

## *Kotzebue Airport Feasibility Study*

### *Public Meeting #2 – January 2007*

- Project Refresher – What are we doing and why
- Present Findings of the Interim Report
- Prioritize Criteria for Evaluating Airport Siting



## Project Refresher

- **What:** Examine the feasibility of relocating the Kotzebue Airport. "Feasibility" in the context of this Study relates to the extent to which the relocation can be:
  - **economically justified**
  - **environmentally and socially acceptable**
  - **managed and financed (construction and operation)**
- **Why:**
  - *City of Kotzebue Comprehensive Plan* identified "Move Airport" as the 1<sup>st</sup> Goal.
  - The 1998 Airport Master Plan indicated the need to consider relocation as a means to meet long term needs



# What the team has done so far

- **Public Involvement**
- **Office Study**
- **Field Reconnaissance**

Findings of these efforts are documented in the Interim Report



 **Kotzebue Airport Relocation**  
*Feasibility Study*

 **Kotzebue Airport Relocation**  
*Feasibility Study*



**Interim Summary Report**

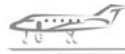
**December 2006**

**relocation**  
*Feasibility Study*

# Interim Report

Consists of the following sections

- **Issues Identification**
- Community Profile
- Land Status and Land Use Inventory
- Regional Transportation Facilities
- Aviation Facilities Inventory
- Geotechnical Review
- Environmental Conditions
- Airspace Conflicts
- Financial Data
- Population Forecast
- Public Involvement
- **Aviation Forecast**
- **Facility Requirements**
- **Identification of Airport Development Alternatives**



Kotzebue Airport Relocation  
Feasibility Study

# Issues Identification

Three key issues emerged:

- **The existing airport does not meet Federal Aviation Administration (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.



Kotzebue Airport Relocation  
Feasibility Study

# Issues Identification

## Related to the Existing Facility

### **Safety and Security**

- Runway Safety Areas
- Aircraft Parked in the
- Runway Object Free Area (ROFA)
- Limited Approach Capabilities
- Wildlife Hazards
- Airport Access and Security
- Terminal Area Security



### **The Runway**

- Length: Recent changes in FAA operating procedures, call for a up to 7,500-foot runway. This guidance could also be met through additional maintenance or reduced aircraft payloads.
- Surfacing

### **Community vs. Airport Expansion**

- The existing airport lease area is cramped;
- Likewise, the airport restricts community expansion on the spit.

# Issues Identification

## Related to Airport Relocation

### **Access**

- The airport is used daily by a number of people, many of whom walk to the airport.
- Some residents feel it would be very difficult if not impossible to keep the road open during the winter



### **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.

### **Coordination with Other Projects**

- Consider other projects when looking at airport relocations. A road to Cape Blossom, currently being studied, would cut some expense of a road to a new airport or deep water port.

### **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.



# **Aviation Forecast**

**Moderate Growth of 1.1% Annual Average**

	Year 2006	2011	2016	2026
Passenger Enplanements	58,198	61,470	64,926	72,432
Aircraft Operations	42,454	44,841	47,362	52,837
Cargo (pounds)	37,254,301	39,348,863	41,561,191	46,365,989
Based Aircraft	82	86	92	101

- Forecast based on historic population growth 1990 – 2005 (1.1% Annual Average) = Moderate Growth
- Low growth projection of 0.1% is based on historical enplanement counts resulting in Year 2026 enplanements of 59,373; Aircraft operations of 43,311; and Cargo of 38,006,508 pounds.
- High growth projection set at 1.4% representing the Northwest Arctic Borough population historic trend resulting in Year 2026 enplanements of 76,854; Aircraft operations of 56,063; and Cargo of 49,196,649 pounds.



**Kotzebue Airport Relocation**  
*Feasibility Study*

# **Facility Requirements**

- **Design Aircraft is the B737-200**

Predicted to continue to operate over the next 20 years and requires a longer runway length than the B272-100, 737-400 and the 737-700.

- **Runway Length**

6,500' minimum required with a desired length being 7,500'. Additional analysis is required to determine the optimal length depending upon M&O's ability to maintain the runway surface in fair-to-good braking range during poor weather and airlines reduction of payload capacity.

- **Runway Orientation**

The optimal runway orientation is between 101° and 107°; the existing runway is 102°. A cross wind runway is only needed for the GA aircraft.



**Kotzebue Airport Relocation**  
*Feasibility Study*

# Facility Requirements

- Taxiway Requirements

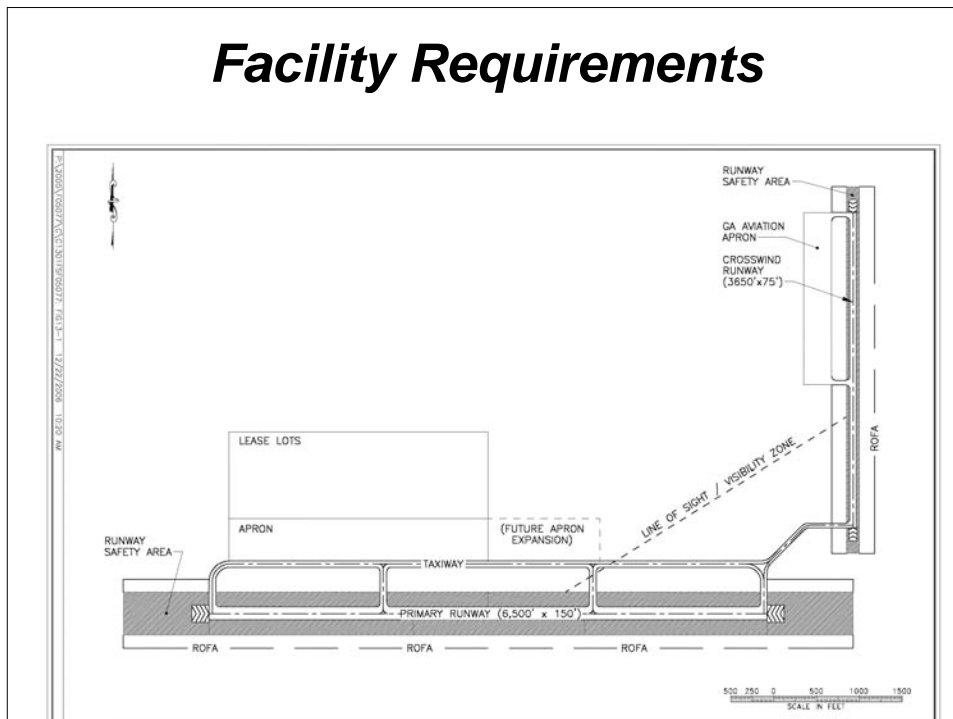
A full parallel taxiway is required for R/W 8-26 because it has a precision instrument approach. The taxiway would improve operational efficiency.

- Landside Facilities

In general the facilities planned for the existing airport will be sufficient. If the airport is relocated landside facilities should be of equivalent size however they should be configured to better separate air taxi, air carrier, cargo and GA operations.



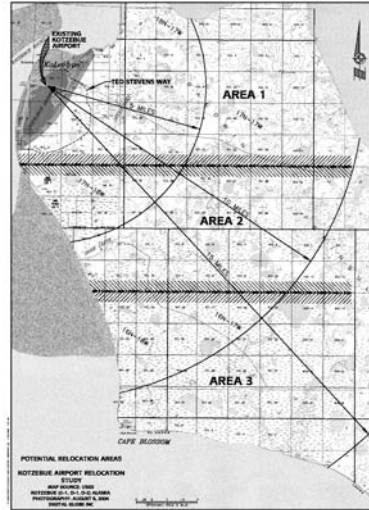
# Facility Requirements



# Development Alternatives

For purpose of determining feasibility the Baldwin Peninsula was divided into three general areas – Area 1, 2 and 3.

No specific site will be identified at this time, however the office and field reconnaissance study determined that within each area an airport facility could technically be developed.



 **Kotzebue Airport Relocation**  
Feasibility Study

## Here's What We Heard.....

- **AREA 1**
  - Over half the respondents liked Area 1
  - Others believe that it is too close to town's water supply
  - It would be noisy
  - Kotzebue would grow out to the airport again
- **Any Cultural/Historical Significance or Subsistence Activity in Area 1**
  - Subsistent picking of wild plants/berries
  - Nesting areas of migratory birds/animal habitats
  - Hunting
  - Kotzebue water source
  - Graveyard

 **Kotzebue Airport Relocation**  
Feasibility Study

## Here's What We Heard.....

- **Maintenance of Access Road for Area 1**
  - 20 respondents indicated the maintenance would be **low** because:
    - The short length of road
    - There is an existing road
    - It could be done with proper equipment
  - 14 respondents indicated that the maintenance would be **high** because:
    - The irregularities of the land
    - Winter maintenance needed to make the road safe, snow and ice free
    - Kotzebue area does not have a gravel pit nearby
    - Gas [to fuel vehicles] is expensive



## Here's What We Heard.....

- **AREA 2**
  - Over half the respondents believe Area 2 is too far
  - Others believe it is a reasonable distance from town
  - Less fog in this area
  - Better coastal access
  - Away from town's water supply
- **Any Cultural/Historical or Subsistence Impacts in Area 2**
  - Subsistent picking of wild plants/berries
  - Nesting areas of migratory birds/animal habitats
  - Caribou migration
  - Hunting
  - Increased noise may impact sea mammals and other wildlife



## Here's What We Heard.....

- **Maintenance of Access Road for Area 2**
  - 27 respondents indicated that the maintenance would be **high** because:
    - Cost of equipment and operators
    - Winter maintenance to make the road safe, snow and ice free
    - More road to maintain
    - It will become a high traffic area
  - 14 respondents indicated that the maintenance would be **moderate** because:
    - Coastal approach easier to maintain
    - 10 miles is still not too far from town
    - Cost of gravel—but cement costs more



## Here's What We Heard.....

- **AREA 3**
  - 75% of respondents said it was too far
  - Others believe distance would allow for town growth
  - The airport would be out of the fog
  - Noise and debris from the airport would be away from town
- **Any Cultural/Historical or Subsistence Impacts in Area 3**
  - Subsistent picking of wild plants/berries
  - Nesting areas of migratory birds/animal habitats
  - Caribou migration
  - Hunting
  - Old village sites in the area



## Here's What We Heard.....

- **Maintenance for Area 3**
  - 40 respondents indicated that the maintenance would be **high** because:
    - The land is irregular due to marsh and two hills
    - The road would move and subside
    - Winter maintenance to make the road safe, snow and ice free—there is no budget
    - Long distance/tough conditions
    - Long, long winter
    - Maintenance needs modern equipment
    - The cost of gravel



## Alternatives to be considered

- Expanding the existing Airport Facility
- Relocating the airport to a new site within areas 1, 2 or 3
- Relocating the aircarrier runway and service facilities and converting the existing airport to a commuter/GA facility.



## What's Next

- **Identify which components of the facility requirements are “essential” for evaluation of possible airport sites.**
- **Prioritize criteria to be used for evaluation of feasibility**
- **Complete the alternative evaluation and**
- **Financial/Funding Analysis**



## Essential Facilities

Key to initial determination of feasibility will be to determine which elements of the facility requirements are “essential”, so as not to overly complicate the analysis.

Public Input and consultation with FAA will help to identify the essential elements

Facility Requirement	Essential?
Runway Length = 6,500'	Yes
Runway Length = 7,500	Maybe?
Full R/W safety Area length	Conventional or EMS
Full R/W safety Area width	Maybe?
Full Parallel Taxiway	Maybe?
Landside facilities = Aircraft parking areas, Lease lots and access	Yes
Sewer and Water	Maybe
Other?	



## Evaluation Criteria

Evaluation of the feasibility of the airport alternatives will consider:

- Safety
- Engineering and
- Environmental conditions



## Safety Criteria

- **Distance from Landfill and Lagoon**

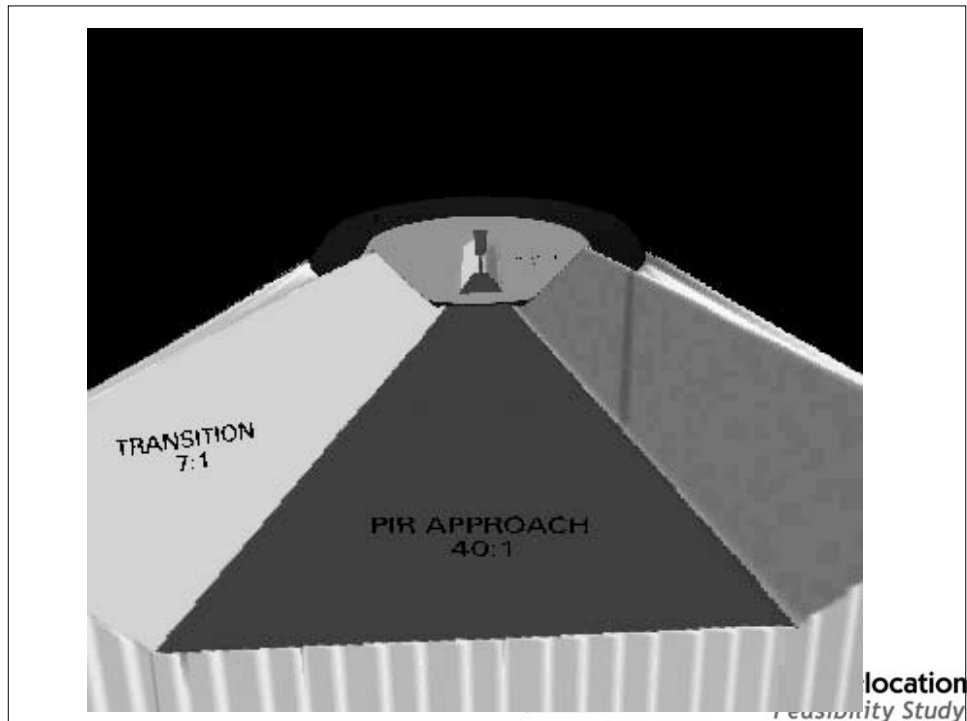
*Potential for bird and aircraft conflict farther the distance between the airport and bird attractant the Better. FAA requires a minimum of 10,000'.*

- **Airspace and Approach Capabilities (Terrain Limitations)**

*Makes a big difference for medevac and ability to land during poor weather condition and night operations, but not significant for day to day operations.*







## Safety Criteria

- **Distance from Landfill and Lagoon**  
*Farther=Better FAA requires 10,000'*
- **Approach Capabilities (Terrain Limitations)**  
*Big difference for medevac, no significant difference for day to day activity*
- **Wind Coverage and other Meteorological Conditions**  
*Affects day to day operations  
Higher % wind coverage = Better - FAA requires at least 95%  
Less fog is also better*
- **Obstructions**  
*(such as parked aircraft too close to the runway, road at end of runway properties)*
- **Security**  
*Ability to fence and secure the airport from unwanted activities/individuals*

# Engineering Criteria

- **Development Costs**
  - Availability of construction materials
  - Surface and Subsurface conditions
  - Distance from the community – Extending Utility services, and access road constructions.
- **Maintenance and Operations Costs**
  - Generally the same issues as above
- **Geology/Long Term Stability**
- **Future Expansion Possibilities**



# Environmental Impact Criteria

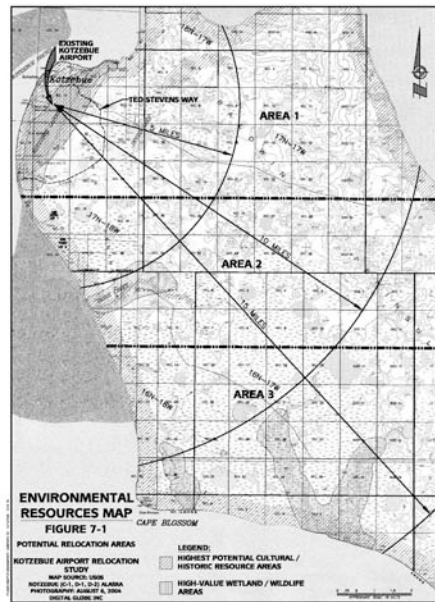
## **Convenience of Access/Proximity to Community**

- Travel costs for passengers/residents
- Development and Maintenance and Operations costs
- Is Maintenance viable?
- Opens access to additional lands
- Other considerations?



# Environmental Impact Criteria

- Cultural resources
- Subsistence Lands
- Wetlands
- Fish and Wildlife Habitat



 **Kotzebue Airport Relocation**  
Feasibility Study

# Environmental Impacts to Land Acquisition

- Land Ownership: Village, Corporation, Native allotments



 **Kotzebue Airport Relocation**  
Feasibility Study

# Evaluation Criteria

We asked the Citizen Advisory Committee help weight the categories.

Out of 100 points the following was established:

Safety = xx points  
Good Engineering = xx points  
Environmental Impacts = xx points

What are your thoughts? Which is most important to you?

Next we will consult with FAA to gain their input. The final weights will be a combination of the input we received the CAC, you, and the FAA.



# Financial Analysis

- Study of the financial burdens and enhancements anticipated with relocation
- Assess costs to airport related businesses  
(Will include a survey of local businesses to determine which are "airport related" and how they would be affected)
- Investigate the potential for re-use of the existing airport by ADOT for revenue generation and/or disposal of airport. Will disposal be able to offset some of the costs of relocation?
- Identify capital funding options
- Consider Ways to stage relocation



# Finding The Balance

The goal of this project is to find the balance between a number of objectives.

## Safety

- Meets FAA safety standards
- Obstruction-free approaches
- Minimized wildlife hazards
- Limited vehicle/aircraft conflict potential
- Orientation to winds

## Cost

- Development costs
- Facility relocation costs
- M&O costs
- Costs to public



## Natural Environment

- Wetlands
- Wildlife habitat
- Kotzebue Sound
- Kotzebue Lagoon

## Community

- (Human Environment)
- Community disruption
  - Relocation of businesses
  - Proximity to community
  - Land uses/Subsistence impacts
  - Cultural resources



**Kotzebue Airport Relocation**  
Feasibility Study

# Finishing Up the Study

## What

**Alternatives Evaluations and Cost Estimates**

**Financial/Funding Analysis**

**Feasibility Study**

- Draft – for public review
- Final

## When

February  
thru March 2007

March thru May 2007

August 2007  
October 2007



**Kotzebue Airport Relocation**  
Feasibility Study

## Questions & Comments

Also, please feel free to review and discuss with us the graphics showing the airport facility overlays on the project area map.