

Pebble Project

Environmental Baseline Studies Agency Meetings

Noise, Transportation, and Power



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Pebble Project EBD

Introduction/Discussion Topics

- Objectives
- Program Overview
- Methodology and QA/QC – Noise, Transportation, and Power
- Cook Inlet and Mine Study Areas
- Transportation Corridor Discussion
- Questions and Answers

Objectives

- Noise - Characterize existing background noise for Cook Inlet, Mine, and Transportation Study Areas
- Transportation – Identify existing transportation modes and corridors associated with the Study Areas
- Power – Summarize existing power generation and transmission systems in Southwest Alaska in the respective Study Areas



Program Overview

Subject: Cook Inlet (Port), Mine, Transportation Study Areas

- **Noise – Background Studied During 2006 to 2008 by Michael Minor & Associates**
 - Types - based on Area Demographics
 - Magnitudes - based Experience/Measurements
- **Transportation – Background Studied During 2006 to 2008 by Kevin Waring & Associates**
 - Air, Water, and Overland Modes Considered
 - Analysis of Previous Studies and Interviews
- **Power – Background Studied During 2006 to 2008 by Kevin Waring & Associates**
 - Focus on Electric Power Generation, Petroleum Sources
 - Analysis of Previous Studies, Interviews, Reviews of Maps, Land Records, and Public Agency Data

Program Overview (Cont'd)

- **Noise, Transportation, and Power Systems Baseline Definition for Future Study Use**
 - 2008 Studies Characterized Background
- **Cook Inlet and Mine Study Areas Remote, with Limited Local Occupancy**
 - Mine Study Area access currently limited
 - Cook Inlet Study Area access by water only
 - Low continuous background noise typical
 - No regional power generation or transmission systems (only remote generation, such as Iliamna/Newhalen area served by Tazimina hydro)

Methodology and QA/QC – Noise, Transportation, and Power

- PLP consultants documented background conditions
- Definition of background utilized both desktop and field inspections, with observations documented
- Neither the Cook Inlet or Mine Study Areas located near any development; land routes in Transportation Study Area travels through sparse populations; 2004 SW Alaska Transportation Plan recommends upgrade of existing road from Williamsport to Pile Bay (integrated)
- Limited QA/QC necessary as background mostly qualitative and used industry standards and public documents

Cook Inlet/Mine Study Areas

- Night and daytime noise levels in both Areas currently low and dominated by occasional boat and plane/helicopter traffic, principally during daytime
- Boat traffic in Cook Inlet Study Area limited due to a lack of development along west side of Cook Inlet; access to Mine Study Area limited (extension of existing road from Williamsport to Iliamna possible)
- No energy sources exist in Study Areas, although natural gas reserves have been identified under Cook Inlet; regional power needs in/between Study Areas low

Study Area Noise Data – 2008 EBD

- Sound pressure levels measured in Decibel A-scale (dBA) and converted to equivalent sound pressure level over longer time periods (L_{eq})

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (human judgment of different sound levels)
Jet aircraft takeoff from carrier (50 feet)	140	Threshold of pain	64 times as loud
50-horse power siren (100 feet)	130		32 times as loud
Loud rock concert near stage, Jet takeoff (200 feet)	120	Uncomfortably loud	16 times as loud
Float plane takeoff (100 feet)	110		8 times as loud
Jet takeoff (2,000 feet)	100	Very loud	4 times as loud
Heavy truck or motorcycle (25 feet)	90		2 times as loud
Garbage disposal (2 feet) Pneumatic drill (50 feet)	80	Moderately loud	Reference loudness
Vacuum cleaner (10 feet), Passenger car at 65 mph (25 feet)	70		1/2 as loud
Typical office environment	60		1/4 as loud
Light auto traffic (100 feet)	50	Quiet	1/8 as loud
Bedroom or quiet living room Bird calls	40		1/16 as loud
Quiet library, soft whisper (15 feet)	30	Very quiet	
High quality recording studio	20		
Acoustic Test Chamber	10	Just audible	
	0	Threshold of hearing	

Sources: Beranek (1988) and U.S. EPA (1971).

Study Area Noise – 2008 EBD (Cont'd)

- Mine Study Area – data collected in communities of Iliamna, Newhalen, Pedro Bay, Nondalton (all rural)
 - Daily pressure level range: < 30 dBA to 63 dBA L_{eq}
 - Maximum short-term level: 100 dBA (aircraft flyovers)
- Cook Inlet Study Area – data collected for Williamsport and Iliamna and Iniskin Bays (land side and all rural)
 - Summer pressure level range: < 30 dBA to 63 dBA L_{eq}
 - Winter pressure level range: 28 to 32 dBA L_{eq}
 - Maximum short-term level: 90 dBA (haul road trucks)

Study Area - Power/Energy Baseline

- 2008 EBDs identified following:
 - Cook Inlet Study Area: no energy systems exist
 - Mine Study Area: 8 local communities in/near Study Area (Iliamna Lake/Lake Clark); 2009 Pop.: 918; 2009 Diesel: \$5.54/gal; 2008 Elect.: \$0.21/kWh
 - Communities dependent on petroleum fuels for heating/power aside from Tazimina hydro; no regional energy systems present; 2009 generating capacity: 4,009 kW; over 50% diesel
 - Small populations and lack of industry prohibit economies of scale and volume discounts; exposed to petroleum cost swings

Power/Energy Baseline (cont'd)

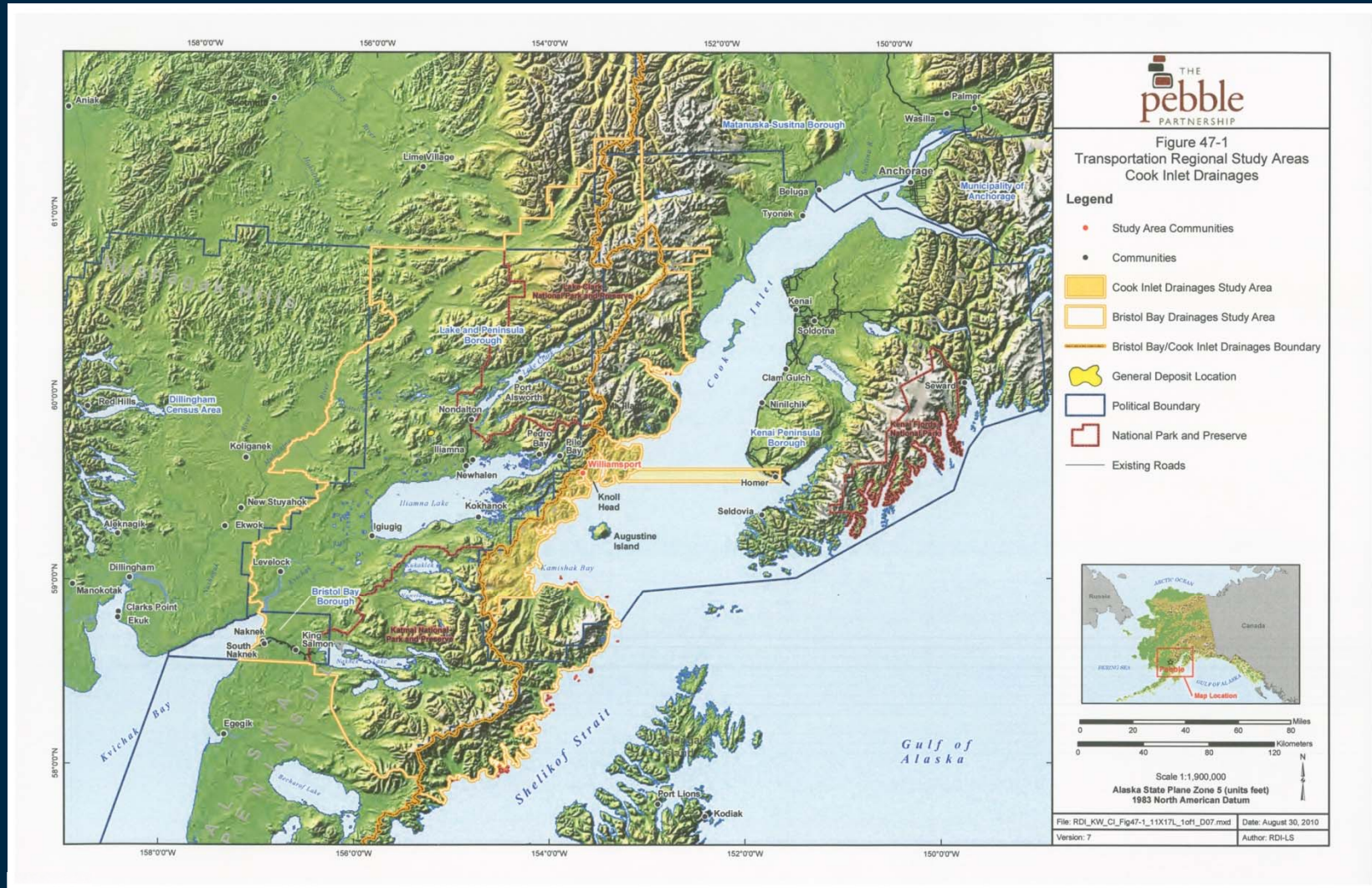
- 2010 RIRP Study* - no plans for power/energy development in Study Areas; closest generation and transmission is Beluga; concerns for elevated costs for electricity; focus on Kenai/Anchorage/Fairbanks corridor
- 2010 AEA “Alaska Energy Pathway” and 2011 AEA/REAP “Renewable Energy Atlas” both identify viable local renewable resources
- Regional Power/Energy Systems:
 - Cook Inlet Study Area: Gas-Based Generation and Storage exists on Kenai Peninsula (closest source)

* 2010 Alaska Railbelt Regional Integrated Resource Plan (RIRP) Study, B&V

Power/Energy Baseline (cont'd)

- Mine Study Area: Power systems limited to small hydro (Tazimina) and diesel systems in small villages at Lake Iliamna; no grid systems or interconnection to neighboring communities
- Energy sources for base load power generation limited, with natural gas opportunities in Cook Inlet area being explored by other interests
- Distance from existing transmission grid (Beluga, Homer) to Study Areas very long; routes exposed to natural environment/terrain thus reducing reliability

Transportation Regional Study Areas



State of Alaska Industrial Road Options - 2007



Figure 19-10, Alternative Port Sites and Road Corridors, Iliamna Regional Transportation Corridor Analysis (PND et al., 2007).

Transportation Study Areas

- Region: small, remote, inland settlements, limited and circuitous water access, and rugged and environmentally sensitive terrain
- Roadway could enable ground transportation from CI to Mine Study Area; upgrade of existing Pile Bay road cited in 2004 SW Alaska Transportation Plan
- Baseline study considered various sustainable roadway routes to Mine Study Area (State-proposed routes)
- Several locations in Cook Inlet Study Area can support berthing of boats; State Industrial Roads Program evaluating deepwater port near Williamsport and roadway to Mine Study Area (Pile Bay)

Questions & Answers?

Cook Inlet, Mine, Transportation Study Areas

- Noise Baseline
- Power/Energy Baseline
- Transportation Baseline