA 1978), L _{dn} for Outdoor Locations

Notes:

dBA = A-weighted decibel

L_{dn} = day-night sound level, expressed as dBA

Source: EPA 1978



Sources: PLP 2020-RF1168; PLP 2019-RF1153;
USCB 2017, 2018a, b, c; USCB 2020;
BLM 2018;ADNR



US Army Corps
of Engineers®



5 0 5 10
Miles

Noise Analysis Areas (10-mi analysis
distance for Mine Site, 2-mi analysis
distance for Other Infrastructure)

Native Allotments
Census-Designated Place

Action Alternatives

Lightening Locations

Ferry Routes

Natural Gas Pipelines

Alternative 1a
Alternative 1
Alternative 1 Kokhanok East
Ferry Terminal Variant
Alternative 2
Alternative 2 Newhalen River
North Crossing Variant
Alternative 3

Other Features

Local Roads
Borough Boundary
State Game Refuge/Sanctuary
Wild and Scenic River
National Wildlife Refuge
National Park

PEBBLE PROJECT EIS

NOISE ANALYSIS AREAS

FIGURE 3.19-1

3.19.1.2 Transportation Corridor—Existing Sound

For the purpose of describing existing sound levels, facilities in the transportation corridor are grouped and summarized according to location and use as described below.

Mine Site to Eagle Bay Ferry Terminal—As with the mine site, most of the mine access road would be in a remote area with no development. No ambient sound data were collected in the vicinity of the mine access road to Eagle Bay. Existing land use in the vicinity of the mine access road to Eagle Bay corresponds with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

South Ferry Terminal—The vicinity of this Iliamna Lake shoreline area is undeveloped and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . The ferry terminal and natural gas pipeline corridor would be 2 miles from the Gibraltar River outlet into Iliamna Lake. This area may be exposed to seasonal transportation noise sources such as small boat traffic for sport fishing during the summer, and possibly snowmachines during winter. No such motorized boats or vehicles would be expected during the shoulder seasons of freeze-up and break-up in the vicinity. These occasional or sporadic noise sources are conservatively ignored in assuming the “wilderness ambient” existing sound level.

Kokhanok Spur Road—Most of this spur road route is undeveloped and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Baseline sound level measurements were not collected in this vicinity. At the northern terminus of the spur road are an airstrip and the community of Kokhanok. Kokhanok is a census-designated place with a population of 140 residents (USCB 2018c), which could be considered “wilderness ambient” (Table 3.19-1). Not counting noise from occasional aircraft taking off and landing from the existing airstrip (an active public airport with Federal Aviation Administration [FAA] identifier “9K2”), the indicated level of 35 dBA L_{dn} would be conservative.

Port Access Road—The port access road would traverse an undeveloped area between Iliamna Lake and Cook Inlet at Amakdedori port and is compatible with the outdoor ambient sound level for the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . No ambient sound data have been collected.

3.19.1.3 Amakdedori Port—Existing Sound

Baseline sound levels have not been measured at the Amakdedori port site. The vicinity of Amakdedori port is undeveloped and is compatible with outdoor ambient sound levels consistent with the “wilderness ambient” classification in Table 3.19-1, and baseline sound level of 35 dBA L_{dn} .

3.19.1.4 Natural Gas Pipeline Corridor—Existing Sound

For the purpose of describing existing sound levels, features along the natural gas pipeline corridor are grouped and summarized according to location, as described below.

Compressor Station near Anchor Point—The compressor station would be common to all alternatives. It is about 5 miles north of the town of Anchor Point and the 2-mile analysis distance from the compressor station partially includes the census-designated place, Anchor Point (USCB 2018a). The compressor station site is approximately 0.25 mile southeast of the Sterling Highway (Alaska Highway 1) near its intersection with Bourbon Avenue, where the pipeline would make landfall on the eastern side of Cook Inlet. Baseline sound levels were not measured in this vicinity. Using a Federal Transit Administration (FTA)-based estimation method that uses population density (21.2 people per square mile, based on US Census data) (USCB 2018a) as input, the baseline outdoor ambient sound level could be calculated as 35 dBA L_{dn} , a value comparable to

the “wilderness ambient” designation (Table 3.19-1). The Sterling Highway is a major two-lane road that parallels the coast with minimum posted speed limits of 50 miles per hour; it would be expected to raise outdoor ambient sound levels to a minimum of 50 dBA L_{dn} about 1,000 feet from the road (which includes the compressor station site) per FTA guidance.

Amakdedori Port to South Ferry Terminal—This section of the pipeline corridor parallels the port access road. This portion of the corridor shares the same area and existing outdoor ambient sound environment with the port access road and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

Iliamna Lake to Mine Access Road—This would be a pipeline-only overland (buried) section from the north shore of Iliamna Lake, east of Newhalen to the mine access road on the eastern side of the Newhalen River. This pipeline corridor would pass between Newhalen and Iliamna, and pass within 1 mile of the Iliamna Airport. Existing outdoor sound levels were measured at position “M2,” about 2 miles north of the Iliamna Airport, as reported by Michael Minor and Associates (2010a) (Table 3.19-3). From measured L_{eq} data collected during daytime, evening, and nighttime periods at M2, and additional baseline field survey positions representing a variety of land uses (residential areas, a school, and a medical clinic), baseline L_{dn} values were calculated for the communities of Iliamna and Newhalen.

Table 3.19-3: Calculated Baseline Day-Night Sound Levels at Representative Iliamna and Newhalen Community Land Uses

Measurement Location (and Summary Description)	Summer Season L_{dn} (dBA)	Winter Season L_{dn} (dBA)
M2 —Central Newhalen River Road (north of Iliamna Airport at the northernmost occupied residence on the Newhalen River Road)	53	47
M3 —Iliamna Airport (near Iliamna Air Taxi terminal)	54	61
M4 —Post Office and Community Medical Clinic (intersection of Iliamna Village Road and Newhalen Road)	51	52
M5 —North Newhalen (residential area just off Newhalen Road)	47	42
M6 —Newhalen School (in front of the school near Newhalen Road)	56	63
M7 —Roadhouse Bed and Breakfast (and single-family residence on Iliamna Road)	47	42

Notes:

dBA = A-weighted decibel

L_{dn} = day-night sound level, expressed as dBA

Source: Michael Minor & Associates 2010a

Mine Access Road—The pipeline corridor would be along the mine access road and share the same area as the mine access road in a remote area with very little development; no ambient sound data were collected in the vicinity of the corridor. This portion of the pipeline corridor has an existing outdoor ambient sound environment that is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

3.19.1.5 Alternative 1a—Sensitive Receptors

There are no sensitive receptors within 10 miles of the mine site. The 2-mile distance used for analysis of other Alternative 1a components includes 36 Native Allotments (3,140 acres) and partially includes the Kokhanok, Iliamna, and Anchor Point census-designated places (USCB 2017, 2018a, 2018c) (Figure 3.19-1).

3.19.2 Alternative 1

3.19.2.1 Mine Site—Existing Sound

The mine site existing sound would be the same as for Alternative 1a.

3.19.2.2 Transportation Corridor—Existing Sound

For the purpose of describing existing sound levels, facilities in the transportation corridor are grouped and summarized according to location and use as described below.

Mine Access Road to North Ferry Terminal—The mine access road would be in a remote area with no development. No ambient sound data were collected in the vicinity of the mine access road. Existing sound levels correspond with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

Iliamna Spur Road—As with the mine access road, the spur road would be in a remote area with very little development. Aside from its southern terminus near Iliamna Airport, no ambient sound data were collected in the vicinity of the spur road; existing sound levels correspond with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Existing outdoor sound levels were measured at position “M2,” about 2 miles north of Iliamna Airport, as reported in Michael Minor & Associates (2010a) (Table 3.19-3). Baseline L_{dn} values were calculated for the communities of Iliamna and Newhalen using measured L_{eq} data collected during daytime, evening, and nighttime periods at M2, as well as additional baseline field survey positions representing a variety of land uses (residential areas, a school, and a medical clinic).

Kokhanok Spur Road—Baseline sound would be the same as for Alternative 1a.

North Ferry Terminal—This area, in the vicinity of the Iliamna Lake shoreline, is undeveloped and compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Baseline sound level measurements were not conducted in this vicinity. The north ferry terminal and natural gas pipeline corridor would be within 1 mile of the Upper Talarik Creek outlet into Iliamna Lake. This area may be exposed to seasonal transportation noise sources, such as small boat traffic for sport fishing during the summer, and possibly snowmachines during winter. No motorized boats or vehicles would be expected in the area during the shoulder seasons of freeze-up and break-up. These occasional or sporadic noise sources are conservatively ignored in assuming the “wilderness ambient” existing sound level.

3.19.2.3 Amakdedori Port—Existing Sound

Baseline sound would be the same as for Alternative 1a.

3.19.2.4 Natural Gas Pipeline Corridor—Existing Sound

Compressor Station near Anchor Point—Baseline sound at the compressor station at Anchor Point would be the same as for Alternative 1a.

Mine Site to Amakdedori Port—This section of the pipeline corridor parallels the mine access road, north and south ferry terminals, port access road, and Amakdedori port site. This portion of the corridor shares the same area and existing outdoor ambient sound environment with these project components and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

3.19.2.5 Alternative 1—Sensitive Receptors

There are no sensitive receptors within 10 miles of the mine site. The 2-mile distance used for analysis of other Alternative 1 components includes 22 Native Allotments (2,755 acres) and partially includes the Kokhanok, Iliamna, and Anchor Point census-designated places (USCB 2017, 2018a, 2018c) (Figure 3.19-1).

3.19.2.6 Alternative 1—Summer-Only Ferry Operations Variant

Baseline sound conditions and potential NSRs under this variant would be the same as those described for Alternative 1.

3.19.2.7 Alternative 1—Kokhanok East Ferry Terminal Variant

Existing Sound

The Kokhanok east ferry terminal site would be about 6.5 miles east of the south ferry terminal site described for Alternative 1a and Alternative 1 (see Chapter 2, Alternatives). Section 3.9, Subsistence, describes conditions and activity in the vicinity of the Kokhanok east ferry terminal that may contribute to background sound, including seasonal use of boats, snowmachines, and all-terrain-vehicles. Except for sounds associated with these sources, the outdoor ambient sound level would be the same baseline sound level of 35 dBA L_{dn} .

Sensitive Receptors with Variant

Evaluated data sets used to identify potential NSRs are described in AECOM 2018c. The 2-mile analysis distance for this variant includes 22 Native Allotments (2,555 acres) and partially includes the Kokhanok and Anchor Point census-designated places (USCB 2018a, c).

3.19.2.8 Alternative 1—Pile-Supported Dock Variant

Existing sound conditions and potential NSRs would be the same as those described for Alternative 1.

3.19.3 Alternative 2—North Road and Ferry with Downstream Dams

3.19.3.1 Mine Site—Existing Sound

Existing sound conditions and potential NSRs would be the same as those described for Alternative 1a.

3.19.3.2 Transportation Corridor—Existing Sound

For the purpose of describing existing sound levels, facilities in the transportation corridor are grouped and summarized according to location as described below.

Mine Access Road to Eagle Bay—Baseline sound in the road corridor from the mine site to Eagle Bay would be the same as for Alternative 1a.

Eagle Bay Ferry and Pile Bay Ferry Terminals—No ambient sound data were collected in these areas. These Iliamna Lake shoreline areas are generally undeveloped and would be compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

Port Access Road—No ambient sound data were collected in this area, which has little development. The road would connect the Pile Bay ferry terminal to the Diamond Point port,

bypassing all but 5 miles of the existing Williamsport-Pile Bay Road. The existing road is primarily used by large tractor-trailer rigs in the summer season to haul boats and other bulky freight between Iliamna Lake and Cook Inlet. Other than the existing road segment, there is little development, and the baseline outdoor ambient sound level is “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Infrequent truck traffic on the existing Williamsport-Pile Bay Road would temporarily raise the outdoor ambient sound level near the route.

3.19.3.3 Diamond Point Port—Existing Sound

Based on site observations (AECOM 2018h), development in the vicinity of the Diamond Point port is associated with a gravel and rock quarry. According to Special Condition #6 on the US Army Corps of Engineers (USACE) permit (POA-2008-523) (USACE 2012), seasonal activities are permitted from May 1 to October 31 each year. Depending on the progress of tideland fill and the corresponding pace of gravel and rock material production, noise-producing activities could include dredging, pile-driving, rock blasting, distribution of materials, and the operation of equipment, consistent with the description in POA-2008-523. Material extracted from the quarry would be transported via marine route. There would be no quarry-associated vehicle traffic contributing to baseline noise conditions on the port access road (see above under port access road). One or more of these noise-producing sources would temporarily elevate outdoor ambient sound levels to a degree that would depend largely on the distance between the receptor location and the source of the noise-producing activity or event.

Outside of this permitted site development activity, little or no noise-producing activities occur at the Diamond Point port site. This suggests that outdoor ambient sound levels would reflect naturally occurring acoustical contributors and be more consistent with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Depending on proximity to the Cook Inlet shoreline and the magnitude of winds and wave activity, localized sound levels may be higher. Baseline sound levels have not been measured at this location.

3.19.3.4 Natural Gas Pipeline Corridor—Existing Sound

Existing sound conditions are addressed by location along the natural gas pipeline corridor as described below.

Compressor Station near Anchor Point—Baseline sound conditions in the vicinity of the compressor station would be the same as those described for Alternative 1a.

Mine Site to Diamond Point Port—This overland section of the pipeline corridor would parallel the north route mine access road (see Chapter 2, Alternatives). Existing outdoor baseline sound levels are compatible with the “wilderness” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

Ursus Cove to Diamond Point Port—The pipeline would be buried onshore between Ursus Cove and Cottonwood Cove, installed in the seabed across Cottonwood Cove via trenching methods (see Chapter 2, Alternatives), and connect to the onshore portion at the Diamond Point port. The area represented by this pipeline section is undeveloped and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} .

3.19.3.5 Alternative 2—Sensitive Receptors

Evaluated data sets used to identify potential NSRs are described in AECOM 2018c. The 2-mile analysis distance includes 76 Native Allotments (6,053 acres), and passes through a portion of

Iliamna, Pedro Bay, and Anchor Point census-designated places (USCB 2017, 2018a, USCB 2020).

3.19.3.6 Alternative 2—Summer-Only Ferry Operations Variant

Existing sound conditions and potential NSRs would be the same as those described for Alternative 2.

3.19.3.7 Alternative 2—Pile-Supported Dock Variant

Existing sound conditions and potential NSRs would be the same as those described for Alternative 2

3.19.3.8 Alternative 2—Newhalen River North Crossing Variant

Existing sound conditions and potential NSRs would be the same as those described for Alternative 2.

3.19.4 Alternative 3—North Road Only

3.19.4.1 Mine Site—Existing Sound

Existing sound conditions and potential NSRs would be the same as those described for Alternative 1a.

3.19.4.2 Transportation Corridor—Existing Sound

For the purpose of describing existing sound levels, facilities in the transportation corridor are grouped and summarized according to location as described below.

Mine Access Road—Most of the mine access road is remote, with no development. Along the undeveloped portion of the overland transportation route, the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . Pedro Bay is a village along the north route, where existing outdoor sound levels were measured at positions M10, M11, and M12 (Michael Minor & Associates 2010a). From measured L_{eq} data collected during daytime, evening, and nighttime periods at these three positions, calculated baseline L_{dn} values for the Pedro Bay community are shown in Table 3.19-4.

Table 3.19-4: Calculated Baseline Day-Night Sound Levels at Representative Pedro Bay Community Land Uses

Measurement Location (and Summary Description)	Summer Season L_{dn} (dBA)	Winter Season L_{dn} (dBA)
M10 —Pedro Bay on Iliamna Lake (along the shoreline next to several cabins used for fishing trips and where several floatplanes were moored)	48	42
M11 —Pedro Bay Tribal Center (behind Tribal Center, up the hill)	48	40
M12 —Pedro Bay School (on school grounds near the main school entrance; additional readings taken behind school at power plant)	44	44

Notes:

dBA = A-weighted decibel

L_{dn} = day-night sound level, expressed as dBA

Source: Michael Minor & Associates 2010a

3.19.4.3 Diamond Point Port—Existing Sound

Existing sound conditions and potential NSRs would be the same as described for Alternative 2.

3.19.4.4 Natural Gas Pipeline Corridor—Existing Sound

For the purpose of describing existing sound levels, features along the natural gas pipeline corridor are grouped and summarized according to location as described below.

Anchor Point—Baseline sound would be the same as that described for Alternative 1a.

Mine Site to Diamond Point Port—This section of the pipeline would parallel the mine access road and north access pipeline corridor as described for Alternative 2; would share the same area and existing outdoor ambient sound environment with the mine access road, and is compatible with the “wilderness ambient” classification in Table 3.19-1, with a baseline sound level of 35 dBA L_{dn} . There may be localized higher L_{dn} values in the vicinity of Pedro Bay (Table 3.19-4).

Ursus Cove to Diamond Point Port—Baseline sound would be the same as that described for Alternative 2.

3.19.4.5 Alternative 3—Sensitive Receptors

Evaluated data sets used to identify potential NSRs are described in AECOM 2018c. There are no sensitive receptors within 10 miles of the mine site. The 2-mile analysis zone of all other Alternative 3 project components includes 71 Native Allotments (5,702 acres), and partially includes the Iliamna, Pedro Bay, and Anchor Point census-designated places (USCB 2017, 2018a, 2020).

3.19.4.6 Alternative 3—Concentrate Pipeline Variant

Under this variant, baseline sound conditions and identified NSRs would be the same as described above for the natural gas pipeline corridor for Alternative 3.

3.19.5 Comparison of Sensitive Receptors by Alternative

Table 3.19-5 provides a comparative summary of the analysis area for each alternative and variant within a 10-mile analysis distance of the mine site, and a 2-mile analysis distance for all other project components (Figure 3.19-1). The analysis distance would encompass the conservative area in which noise impacts could potentially occur, as described in Section 4.19, Noise. Table 3.19-5 lists the number and acreage of Native Allotments associated with each alternative and variant, as well as their proximity to census-designated places.

Table 3.19-5: Comparison of Potential Noise-Sensitive Receptors by Alternative

Alternative and Variant	Analysis Area ¹	Native Allotments		Proximity to Census Designated Places ¹			
	Acres	Count	Acres	Iliamna	Kokhanok	Pedro Bay	Anchor Point
Alternative 1a	849,953	36	3,140	Yes	Yes	No	Yes
Alternative 1 (Main)	806,073	22	2,755	Yes	Yes	No	Yes
Alternative 1—Kokhanok East Ferry Terminal Variant	801,615	22	2,555	Yes	Yes	No	Yes
Alternative 1—Summer-Only Ferry Operations Variant	806,069	22	2,755	Yes	Yes	No	Yes
Alternative 1—Pile-Supported Dock Variant	806,068	22	2,755	Yes	Yes	No	Yes
Alternative 2 (Main)	757,370	76	6,053	Yes	No	Yes	Yes
Alternative 2 Newhalen River North Crossing Variant	756,586	76	6,053	Yes	No	Yes	Yes
Alternative 2 Summer-Only Ferry Operations Variant	757,369	76	6,053	Yes	No	Yes	Yes
Alternative 2—Pile-Supported Dock Variant	757,373	76	6,053	Yes	No	Yes	Yes
Alternative 3 (Main)	744,708	71	5,702	Yes	No	Yes	Yes
Alternative 3—Concentrate Pipeline Variant	744,708	71	5,702	Yes	No	Yes	Yes

Note:

¹10-mile analysis distance from mine site and 2-mile analysis distance for other components

Source: PLP 2018d; USCB 2017, 2018a, 2018c, 2020