1 INTRODUCTION

This study examines the feasibility of relocating the Ralph Wien Memorial (Kotzebue) Airport, a regional hub that serves 10 communities in the Northwest Arctic Borough as well as Point Hope and the Red Dog Mine (Figure 1-1). The airport is the principal means of transporting people to these communities and the surrounding area, and plays a significant role in the transportation of mail and cargo as well as in exploration and tourism.

The airport is located adjacent to the city of Kotzebue on the Kotzebue spit, providing easy access by Kotzebue residents but also hindering airport and city expansion. Achieving operational efficiency and an acceptable level of safety at this very constrained site is challenging.

This study will examine potential relocation sites to determine the feasibility of development and impacts of the potential relocation. Relocating this airport is a serious consideration because transition to a new site would be extremely expensive. This is due in part to the very poor soil conditions in the area and the general lack of good material sources, as well as the cost associated with relocating or reconstructing the existing airport infrastructure. Any relocation effort will need to be backed up by a well-executed aviation master plan with the support of all stakeholders and the public.

This project provides a basis for an update to the Kotzebue Airport Master Plan and presents guidelines for future airport planning to meet aviation safety and capacity needs in a financially feasible manner. Further, the project identifies additional studies necessary to address environmental and socioeconomic (including development cost) issues existing with this regional airport and the Kotzebue community.

1.1 Methods

For the purpose of identifying potential airport relocation sites, the Baldwin Peninsula was divided into three general areas – Area 1, Area 2, and Area 3 – each corresponding to approximately one-third of the overall study area. The area designations were recommended by the Community Advisory Committee, who felt that it was too early in the relocation study process to identify specific sites and suggested evaluating broader areas to identify issues and benefits within those areas that could affect feasibility. Figure 1-2 shows the Kotzebue airport and the three areas examined.

The first step of the study was to identify the issues related to the existing airport facility and to airport relocation. The issues are summarized in Section 1.2. Some of the airport issues were known from the outset of the study, and others were determined through the office study and public involvement process.

The office study focused on research related to the existing airport and relocation areas. The topics of investigation included a community profile, a survey of the regional transportation plans, an inventory of the aviation facilities, a preliminary environmental investigation, and a land status/land use inventory.

A field reconnaissance was conducted in August 2006 for a preliminary assessment of field conditions at the airport and in the relocation areas. Over-flights of the Baldwin Peninsula confirmed that Areas 1, 2, and 3 each contained at least one possible airport relocation site. A preliminary soils investigation was conducted through observations of the surface features of the land.

Building on the information gathered in the office study, the aviation forecast and the facility requirements were developed. The aviation forecast identifies the historic and predicted fleet mix and air traffic. The facility requirements were determined based on the design aircraft and demand-capacity requirements, and Federal Aviation Administration (FAA) recommendations.

Alternatives that would meet the airport facility requirements were then developed. One alternative was based on significant expansion at the existing site, and three others were based on airport relocation to Areas 1, 2, or 3. Evaluation criteria were developed with the input of the community and applied to the alternatives to show each alternative's strengths and weaknesses. The three categories of evaluation criteria were safety, environmental impacts, and design quality.

Finally, the financial effects of relocating the airport were analyzed, and potential capital funding options were documented.

Throughout the entire process, community involvement was encouraged through public meetings, surveys, and newsletters. In particular, a Community Advisory Committee was formed to provide input to the project team.

1.2 Issues

Relevant issues were identified during this initial phase of the project. Methods used included discussions with the airport users and charter, freight, and air taxi providers; site inspections; and review of previous airport studies. Comments came primarily through personal telephone conversations, public and agency meetings, and responses to questionnaires (see Section 8 and Appendix F).

Three key issues emerged:

- The existing airport does not meet FAA standards; to bring it up to standards and accommodate future growth would involve community disruption and considerable expense.
- The proximity of the airport to the community is of great concern. The existing close proximity of the airport is convenient but limits community expansion opportunities and causes safety concerns. Relocation would cause inconvenience, expense, and safety concern (during poor weather) due to daily travel, but would open opportunities for community expansion by extending roads and utilities to currently undeveloped areas.
- Is the cost to relocate feasible? Cost evaluations need to consider development costs, maintenance and operation (M&O) costs, as well as the costs to the lease holders and the traveling public.

1.2.1 Issues Related to the Existing Facility

Safety and Security

Runway Safety Areas: The existing runways do not meet FAA safety standards: primarily the safety areas are inadequate in length and width. Expansion to meet the required dimensions involves fill into the lagoon, excavation of the hill on the end of Runway 26, and/or fill into the sound on the end of Runway 8. Any expansion to bring the airport into compliance with FAA standards would be expensive. FAA considers safety area compliance one of their biggest concerns statewide, but they have limited the funds they provide for safety area improvement projects.

Aircraft Parked in the Runway Object Free Area (ROFA): Runway 17-35 is used by general aviation (GA) aircraft. Forty parking spaces are located on the west side of the runway within the Runway Object Free Area (ROFA); setback to meet the standard distance of 500 feet is restricted by Isaac Lake. (The planned GA Apron Expansion project will remedy this problem.)

Limited Approach Capabilities: Terrain obstructions on Runway 26 and the inability to install approach lighting systems on Runway 8 limit the airport's approach capabilities. Removal of the obstructions would be costly and may impact a cemetery. Filling in the sound on the west end (Runway 8) is likely impracticable.

Wildlife Hazards: There are numerous birds around the airport, creating a potential hazard. Two main bird attractants are the community sewage lagoon, which is located adjacent to Runway 17-35, and drying fish at the fish camps along the spit west and south of Runway 17-35.

Airport Access and Security: Access to Runway 17-35, its associated aircraft parking, FAA facilities including the Flight Service Station's two hangars, and private properties including fish camps and a Native allotment involve crossing the end of Runway 8. A big concern is the potential for vehicle or pedestrian and aircraft collisions. Also, during Part 139 operations M&O is required to man the crossing to ensure security is maintained. This takes anywhere from three to five hours per day of additional manpower.

Terminal Area Security: During hunting season, the lease areas are congested with hunters carrying firearms. The city has presented written concern to the Alaska Department of Transportation and Public Facilities (DOT&PF) on this subject.

The Runway

Length: Until recent changes in FAA operating procedures, the existing 5,900-foot runway provided sufficient length for aircraft currently operating at Kotzebue. However, the runway will need to be lengthened to accommodate the changing fleet mix and the Safety Alert for Operators (SAFO) released in August 2006 entitled "Landing Performance Assessments at Time of Arrival (Turbojets)." The SAFO recommends that aircraft operators only land at runways that are at least 15 percent longer than the calculated stopping length under the current braking conditions (good, fair, or poor). FAA is in the process of changing the SAFO content from a recommendation to a rule. Implementing this rule will require a longer runway, additional maintenance, or reduced aircraft payloads. See Section 4.1.2, Runway Length, for further discussion.

Surfacing: There are abrupt and extreme differences in the foundation soil conditions beneath the existing airport. As differential settlement continues under the runway and apron, surface repairs are routinely required.

Community vs. Airport Expansion

The existing airport lease area is cramped; expansion would involve either expansion into the Kotzebue Lagoon and/or acquisition of developed properties to the north.

Likewise, the airport restricts community expansion on the spit. In order to keep the community from being segregated and to minimize the need for expensive utility expansion projects, the airport would have to move. As currently situated, the community is forced to become segregated by the lagoon as it expands. Recently a new subdivision was developed on the hillside east of the community and lots are being sold, but there are no plans under way to extend water, sewer, or electric utilities to the subdivision.

1.2.2 Issues Related to Airport Relocation

Access

The airport is used daily by a number of people, many of whom walk to the airport. Many Kotzebue residents do not have vehicles, and users from other communities would have to rely on taxi service or relatives.

Some residents said they believe it would be very difficult if not impossible to keep the road open during the winter; sometimes even getting to the existing airport is difficult.

Coordination with Other Projects

The community would like DOT&PF to consider other projects when looking at airport relocations. For example, if the airport were located along the route to Cape Blossom, the construction of a road to Cape Blossom (of which a study is about to begin) would reduce airport construction cost.

Costs

Soil conditions (high ice content soils) and the lack of construction materials make for high development costs as well as long-term maintenance costs.

Other Issues

One of the problems with the existing airport is related to jet service; can the jet operations be moved and the existing airport remain open for smaller commuter operations?

Fog sometimes prevents aircraft from landing in Kotzebue. The fog problems exist because of the airport's proximity to the water and lagoon. There is much less fog on the hill.

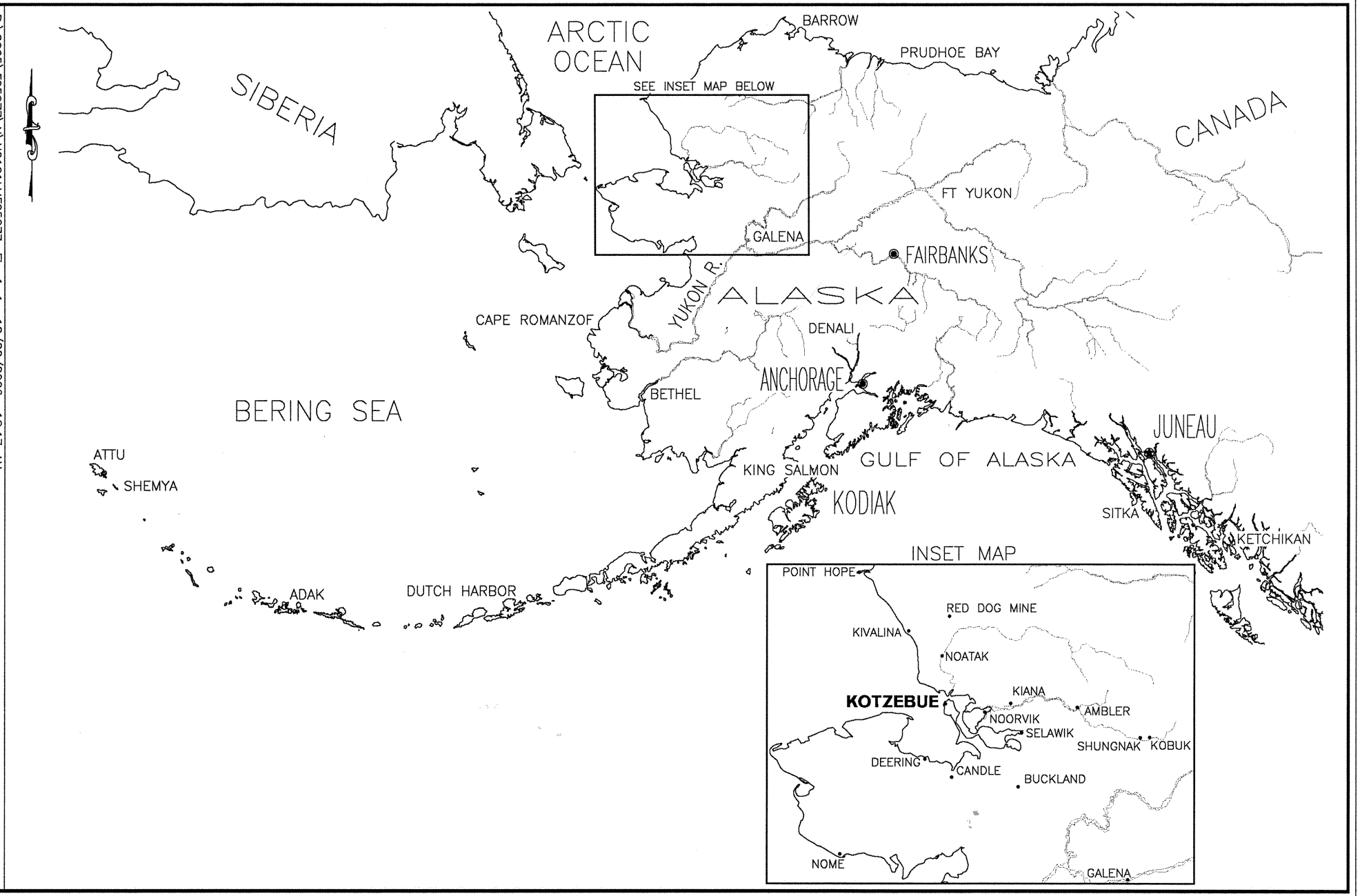

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FIGURE 1-1	NOV 2006 PROJ. No. F05077	DESIGN: RAA DRAWN: GDS CHECK: RLC	**KOTZEBUE AIRPORT RELOCATION FEASIBILITY STUDY** **ALASKA MAP WITH KOTZEBUE AREA INSET MAP** **KOTZEBUE, ALASKA**

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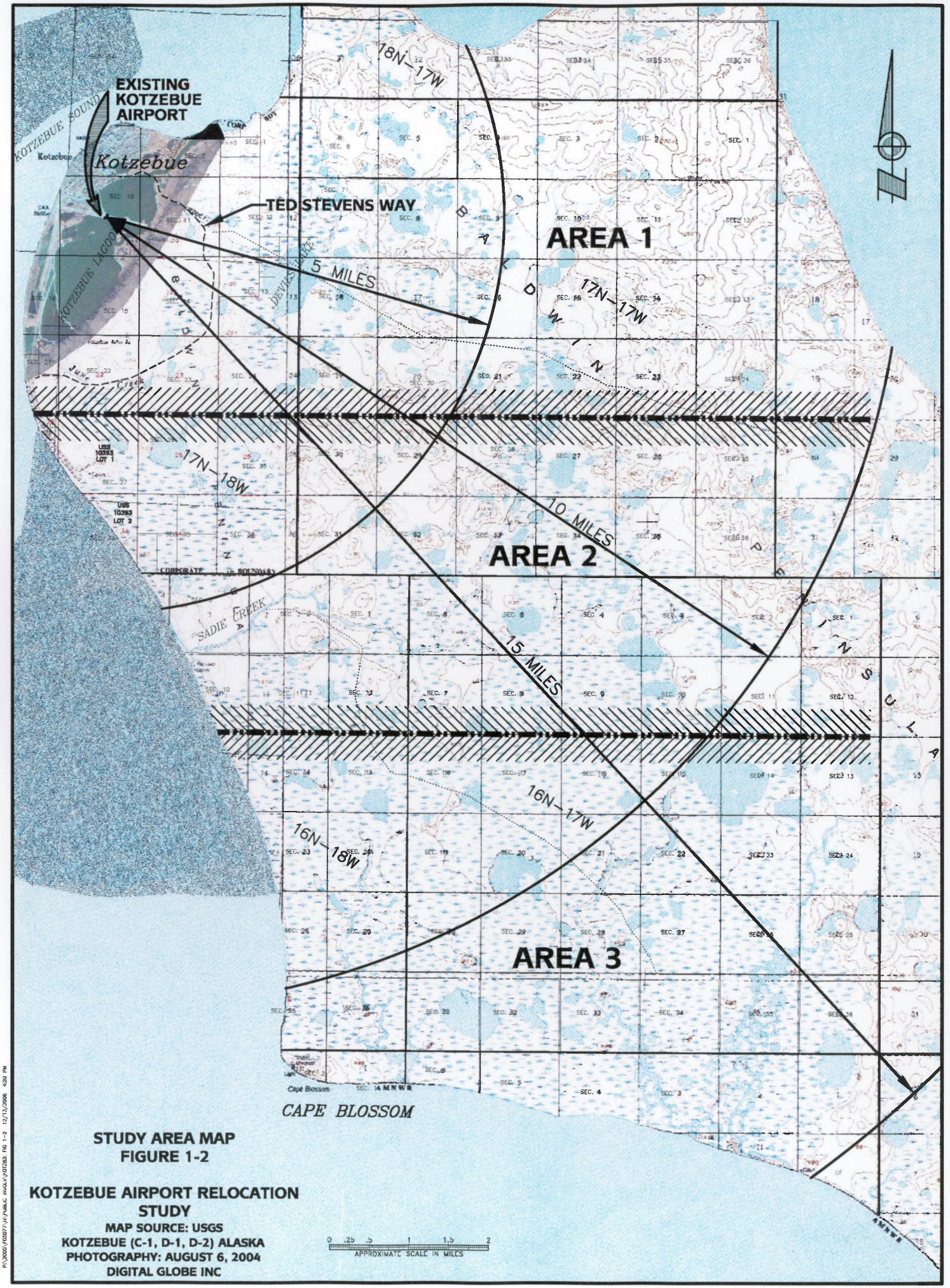

STUDY AREA MAP
FIGURE 1-2

KOTZEBUE AIRPORT RELOCATION STUDY

MAP SOURCE: USGS
KOTZEBUE (C-1, D-1, D-2) ALASKA
PHOTOGRAPHY: AUGUST 6, 2004
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