

Chapter Three
Forecasts

Chapter Three

Forecasts

3.1. Introduction

This chapter provides the annual and derivative activity forecasts for Brookings Regional Airport (BKK). The forecasts are intended for use in subsequent facility requirements analyses for the airside and landside area development. A credible and usable forecast is critical to ensure that the type and size of the planned facilities are appropriate for future conditions. The forecasts have been developed for the years 2010, 2015, 2020, and 2025, corresponding to the short-, mid-, and long-range planning horizons. A single case, the most likely scenario, was developed for all aviation activity, and a review of potential athletic charter flight activity was also included. All forecasts assumed that there were no physical constraints on growth in the future.

In deriving the forecasts, comparisons with growth rates experienced at other airports in South Dakota were made. The assumptions inherent in the following calculations are based on input from airline and airport officials, previous BKK studies, relevant literature, and professional experience. Forecasting, however, is not an exact science. Departures from forecast levels in the local and national economy and in the airline business environment may have a significant effect on the projections made in this chapter.

These uncertainties increase toward the end of the forecast period when new technologies and changes in work and recreational practices may have an unpredictable impact on aviation activity. For these reasons, the forecasts should be periodically compared with actual BKK activity levels, and the airport plans and policies should be adjusted accordingly.

3.2. Review of Previous Forecasts and Existing Traffic

As *Table 3-1* shows, aviation activity in BKK has differed slightly when compared to previous forecasts included in the 1996 South Dakota Aviation System Plan (SDASP) and the 1994 FAA Terminal Area Forecast (TAF). There were a total of 1,777 enplanements forecast for 2000 in the SDASP, and the 1994 TAF forecast 1,000 enplanements for this same year. The actual number of 1,186 enplanements that were recorded in 2000 fell between the two forecasts. The SDASP forecast 14,309 operations in 2000, and the actual 15,042 operations in 2000 were 5.1 percent greater than had been projected. There were a total of 41 based aircraft also forecast for 2000, and the actual 43 based aircraft were 4.9 percent greater than had been forecast.

Table 3-1

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Comparison of Previous Forecasts with Existing Aviation Activity Levels

	Previous Forecasts		Percent Difference	
	1996 South Dakota Aviation System Plan 2000	1994 FAA Terminal Area Forecast 2000	1996 South Dakota Aviation System Plan 2000	1994 FAA Terminal Area Forecast 2000
Annual Enplanements	1,777	1,000	-33.3%	18.6%
Annual Aircraft Operations	14,309	15,042	5.1%	
Based Aircraft (a)	41	43	4.9%	

(a) Actual Based Aircraft in 2000 from FAA TAF (February 2004 Edition)

Sources: Airport records; FAA TAF (February 2004 Edition); 1996 South Dakota Aviation System Plan; and HNTB analysis

3.3. Air Service Analysis

BKX has scheduled passenger air service that is federally subsidized through the Essential Air Service (EAS) program. In the fall of 2004, the Great Lakes Aviation EAS service between BKX and Minneapolis/St. Paul was replaced with new EAS service provided by Mesa Airlines to Omaha. In each case, the service consisted of two daily weekday flights and one daily flight on each of Saturday and Sunday. In both the former Great Lakes service and current Mesa service, the EAS service is provided not only to BKX, but also to Huron. The outbound service consists of flights originating in Huron, stopping off in BKX to board additional passengers, and then continuing on to Omaha. The return service reverses this itinerary, with flights originating from either Minneapolis/St. Paul or Omaha, stopping in BKX first and then continuing on to Huron. This forecast assumes that the EAS subsidy will remain in place for the duration of the forecast.

The potential for passenger traffic at BKX is greatly impacted by the proximity of Sioux Falls to Brookings. Brookings is located just 55 road miles from the much larger commercial service airport in Sioux Falls. Due to the presence of multiple passenger carriers flying to many airline hubs from Sioux Falls, this airport is a major competitor for BKX. Many potential passengers who would otherwise use BKX drive down to Sioux Falls to take advantage of the more attractive schedules.,

One of the major impediments to passenger traffic growth at BKX in the past was that Great Lakes Aviation, a United Express carrier, flew to Minneapolis/St. Paul, a major hub for Northwest Airlines. Convenient United connections were not readily available at this airport, as United's only nonstop service from Minneapolis/St. Paul consisted solely of service to Chicago and Denver. Without convenient online connections to markets other than Chicago and Denver, the majority of passengers flying on Great Lakes between BKX and Minneapolis/St. Paul were just using the service to fly locally between BKX and Minneapolis/St. Paul.

As *Table 3-2* highlights, local traffic between BKX and Minneapolis/St. Paul ranged from 61.3 percent to 86.9 percent of total onboard traffic between 1996 and the twelve months ending June 2004 (YE2Q04). The average fare in the Minneapolis/St. Paul market ranged from \$91 to \$100 during this period, while the average domestic fare in all other markets ranged from \$167 to \$238. The relatively high fares to destinations beyond Minneapolis/St. Paul combined with the inconvenient service in BKX and lack of online connections in Minneapolis/St. Paul contrasted sharply with the lower fares in Sioux Falls, the more convenient service there, and the plentiful number of online connections that were available from carriers feeding their appropriate airline hubs from Sioux Falls.

BKX does not compare favorably to Sioux Falls when fare and travel time factors are applied to common destinations. Certainly, service to Omaha does afford the enplaned BKX passenger with cheaper options as compared to the former Minneapolis-St. Paul hub service, but much depends upon the tolerance of that passenger for lengthy trip

durations as well as elastic price sensitivity even given ground travel cost to and from Sioux Falls as well as parking fees.

With the continued realignment of airline alliance networks, there certainly is a possibility that Mesa or a successor EAS-subsidized carrier could establish an enhanced code-share arrangement that might better align connections into and out of Omaha. If that occurred and the trip times were reduced, flights out of BKK would likely be more attractive to travelers.

Table 3-2

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Historical Domestic O&D Traffic and Average Fares for Brookings 1996-YE2Q04 (12 months ending June 2004)

Calendar Year	Domestic O&D Passengers (a)			MSP as Percent of Total		Average Domestic Fare	
	Minneapolis	Total		Minneapolis	All Other Markets	Minneapolis	All Other Markets
1996	1,870	2,610		71.6%		97.68	171.91
1997	1,340	1,900		70.5%		90.86	189.73
1998	4,040	5,080		79.5%		100.27	200.59
1999	2,170	3,100		70.0%		92.15	204.73
2000	1,630	2,360		69.1%		92.21	209.95
2001	1,110	1,810		61.3%		92.30	210.91
2002	1,170	1,710		68.4%		94.30	241.52
2003	1,060	1,260		84.1%		92.30	167.25
YE2Q04	1,260	1,450		86.9%		92.30	238.42

(a) Historical O&D Traffic based on individual itinerary of ticketed passenger to and from Brookings.

Traffic does not reflect passengers flying multiple itineraries (one ticket between Brookings and MSP and a second ticket between MSP and another market). Large O&D traffic in 1998 does not agree with historic enplanement data as found in airport database, but O&D traffic reported according to source.

Source: US DOT 10% O&D Passenger Survey via Data Base Products; and HNTB Analysis

The new EAS service to Omaha is also at a disadvantage relative to service in Sioux Falls with respect to both fares and convenient service. Fares from Sioux Falls are lower than those from BKK to most markets and the total travel time (including driving from Brookings to the airport in Sioux Falls) is greater when using BKK service. However, one benefit that Brookings has over Sioux Falls is that additional ground transportation costs, including parking costs, do add to the total cost of any trip taken from Sioux Falls rather than Brookings.

Table 3-3 provides details on monthly enplanement trends in BKK. In recent years, 11 percent of annual BKK enplanements occurred during the peak month.

3.4. Passenger Traffic Forecast

In order to forecast future passenger traffic levels, it is necessary to review forecasts for growth in socioeconomic factors such as personal income. Personal income is one factor that frequently has a high correlation with passenger traffic levels. If major growth in personal income for Brookings County is projected, there could be the potential for unsubsidized scheduled passenger air service. However, as **Table 3-4** shows, personal income in Brookings County is projected to grow at an average annual rate of 2.3 percent from 2003 to 2025, only a very slight bit faster than the average annual growth rates of 2.2 percent for the state of South Dakota and 2.1 percent for the United States overall. Based on this projected growth in personal income, there is limited potential for unsubsidized scheduled passenger service in BKK.

As **Table 3-5** shows, smaller airports in South Dakota had their peak years of passenger traffic in the years just before the impacts of the deregulation of the airline industry took effect. Brookings, Aberdeen, Huron, Mitchell, Pierre, Watertown, and Yankton each had its peak year of passenger traffic in the years from 1977 through 1979. In contrast to the declining traffic trends at these smaller airports, both Rapid City and Sioux Falls have grown over the years, and in summing up the passenger traffic at all commercial airports in South Dakota, the growth of these two airports has more than offset the declines at the other airports. In 1999, South Dakota airports enplaned over 600,000 passengers. Based on year to date numbers for 2004, it is likely that there will be a record number of passengers in South Dakota during this year. In addition to the growth in traffic at South Dakota's two major airports, the airport in Omaha has also experienced significant growth since deregulation. The introduction of low fare carrier service at Omaha in the mid-1990s helped it average 3.1 percent annual growths from 1976 through 2002, a growth rate that easily outpaces the growth at any South Dakota airport. The trend for larger airports to grow at faster rates than smaller airports is not only prevalent in the Midwest, but all across the nation.

Table 3-3

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Comparison of Fares and Travel Times in Select Markets from Brookings and Sioux Falls December 2004

Market	Lowest Roundtrip Fare on Expedia.com/ Mesa-air.com & Southwest.com (a)	Airline(s)	Connect Airport(s)	Flight Travel Time	Estimated Drive Time to Airport (b)	Estimated Total Travel Time
Brookings-Orlando	407	Mesa/Delta	Omaha/Atlanta	6 hrs 44 min	0 hrs 3 min	6 hrs 47 min
Brookings-Omaha-Orlando	415	Mesa/Southwest	Omaha/Chicago	9 hrs 10 min	0 hrs 3 min	9 hrs 13 min
Sioux Falls-Orlando	303	United	Chicago	5 hrs 2 min	0 hrs 53 min	5 hrs 55 min
Brookings-Las Vegas	403	Mesa/Frontier	Omaha/Denver	8 hrs 35 min	0 hrs 3 min	8 hrs 38 min
Brookings-Omaha-Las Vegas	488	Mesa/Southwest	Omaha/Phoenix	6 hrs 10 min	0 hrs 3 min	6 hrs 13 min
Sioux Falls-Las Vegas	387	United	Denver	4 hrs 33 min	0 hrs 53 min	5 hrs 26 min
Brookings-Los Angeles	403	Mesa/Frontier	Omaha/Denver	8 hrs 50 min	0 hrs 3 min	8 hrs 53 min
Brookings-Omaha-Los Angeles	428	Mesa/Southwest	Omaha/Phoenix	6 hrs 55 min	0 hrs 3 min	6 hrs 58 min
Sioux Falls-Los Angeles	323	United	Denver	4 hrs 54 min	0 hrs 53 min	5 hrs 47 min
Brookings-Phoenix	383	Mesa/America West	Omaha	4 hrs 35 min	0 hrs 3 min	4 hrs 38 min
Brookings-Omaha-Phoenix	378	Mesa/Southwest	Omaha	4 hrs 15 min	0 hrs 3 min	4 hrs 18 min
Sioux Falls-Phoenix	308	United	Denver	4 hrs 20 min	0 hrs 53 min	5 hrs 13 min
Brookings-Chicago (O'Hare)	303	Mesa/United	Omaha	4 hrs 35 min	0 hrs 3 min	4 hrs 38 min
Brookings-Omaha-Chicago (Midway)	277	Mesa/Southwest	Omaha	3 hrs 25 min	0 hrs 3 min	3 hrs 28 min
Sioux Falls-Chicago (O'Hare)	213	United	Nonstop (no connection)	1 hr 37 min	0 hrs 53 min	2 hrs 30 min
Brookings-Washington (National)	389	Mesa/United	Omaha/Chicago	6 hrs 49 min	0 hrs 3 min	6 hrs 52 min
Brookings-Omaha-Baltimore/Washington	413	Mesa/Southwest	Omaha/Chicago	8 hrs 30 min	0 hrs 3 min	8 hrs 33 min
Sioux Falls-Washington (National)	276	United	Chicago	4 hrs 5 min	0 hrs 53 min	4 hrs 58 min
Brookings-Atlanta	440	Mesa/Delta	Omaha	4 hrs 21 min	0 hrs 3 min	4 hrs 24 min
No Southwest Service to Atlanta Area						
Sioux Falls-Atlanta	261	Northwest	Minneapolis	4 hrs 23 min	0 hrs 53 min	5 hrs 16 min

Note: Itineraries pulled on December 14, 2004 for departure on January 5, 2005 with return January 12, 2005

(a) Point to point fares using Southwest included fare of \$184.50 on Brookings-Omaha Mesa service and remainder on Omaha-final destination Southwest service.

(b) Estimated Drive Time from downtown Brookings to either Brookings Regional or Sioux Falls Airports based on AAA TripTik database

Sources: Expedia.com; Southwest.com; Mesa-air.com; and HNTB Analysis

Table 3-4

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Monthly Enplanements and Peak Month Percentages at BKX 1994-2003

Month	1994	1995	1996	1997 (a)	1998	1999	2000	2001	2002	2003	2004	94-96/98-03 Avg
January	282	248	125	104	119	129	74	58	53	53	82	127
February	234	199	129	86	180	105	90	75	62	46	47	124
March	256	179	108	106	166	146	96	107	53	32	95	127
April	217	164	135	88	195	116	96	94	57	49	93	125
May	253	199	103	47	169	144	105	68	88	31	74	129
June	234	238	121	-	153	131	94	86	59	38	53	128
July	219	222	112	-	113	186	107	66	73	52	89	128
August	207	255	113	70	130	102	100	66	60	55	34	121
September	247	227	98	124	147	84	99	49	61	43	63	117
October	228	272	123	125	146	120	121	71	95	84	63	140
November	257	237	106	145	149	79	96	66	55	99	127	127
December	224	210	125	215	197	107	108	77	71	88	134	134
Annual Total	2,858	2,650	1,398	1,110	1,864	1,449	1,186	883	787	670	1,527	1,527
Peak Month	282	272	135		197	186	121	77	95	99	163	163
Percent	9.9%	10.3%	9.7%		10.6%	12.8%	10.2%	8.7%	12.1%	14.8%	11.0%	11.0%

(a) Airport records show service interruption in summer of 1997, so therefore 1997 not included in peak month percentage calculation.

Source: Brookings Regional Airport records; and HNTB Analysis

Table 3-5

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Historical and Forecast Personal Income for Brookings County 1980-2025

Year	Personal Income (millions 1996\$)			Brookings County as Percent of South Dakota
	Brookings County	Statewide South Dakota	United States (billions 1996\$)	
1980	327.8	7,751.6	4,191	4.23%
1985	379.3	10,188.4	4,928	3.72%
1990	423.5	13,210.5	5,705	3.21%
1995	494.6	14,764.3	6,325	3.35%
1996	524.2	15,882.6	6,538	3.30%
1997	547.0	15,977.2	6,796	3.42%
1998	585.7	16,982.6	7,200	3.45%
1999	607.7	17,609.0	7,428	3.45%
2000	643.7	18,168.0	7,821	3.54%
2001	630.9	18,368.0	7,920	3.43%
2002	650.0	18,387.7	8,093	3.53%
2003	665.7	18,642.4	8,267	3.57%
2010	783.7	21,961.7	9,566	3.57%
2015	878.1	24,342.9	10,628	3.61%
2020	981.4	27,011.0	11,819	3.63%
2025	1,093.6	30,000.9	13,157	3.65%

Average Annual Growth Rates				
1980-2003	3.1%	3.9%	3.0%	
2003-2010	2.4%	2.4%	2.1%	
2010-2015	2.3%	2.1%	2.1%	
2015-2020	2.2%	2.1%	2.1%	
2020-2025	2.2%	2.1%	2.2%	
2003-2025	2.3%	2.2%	2.1%	

Sources: 2004 Complete Economic and Demographic Data Source (CEDDS), Woods & Poole Economics, Inc;

Table 3-6 and *Figure 3-1* provide the passenger enplanement forecast for BKK. There are 1,046 enplanements forecast for 2010, 1,179 enplanements forecast for 2015, 1,311 enplanements forecast for 2020, and 1,438 enplanements forecast for 2025. As no correlations between socioeconomic growth and enplanement growth could be uncovered in BKK, partially due to the subsidized EAS service not depending on free market economic forces, these forecasts are based on a methodology other than regression analysis. First, the FAA TAF forecast (February 2004 edition) for total enplanements in South Dakota is used as the base for future levels of statewide passenger traffic (2025 growth extrapolated from growth between 2015 and 2020). The percentage of South Dakota enplanements captured by BKK has declined over the years, and the estimated annual total of 902 enplanements in 2004 is roughly 0.17 percent of the statewide total. The personal income of Brookings County as a percentage of the statewide total personal income is estimated at 3.57 percent of the total. The ratio of income percentage to enplanement percentage is 21.0 (3.57/0.17) in 2004, and it is assumed that this ratio will remain constant for the duration of the forecast. As the share of Brookings County personal income as a percent of the South Dakota total grows slightly over the years, the share of its enplanements grows slightly, as well. By 2025, BKK is forecast to generate 0.174 percent of the statewide enplanement total. In a comparison with the most recent TAF, this forecast is slightly more optimistic and has slightly greater enplanement forecasts. Annual traffic, however, only averages to a few daily enplanements, well within the capacity offered by the current and assumed future EAS service.

3.5. General Aviation Based Aircraft Forecast

BKK had a total of 35 general aviation based aircraft in November 2004. There were 30 single engine piston, three multi engine piston, and two ultra light aircraft. Reliable historical figures for based aircraft were not available, so the forecast for based aircraft at BKK relies on the national growth rate for based aircraft as published recently by the FAA as its major source. As Brookings County is forecast to grow its personal income slightly faster than the nation overall over the duration of the forecast, the based aircraft forecast for BKK forecasts a slightly greater growth rate in based aircraft than the national average.

As *Table 3-7* shows, based aircraft at BKK are forecast to grow to 37 aircraft in 2010, 38 aircraft in 2015, 40 aircraft in 2020, and 41 aircraft in 2025. Single engine piston aircraft are forecast to grow modestly in the nation, and by 2025, the forecast predicts that BKK will have 33 single engine piston aircraft. The national forecast predicts that there will be a decline in multi engine piston aircraft, and this forecast predicts that there will still be three multi engine piston aircraft based at BKK in 2025. Ultra light aircraft are predicted to grow at an average annual rate of 2.6 percent from 2004 to 2025 in the nation, and this forecast predicts that BKK ultra lights will grow roughly 1.9 percent annually during this period. In 2025, three ultra light aircraft are forecast to be based in BKK.

Table 3-6

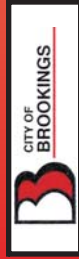
BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE
 Enplanement History in South Dakota and Omaha FY 1976-2002

Fiscal Year	Brookings	Aberdeen	Huron	Mitchell	Pierre	Rapid City	Sioux Falls	Watertown	Yankton	South Dakota Total	Rapid City + Sioux Falls	All Other SD Airports	Omaha
1976	2,946	36,163	6,751	3,674	37,348	126,546	247,224	14,072	5,481	477,259	373,770	103,489	788,542
1977	3,240	37,821	6,540	3,852	36,161	132,903	244,232	13,484	5,633	480,626	377,135	103,491	849,198
1978	3,003	40,128	6,944	4,016	38,527	147,019	274,841	16,247	5,521	533,243	421,860	111,383	905,576
1979	2,665	39,580	7,188	4,661	40,512	164,722	290,423	16,347	6,365	569,798	455,145	114,653	987,919
1980	2,713	33,580	6,025	3,815	35,534	150,057	249,183	15,072	5,045	498,311	399,240	99,071	891,965
1981	1,549	24,323	3,294	2,385	23,951	121,024	183,063	9,591	3,161	370,792	304,087	66,705	800,385
1982	897	19,056	1,491	792	19,560	106,875	199,088	7,518	1,583	355,963	305,963	50,000	834,867
1983	1,959	23,697	2,572	1,135	23,511	124,071	216,482	7,764	1,317	400,549	340,553	59,996	931,174
1984	2,633	25,415	2,744	1,451	18,628	119,176	197,346	9,422	1,904	376,086	316,522	59,564	1,015,499
1985	3,213	23,580	2,792	1,386	11,077	141,606	236,408	10,871	1,141	428,861	378,014	50,847	1,078,993
1986	2,857	29,018	2,983	1,128	10,471	159,126	251,846	8,946	801	464,319	410,972	53,347	1,098,739
1987	2,399	26,377	2,993	1,019	12,313	184,413	273,205	7,165	534	508,019	457,618	50,401	1,119,354
1988	2,167	26,143	2,751	1,017	17,886	162,421	238,358	7,267	-	455,843	400,779	55,064	1,105,395
1989	2,055	24,085	3,517	1,040	15,910	157,812	233,557	7,042	310	443,273	391,369	51,904	1,050,235
1990	2,277	24,301	3,380	1,024	16,227	160,767	237,091	7,580	903	451,273	397,858	53,415	1,030,627
1991	1,147	22,605	1,932	613	17,153	168,566	229,527	7,374	1,826	449,596	398,093	51,503	1,071,992
1992	573	27,801	2,207	497	15,696	188,164	277,818	7,956	3,067	523,206	465,982	57,224	1,106,114
1993	933	26,460	2,529	767	16,885	189,350	259,471	6,903	3,217	505,582	448,821	56,761	1,046,547
1994	1,462	26,740	3,577	743	16,108	185,830	282,444	6,321	3,026	524,789	468,274	56,515	1,171,790
1995	1,937	25,304	4,781	1,249	15,295	180,457	273,809	7,464	2,770	511,129	454,266	56,863	1,462,172
1996	1,412	25,514	3,881	697	15,967	184,799	328,238	7,591	1,814	568,501	513,037	55,464	1,722,841
1997	623	24,654	3,548	123	15,056	170,499	345,425	9,058	1,027	569,390	515,924	53,466	1,736,890
1998	2,644	27,202	2,153	-	17,697	169,071	343,369	9,821	2,026	571,339	512,440	58,899	1,801,290
1999	1,805	26,011	3,100	-	17,976	194,889	353,380	9,329	1,494	606,179	548,269	57,910	1,827,267
2000	1,183	23,710	3,171	-	18,332	196,331	349,496	7,612	1,040	599,692	545,827	53,865	1,865,630
2001	1,032	24,098	1,806	-	18,381	192,911	352,994	5,661	568	596,419	545,905	50,514	1,806,008
2002	881	23,364	1,388	-	14,840	196,125	293,254	5,876	-	534,847	489,379	45,468	1,735,032
<i>Average Annual Growth Rates</i>													
1976-2002	-4.5%	-1.7%	-5.9%	-100.0%	-3.5%	1.7%	0.7%	-3.3%	-100.0%	0.4%	1.0%	-3.1%	3.1%

Note: Outlined Annual Enplanement Totals indicate Peak Year Activity

Source: FAA Terminal Area Forecast, February 2004 Edition; HNTB Analysis

Operations History and Forecast



Airport Master Plan Brookings Regional Airport

Table 3-7

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Enplanement Forecast for Brookings and South Dakota 2010, 2015, 2020, and 2025

Fiscal Year	Annual Enplanements			Brookings Personal Income as Percent of SD	Income to Enplanement Percent Ratio (c)	Enplanement Forecast Feb. 2004 TAF (d)
	Brookings (a)	South Dakota Total (b)	Brookings as Percent			
1976	2,946	477,259	0.617%			2,946
1977	3,240	480,626	0.674%			3,240
1978	3,003	533,243	0.563%			3,003
1979	2,665	569,798	0.468%			2,665
1980	2,713	498,311	0.544%	4.23%	7.8	2,713
1981	1,549	370,792	0.418%			1,549
1982	897	355,963	0.252%			897
1983	1,959	400,549	0.489%			1,959
1984	2,633	376,086	0.700%			2,633
1985	3,213	428,861	0.749%	3.72%	5.0	3,213
1986	2,857	464,319	0.615%			2,857
1987	2,399	508,019	0.472%			2,399
1988	2,167	455,843	0.475%			2,167
1989	2,055	443,273	0.464%			2,055
1990	2,277	451,273	0.505%	3.21%	6.4	2,277
1991	1,147	449,596	0.255%			1,147
1992	573	523,206	0.110%			573
1993	933	505,582	0.185%			933
1994	1,462	524,789	0.279%			1,462
1995	1,937	511,129	0.379%	3.35%	8.8	1,937
1996	1,412	568,501	0.248%	3.30%	13.3	1,412
1997	623	569,390	0.109%	3.42%	31.3	623
1998	2,644	571,339	0.463%	3.45%	7.5	2,644
1999	1,805	606,179	0.298%	3.45%	11.6	1,805
2000	1,183	599,692	0.197%	3.54%	18.0	1,183
2001	1,032	596,419	0.173%	3.43%	19.8	1,032
2002	881	534,847	0.165%	3.53%	21.5	881
2003	620	516,263	0.120%	3.57%	29.7	890
2004	902	530,452	0.170%	3.57%	21.0	899
2010	1,046	615,602	0.170%	3.57%	21.0	958
2015	1,179	686,563	0.172%	3.61%	21.0	1,009
2020	1,311	757,527	0.173%	3.63%	21.0	1,060
2025	1,438	828,491	0.174%	3.65%	21.0	1,111
<i>Average Annual Growth Rates</i>						
1976-2004	-4.1%	0.4%				
2004-2025	2.2%	2.1%				1.0%

(a) Enplanements for FY 2003 and FY 2004 based on airport records (FY 2004 based on 12 months from August 2003 through July 2004)

(b) Enplanements for FY 2004 based on FAA Terminal Area Forecast, February 2004 Edition

(c) Ratio of Income Percentage to Enplanement Percentage (in FY 2002, BKX had 0.165% of SD enplanements, but 3.53% of SD personal income, so $3.53/0.165 = 21.5$)

(d) Enplanements for FY 2003 and FY 2004 based on FAA Terminal Area Forecast, February 2004 Edition

Source: Table 3.4; FAA Terminal Area Forecast, February 2004 Edition; HNTB Analysis

Based partly on the lack of corporate hangar facilities, there are no corporate jets currently based at BKK. By 2010, it is forecast that there would be one based jet at BKK, and by 2020, it is forecast that there would be a second based jet. In comparison to other airports in South Dakota with scheduled passenger service, there were two based jets in Sioux Falls, three in Rapid City, three in Aberdeen, two in Huron, and one in Watertown in 2004. Pierre and Brookings are the only two airports in South Dakota with scheduled passenger service that do not yet have any based jets. According to the latest FAA forecast, the national corporate jet fleet is forecast to grow from 8,650 jets in 2004 to 11,990 jets in 2010. BKK, which had 0.021 percent of the nation's single engine piston fleet, 0.017 percent of the multi engine piston fleet, and 0.013 percent of the ultra light fleet in 2004, would have 0.008 percent of the nation's corporate jet fleet in 2010 with its one based corporate jet. This share is expected to grow to 0.011 percent in 2020 when the second based jet is forecast to arrive at BKK. Both these shares are well below shares of other aircraft types currently based in BKK, so this forecast is very reasonable assuming that appropriate corporate hangar facilities would be available in the future.

3.6. Aircraft Operations and Fleet Mix Forecast

According to recent information provided by the airport in November 2004, BKK had a total of 28,369 operations in 2003. Scheduled passenger service is forecast to remain constant at 2,472 annual Beechcraft 1900 operations, while general aviation operations are expected to grow at similar rates for each aircraft type as the national rate forecast by the FAA for each aircraft type in its Aerospace Forecasts FY 2004-2015 publication. Based on these various growth rates, a total of 32,722 operations are forecast for 2025. Of this total, 20.4 percent will occur during the night, while the remaining 79.6 percent will occur during the day. These percentages were in effect for 2003, and no changes in these percentages are forecast. Instrument operations are projected to remain constant at approximately 25.7 percent of total BKK operations, and there are 8,420 instrument operations forecast for 2025. *Table 3-8* shows the fleet mix forecast, and *Table 3-9* shows the aircraft operations forecast by category of aviation. *Figure 3-2* summarizes.

3.7. Peak Hour Forecasts

Annual operations are projected to increase from 28,369 operations in 2003 to 32,722 operations in 2025. During the peak hour of aviation activity in 2003, it is estimated that with Beechcraft 1900s providing the only scheduled passenger service, and with schedules not having an arrival from Minneapolis (Omaha in 2004 and future years) and a departure to Minneapolis (Omaha in 2004 and future years) occurring within 60 minutes of one another, that there were an estimated two enplanements, two deplanements, and two total passengers occurring in the peak hour. Based on the growth in annual enplanements, peak hour enplanements, peak hour deplanements, peak hour total passengers are projected to grow to three in 2020 and 2025. With 14.7 percent of BKK operations occurring in the peak month of 2003, peak month aircraft operations are forecast to grow from 4,170 operations in 2003 to 4,810 operations in 2025. Average Day Peak Month operations are forecast to grow from 135 in 2003 to 155 in 2025. Due to the very modest growth rate forecast, peak hour aircraft operations are only forecast to grow from 20 to 23 operations during the forecast period. *Table 3-10* provides details on peak hour enplanements, passengers, and aircraft operations.

Master Plan Update

Table 3-8

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE
 General Aviation and Air Taxi Based Aircraft Forecast by Aircraft Type

Year	Based General Aviation and Air Taxi Aircraft in Brookings				FAA Forecast of General Aviation Aircraft in United States					
	Single Engine Piston	Multi Engine Piston	UltraLight	Turbojet	Subtotal	Single Engine Piston	Multi Engine Piston	UltraLight	Turbojet	Subtotal
2004	30	3	2	-	35	143,350	17,420	15,500	8,650	184,920
2010	31	3	2	1	37	146,150	16,910	18,065	11,990	193,115
2015	32	3	2	1	38	147,600	16,660	20,915	15,510	200,685
2020	32	3	3	2	40	149,050	16,410	23,765	19,030	208,255
2025	33	3	3	2	41	150,500	16,160	26,615	22,550	215,825
<i>Forecasted Average Annual Growth Rates</i>										
2004-2010	0.5%	0.0%	0.0%	NA	0.9%	0.3%	-0.5%	2.6%	5.6%	0.7%
2010-2015	0.6%	0.0%	0.0%	0.0%	0.5%	0.2%	-0.3%	3.0%	5.3%	0.8%
2015-2020	0.0%	0.0%	8.4%	14.9%	1.0%	0.2%	-0.3%	2.6%	4.2%	0.7%
2020-2025	0.6%	0.0%	0.0%	0.0%	0.5%	0.2%	-0.3%	2.3%	3.5%	0.7%
2004-2025	0.5%	0.0%	1.9%	NA	0.8%	0.2%	-0.4%	2.6%	4.7%	0.7%

Brookings Based Aircraft as Percent of United States

Year	Single Engine	Multi Engine	UltraLight	Turbojet	Subtotal
2004	0.021%	0.017%	0.013%	0.000%	0.019%
2010	0.021%	0.018%	0.011%	0.008%	0.019%
2015	0.022%	0.018%	0.010%	0.006%	0.019%
2020	0.021%	0.018%	0.013%	0.011%	0.019%
2025	0.022%	0.019%	0.011%	0.009%	0.019%

Sources: Airport Manager Survey (November 2004); FAA Aerospace Forecasts FY 2004-2015; and HINTB Analysis

Table 3-9

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE
Fleet Mix Forecast and Day/Night Split for all Aircraft Operations 2003-2025

Category of Aviation Aircraft Type	Total Annual Operations			Daytime Operations			Nighttime Operations			
	2003	2010	2015	2020	2025	2003	2010	2015	2020	2025
Scheduled Passenger										
Beechcraft 1900	2,472	2,472	2,472	2,472	2,472	1,854	1,854	1,854	1,854	1,854
Subtotal	2,472	2,472	2,472	2,472	2,472	1,854	1,854	1,854	1,854	1,854
General Aviation (a)										
Single Engine Piston	23,705	24,960	25,890	26,819	27,749	18,964	19,968	20,712	21,456	22,199
Multi Engine Piston	1,500	1,459	1,429	1,400	1,370	1,200	1,167	1,143	1,120	1,096
Turboprop	500	516	529	541	553	400	413	423	433	443
Turbojet	168	266	360	454	548	134	212	288	363	439
Helicopter	24	26	27	28	29	19	21	22	23	23
Subtotal	25,897	27,227	28,235	29,242	30,250	20,718	21,781	22,588	23,394	24,200
Total	28,369	29,699	30,707	31,714	32,722	22,572	23,635	24,442	25,248	26,054
Percent of Total	100.0%	100.0%	100.0%	100.0%	100.0%	79.6%	79.6%	79.6%	79.6%	79.6%
USA Total General Aviation Hours Flown (000s)										
Single Engine Piston	16,060	16,910	17,540	18,170	18,800					
Multi Engine Piston	2,540	2,470	2,420	2,370	2,320					
Turboprop	1,830	1,890	1,935	1,980	2,025					
Turbojet	2,745	4,340	5,880	7,420	8,960					
Helicopter	1,845	2,030	2,105	2,180	2,255					
Subtotal	25,020	27,640	29,880	32,120	34,360					

(a) General Aviation Operations Growth Rate by Aircraft Type at BKX similar to that for US overall growth rate in General Aviation Hours Flown

Sources: Airport Records & Surveys (November 2004); FAA Aerospace Forecasts FY 2004-2015; and HNTB Analysis

Enplanements - Base Case

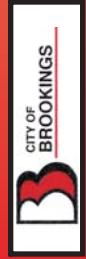
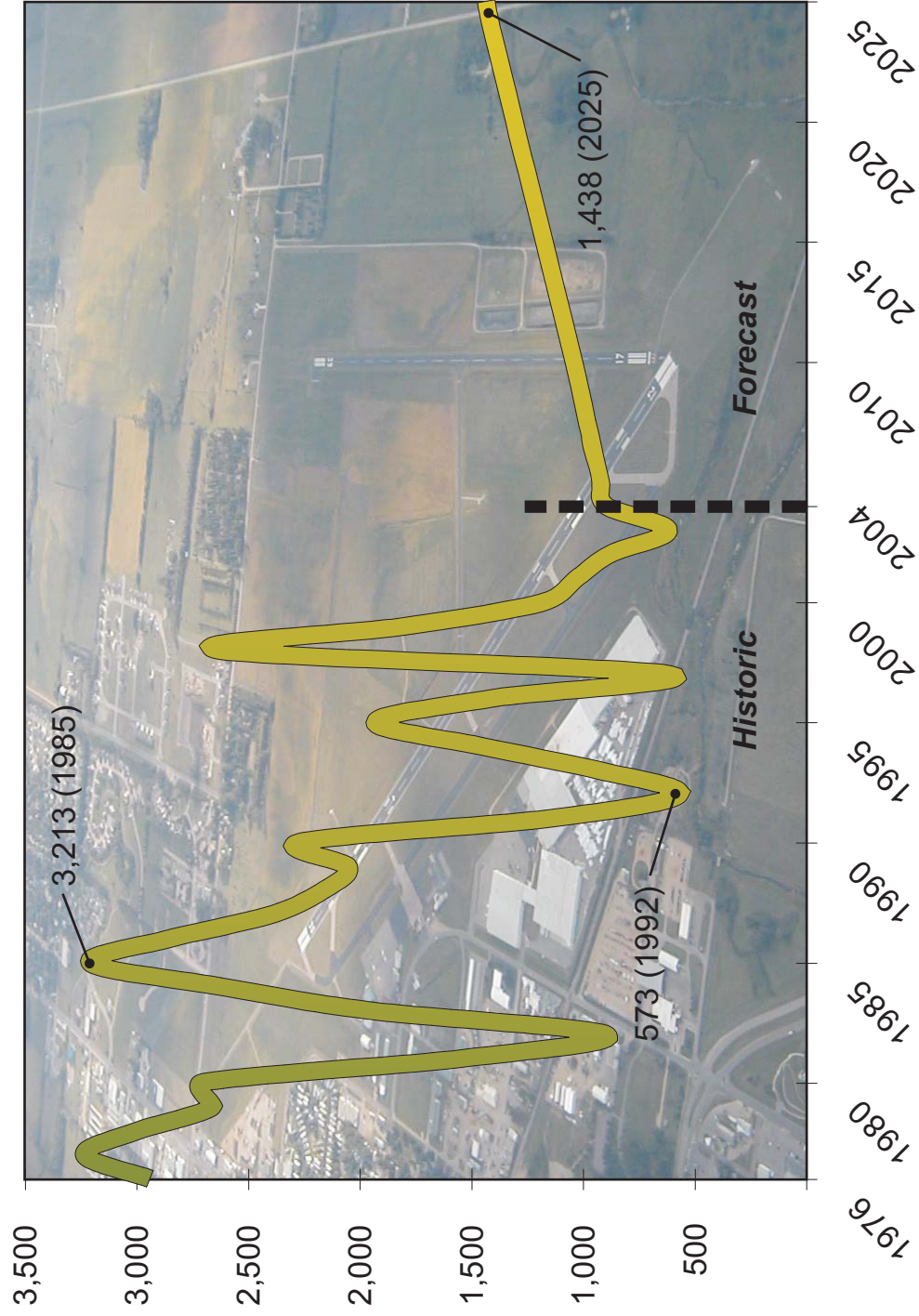


Table 3-10

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE
Annual Aircraft Operations Forecast by Category of Aviation 2000-2025

Calendar Year	Passenger Scheduled	Annual Operations				Total	Instrument Operations (a)
		General Aviation		Training	Subtotal		
		Non-Training	Training				
2000	2,472	1,077	11,493	12,570	15,042		
2001	2,440	2,061	20,394	22,455	24,895		
2002	2,472	2,439	23,778	26,217	28,689		
2003	2,472	2,407	23,490	25,897	28,369	7,300	
2010	2,472	2,531	24,696	27,227	29,699	7,642	
2015	2,472	2,624	25,610	28,235	30,707	7,902	
2020	2,472	2,718	26,525	29,242	31,714	8,161	
2025	2,472	2,812	27,439	30,250	32,722	8,420	
<i>Average Annual Growth Rate</i>							
2000-2003	0.0%	30.7%	26.9%	27.2%	23.6%		
2003-2010	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	
2010-2015	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	
2015-2020	0.0%	0.7%	0.7%	0.7%	0.6%	0.6%	
2020-2025	0.0%	0.7%	0.7%	0.7%	0.6%	0.6%	
2003-2025	0.0%	0.7%	0.7%	0.7%	0.7%	0.7%	

(a) Based on estimated average of 20 daily instrument operations in 2003.

Sources: Airport Records (November 2004); South Dakota Aviation System Plan; and HNTB Analysis

3.8. Athletic Charter Flights Scenario

The forecast presented in this report represents one possible forecast for BKX based on a reasonable assessment of current economic and industry factors. However, there is some speculation that there could be a new segment of aviation activity that could generate many additional aircraft operations and passenger enplanements at BKX. Athletic teams from South Dakota State University (SDSU) and their opponents could fly much more frequently if SDSU were to join the Big Sky Conference. The other schools in this athletic conference are all located in the Western and Rocky Mountain states, and air travel would be necessary for both SDSU athletic teams for their away games and their opponents for SDSU home games in order to avoid long ground transportation alternatives that are not at all convenient for time sensitive student athletes. If SDSU is unable to join the Big Sky Conference, then it will remain an independent Division I-A school while it applies to other conferences, which would comprise opponents to the east or south as opposed to west of South Dakota.

It is also assumed that charters of larger aircraft, such as Airbus A319s or Airbus A320s, for larger groups of travelers associated with football teams could also use BKX if the runway could support heavier aircraft. As this forecast assumes no constraints, Airbus A320 operations are included in this scenario. However, due to the fact that far fewer than 500 annual operations, the minimum annual number for a critical aircraft type for any airport, would be chartered for such large aircraft at BKX, it is likely that football charter flights will continue to use the airport in Sioux Falls.

As *Table 3-11* and *Figure 3-3* show, annual enplanements could increase substantially with athletic charter flights. For the purposes of this table, it is assumed that all SDSU athletic charter flight enplanements (including football) comprise an eligible “pool” of enplanements resulting from SDSU athletics, and that technically these enplanements would all use BKX for charter activity if airport facilities were sufficient for demand charter aircraft fleet type. Peak hour enplanements, deplanements, and total passengers would each reach 130 in 2025 in this scenario. The Embraer Regional Jets ERJ-135 (37 seats) and ERJ-145 (50 seats) and the Airbus A320 are forecast to be the aircraft utilized by athletic teams in their charter operation. Annual operations would not be as significantly impacted on a percentage basis, since it is forecast that all athletic charters of SDSU and their opponents would add a total of 392 annual operations to the base scenario.

Table 3-11

BROOKINGS REGIONAL AIRPORT MASTER PLAN AND ALP UPDATE

Peak Hour Forecasts for Enplanements, Passengers and all Aircraft Operations 2003-2025

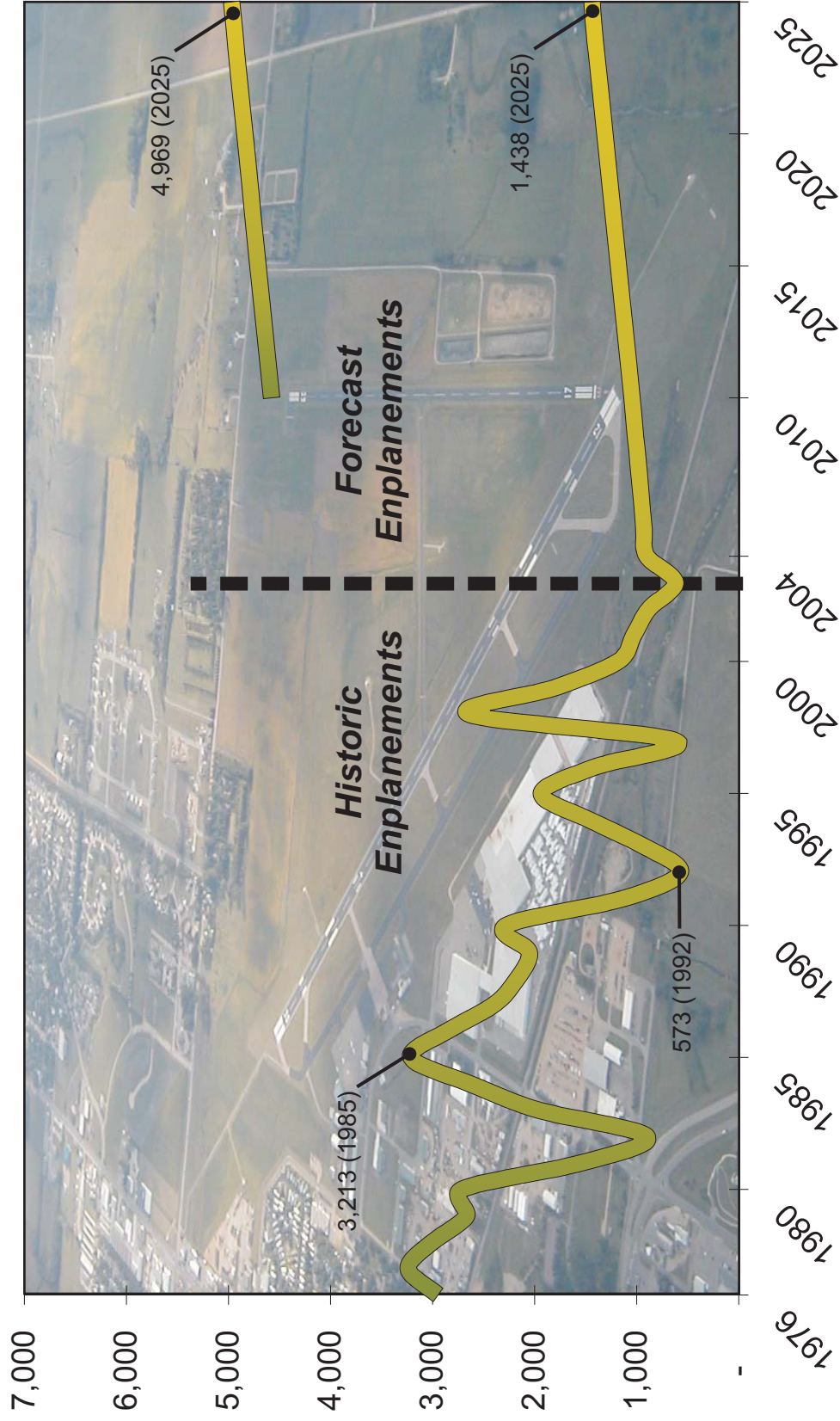
	2003	2010	2015	2020	2025
<u>Peak Hour Passenger Traffic</u>					
Enplanements	2	2	2	3	3
Deplanements	2	2	2	3	3
Total Passengers (a)	2	2	2	3	3
<u>Peak Hour Aircraft Operations</u>					
Peak Month Aircraft Operations (14.7 percent of Annual Ops) (c)	4,170	4,366	4,514	4,662	4,810
Average Day Peak Month (ADPM) Operations	135	141	146	150	155
Peak Hour Aircraft Operations (15 percent of ADPM)	20	21	22	23	23

(a) Assumption that Brookings was a midpoint in flights between Huron and Minneapolis, so with enplanements only occurring on departures to Minneapolis and deplanements only occurring on arrivals from Minneapolis, there are no hours where both enplanements and deplanements occur.

(b) Peak Month of February 2003 had 4,184 operations (14.7 percent of 2003 total of 28,369 operations)

Sources: Airport Records & Surveys (November 2004) and HNTB Analysis

Enplanements - Athletic Case



3.9. Summary

Although the base and alternate athletic charter scenarios are presented as two possible forecasts, there are many alternative potential outcomes that may occur if economic, political, or industry conditions change. As the major focus of providing this forecast is to provide a basis from which planning concepts can be developed, this forecast should be compared with actual aviation activity as it develops in the future. Appropriate adjustments to airport plans should be made in the future if the aviation activity differs greatly from the forecast.

In comparing this forecast with those recently issued by the FAA in its February 2004 edition of the Terminal Area Forecast (TAF) for BKK, there are substantial differences. The primary causes for these differences in enplanement and aircraft operations forecasts are that this study uses the updated and corrected bases for enplanements and aircraft operations that were the result of the aviation activity survey that was performed with the local airport officials and FBO in November 2004, while the TAF uses the outdated bases that were in historic Form 5010s.

In the November 2004 survey, it was established that there were 35 based aircraft at BKK, which agrees with the latest TAF. However, while the TAF projected 16,897 operations at BKK in 2003, the airport survey reveals that there were actually 28,369 operations at BKK. The airport records on historic annual enplanements also differ from those provided the latest TAF. While the airport figures are based on calendar year, and the TAF is based on fiscal year, the differences in these two datasets are fairly substantial and reflect different historic enplanement trends. It should be noted that in 2002, the TAF acknowledged a level of operations more consistent with actual airport figures, so this may be reflective of an outdated forecast. Based on the more recent enplanement figures provided in this forecast, the enplanement forecasts in this study have a slightly higher growth rate than those in the TAF.