PEBBLE PROJECT
ENVIRONMENTAL BASELINE DOCUMENT
2004 through 2008

CHAPTER 37.
NOISE
Cook Inlet Drainages

PREPARED BY:
MICHAEL MINOR & ASSOCIATES, INC.

TABLE OF CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

dBA	A-weighted decibel
L_{eq}	energy averaged equivalent sound level
L_{max}	maximum sound level over preset measurement period

37. NOISE

37.1 Introduction

Sound is a fundamental component of daily life and the most universal method of communicating with other people. When sounds are perceived as desired, beneficial, or otherwise pleasing, they are typically considered as having a positive effect on daily life. When sound is perceived as unpleasant, unwanted, or disturbingly loud, it is considered noise.

The purpose of this chapter is to describe predicted noise levels for the Pebble Project study area in the Cook Inlet drainages. This has been accomplished by using measured data from similar areas in Alaska. A general explanation of noise and noise-level descriptors is provided in Chapter 12.

37.2 Study Objectives

The objective of the noise study is to characterize the type and magnitude of existing noise sources in the study area.

37.3 Study Area

The study area includes Williamsport, and Iliamna and Iniskin bays (Figure 37-1).

37.4 Previous Studies

No previous noise studies were available at the time of this report.

37.5 Scope of Work

The project scope is intended to meet the requirements of the guidelines from the U.S. Environmental Protection Agency and the U.S. Bureau of Mines for preparation of an affected-environment noise analysis. The purpose of this phase of the analysis is to characterize the existing environment.

37.6 Methods

This study area's noise environment was characterized using measured noise levels from other similar areas in Alaska. The methods used were standard literature-research techniques and personal experience. For a description of standard acoustical measurement methods, see Section 12.6 in Chapter 12. For a summary of typical noise sources and the associated typical human response, see Figure 12-2 in that chapter.

All noise levels presented in this chapter are stated as sound pressure levels, in terms of decibels on the A-scale (dBA). The A-scale is used in most ordinances and standards including the applicable standards selected for this project. To account for the time-varying nature of noise, several noise metrics are useful.

The equivalent sound pressure level (L_{eq}) is defined as the average noise level, on an energy basis, for a stated time period (for example, hourly). Another commonly used noise descriptor is L_{max}, which indicates the greatest root-mean square sound levels, in dBA, measured during a specified measurement period.

37.7 Results and Discussion

This section provides a summary of land use in the study area and measured noise levels from other similar areas in Alaska.

37.7.1 Study Area Land Use

Land near Williamsport, and Iliamna and Iniskin bays is virtually all undeveloped. There is a single residential/commercial use area that is occupied at Williamsport during summer. During winter, there are no residents in the study area.

The summertime residents operate a boat-hauling service, moving vessels back and forth between Cook Inlet and Iliamna Lake. The operation requires use of a large tractor-trailer powered by a diesel engine.

37.7.2 Noise-monitoring Results

Ambient noise levels for the study area were predicted using the measured noise levels from two sites north of the Iliamna Airport along Newhalen River Road and from a site southeast of the community of Pedro Bay. In addition, the predictions relied on general experience and measured noise levels from other areas in central Alaska. Detailed information on those measured data is given in Chapter 12.

Overall noise levels in the area of Williamsport, and Iliamna and Iniskin bays are predicted to range from below 30 dBA L_{eq} to over 60 dBA L_{eq}.

Noise levels during summer are predicted to range from 36 to over 60 dBA L_{eq}, with the highest levels occurring during the transportation of vessels in both directions between Cook Inlet and Iliamna Lake. Typical maximum noise levels for a tractor-trailer range from 86 to 90 dBA L_{max} at 50 feet from the source of the noise. The haul vehicle is likely the major noise source in the area during summer. Other noise sources would include the loading and unloading of boats, general residential activity, occasional aircraft overflights, fishing boats, all-terrain vehicles, wind, and birds and other animals.

During winter, when no humans are in the area, typical noise levels are predicted to range from 28 to 32 dBA L_{eq}. Major noise sources during the winter would include wind and some additional noise from aircraft overflights and animals.

37.8 Summary

This study area's noise environment was characterized using measured noise levels from other similar areas in Alaska. Land near Williamsport, and Iliamna and Iniskin bays is virtually all undeveloped. There is a single residential/commercial use area that is occupied at Williamsport during summer. During winter, there are no residents in the study area.

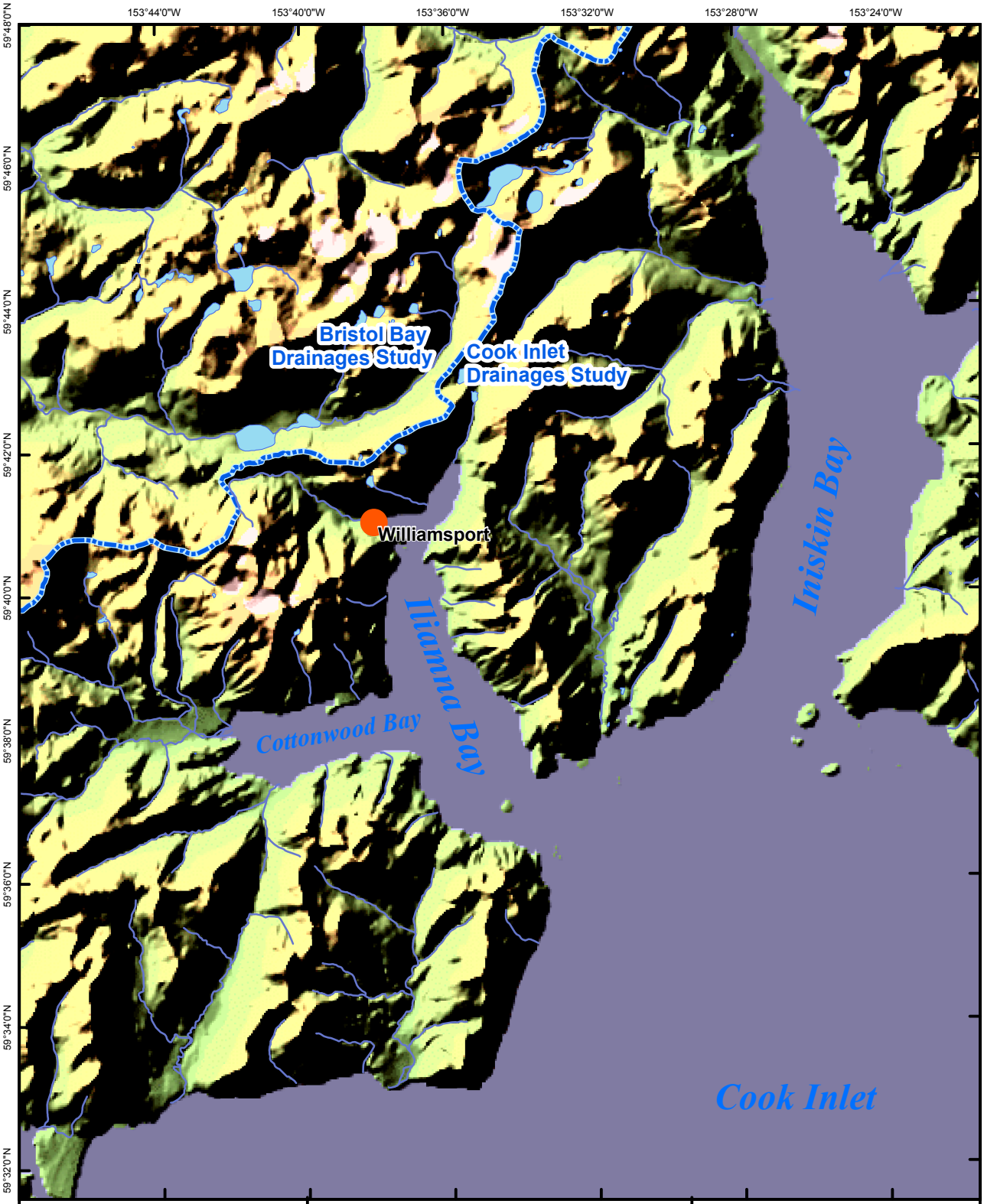
Ambient noise levels for the study area were predicted using general experience and measured noise levels from other areas in central Alaska, including two sites north of the Iliamna Airport and one site southeast of the community of Pedro Bay.

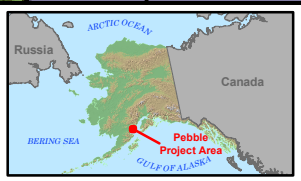
Overall noise levels in the area of Williamsport, and Iliamna and Iniskin bays are predicted to range from below 30 dBA L_{eq} to over 60 dBA L_{eq}.

Noise levels during summer are predicted to range from 36 to over 60 dBA L_{eq}, with the highest levels occurring during the transportation of vessels between Cook Inlet and Iliamna Lake. Typical maximum noise levels for a tractor-trailer range from 86 to 90 dBA L_{max} at 50 feet from the source of the noise. Summertime noise sources would include the tractor-trailer rig used for hauling boats, the loading and unloading of boats, general residential activity, occasional aircraft overflights, fishing boats, all-terrain vehicles, wind, and birds and other animals.

During winter, when no humans are in the area, typical noise levels are predicted to range from 28 to 32 dBA L_{eq}. Major noise sources during the winter would include wind and some additional noise from aircraft overflights and animals.

FIGURE





Miles
0 0.5 1 1.5
Kilometers
0 0.5 1 1.5 2
Scale 1:150,000
N

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

Legend

Bristol Bay/Cook Inlet Drainage Divide

Noise Study Location

THE pebble PARTNERSHIP

Figure 37-1
Noise Study Area
Cook Inlet Drainages

File: PLP_DR_Noise_37-1_11x17P_1of1_D01.mxd	Date: June 11, 2010
Version: 1	Author: PLP-JG