

3 AVIATION ACTIVITY AND FORECAST

The contents of this chapter were prepared by HDR, Inc. for PDC and DOT&PF in February 2007.

This chapter presents a comprehensive 20-year air traffic forecast for the Ralph Wien Memorial Airport in Kotzebue, Alaska. FAA approved this forecast on March 9, 2007 (Appendix B).

The year 2006 estimated base year enplanements are 58,198. This could increase to 72,432 passengers in year 2026 using a moderate 1.1% increase. A more conservative estimate based on historical enplanement counts shows enplanements could increase to 59,373 by year 2026 based on a 0.1% rate of increase. Many of the prior forecasts reviewed for this report present a rate of change that far exceeds reality. Thus we have included a very conservative scenario in addition to more optimistic scenarios.

Operations were forecast using the same methodology. The 2006 base year is estimated to be 42,454. Operations at a non-tower controlled airport like Kotzebue are not formally recorded. HDR compiled operations from a variety of sources to generate our base year estimate. Operations could increase to 52,837 by year 2026 based on a 1.1% rate of change. The more conservative rate of change of 0.1% would result in operations increasing to 43,311 by year 2026.

Air cargo and mail data is now more systematically collected by the Federal DOT, Bureau of Transportation Statistics. A new data collection system was implemented in late 2002 resulting in a dramatic shift in the reported numbers beginning with year 2003 data. The Kotzebue Airport serves not only the City of Kotzebue, but also the surrounding communities. Bypass mail is a large component of the shipments. The estimated year 2006 base year is just over 37 million pounds. This is projected to increase by year 2026 to just over 46 million pounds at a 1.1% rate of change to a more conservative 38 million pounds at 0.1% rate of change.

The proposed methodology for the Kotzebue Airport air traffic forecast is based on the process recommended in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans* (July, 2005) and in *Forecasting Aviation Activity by Airport* (FAA 2001). These documents provide national guidance for the development of airport master plans and are recommended for use in preparing individual airport master plan forecasts. The AC has been the primary guidance in the preparation of master plans since enactment of the Airport and Airways Development Act of 1970 and has been recently updated with a seven-step process for the development of aviation forecasts. The recommended steps are:

- Step 1. Identify aviation activity measures
- Step 2. Review previous airport forecasts
- Step 3. Gather data
- Step 4. Select forecast methods
- Step 5. Apply forecast methods and evaluate results
- Step 6. Compare forecast results with FAA's Terminal Area Forecasts
- Step 7. Obtain approval of the forecasts

3.1 Step 1: Identify Aviation Activity Parameters and Measures to Forecast

The level and type of aviation activity anticipated at an airport as well as the nature of the planning to be done determines the parameters to be forecast. Generally, the most important activity forecast for airfield planning is the level and type of aviation demand generated at the airport. It is this demand that defines the runway and taxiway requirements and drives the location of aprons and ultimately landside development.

As indicated in *Forecasting Aviation Activity by Airport*, practical considerations dictate the level of detail and effort that should go into an airport planning forecast. Air traffic activity at Kotzebue is comprised of commercial passenger jets and turboprop aircraft, commercial cargo aircraft, single and twin-engine GA aircraft, corporate jets, and a few helicopters. Aircraft operations, passenger enplanements, mail, and cargo have historically comprised a significant percentage of the annual aviation activity. Other activities include military operations, search and rescue, touch and go operations and other general aviation activities. The forecast for Kotzebue airport will focus on the following parameters:

- Passenger Enplanements – *Air Carrier, Commuter*
- Aircraft Operations – *Air Carrier, Commuter, General Aviation, Military (Itinerant and Local)*
- Based Aircraft – *Single and Multi Engine, Helicopter, Ultra Light, and others*
- Air Cargo – *freight, mail, and fuel*

3.2 Step 2: Collect and Review Previous Airport Forecasts

This step recommends acquiring existing FAA and other related forecasts for the area and airport served. The relevant forecasts for Kotzebue Airport include the FAA Terminal Area Forecast (TAF), the Alaska Aviation System Plan (AASP), the 1998 Kotzebue Airport Master Plan, the 2004 Northwest Alaska Transportation Plan, and the 2006 National Plan of Integrated Airport Systems (NPIAS).

3.2.1 Federal Aviation Administration, Terminal Area Forecast

The FAA Terminal Area Forecast (TAF) (Table 3-1) for Kotzebue Airport contains FAA's forecast for fiscal years 2005-2025. The TAF reports passenger enplanements, aircraft operations, and based aircraft for four major users of the Kotzebue Airport: air carriers, air taxi and commuters, general aviation, and the military. A further division is made between local and itinerant aircraft operations. The TAF for Kotzebue has the same values in each category for each year between 2005 and 2025.

Table 3-1
 Federal Aviation Administration, Terminal Area Forecast (2005-2025)
 Kotzebue Airport

| Passenger Enplanements | | | Itinerant Aircraft Operations | | | | Local Aircraft Operations | Total Operations |
|------------------------|----------|--------|-------------------------------|--------------------|--------|----------|---------------------------|------------------|
| Air Carrier | Commuter | Total | Air Carrier | Commuter /Air Taxi | GA | Military | General Aviation | |
| 24,851 | 32,169 | 57,020 | 2,133 | 18,192 | 30,000 | 1,000 | 7,000 | 58,325 |

Source: Federal Aviation Administration

3.2.2 Alaska Aviation System Plan

Table 3-2 presents the air traffic forecast for Kotzebue Airport reported in the 1996 Alaska Aviation System Plan (AASP). The AASP forecast is important because it better reflects local conditions and policy considerations at a state level rather than the TAF on a national level.

Table 3-2
 Air Traffic Forecast, Kotzebue Airport
 Alaska Aviation System Plan Update (1996)

| Operations | Base (1992) | 1995 | 2000 | 2005 | 2010 |
|-------------------|------------------------|---------------|---------------|---------------|---------------|
| Air Carrier | 20,000 | 20,000 | 22,900 | 25,800 | 27,700 |
| Air Taxi | 2,000 | 2,000 | 2,200 | 2,300 | 2,400 |
| -GA Local | 7,000 | 7,000 | 7,960 | 8,460 | 8,950 |
| -GA Itinerant | 30,000 | 30,000 | 34,140 | 36,240 | 38,350 |
| Military | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Total | 60,000 | 60,000 | 68,200 | 73,800 | 78,400 |

| Fleet Mix (Kotzebue Airport) | Base (1990) | 1995 | 2000 | 2005 | 2010 |
|-------------------------------------|------------------------|-------------|-------------|-------------|-------------|
| Single Engine | 65 | 63 | 73 | 81 | 90 |
| Multi Engine | 10 | 10 | 11 | 13 | 14 |
| Jet | 0 | 0 | 0 | 0 | 0 |
| Rotorcraft | 1 | 1 | 1 | 1 | 1 |
| Other | 3 | 3 | 3 | 4 | 4 |
| Total | 79 | 77 | 89 | 99 | 109 |

| Enplaned Passengers | Base (1990) | 1995 | 2000 | 2005 | 2010 |
|----------------------------|------------------------|---------------|---------------|---------------|---------------|
| Total | 53,695 | 50,116 | 55,628 | 61,748 | 68,546 |

| Enplaned Cargo (tons) | Base (1991) | 1995 | 2000 | 2005 | 2010 |
|------------------------------|------------------------|---------------|---------------|---------------|---------------|
| Total | 15,466 | 16,000 | 17,700 | 19,500 | 21,500 |

Source: 1996, Alaska Aviation System Plan: Appendix C

3.2.3 Kotzebue Airport Master Plan (1998)

In 1989, the State of Alaska Department of Transportation completed the Kotzebue Airport Master Plan. In 1998, a master plan update was prepared to review projects accomplished to date, examine other needs and make recommendations for future capital improvements.

Table 3-3
 Air Traffic Forecast, Kotzebue Airport – Airport Master Plan Update

| Operations | Base (1995) | 2003 | 2008 | 2018 |
|-------------------|--------------------|---------------|---------------|---------------|
| Air Carrier | 2,000 | 2,170 | 2,270 | 2,680 |
| Air Taxi | 20,000 | 23,660 | 25,850 | 28,670 |
| GA | 37,000 | 45,400 | 50,500 | 60,800 |
| Military | 1,000 | 1,000 | 1,000 | 1,000 |
| Total | 60,000 | 73,154 | 80,640 | 94,405 |

| Fleet Mix (Kotzebue Airport) | Base (1995) | 2003 | 2008 | 2018 |
|-------------------------------------|--------------------|-------------|-------------|-------------|
| Total | 79 | 97 | 107 | 130 |

| Enplaned Passengers | Base (1995) | 2003 | 2008 | 2018 |
|----------------------------|--------------------|---------------|---------------|---------------|
| Total | 55,904 | 66,600 | 74,200 | 92,200 |

Source: 1998, Kotzebue Airport Master Plan Update

3.2.4 Northwest Alaska Transportation Plan

In 2004, the State of Alaska Department of Transportation and Public Facilities (DOT&PF) released the *Northwest Alaska Transportation Plan*. The aviation component of this plan examines the community airports serving the northwest region of Alaska.

Table 3-4
 Air Traffic Forecast, Kotzebue Airport – Northwest Alaska Transportation Plan

| | Base Year | | | | | |
|----------------------------|------------------|-------------|-------------|-------------|-------------|-------------|
| | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| Enplaned Passengers | 58,112 | 63,935 | 67,821 | 71,913 | 75,633 | 78,924 |
| Cargo (Tons) | | 5,105 | | 6,269 | | 7,511 |

Source: 2004, *Northwest Alaska Transportation Plan, Community Transportation Analysis*

3.2.5 2005 National Plan of Integrated Airport Systems

The NPIAS presents a five year forecast for enplaned passengers and based aircraft.

Table 3-5
 Passenger Enplanement Forecast – National Plan of Integrated Airport Systems, 2005

| Forecast Year 2009 | |
|-------------------------------|---------------|
| Passenger Enplanements | 57,020 |
| Based Aircraft | 52 |

Source: National Plan of Integrated Airport Systems (2005-2009)

3.3 Step 3: Gather Data

3.3.1 Data Requirements

The FAA requires that the number of aircraft operations for various categories of aircraft be incorporated into the forecast. Passenger enplanement data, cargo, mail and freight data are also required data sets. The Advisory Circular also specifies that population, employment rates, and

socio-economic factors such as personal income be included. As a non-towered airport, records of air traffic operations at the Kotzebue Airport are not maintained onsite. Historical air traffic data for the Kotzebue Airport was acquired from FAA’s Airport Master Record Form 5010, the FAA TAF for Kotzebue airport, the USDOT, and the DOT&PF’s Aviation Division. Data was also acquired from the DOT&PF’s Alaska Aviation System Plan (AASP), the National Plan of Integrated Airport Systems (NPIAS), and the Northwest Alaska Transportation Plan. Informal interviews with several airport tenants to supplement and validate aircraft operations, annual passenger enplanements, and annual freight tonnage estimates were also documented. See Appendix B for correspondence.

3.3.2 Historical Aviation Data

As a non-towered airport, data reported in the FAA TAF for Kotzebue airport are extrapolated from estimates recorded on FAA’s Form 5010 Airport Master Record during routine airport inspections. The last inspection of Kotzebue airport was performed on April 15, 2005. Passenger enplanement data is reported directly from the FAA TAF and the DOT Air Carrier Activity Information System (ACAIS) reports.

Aircraft Operations

Table 3-6 presents the estimated historical aircraft operations for Kotzebue airport from 1986 to 2005 based on the TAF.

Table 3-6
 Historical Aircraft Operations (1986-2005) – Kotzebue Airport

| | Itinerant Operations | | | | Local Operations | | Total |
|------|-----------------------------|-----------------|-----------|-----------------|-------------------------|-----------------|--------------|
| | AC | Commuter | GA | Military | GA | Military | |
| 1986 | 10,000 | 20,000 | 10,000 | 1,000 | 5,000 | 0 | 46,000 |
| 1987 | 3,000 | 32,000 | 10,000 | 1,000 | 4,000 | 0 | 50,000 |
| 1988 | 3,111 | 32,000 | 10,000 | 1,000 | 4,000 | 0 | 50,111 |
| 1989 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1990 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1991 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1992 | 3,354 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 61,534 |
| 1993 | 3,354 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 61,534 |
| 1994 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1995 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1996 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1997 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1998 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 1999 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2000 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2001 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2002 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2003 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2004 | 2,000 | 20,000 | 30,000 | 1,000 | 7,000 | 0 | 60,000 |
| 2005 | 2,133 | 18,192 | 30,000 | 1,000 | 7,000 | 0 | 58,325 |

Source: FAA Terminal Area Forecast

The FAA conducts an annual 5010 inspection of the Kotzebue Airport conducted by FAA personnel. Information from those 5010 inspections is updated and fed into the TAF database, then manipulated by a set of algorithms resulting in the final TAF. The demographic metrics of Kotzebue and the surrounding area show considerably more variability than is reflected in the historic TAF data.

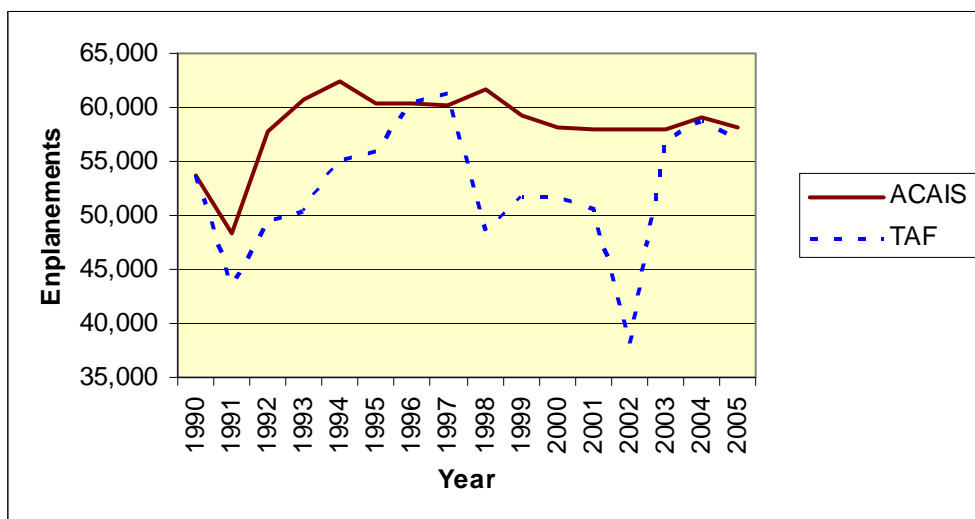
Table 3-7 and Chart 3-1 present passenger enplanements as reported by the FAA ACAIS and the FAA TAF from 1990 through 2005. Though both sets of data report annual passenger enplanements it is important to note that the ACAIS reports enplanements during the calendar year whereas the TAF reports enplanements during the fiscal year. Scheduled air carriers are required to report enplanements to the ACAIS. Non-scheduled air carrier submittals are voluntary. Thus, one would anticipate that the TAF would be higher than the ACAIS but the opposite is shown by the data. HDR does not have access to the FAA algorithm that generates the TAF data, so we cannot offer any explanation for the TAF numbers.

Table 3-7
 Passenger Enplanements (1990-2005) – Kotzebue Airport

| Year | FAA ACAIS | FAA TAF | Difference (ACAIS – TAF) |
|------|-----------|---------|--------------------------|
| 1990 | 53,695 | 53,695 | 0 |
| 1991 | 48,421 | 43,498 | 4,923 |
| 1992 | 57,861 | 49,514 | 8,347 |
| 1993 | 60,738 | 50,341 | 10,397 |
| 1994 | 62,445 | 55,117 | 7,328 |
| 1995 | 60,434 | 55,904 | 4,530 |
| 1996 | 60,400 | 60,387 | 13 |
| 1997 | 60,187 | 61,231 | -1,044 |
| 1998 | 61,690 | 48,515 | 13,175 |
| 1999 | 59,351 | 51,632 | 7,719 |
| 2000 | 58,112 | 51,708 | 6,404 |
| 2001 | 57,841 | 50,943 | 6,898 |
| 2002 | 52,106 | 38,180 | 13,926 |
| 2003 | 56,458 | 56,945 | -487 |
| 2004 | 58,999 | 58,665 | 334 |
| 2005 | 58,140 | 57,020 | 1,120 |

Source: FAA and U.S. DOT, Bureau of Transportation Statistics, Office of Airline Information.

Chart 3-1
 Passenger Enplanement Comparison – Kotzebue Airport



Cargo and Mail Activity

Air cargo service provides residents with a means of importing and exporting goods to and from the community. Aircraft in Alaska serve the same role for moving freight and mail that trucks provide in the Lower 48 states.

The US Postal Service provides priority and other classes of mail service to rural Alaska, and in locations where the community is not on the highway system, the mail moves by air. A 1985 special provision in Federal law permits and subsidizes the delivery of fourth class mail at rates that are significantly lower than freight rates. Stores or businesses that ship large quantities of goods such as groceries and other consumer goods palletize their loads and deliver them directly to an air cargo shipper, bypassing the Post Office. Thus the term “bypass mail” is used for these shipments. A postal official at the air carrier facility accepts the pallet on behalf of the Post Office, and bills for the fourth class postage. The air carrier is responsible for delivery of the goods to the recipient in the destination community. Individuals can also ship goods by fourth class mail, but those packages must be taken to a post office. Approximately 75% of the fourth class mail to rural Alaska is transported as bypass mail. Hazardous materials and construction materials are not accepted by the Post Office as fourth class mail, and must be shipped by air freight. Delivery of mail by air at these favorable rates has facilitated a better flow of goods to rural Alaska.

The Rural Air Service Improvement Act (RSIA) (Public Law 107-206, Sec. 3002, 2002) changed the freight, mail, and passenger service in rural Alaska including freight and mail reporting requirements for air carriers. Essentially, beginning in 2002, air carriers were required to report all freight and mail on form T-100 to the Federal DOT, Bureau of Transportation Statistics (BTS). The BTS implemented a system to facilitate all air carriers to submit their data on a web based system. Prior to this 2002 change in the law, only the largest air carriers reported their data. This change in the method of reporting has created an interesting spike in the reported numbers.

Table 3-8 presents data acquired from the U.S. DOT, Bureau of Transportation Statistics, Office of Airline Information, and reflects reported freight and mail enplaned and deplaned at the Kotzebue Airport from 1995 through 2005. As shown in the table, reported freight and mail activity is dramatically higher in the last 3 years. (The new system was being implemented in the later half of 2002.) For the period reported, freight peaked at 7,832 tons in 2003. Mail peaked at 13,007 tons in 2005. This data suggest a relatively stable level of cargo activity considering the reports were relatively stable under the old reporting system from 1999 into 2002 and also relatively stable under the new T100 reporting system.

Table 3-8
Historical Cargo (Freight and Mail) Activity (Tons) (1995-2006) – Kotzebue Airport

| <u>Year</u> | <u>Freight</u> | <u>Mail</u> | <u>Total</u> |
|-------------|----------------|-------------|--------------|
| 1995 | 1,011 | 3,444 | 4,455 |
| 1996 | 693 | 2,871 | 3,564 |
| 1997 | 860 | 2,531 | 3,391 |
| 1998 | 726 | 2,425 | 3,151 |
| 1999 | 861 | 1,924 | 2,785 |
| 2000 | 969 | 2,928 | 3,898 |
| 2001 | 1,512 | 3,296 | 4,808 |
| 2002 | 779 | 2,031 | 2,809 |
| 2003 | 7,832 | 12,112 | 19,944 |
| 2004 | 5,962 | 12,652 | 18,614 |
| 2005 | 5,418 | 13,007 | 18,424 |

Source: U.S. DOT, Bureau of Transportation Statistics, Office of Airline Information

Based Aircraft and Fleet Mix

The TAF reports between 52 and 79 based aircraft at the Kotzebue airport from 1990 to 2002. A public database (www.landings.com) indicates there are 69 aircraft registered with Kotzebue addresses. The types of aircraft include Aeronca, Cessna, Stinson, Maule, Taylorcraft, and Piper. Table 3-9 presents the fleet mix of aircraft currently registered in Kotzebue. Other aircraft that utilize Kotzebue airport for passenger and cargo operations include the Boeing 737-200 and 400, the Boeing 727-100, the Douglas DC-6 and the Lockheed L-382 (the civilian version of the military C-130). Table 3-10 presents the estimated numbers of based aircraft at Kotzebue airport reported on the TAF.

Table 3-9
 Kotzebue Airport Fleet Mix

Based Aircraft Fleet Mix (2006)

| |
|--|
| Aeronca 15AC |
| Bellanca 7ECA |
| Cessna 180, 182, 185, 206, 175, 170, 145, 140 |
| Maule M-7-235, M-5-210 |
| Monocoupe 110 |
| Piper PA-38, PA-32, PA-18, PA- 14, PA-12, PA-11, PA-22, PA-20 |
| Stinson 108 |
| Taylorcraft BC12 |

Source: <http://www.landings.com> (2006)

Table 3-10
 Based Aircraft - Kotzebue Airport

| Year | Total |
|------|-------|
| 1990 | 79 |
| 1991 | 79 |
| 1992 | 79 |
| 1993 | 79 |
| 1994 | 79 |
| 1995 | 79 |
| 1996 | 52 |
| 1997 | 52 |
| 1998 | 52 |
| 1999 | 52 |
| 2000 | 52 |
| 2001 | 52 |
| 2002 | 52 |
| 2003 | 52 |
| 2004 | 52 |
| 2005 | 52 |

Source: FAA Terminal Area Forecast

Airport Master Record, Form 5010

Table 3-11 presents aircraft operations data as reported on the FAA’s form 5010 *airport master record* for Kotzebue airport. Form 5010 reports basic airport identifying information plus manager and owner name, address, and phone number in addition to runway and taxiway information and air traffic activity estimates. The operations data reported for Kotzebue Airport reflects an estimate made during an airport inspection on April 15, 2005. During the airport inspection, the inspector estimated the number of operations and based aircraft with assistance of airport personnel. In some cases, this data is supplemented with data from the airport master plan.

Using the data shown in Table 3-11, HDR calculates an average of 164 operations per day for the Kotzebue airport. Of these annual aircraft operations 12% were attributed to local GA operators, 33% were attributed to air taxi operators, 50% were attributed to transient GA operators; approximately 5% were attributed to air carriers, commuters, and military operations. The Alaska Army National Guard 3rd Scout Battalion is based in Kotzebue. Aircraft that have been used by this unit historically were the DHC - Twin Otter and a helicopter. The Twin Otter was replaced with the C-23A Sherpa in the early 1990’s. A Blackhawk helicopter has recently been based with this unit. The guard is scheduled to replace the Sherpa with the newer C-27 Spartan, a six blade turboprop that has excellent performance on shorter gravel fields. This will be the military aircraft assigned to the Kotzebue facility in the future (Alaska Air National Guard).

Table 3-11
Federal Aviation Administration, Airport Master Record (form 5010) – Kotzebue Airport

| | |
|----------------------------|--------|
| Air Carrier (<3%) | 2,000 |
| Commuter (<0%) | 0 |
| Air Taxi (33%) | 20,000 |
| GA Local (12%) | 7,000 |
| GA Itinerant (50%) | 30,000 |
| Military (<2%) | 1000 |
| Annual Aircraft operations | 60,000 |
| Based Aircraft | 52 |

Source: FAA 5010 Airport Master Record as of 7/25/2006: <http://www.gcr1.com/5010Web/>

3.3.3 Air Traffic Data collected by HDR Alaska, Inc.

In an effort to supplement and validate aircraft operation data, several airport users and tenants were informally interviewed by telephone or email. Scheduled and on-demand flight activity was collected from web sites or by telephone. Weather delays and flight cancellations were factored in and the resulting estimate of operations was compiled. This compilation is for comparison against the air traffic activity as reported by the FAA TAF, FAA 5010, AASP, and the NPIAS. A collection of the information gathered from the interviews with airport tenants is presented in Appendix B. This base level data collection resulted in the conclusion that the Kotzebue Airport has just over 42,000 annual operations as shown in Table 3-12. While the FAA Flight Service Station does not count operations, they do count the number of airport advisories issued. Airport advisories are issued upon request to each departing or landing aircraft. Most, but not all, pilots request this safety service. In Federal Fiscal Year 2006 the Kotzebue FSS issued 39,144 airport advisories, thus validating quite well the HDR estimate of operations.

Table 3-12
Estimate of Aircraft Operations Based on Schedules and Contacts – Kotzebue Airport

| Operator | Type of Service | Number of Operations | Scheduled Annual Ops | Actual Annual Ops |
|---|----------------------|----------------------|----------------------|-------------------|
| Alaska Airlines | Air Carrier | 21 flights/wk | 2,184 | 2,184* |
| Frontier | Air Carrier/Air Taxi | 76 flights/wk | 7,904 | 6,323* |
| Northern Air Cargo | Air Carrier | 5 flights/wk | 520 | 468* |
| Arctic Air Guides | Air Taxi | 100 annual ops | 100 | 100 |
| ATS | Air Taxi | 15 flights/wk | 1,560 | 1,248* |
| Baker Aviation | Air Taxi | 10 flights/wk | 1,040 | 1,040* |
| Bering Air | Air Taxi | 85 flights/wk | 8,840 | 7,956* |
| Guardian Flight, Inc. | Air Taxi | 5 flights/wk | | 260 |
| Hageland | Air Taxi | 110 flights/wk | 11,440 | 9,152* |
| Everts Air Cargo | Air Carrier | 10 flights/wk | 1,040 | 936* |
| Lynden Air Cargo | Air Carrier | 3 flights/wk | 312 | 281* |
| CAP | Military Local | 1 flights/wk | | 104* |
| Military (ANG) | Military Transient | annual ops | | 12 |
| State Troopers | General Aviation | 240 annual ops | | 240 |
| NPS | General Aviation | 240 annual ops | | 240 |
| USFWS | General Aviation | 240 annual ops | | 240 |
| Part 91 (29 Aircraft from tie down list) | General Aviation | 50 annual ops each | | 1,450 |
| Transient | General Aviation | 14 per day | | 10,220* |
| Total | | | 34,940 | 42,454 |

*Note: -- * Each flight includes two aircraft operations, one for arrivals and one for departures. Values reflected include both operations.

This summary differs from the 5010 estimate of operations in several areas. The air carrier operations are higher possibly due to capturing data from the three large air cargo air carriers. The air taxi number is also higher. GA local is estimated less, and GA Itinerant and Military are considerably less. The 5010 estimate of 30,000 GA itinerant operations means that approximately 40 aircraft per day would have to land and takeoff from Kotzebue. Kotzebue does not have an FBO that can service this number of aircraft per day.

3.3.4 Air Traffic Base-Year Summary

Table 3-13 presents the air traffic data collected and summarized and compared to establish a base year estimate (year 2005). This table compares the various data sources and their estimates for air traffic in the future. The TAF figures show an estimate for the year 2005 and the Alaska Aviation System Plan (AASP) shows what was forecast to occur in the year 2005. The FAA form 5010 data reflects the data as of the most recent inspection (2005). The Air Carrier Activity Information System data (ACAIS) is actual data reported from operators to the FAA, while the 2004 Northwest Alaska Transportation Plan is a forecast based on population growth and the 1998 Master Plan shows the forecast numbers for the year 2003.

Table 3-13
 Historical and Forecast Air Traffic Data
 Kotzebue Airport

| | <u>Based Aircraft</u> | <u>Passenger Enplanements</u> | <u>Total Aircraft Operations</u> |
|---|-----------------------|-------------------------------|----------------------------------|
| FAA ACAIS (2004) (actual) | -- | 58,999 | -- |
| FAA TAF (2005) | 52 | 57,020 | 58,325 |
| FAA form 5010 (2005) | 60 | -- | 60,000 |
| DOT&PF AASP (2005) | 99 | 61,748 | 73,800 |
| Northwest Alaska Transportation Plan (2004) | -- | 63,935 | 63,875* |
| NPIAS (2006) | 52 | 57,020 | -- |
| Kotzebue Airport Master Plan (2003) | 97 | 66,600 | 73,154 |
| HDR Estimate based on flight Schedules (2006) | | | 42,454 |

*Based on 175 average operations per day. Page 3-33.
 Source: Compiled by HDR Alaska, Inc., August 2006.

Chart 3-2 graphically displays base year passenger enplanements and aircraft operations as reported in the FAA TAF, FAA Form 5010 Airport Master Record, the FAA (ACAIS), the DOT&PF AASP, the 2004 Northwest Alaska Transportation Plan, the 1998 Master Plan using the 2003 forecast data, the 2006 NPIAS, and the HDR estimate of operations.

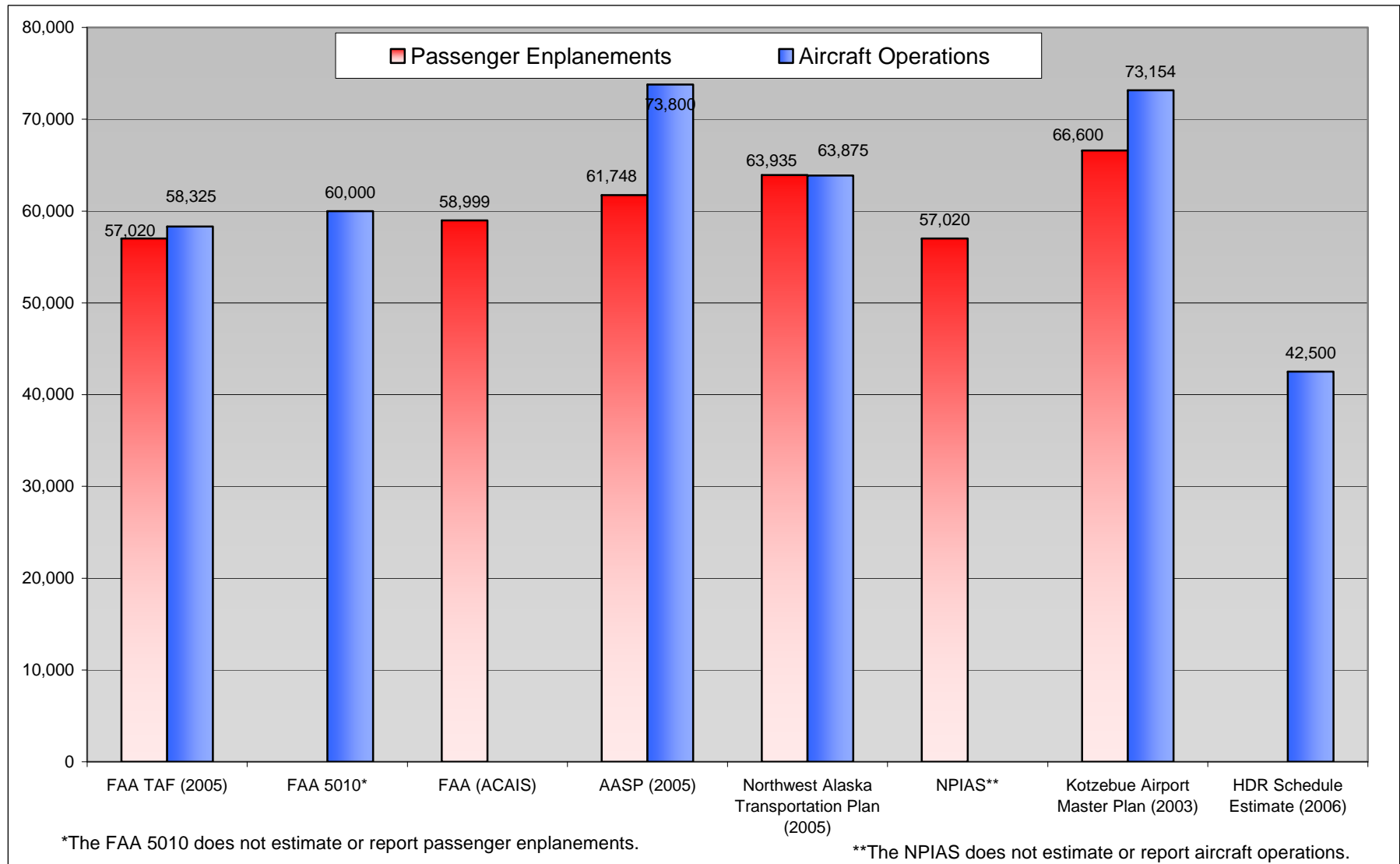


Chart 3-2 Aircraft Operations and Passenger Enplanements

3.3.5 Socioeconomic Data

The socioeconomic situation in a community or region can have a significant impact on the future demand for air travel and air traffic activity. This section presents information on the socioeconomic factors affecting aviation demand at Kotzebue airport.

Population

Population size and potential growth are key features in forecasting needs for air transportation service. A community's historic population trends are useful in indicating a predisposition for air traffic and are key factors in determining potential air transportation demand. Table 3-14 presents historic population data for Kotzebue and the Northwest Arctic Borough (NWAB). Kotzebue currently has an estimated population of 3,237. Population forecasts were acquired from the Alaska Department of Labor and Workforce Development and as presented in the *Northern Economics Population Forecast, Kotzebue Airport, October 2006* report (Appendix B).

A new or larger airport will also not necessarily affect the population of Kotzebue. Kotzebue is the largest city in the Northwest Arctic Borough and its population accounts for approximately 43% of the population of the NWAB. The 2004 population of the NWAB is estimated to be 7,306 individuals.

Since 1990, population statewide has grown 16.6% at an annual average rate of 1.2%. Population in the Northwest Arctic Borough has increased slightly over the same period with an annual average rate of growth of 1.4% from 1990 to 2005. Population in Kotzebue has experienced periods of growth and decline though the overall annual average growth has been 1.1%.

Based on the population forecast prepared by the Alaska Department of Labor and Workforce Development for Alaska and the Northwest Arctic Borough, and the local economic character of the region, it is anticipated that population in Kotzebue will continue to rise slowly. While the NWAB population is monitored annually by the Alaska Department of Labor, the City of Kotzebue population is only determined during US Census years. Using the annual growth rate for the City of Kotzebue of 1.1%, population values were calculated for non-census recording periods. From 2006 to 2026 the population of the Northwest Arctic Borough is forecasted to grow at an annual average rate of approximately 1.4% (ADOL&WD 2005).

Table 3-14
Population, 1990 –2005 (Forecast 2006-2026)

| Year | Kotzebue | Northwest Arctic Borough | Statewide |
|-------------------------|-----------------|-------------------------------------|------------------|
| 1990 | 2,751 | 6,113 | 553,171 |
| 1991 | 2,786 | 6,191 | 569,054 |
| 1992 | 2,927 | 6,536 | 586,722 |
| 1993 | 2,969 | 6,545 | 596,906 |
| 1994 | 2,904 | 6,609 | 600,622 |
| 1995 | 2,876 | 6,591 | 601,581 |
| 1996 | 2,827 | 6,544 | 605,212 |
| 1997 | 2,907 | 6,712 | 609,655 |
| 1998 | 2,942 | 6,817 | 617,082 |
| 1999 | 2,932 | 6,873 | 622,000 |
| 2000 | 3,082 | 7,208 | 625,504 |
| 2001 | 3,070 | 7,141 | 632,389 |
| 2002 | 3,075 | 7,235 | 640,841 |
| 2003 | 3,105 | 7,373 | 648,243 |
| 2004 | 3,144 | 7,341 | 655,435 |
| 2005 | 3,172 | 7,429 | 663,661 |
| Ann. Avg. Growth | 1.10% | 1.40% | 1.20% |
| 2006 | 3,200 | 7,517 | 671,625 |
| 2011 | 3,338 | 7,933 | 679,684 |
| 2016 | 3,537 | 8,514 | 687,841 |
| 2021 | 3,664 | 8,859 | 696,095 |
| 2026 | 3,787 | 9,165 | 704,448 |

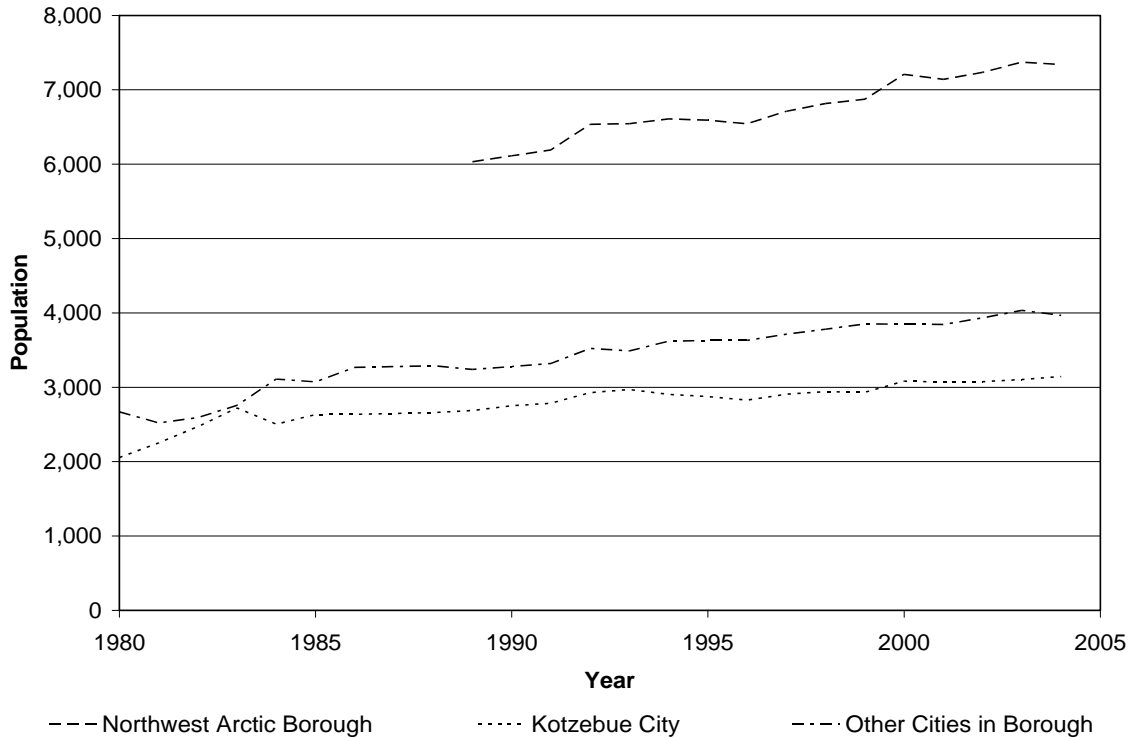
Source: Population Projection, Alaska Dept. of Labor and Workforce Development, Research & Analysis Section;
Alaska Dept. of Labor and Workforce Development, Research & Analysis Section;
Northern Economics, Inc. Population Forecast, Kotzebue Airport, October 2006

It is generally accepted that as a community grows in population so does the demand for travel and freight services within. In many Alaskan communities without land-based access to the regional hubs or the continental United States, population size drives the demand for aviation passenger service. In communities with no road system access, the need for air travel is indispensable. As the primary mode of transportation to and from Kotzebue, aviation demand will increase as the population grows.

Chart 3-3 demonstrates the historically small growth rate of the Northwest Arctic Borough, the City of Kotzebue and other communities in the NWAB. Populations in Alaska, especially those in Western Alaska, often do not follow fixed growth rate trends. Population projections were utilized to determine the implied annual average growth rate.¹ Chart 3-4 also includes a plot of the enplanement data for a comparison with population. Chart 3-4 shows a huge number of enplanements per population. This figure indicates that each person in the City of Kotzebue and the Northwest Arctic Borough flies on a commercial aircraft several times per year. It should also be noted that the enplanement numbers include tourists and workers passing both ways through Kotzebue en route to outlying communities or the Red Dog Mine.

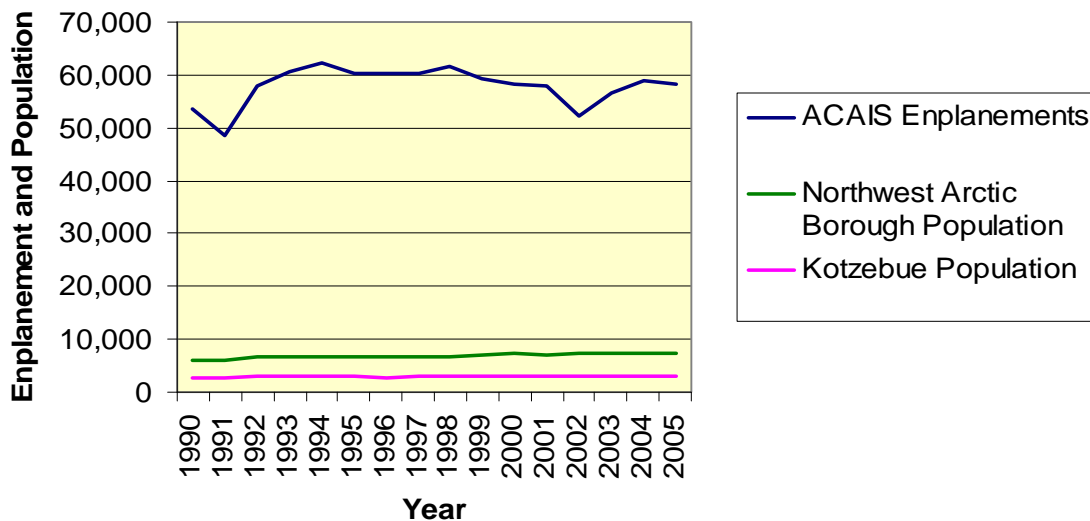
¹ Northern Economics, Inc. Population Forecast, Kotzebue Airport, October 2006.

Chart 3-3
 Population Growth Trend, 1980 –2005



Source: Northern Economics, Inc. Population Forecast, Kotzebue Airport, October 2006

Chart 3-4
 Population Compared to Enplanements, 1990-2005



Employment

Employment characteristics of a region or city can significantly affect the potential for generating air traffic. An important indicator of the propensity to travel is employment. Employment opportunities drive population increases that in turn increase demand for travel.

The City of Kotzebue serves as the region’s service, administrative, and transportation hub (ADOL&WD 2006). The following employment statistics convey the importance of Kotzebue to the Borough’s economy. In 2000, 2,427 residents were employed in the NWAB, with 1,255 of those employees in Kotzebue. Kotzebue has a mixed cash and subsistence economy and serves as a hub for 11 outlying communities (DCCED Alaska Economic Information System).²

Industries: Activities related to government, mining, health care, transportation, services, and construction contribute to the economy. The Red Dog Mine, 90 miles north of Kotzebue, is the world’s largest zinc and lead mine, and provides 370 direct year-round jobs and over a quarter of the Borough’s wage and salary payroll. The mine is located in the DeLong Mountains of Alaska’s Brooks Range. Air Carriers provide direct route service to Red Dog from Fairbanks however local commuter traffic does contribute to the number of flight operations at Kotzebue. The Borough’s largest employers in 2004 were Maniilaq Association, the Northwest Arctic Borough School District, and Teck Cominco Alaska.³ The percentages of self-employed workers in the Borough and Kotzebue are 3.3 percent and 4.5 percent, respectively, which is lower than the statewide average of 8 percent.⁴

Employment Trends: The cumulative annual average unemployment rate in the NWAB from 1995 through 2006 was 12.94%. This is much higher compared to that of the state overall cumulative rates of 6.96%. Table 3-15 presents the unemployment rates for Alaska and the Northwest Arctic Borough. The State of Alaska Department of Labor estimates that the biggest employment losses in Northern Alaska are tied to declines in the Northern communities local governments. While state government declines were small over the last decade, local government losses were tied to both school districts and a decline in local government operations. In 1989, more than half of all wage and salary employment in the Borough was in the public sector. Currently, only 41 percent of NWAB workers and 37.9 percent of Kotzebue workers are government employees. Some of this change has occurred as a number of federal and state programs were privatized, usually in the form of local nonprofit organizations.⁵

Table 3-15
Unemployment Rate 1995-2006

| Year | Northwest Arctic Borough | Statewide |
|----------------------------|---------------------------------|------------------|
| 1995 | 16.2 | 7.3 |
| 1996 | 18.3 | 7.8 |
| 1997 | 16.1 | 7.9 |
| 1998 | 10.6 | 5.8 |
| 1999 | 13.6 | 6.4 |
| 2000 | 8.8 | 6.2 |
| 2001 | 9.6 | 6.2 |
| 2002 | 11.2 | 7.1 |
| 2003 | 13.2 | 7.7 |
| 2004 | 13.4 | 7.4 |
| 2005 | 11.7 | 6.8 |
| 2006 | 12.6 | |
| Average Annual Rate | 12.94% | 6.96% |

Source: Alaska Dept. of Labor, Research & Analysis Section

² Department of Community and Economic Development, August 2006.

³ Northern Economics, Inc. Population Forecast, Kotzebue Airport. October 2006.

⁴ Department of Community and Economic Development, August 2006.

⁵ Department of Labor and Workplace Development; Alaska Economic Trends Magazine, March 2005, page 9.

Project Impacts to Employment: The development of a new, larger airport in Kotzebue would likely provide significant construction employment impacting both the Borough and Kotzebue’s economy. During construction a small increase in aviation activity is likely, however long-term levels would not change with the completion of a larger airport.

Per Capita Income

The personal income available to residents over time is a good indicator of their financial ability to travel. Personal income reflects what the average individual in the community earns or can afford. High-income levels indicate a strong basis for higher than average levels of spending on air travel. Conversely, low-income levels can dampen people’s ability to travel by air.

Table 3-16 indicates historic per capita income for Alaska and the Northwest Arctic Borough. Year 2000 census data reports the per capita income for residents of Kotzebue at \$18,289.

Per capita income in the NWAB has been much lower than the U.S., the State, or Anchorage except for 1973, 1981, and 1982. In recent years, it has been roughly 80 percent of the national average.

Per capita income is also another important indicator of the propensity to travel. Per capita income is often less than personal income as it includes non working individuals such as children, unemployed, disabled and elderly persons no longer in the workforce. As per capita income increases so does the potential for increased disposable income. The location and availability of regional transportation facilities requires residents traveling for business and personnel needs to take aircraft outside of the community. As disposable income increases residents may choose to travel for more recreational activities rather than just business and personal needs.

Table 3-16
 Per Capita Income, 1994-2005

| <u>Year</u> | <u>Kotzebue</u> | <u>Northwest Arctic Borough</u> | <u>Statewide</u> |
|------------------------------|-----------------|---------------------------------|------------------|
| 1994 | --* | --* | \$23,711 |
| 1995 | --* | \$18,354 | \$22,073 |
| 1996 | --* | \$18,633 | \$21,496 |
| 1997 | --* | \$19,826 | \$21,073 |
| 1998 | --* | \$20,523 | \$27,835 |
| 1999 | --* | \$20,230 | \$28,523 |
| 2000 | \$18,289 | \$22,174 | \$29,960 |
| 2001 | \$20,176 | \$24,463 | \$31,027 |
| 2002 | \$20,208 | \$24,501 | \$32,151 |
| 2003 | \$20,145 | \$24,425 | --* |
| 2004 | --* | --* | --* |
| 2005 | --* | \$24,120 | --* |
| Average Annual Growth | --* | 3.2% | 3.3% |

*Note: -- Data not currently available
 Source: Alaska Dept. of Labor, Research & Analysis Section

3.3.6 Base Year (2006) Air Traffic Activity Estimate

Table 3-17 presents base year (2006) air traffic activity estimates generated by HDR. Activity estimates are derived from federal records as well as anecdotal and other information collected from airport tenants.

Table 3-17
Air Traffic Estimate, Base Year (2006) – Kotzebue Airport

| <u>Aircraft Operations*</u> | | | | | <u>Passenger Enplanements</u> | | |
|-----------------------------|--------------------------|-----------|-----------------|--------------|-------------------------------|--------------------------|--------------|
| <u>AC</u> | <u>Air Taxi/Commuter</u> | <u>GA</u> | <u>Military</u> | <u>Total</u> | <u>AC</u> | <u>Air Taxi/Commuter</u> | <u>Total</u> |
| 3,869 | 25,819 | 12,650 | 116 | 42,454 | 21,801 | 36,397 | 58,198 |

* Includes itinerant and local aircraft operations.
Source: Compiled by HDR Alaska, Inc., December 2006

Table 3-18 presents the estimated base year (2006) based aircraft at the Kotzebue Airport.

Table 3-18
Based Aircraft, Base Year (2006) – Kotzebue Airport

| <u>Single Engine</u> | <u>Multi-Engine</u> | <u>Helicopter</u> | <u>Ultra Light</u> | <u>Other</u> | <u>Total</u> |
|----------------------|---------------------|-------------------|--------------------|--------------|--------------|
| 77 | 4 | 1 | 0 | 0 | 82 |

Source: Compiled by HDR Alaska, Inc., December 2006

3.4 Step 4: Select Forecasting Methods

The demand for air travel in Northwest Alaska for the next 20 years is a function of two key factors: passenger travel based on population and economic indicators and the volume of freight and mail delivery.⁶ Historically other master planning efforts that forecast aviation activity based on population appear to over estimate the connection between potential aviation activity and the demographic factors that could affect that activity.

To generate a more realistic estimate of air traffic activity a regression analysis of the ACAIS enplanement data base was calculated. ACAIS is the only consistent aviation related data available. The TAF enplanement numbers were not used after comparing them with the ACAIS in Section 3.3.2. The ACAIS exhibits a dip in activity seen nationwide after the terrorist attacks in 2001. Therefore, to achieve a more realistic regression the values for 2001, 2002, and 2003 were arbitrarily raised. Without this adjustment, the data calculates an average annual increase of 0.05%. With the adjustment, the enplanements show an average annual increase of 0.10%. The adjusted regression value forms the basis of a low activity scenario estimate.

The medium air traffic activity scenario is based on the historical rates of population growth of 1.1% for Kotzebue. This forecast assumes that population and air traffic activity will remain closely tied and that future growth will occur at approximately this rate.

The high growth is set at 1.4% representing the Northwest Arctic Borough population historic trend. Since Kotzebue serves 11 communities with no land-based access, it is anticipated that the demand for air travel will increase as population increases. The only means of year-round access to the rest of the state of Alaska is by air. Currently no roads connect the Borough’s communities. Population growth in communities with no land-based access to regional hubs historically corresponded very well with passenger enplanements over the duration of the planning period.

⁶ Northwest Alaska Transportation Plan, Aviation Chapter, adopted February 11, 2004; Page 3-14.

A regression analysis of the historical air traffic activity data was not performed. It appears that the accuracy of some of the historical air traffic data from the TAF is questionable as is common in many non-towered Alaska airports where flight operations are not formally recorded. Forecasting erroneous historical air traffic activity into the future would exacerbate the error and result in an inaccurate forecast of air traffic activity at Kotzebue Airport.

3.4.1 Economic Impacts of the Northwest Arctic Borough

Oil & Mining

Onshore and offshore oil drilling opportunities are being explored in the Hope Basin and the Selawik Basin, located offshore from the Borough in the Kotzebue Sound and the Bering Straits. This area has been modeled for economically recoverable oil and gas resources, with gas resources showing more favorable prospects. The federal Minerals Management Service has modeled the basin assuming export to Asian markets and is proposing to undertake additional analysis based on regional and local use of gas resources.⁷

Cominco Inc, operators of the Red Dog Mine, have obtained four leases near the mine site through the state's Shallow Gas Leasing program. Cominco is working jointly with the state Division of Geological and Geophysical Surveys and the federal Department of Energy to examine the feasibility of producing gas contained in shale beds for use in powering mining and milling operations. When gas exploration and increased mining operations are available, this could have a significant impact on the aviation forecast and demand during the planning period. Development of this project will require substantial personnel, machinery, fuel, and other bulk supplies have the potential to increase future air traffic at the Kotzebue airport.⁸

Tourism

Kotzebue, with more than 3,000 residents, is the largest community in the region and is the center of government and commerce in the Northwest Arctic Borough. The primary tourism assets of the Borough include its national parklands, Native culture, adventure and ecotourism opportunities, as well as its "north of the Arctic Circle" allure.

More than half of all the land within the region is federally owned and protected as parks, preserves and wildlife refuges. The federal lands include the Noatak National Preserve, Cape Krusenstern National Monument, Kobuk Valley National Park and the Selawik National Wildlife Refuge. Additionally, the Bering Land Bridge National Preserve and the Gates of the Arctic National Park and Preserve are accessible from communities within the Borough. These public lands offer visitors unparalleled opportunities for wildlife viewing, kayaking, rafting, sport fishing and camping and feature a variety of unique archaeological sites. While tourism development opportunities exist in the Northwest Arctic Borough, issues such as inadequate infrastructure, access, and marketing limit the region's ability to take advantage of these opportunities. Should such limitations be overcome, the increase in enplanements would not be significant or could easily be included in the high scenario forecast.

⁷ Northern Economics, Inc. Population Forecast, Kotzebue Airport. October 2006.

⁸ Northwest Alaska Transportation Plan, Aviation Chapter, adopted February 11, 2004; Page 3-14

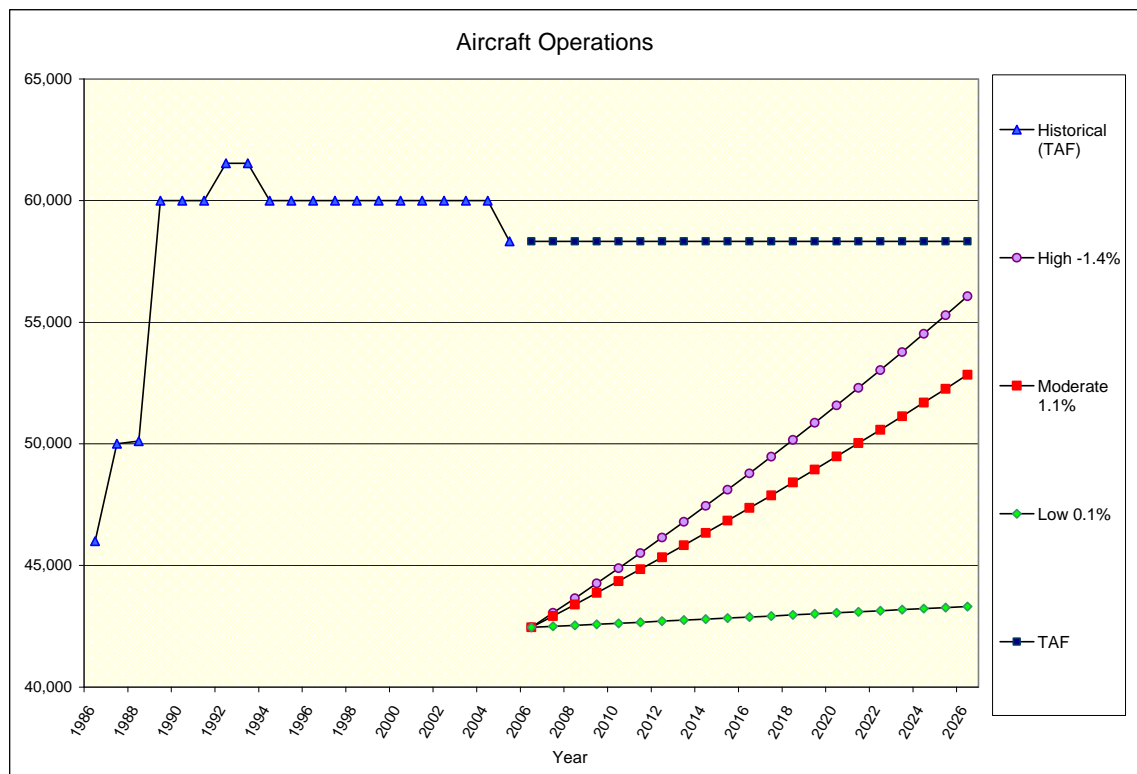
Transportation

Although commercial jet service is provided daily to Kotzebue from Anchorage, it is costly and can deter potential visitors to the region. Access is an even greater obstacle to the outlying villages and communities that rely solely upon air taxi services, which can be costly and unpredictable due to extreme weather conditions. HDR received anecdotal information that a considerable tonnage of fresh fish was flown from Kotzebue in the summer of 2006. We were not able to confirm this anecdotal information looking at the T-100 reports or in contacts with air carriers. There certainly is a potential for air transportation of fish products but the sustainability of those operations depends on the availability of the raw fish and market forces such as availability of raw fish in other Alaskan catch areas.

3.5 Step 5: Apply Forecast Methods, Summarize, Evaluate and Document Results

This section presents three scenarios of air traffic forecasts for aircraft operations and passenger enplanements for Kotzebue airport. Chart 3-5 graphically displays the three forecast scenarios using the base year estimate for aircraft operations of 42,454. Table 3-19 presents this same data in a tabular format. Chart 3-6 and Table 3-20 present the forecast scenarios for passenger enplanements with a base year of 58,198. Chart 3-7 and Table 3-21 presents the information for mail and air cargo. Forecast scenarios are based on the forecast growth rates as presented in Section 3.4, Step 4.

Chart 3-5
Aircraft Operations Forecast – Kotzebue Airport

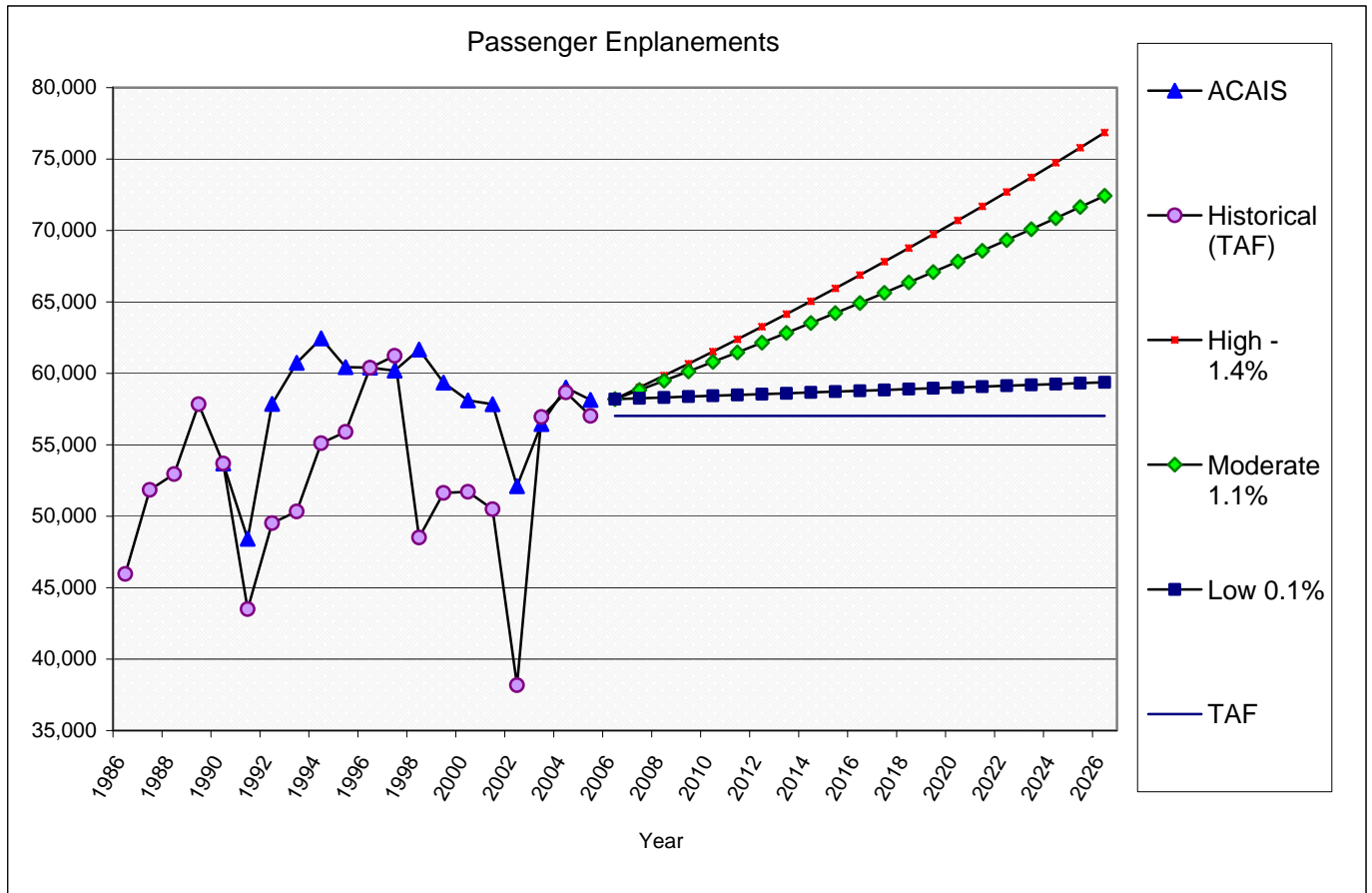


Source: Compiled by HDR Alaska, Inc., December 2006

Table 3-19
 Aircraft Operations Historical and Forecast – Kotzebue Airport

| Year | Historical (TAF) | High 1.4% | Moderate 1.1% | Low 0.1% | TAF |
|-------------|------------------|---------------|---------------|---------------|---------------|
| 1986 | 46,000 | | | | |
| 1987 | 50,000 | | | | |
| 1988 | 50,111 | | | | |
| 1989 | 60,000 | | | | |
| 1990 | 60,000 | | | | |
| 1991 | 60,000 | | | | |
| 1992 | 61,534 | | | | |
| 1993 | 61,534 | | | | |
| 1994 | 60,000 | | | | |
| 1995 | 60,000 | | | | |
| 1996 | 60,000 | | | | |
| 1997 | 60,000 | | | | |
| 1998 | 60,000 | | | | |
| 1999 | 60,000 | | | | |
| 2000 | 60,000 | | | | |
| 2001 | 60,000 | | | | |
| 2002 | 60,000 | | | | |
| 2003 | 60,000 | | | | |
| 2004 | 60000 | | | | |
| 2005 | 58325 | | | | |
| 2006 | | 42,454 | 42,454 | 42,454 | 58,325 |
| 2007 | | 43,048 | 42,921 | 42,496 | 58,325 |
| 2008 | | 43,651 | 43,393 | 42,539 | 58,325 |
| 2009 | | 44,262 | 43,870 | 42,581 | 58,325 |
| 2010 | | 44,882 | 44,353 | 42,624 | 58,325 |
| 2011 | | 45,510 | 44,841 | 42,667 | 58,325 |
| 2012 | | 46,147 | 45,334 | 42,709 | 58,325 |
| 2013 | | 46,793 | 45,833 | 42,752 | 58,325 |
| 2014 | | 47,448 | 46,337 | 42,795 | 58,325 |
| 2015 | | 48,113 | 46,847 | 42,838 | 58,325 |
| 2016 | | 48,786 | 47,362 | 42,880 | 58,325 |
| 2017 | | 49,469 | 47,883 | 42,923 | 58,325 |
| 2018 | | 50,162 | 48,410 | 42,966 | 58,325 |
| 2019 | | 50,864 | 48,942 | 43,009 | 58,325 |
| 2020 | | 51,576 | 49,481 | 43,052 | 58,325 |
| 2021 | | 52,298 | 50,025 | 43,095 | 58,325 |
| 2022 | | 53,031 | 50,575 | 43,138 | 58,325 |
| 2023 | | 53,773 | 51,131 | 43,182 | 58,325 |
| 2024 | | 54,526 | 51,694 | 43,225 | 58,325 |
| 2025 | | 55,289 | 52,263 | 43,268 | 58,325 |
| 2026 | | 56,063 | 52,837 | 43,311 | 58,325 |

Chart 3-6
Passenger Enplanements Historical and Forecast – Kotzebue Airport

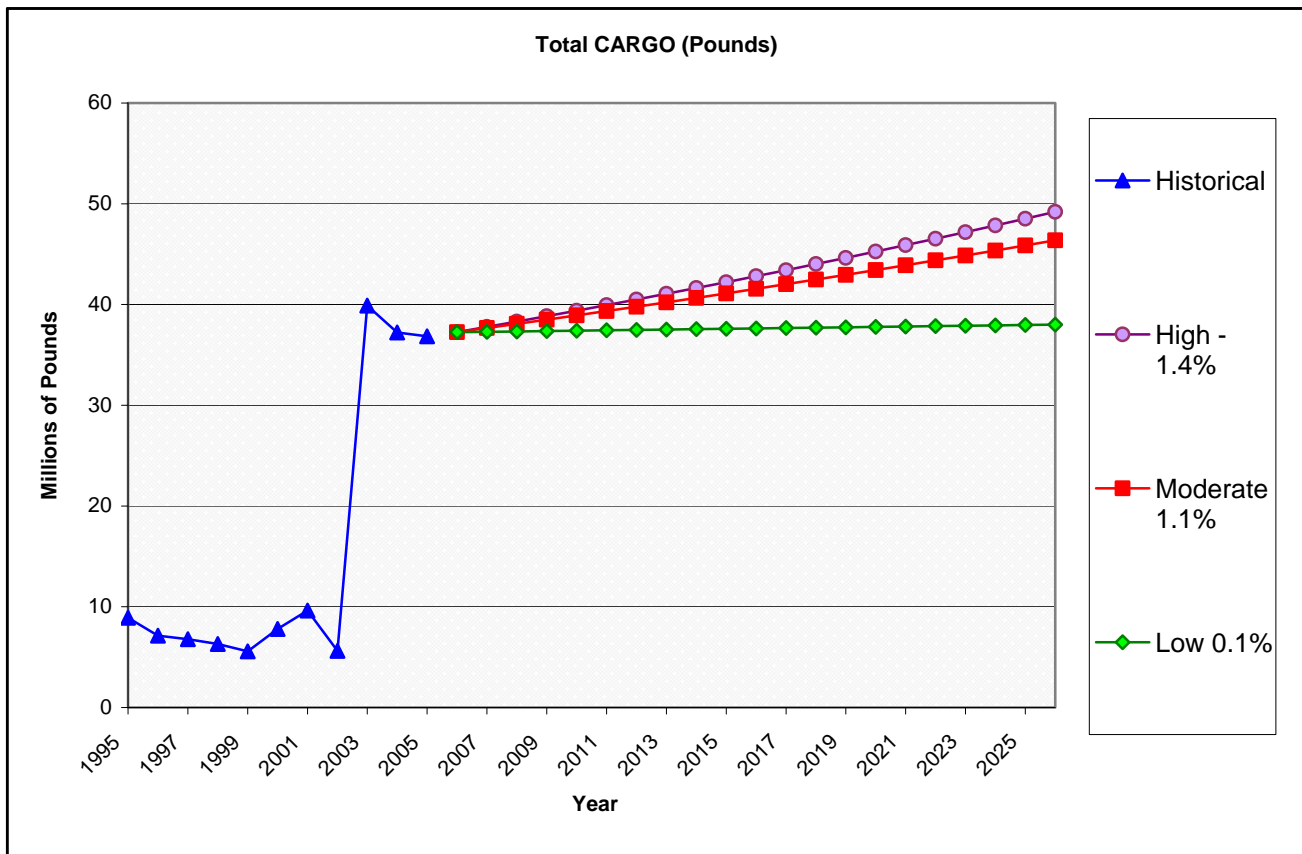


Source: Compiled by HDR Alaska, Inc., December 2006

Table 3-20
 Passenger Enplanement Historical and Forecast
 Kotzebue Airport

| Year | ACAIS | Historical (TAF) | High 1.4% | Moderate 1.1% | Low 0.1% | TAF |
|-------------|--------|------------------|---------------|---------------|---------------|---------------|
| 1986 | | 45,957 | | | | |
| 1987 | | 51,851 | | | | |
| 1988 | | 52,955 | | | | |
| 1989 | | 57,846 | | | | |
| 1990 | 53,695 | 53,695 | | | | |
| 1991 | 48,421 | 43,498 | | | | |
| 1992 | 57,861 | 49,514 | | | | |
| 1993 | 60,738 | 50,341 | | | | |
| 1994 | 62,445 | 55,117 | | | | |
| 1995 | 60,434 | 55,904 | | | | |
| 1996 | 60,400 | 60,387 | | | | |
| 1997 | 60,187 | 61,231 | | | | |
| 1998 | 61,670 | 48,515 | | | | |
| 1999 | 59,351 | 51,632 | | | | |
| 2000 | 58,112 | 51,708 | | | | |
| 2001 | 57,841 | 50,493 | | | | |
| 2002 | 52,106 | 38,180 | | | | |
| 2003 | 56,458 | 56,945 | | | | |
| 2004 | 58,999 | 58,665 | | | | |
| 2005 | 58,140 | 57,020 | | | | |
| 2006 | | | 58,198 | 58,198 | 58,198 | 57,020 |
| 2007 | | | 59,013 | 58,838 | 58,256 | 57,020 |
| 2008 | | | 59,839 | 59,485 | 58,314 | 57,020 |
| 2009 | | | 60,677 | 60,140 | 58,373 | 57,020 |
| 2010 | | | 61,526 | 60,801 | 58,431 | 57,020 |
| 2011 | | | 62,388 | 61,470 | 58,490 | 57,020 |
| 2012 | | | 63,261 | 62,146 | 58,548 | 57,020 |
| 2013 | | | 64,147 | 62,830 | 58,607 | 57,020 |
| 2014 | | | 65,045 | 63,521 | 58,665 | 57,020 |
| 2015 | | | 65,955 | 64,220 | 58,724 | 57,020 |
| 2016 | | | 66,879 | 64,926 | 58,783 | 57,020 |
| 2017 | | | 67,815 | 65,640 | 58,841 | 57,020 |
| 2018 | | | 68,764 | 66,362 | 58,900 | 57,020 |
| 2019 | | | 69,727 | 67,092 | 58,959 | 57,020 |
| 2020 | | | 70,703 | 67,830 | 59,018 | 57,020 |
| 2021 | | | 71,693 | 68,577 | 59,077 | 57,020 |
| 2022 | | | 72,697 | 69,331 | 59,136 | 57,020 |
| 2023 | | | 73,715 | 70,093 | 59,195 | 57,020 |
| 2024 | | | 74,747 | 70,865 | 59,255 | 57,020 |
| 2025 | | | 75,793 | 71,644 | 59,314 | 57,020 |
| 2026 | | | 76,854 | 72,432 | 59,373 | 57,020 |

Chart 3-7
Cargo Operations Forecast
Kotzebue Airport



Source: Compiled by HDR Alaska, Inc., December 2006

As previously mentioned, the Rural Air Service Improvement Act (RSIA) (Public Law 107-206, Sec. 3002, 2002) changed the freight, mail, and passenger service in rural Alaska including freight and mail reporting requirements for air carriers. The BTS implemented a system to facilitate all air carriers to submit their data on a web based system. Prior to this 2002 change in the law, only the largest air carriers reported their data. This change in the method of reporting has created a spike in the reported numbers.

Table 3-21
 Cargo Operations Historical and Forecast
 Kotzebue Airport

| Year | Historical | High - 1.4% | Moderate 1.1% | Low 0.1% |
|-------------|------------|-------------------|-------------------|-------------------|
| 1995 | 8,909,712 | | | |
| 1996 | 7,128,575 | | | |
| 1997 | 6,782,164 | | | |
| 1998 | 6,301,112 | | | |
| 1999 | 5,569,097 | | | |
| 2000 | 7,795,281 | | | |
| 2001 | 9,616,302 | | | |
| 2002 | 5,618,953 | | | |
| 2003 | 39,888,269 | | | |
| 2004 | 37,228,554 | | | |
| 2005 | 36,848,962 | | | |
| 2006 | | 37,254,301 | 37,254,301 | 37,254,301 |
| 2007 | | 37,775,861 | 37,664,098 | 37,291,555 |
| 2008 | | 38,304,723 | 38,078,403 | 37,328,847 |
| 2009 | | 38,840,989 | 38,497,265 | 37,366,176 |
| 2010 | | 39,384,763 | 38,920,735 | 37,403,542 |
| 2011 | | 39,936,150 | 39,348,863 | 37,440,945 |
| 2012 | | 40,495,256 | 39,781,701 | 37,478,386 |
| 2013 | | 41,062,190 | 40,219,300 | 37,515,865 |
| 2014 | | 41,637,060 | 40,661,712 | 37,553,381 |
| 2015 | | 42,219,979 | 41,108,991 | 37,590,934 |
| 2016 | | 42,811,059 | 41,561,190 | 37,628,525 |
| 2017 | | 43,410,414 | 42,018,363 | 37,666,153 |
| 2018 | | 44,018,159 | 42,480,565 | 37,703,820 |
| 2019 | | 44,634,414 | 42,947,851 | 37,741,523 |
| 2020 | | 45,259,295 | 43,420,277 | 37,779,265 |
| 2021 | | 45,892,926 | 43,897,900 | 37,817,044 |
| 2022 | | 46,535,427 | 44,380,777 | 37,854,861 |
| 2023 | | 47,186,923 | 44,868,966 | 37,892,716 |
| 2024 | | 47,847,539 | 45,362,524 | 37,930,609 |
| 2025 | | 48,517,405 | 45,861,512 | 37,968,539 |
| 2026 | | 49,196,649 | 46,365,989 | 38,006,508 |

Table 3-22 presents the 20-year air traffic forecast for the Kotzebue Airport.

Table 3-22
20-Year Air Traffic Forecast

| | <u>Forecast Levels, Base Year 2006</u> | | | | | <u>Average Annual Compound Growth Rates</u> | | | |
|--|--|------------------------|-------------------------|--------------------------|--------------------------|---|-----------------------|------------------------|------------------------|
| | <u>2006</u> | <u>2007</u> | <u>2011</u> | <u>2016</u> | <u>2026</u> | <u>2007</u> | <u>2011</u> | <u>2016</u> | <u>2026</u> |
| | <u>Base Yr. Level</u> | <u>Base Yr. + 1yr.</u> | <u>Base Yr. + 5yrs.</u> | <u>Base Yr. + 10yrs.</u> | <u>Base Yr. + 20yrs.</u> | <u>Base yr. to +1</u> | <u>Base yr. to +5</u> | <u>Base yr. to +10</u> | <u>Base yr. to +20</u> |
| Passenger Enplanements (Commercial) | | | | | | | | | |
| Air Carrier | 21,801 | 22,041 | 23,027 | 24,321 | 27,133 | 1.1% | 1.1% | 1.1% | 1.1% |
| Commuter | 36,397 | 36,797 | 38,443 | 40,605 | 45,299 | 1.1% | 1.1% | 1.1% | 1.1% |
| TOTAL | 58,198 | 58,838 | 61,470 | 64,926 | 72,432 | 1.1% | 1.1% | 1.1% | 1.1% |
| Operations | | | | | | | | | |
| <u>Itinerant</u> | | | | | | | | | |
| Air Carrier | 3,868 | 3,910 | 4,085 | 4,315 | 4,813 | 1.1% | 1.1% | 1.1% | 1.1% |
| Commuter/air taxi | 25,825 | 26,109 | 27,277 | 28,810 | 32,141 | 1.1% | 1.1% | 1.1% | 1.1% |
| Total Commercial Operations | 29,692 | 30,019 | 31,362 | 33,125 | 36,955 | 1.1% | 1.1% | 1.1% | 1.1% |
| General aviation | 10,219 | 10,331 | 10,793 | 11,400 | 12,718 | 1.1% | 1.1% | 1.1% | 1.1% |
| Military | 12 | 12 | 13 | 13 | 15 | 0.0% | 1.6% | 0.8% | 1.1% |
| <u>Local</u> | | | | | | | | | |
| General aviation | 2,428 | 2,455 | 2,565 | 2,709 | 3,022 | 1.1% | 1.1% | 1.1% | 1.1% |
| Military | 104 | 105 | 110 | 116 | 129 | 1.0% | 1.1% | 1.1% | 1.1% |
| TOTAL | 42,454 | 42,921 | 44,841 | 47,362 | 52,837 | 1.1% | 1.1% | 1.1% | 1.1% |
| Peak Hour Operations | | | | | | | | | |
| | 18 | 18 | 19 | 20 | 21 | | | | |
| Based Aircraft | | | | | | | | | |
| Single Engine (Nonjet) | 77 | 78 | 82 | 86 | 95 | 1.3% | 1.3% | 1.1% | 1.1% |
| Multi Engine (Nonjet) | 4 | 4 | 4 | 5 | 5 | 0.0% | 0.0% | 2.3% | 1.1% |
| Helicopter | 1 | 1 | 1 | 1 | 1 | 0.0% | 0.0% | 0.0% | 0.0% |
| Ultra Light | 0 | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| Other | 0 | 0 | 0 | 0 | 0 | 0.0% | 0.0% | 0.0% | 0.0% |
| TOTAL | 82 | 83 | 86 | 92 | 101 | 1.2% | 1.0% | 1.2% | 1.0% |

Source: HDR Alaska, Inc. November 2006

3.6 Step 6: Compare Airport Planning Forecast Results with TAF

Table 3-23 presents a comparison between the updated air traffic forecast for Kotzebue Airport, based on the determined medium scenario growth rate of 1.1% and the FAA TAF. The growth rate is based on Step 4 (Section 3.4) Selecting Forecast Methods of this report. Based on communication with FAA personnel, the FAA TAF is an estimate of air traffic activity and does not accurately reflect actual conditions at the Kotzebue airport. The updated forecast presented in this report is based on current actual data as described in Section 3.2 of this report and is more representative of actual air traffic at Kotzebue Airport.

Table 3-23
 Comparing Airport Planning and TAF Forecast
 Kotzebue Airport

| | Year | Airport Forecast | TAF | AF/TAF % Change |
|------------------------|------|------------------|--------|-----------------|
| Passenger Enplanements | 2006 | 58,198 | 57,020 | 2% |
| | 2011 | 61,470 | 57,020 | 8% |
| | 2016 | 64,926 | 57,020 | 14% |
| | 2026 | 72,432 | 57,020 | 27% |
| Commercial Operations | 2006 | 29,692 | 20,325 | 46% |
| | 2011 | 31,362 | 20,325 | 54% |
| | 2016 | 33,125 | 20,325 | 63% |
| | 2026 | 36,955 | 20,325 | 82% |
| Military Operations | 2006 | 116 | 1,000 | -89% |
| | 2011 | 123 | 1,000 | -88% |
| | 2016 | 129 | 1,000 | -87% |
| | 2026 | 144 | 1,000 | -86% |
| GA Operations | 2006 | 12,647 | 37,000 | -66% |
| | 2011 | 13,358 | 37,000 | -64% |
| | 2016 | 14,109 | 37,000 | -62% |
| | 2026 | 15,740 | 37,000 | -57% |
| Total Operations | 2006 | 42,454 | 58,325 | -27% |
| | 2011 | 44,841 | 58,325 | -23% |
| | 2016 | 47,362 | 58,325 | -19% |
| | 2026 | 52,837 | 58,325 | -9% |

1. The TAF does not provide a forecast beyond 2025. TAF data shown for 2026 is actually 2025 adjusted for percentage growth rate. For this project TAF growth rate is 0% change annually therefore no change from the year 2025.
2. % Difference is rounded. Cells may not add exactly.
3. Note: TAF data is based on a U.S. government fiscal year basis (October through September)

3.7 Step 7: Obtain Approval of the Forecast

The FAA has a responsibility to review aviation forecasts that are submitted to the agency in conjunction with airport planning, including airport master plans and environmental studies. FAA reviews such forecasts with the objective of including them in its TAF and the NPIAS. In addition, aviation activity forecasts are an important input to benefit-cost analyses associated with airport development, and FAA reviews these analyses when federal funding requests are submitted. The FAA has an AC on Airport Master Plans, AC 150/5070-6B, dated July 2005, which includes a chapter on aviation forecasts.

The forecasts should be:

- Realistic
- Based on the latest available data
- Reflect the current conditions at the airport
- Supported by information in the study
- Provide an adequate justification for the airport planning and development.

While the forecast methods provide a means for developing quantifiable results, aviation forecasters must use their professional judgment to determine what is reasonable as recommended in AC 150/5070-7, “The Airport System Planning Process,” paragraph 506.

In essence, then, FAA will find an airport planning forecast generally acceptable if the 5-year, 10-year, and 15-year forecast levels for the airport forecast and the TAF are within 10 percent of each other. The relevant parameters that should come within 10 percent are total airport operations, total commercial operations, and total enplanements. It should be emphasized that if the proposed airport forecast exceeds the TAF by more than 10 percent and is considered valid on FAA review, it will be incorporated into the TAF and NPIAS.

HDR believes that the forecast presented does represent a realistic outlook based on available data, reflecting the current conditions of the Ralph Wien Memorial Kotzebue Airport that can be used to provide justification for future airport planning as defined in AC 150/5070-7, “The Airport System Planning Process.”

FAA has reviewed this forecast and approved it on March 9, 2007 (Appendix B).

The design aircraft and facility requirements are presented in Section 4. The capacity analysis, also presented in Section 4, is based in part on the forecast information presented above.