3. Aviation Demand Forecasts

This chapter presents the forecasts of aviation demand for the Airport. The forecasts cover the period from 2004 through 2024 and include enplaned passengers, air cargo, commercial and general aviation aircraft operations, based aircraft, aircraft fleet mix, and other aviation activity. The forecasts presented here form the basis for determining the future development needs at the Airport, such as the future demand for terminal facilities, parking, aircraft storage hangars, apron space, etc. The forecasts will also be used to guide how much additional land may be needed to accommodate future Airport development in an orderly fashion. Later in the planning process, land and facility requirements are key factors in estimating costs and developing a financial plan for the Airport.

The development of forecasts requires both careful analysis and subjective judgment. This is especially true when preparing forecasts for an airport such as St. Cloud Regional, where a high rate of population and economic growth is tempered by St. Cloud's proximity to the Minneapolis/St. Paul metropolitan area and Minneapolis/St. Paul International Airport (MSP). Unrealized demand for commercial air service is much higher than actual numbers of enplaned passengers because so many passengers bypass STC and drive to MSP for air travel.

This chapter is organized in the following subsections to set forth both the quantifiable and non-quantifiable factors that are important in developing the forecasts:

- Historical Aviation Activity and Trends
- Factors Affecting Aviation Activity
- Forecast Methodologies
- Baseline Forecast of Enplaned Passengers
- Alternative Demand Scenarios
- Air Cargo Activity
- Aircraft Operations and Fleet Mix Projections
- Planning Activity Levels

3.1 Historical Aviation Activity and Trends

This section provides a detailed analysis of STC's aviation activity, including commercial air service, enplaned passengers, passenger travel patterns (including origin and destination patterns), aircraft operations, and based aircraft.

3.1.1 Overview of Commercial Air Service

Commercial service at STC began in July 1993 when Mesaba Airlines initiated 19-seat Swearingen Metroliner service between STC and MSP. In the late 1990s, Mesaba upgraded its turboprop fleet to Saab 340 aircraft. This 34-seat aircraft is still in use and is likely to remain in the fleet until Northwest retires the Saabs in or around 2015.

Commercial service patterns at STC have remained largely the same since the 1990s. However, until recently, service at STC was mostly shared with other cities to the north and west, including Bemidji, Brainerd, Hibbing, and Grand Rapids in Minnesota and Aberdeen and Watertown in South Dakota. Cities were paired to maximize coverage throughout the day in seasonal or smaller markets. In 2004,

Northwest initiated dedicated service between STC and MSP: with frequencies of five flights per weekday and four flights per weekend day.

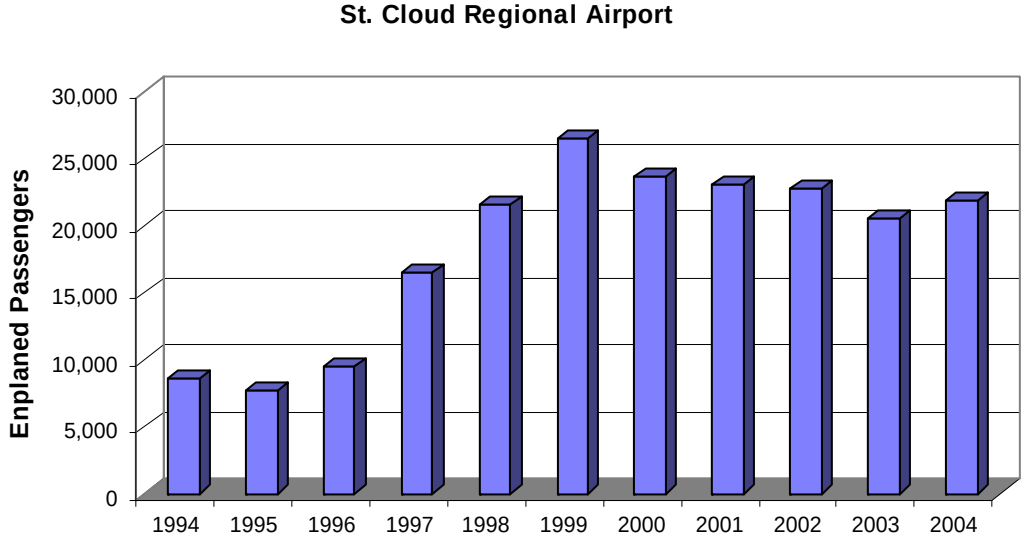
There is no scheduled all-cargo service at the Airport. Most express packages are carried by truck to Minneapolis/St. Paul. Cargo lift on the Saab 340 is limited to air freight checked by passengers.

3.1.2 Enplaned Passengers

Exhibit 3-1 shows the history of enplaned passengers at STC, beginning in 1994, the first full year of service. In the initial years of service, fewer than 10,000 passengers were enplaned annually. The low level of enplaned passengers stemmed from the use of 19-seat aircraft. St. Cloud passengers competed for seats with passengers from cities further away, where the distance to MSP was greater and the option to drive less attractive. In 1997, Mesaba began to phase in the Saab 340 aircraft and in the late 1990s, Northwest introduced the Fly Local program, a fare initiative designed to stimulate the use of Minnesota airports in outlying areas. For a fixed add-on of $25, passengers could fly from St. Cloud. The Fly-Local program contributed to 1999 being the busiest year for enplaned passengers in Airport history.

Exhibit 3-1

History of Enplaned Passengers, 1994-2004



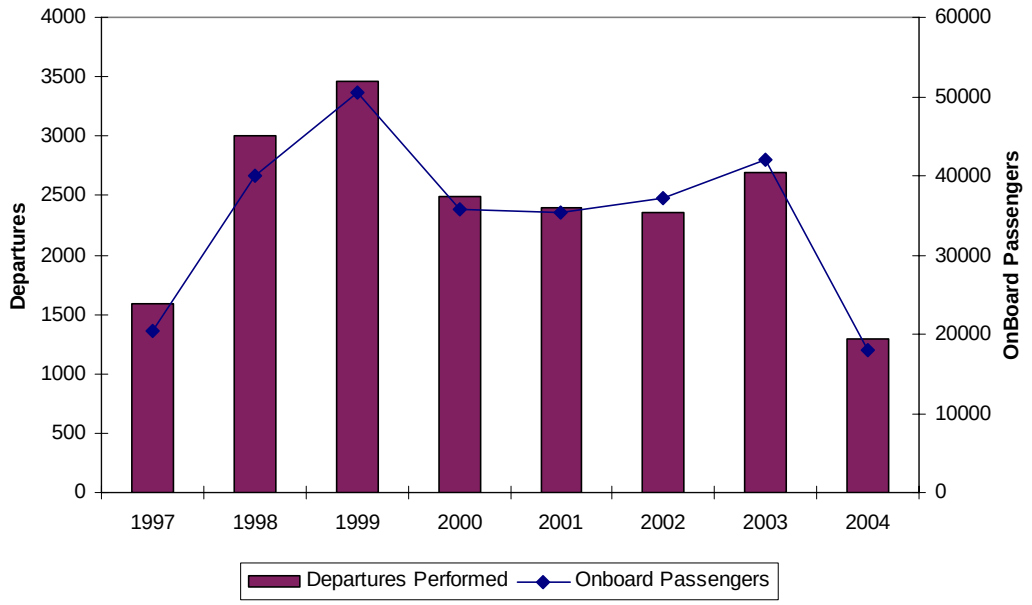
Source: St. Cloud Regional Airport records
Prepared by: KRAMER aerotek, inc.

A review of numbers of on-board passengers and departures suggests that St. Cloud is a "service driven" market rather than a "demand driven" market. **Exhibit 3-2** shows the close correlation between the number of departures and the number of on-board passengers. Other information supports the determination that St. Cloud is a service driven market. The St. Cloud service area has a very low enplaned passenger to population ratio, well below national averages even for communities

of its size. Furthermore, past travel agent ticket samples indicate that more than 80 percent of passengers in the St. Cloud area use MSP as their principal airport.[1]

Exhibit 3-2

Comparison of On-Board Passengers and Departures, 1997-2004



Source: USDOT, T100 Segment Database, 1997 – August 2004
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

3.1.3 Passenger Travel Patterns

The U.S. Department of Transportation's (USDOT's) origin and destination survey records the itinerary and fares of 10 percent of passengers traveling within the United States. This sample is quite accurate for medium- to large-hub airports; less so for an airport with a large diversion rate such as STC.[2] **Table 3-1** shows St. Cloud travel patterns for calendar year 2003. St. Cloud's top five markets are: Chicago, Phoenix, Washington, D.C., Denver, and Las Vegas. These markets are also ranked highly for Minneapolis/St. Paul and are confirmed by a series of ticket samples undertaken for St. Cloud in the past.[3]

Also noteworthy, are the relatively high average fares paid by St. Cloud passengers. In 2003, STC passengers paid an average one way fare of $191, compared with an average fare for MSP passengers of $173, and a national average of $138. The dominance of Northwest at MSP has resulted in a higher fare environment for all airports in Minnesota.

[1] Local St. Cloud travel agents participated in ticket samples in 1998, 1999, 2002, and 2004. Starting in 1999, diversion to MSP exceeded 80 percent.
[2] St. Cloud and Minneapolis/St. Paul O&D patterns are quite similar. However MSP's O&D pattern might serve as a better representation of the full range of travel from central Minnesota.
[3] St. Cloud ticket samples, 1998, 1999, 2002 and 2004.

Table 3-1

Top 30 Origin and Destination Markets for St. Cloud Regional Airport – 2003

Rank	Market	Passengers	Non-Stop Miles	Average Fare	Yield per Coupon Mile
1	Chicago	1,590	401	$160	$0.3989
2	Phoenix	1,360	1,267	$152	$0.1131
3	Washington, D.C.	1,290	980	$209	$0.2120
4	Denver	1,150	667	$146	$0.1977
5	Las Vegas	1,060	1,279	$190	$0.1398
6	Dallas	970	887	$239	$0.2616
7	Minneapolis-St. Paul	970	61	$61	$1.0117
8	Orlando	940	1,370	$151	$0.1096
9	New York/Newark	840	1,064	$175	$0.1615
10	St Louis	830	506	$205	$0.4012
11	Kansas City	810	433	$236	$0.5207
12	Detroit	800	582	$220	$0.3639
13	Seattle-Tacoma	800	1,346	$169	$0.1138
14	Atlanta	730	967	$170	$0.1752
15	San Diego	730	1,516	$161	$0.1014
16	San Francisco	660	1,556	$215	$0.1296
17	Houston	620	1,076	$300	$0.2719
18	Milwaukee	610	354	$131	$0.3658
19	Los Angeles	600	1,515	$185	$0.1158
20	Portland	580	1,377	$165	$0.1106
21	Nashville	570	755	$173	$0.2274
22	Dayton	560	634	$212	$0.3337
23	Tampa	520	1,367	$122	$0.0884
24	Boston	510	1,166	$201	$0.1697
25	Philadelphia	510	1,032	$236	$0.2244
26	Fort Myers	470	1,477	$181	$0.1172
27	Indianapolis	460	564	$246	$0.4320
28	Santa Ana	430	1,503	$177	$0.1117
29	Charlotte	420	991	$226	$0.2266
30	Cleveland	380	676	$245	$0.3574
Total – Top 30 Markets		22,770			
Weighted Average – Top 30 Markets			948	$183	$0.1870
Total – All Markets		36,730			
Weighted Average – All Markets			969	$191	$0.1872
Minneapolis/St. Paul Average			1,086	$173	$0.1596
United States Average			939	$138	$0.1211

Source: USDOT *Origin & Destination Survey of Airline Passenger Traffic, Domestic*.
Prepared by: Ricondo & Associates, Inc.

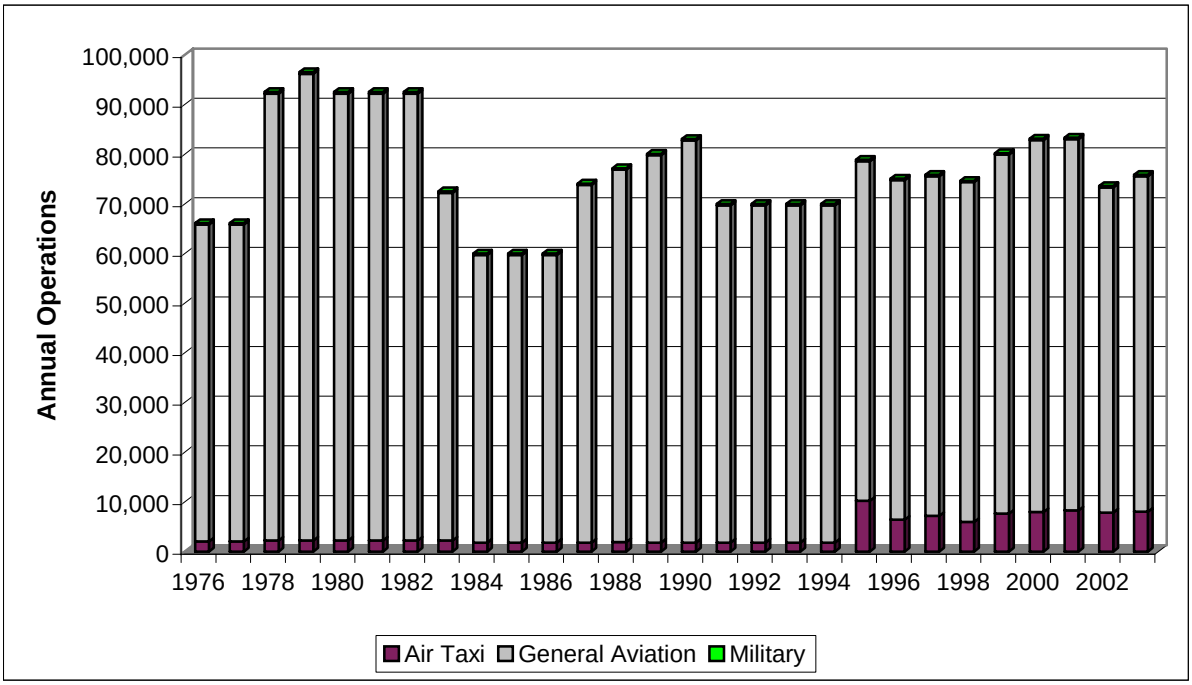
3.1.4 Aircraft Operations

Prior to November 2004, the number and type of operations at STC were estimates based on sample traffic counts. On November 8, 2004, the contract Airport traffic control tower at STC began operations, enabling accurate traffic counts going forward. **Table 3-2** shows estimates of operations reported to the FAA. Total operations in 2003 numbered 75,890. Military represents less than one percent of operations; Northwest Airlink represented 10.6 percent in 2003; and the vast majority of operations are general aviation. The St. Cloud State University Aviation Department contracts with Wright Aero, a fixed based operator (FBO) at the Airport, to provide flight training. Flight school training contributes significantly to local general aviation activity and explains the preponderance of local versus itinerant operations.

Exhibit 3-3 shows annual operations at the Airport since 1976. In 1995, Mesaba operations began to contribute to the composition of commuter/air taxi aircraft activity. Over the last 10 years, estimates of general aviation operations indicate a relatively constant level of activity, with air taxi operations contributing the largest increment of new activity.

Exhibit 3-3

Operation Trends, 1976-2003



Source: FAA Terminal Area Forecasts, 2004
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

Exhibit 3-4 shows the distribution of operations as reported by Airport management on the FAA 5010 form. Local general aviation operations predominate with 51 percent, followed by itinerant general aviation operations. Total general aviation activity accounts for 87 percent of all operations.[4]

[4] Note that Form 5010 separates air taxi and commuter operations, whereas the FAA Terminal Area Forecast combines these two categories.

Table 3-2

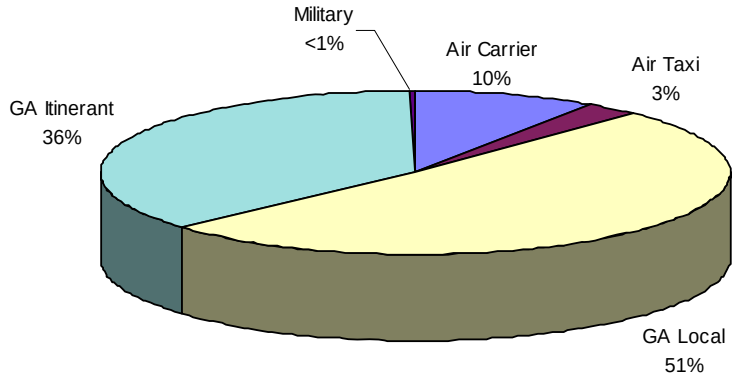
Aircraft Operations, 1976-2003

	Itinerant Operations					Local Operations			
Year	Air Carrier	Air Taxi	General Aviation	Military	Total Itinerant	General Aviation	Military	Total Local	Total Operations
1976	-	2,000	23,850	150	26,000	40,000	150	40,150	66,150
1977	-	2,000	23,850	150	26,000	40,000	150	40,150	66,150
1978	-	2,200	40,000	175	42,375	50,000	175	50,175	92,550
1979	4	2,200	42,000	175	44,379	52,000	175	52,175	96,554
1980	-	2,200	40,000	175	42,375	50,000	175	50,175	92,550
1981	-	2,200	40,000	175	42,375	50,000	175	50,175	92,550
1982	-	2,200	40,000	175	42,375	50,000	175	50,175	92,550
1983	-	2,200	30,000	175	32,375	40,000	175	40,175	72,550
1984	-	1,800	24,900	150	26,850	33,000	150	33,150	60,000
1985	-	1,800	24,900	300	27,000	33,000	-	33,000	60,000
1986	-	1,800	24,900	300	27,000	33,000	-	33,000	60,000
1987	-	1,800	39,000	300	41,100	33,000	-	33,000	74,100
1988	-	1,903	42,000	300	44,203	33,000	-	33,000	77,203
1989	-	1,800	45,000	300	47,100	33,000	-	33,000	80,100
1990	-	1,800	48,000	300	50,100	33,000	-	33,000	83,100
1991	-	1,800	28,900	300	31,000	39,000	-	39,000	70,000
1992	-	1,800	28,900	300	31,000	39,000	-	39,000	70,000
1993	-	1,800	28,900	300	31,000	39,000	-	39,000	70,000
1994	-	1,800	28,900	300	31,000	39,000	-	39,000	70,000
1995	-	10,204	28,900	300	39,404	39,500	-	39,500	78,904
1996	100	6,400	28,900	300	35,700	39,500	-	39,500	75,200
1997	-	7,158	28,900	300	36,358	39,500	-	39,500	75,858
1998	-	5,972	28,900	300	35,172	39,500	-	39,500	74,672
1999	-	7,620	30,625	300	38,545	41,675	-	41,675	80,220
2000	-	7,947	31,773	300	40,020	43,126	-	43,126	83,146
2001	-	8,275	31,724	300	40,299	43,026	-	43,026	83,325
2002	-	7,861	27,584	300	35,745	37,878	-	37,878	73,623
2003	-	8,026	28,550	300	36,876	39,014	-	39,014	75,890

Source: FAA Terminal Area Forecast, 2004
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

Exhibit 3-4

Operations by Type, 2004



Source: FAA 5010 Form, Effective Date: 9/30/2004
Prepared by: KRAMER aerotek inc. and Ricondo & Associates, Inc.

3.1.5 Based Aircraft

A history of based aircraft at STC is reported in the *FAA Terminal Area Forecast* (TAF), which suggests a consistent level of based aircraft, except during 1995-1996 when the number of based aircraft peaked at 92. Using 2004 FAA Form 5010 data and a recent survey of based aircraft at STC, the TAF appears to under-report the actual number of aircraft based at the Airport. **Table 3-3** and **Table 3-4** show the historical TAF numbers and 2004 estimates, respectively. For forecasting purposes, the Master Plan inventory of 95 aircraft will be used as a baseline. Of note is the higher number of jets that are hangared at the Airport.

Table 3-3

Current (2004) Based Aircraft--FAA Terminal Area Forecast, 1980-2003

Year	Based Aircraft	Year	Based Aircraft
1980	66	1993	82
1981	60	1994	82
1982	52	1995	92
1983	58	1996	92
1984	62	1997	79
1985	62	1998	79
1986	62	1999	83
1987	75	2000	83
1988	74	2001	85
1989	76	2002	85
1990	76	2003	85
1991	82	2004	85
1992	82		

Source: FAA Terminal Area Forecast, 2004
Prepared by: KRAMER aerotek inc. and Ricondo & Associates, Inc.

Table 3-4

Based Aircraft – FAA Form 5010 and Master Plan Inventory

	FAA 5010	Master Plan Inventory
Single Engine	87	78
Multi Engine	10	10
Jet	1	5
Helicopters	2	2
Total	100	95

Sources: FAA 5010 Form, Effective Date: 9/30/2004, Airport Inventory, Fall 2004
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

3.2 Factors Affecting Aviation Activity

Future activity at STC will be influenced by a number of national, regional, and local factors. The most important factors that will affect aviation activity at STC are highlighted in this section. These factors include:

- **Aviation Industry Factors**
  - On-going pressure for the remaining hub and spoke carriers to reduce capacity and costs.
  - Potential large scale entry of low-cost service in North Central Minnesota.
  - Retirement of Northwest's remaining turboprop fleet.

- **Regional Factors**
  - Population growth and economic development along the I-94 corridor
  - Development of a regional distribution center for air cargo south of MSP
  - Construction of the Northstar Commuter Rail

- **Local Factors**
  - Community efforts to support air service at STC
  - Effect of the Airport Traffic Control Tower at STC
  - Army Aviation Support Facility at STC

The confluence of growth factors and industry trends provides an uncertain, yet positive outlook for STC. In large measure, the future of commercial service at STC rests with the community's willingness to support and use local air service and Northwest's willingness to continue spoke service to communities within 100 miles of MSP.

3.2.1 Aviation Industry Factors

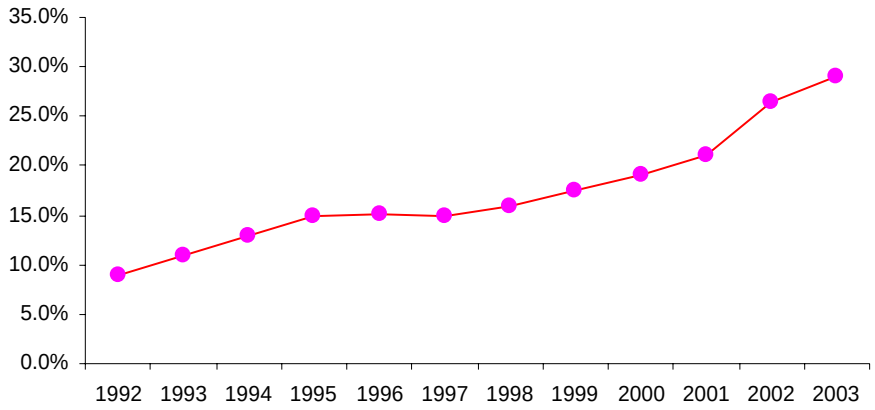
In 2000, several developing trends came together to change the structure of the domestic airline industry. The most important of those trends were: (1) growth of the low cost carriers to the point where they provided significant market share in the largest U.S. cities; (2) full development of the internet as a means of electronic commerce; and (3) widening cost differentials between the mainline

carriers[5] and the low cost carriers[6]. These three factors produced important changes in consumer behavior and travel patterns that solidified after the terrorist attacks on September 11, 2001.

Exhibit 3-5 shows the steadily increasing market share of the low cost carriers during the 1990s. However, 2001 marked the start of another phase of rapid growth during which the low cost carriers' market share increased from approximately 21 percent of domestic traffic to almost 27 percent in one year. This market share differential occurred as the mainline, or legacy, carriers aggressively reduced available seat miles[7] (ASMs) while the low cost carriers increased ASMs. **Exhibit 3-6** demonstrates the changes in capacity during 2000-2003.

Exhibit 3-5

Low Cost Carrier Share of Domestic O&D Traffic



Source: USDOT OD1A Database via Eclat Consulting, Inc.
Prepared by: KRAMER aerotek, inc.

The increasing service by low cost carriers also enabled a shift in business travel behavior. With internet reservation systems and search engines to find the lowest fares, business travelers did not need to pay a premium for travel and were unwilling to do so. For the first time, premium passengers demonstrated a willingness to drive upwards of 100 miles to take advantage of lower fares.

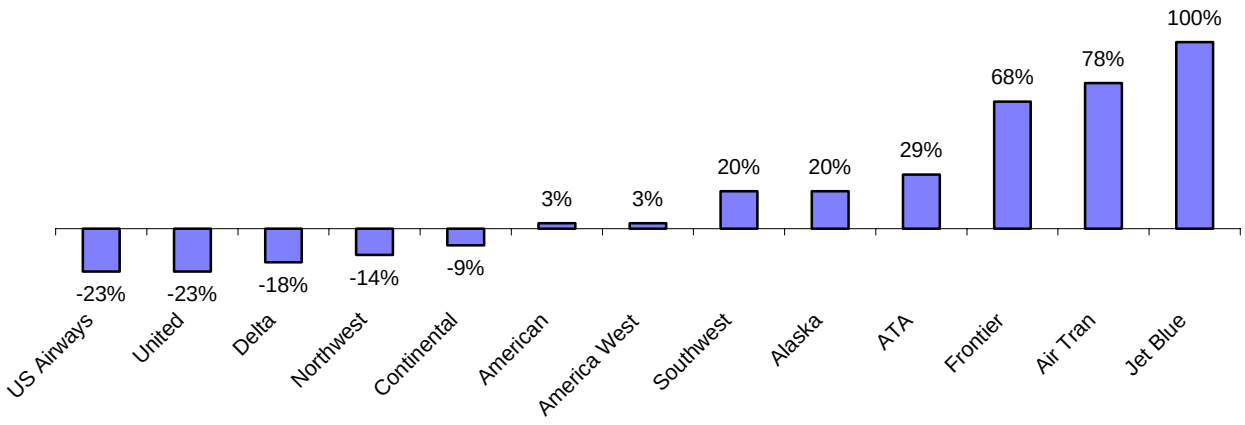
Most of the legacy carriers depend on business travel to sustain a high cost structure and were caught off-guard when it was determined that passengers on their higher yield routes were willing to drive to an alternate airport to fly at a lower cost. **Exhibit 3-7** shows how this trend affected premium revenues at United Airlines from 1999 to 2002.

As **Exhibit 3-8** indicates, the trend toward declining revenues was in place prior to the collapse of air travel demand after September 11, 2001. The effects of the terrorist attacks compounded the problem, leaving the high cost carriers scrambling to fill seats at much lower fare levels. This environment opened the door for carriers with lower cost structures.

[5] Mainline or legacy carriers include the major carriers operating hub and spoke systems: American, Continental, Delta, Northwest, United, and U.S. Airways.
[6] Largest low cost carriers include: America West, Southwest, Alaska, ATA, Frontier, Air Tran, and JetBlue.
[7] Available seat miles are the number of seats times miles flown.

Exhibit 3-6

Changes in Airline ASMs, 2000-2003

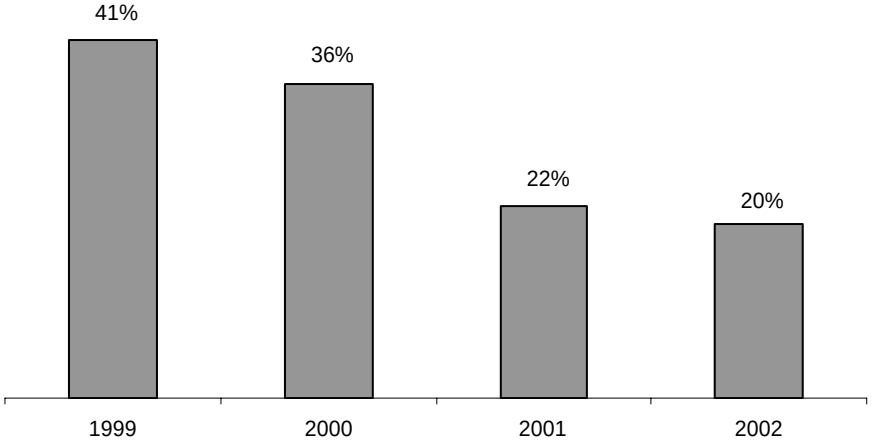


Note:
Regional code-sharing partners and subsidiaries are not included.

Source: Individual Airline Reports
Prepared by: KRAMER aerotek, inc.

Exhibit 3-7

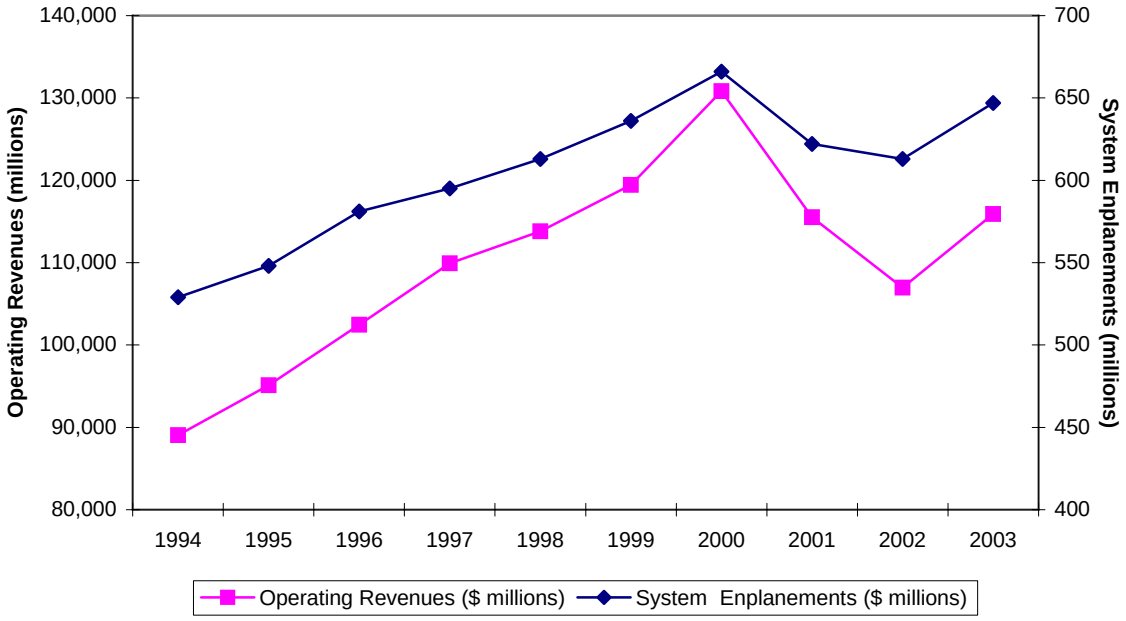
United Airlines Share of Domestic Revenue Derived from Premium Passengers



Source: United Chapter 11 Submission via Eclat Consulting Inc.
Prepared by: KRAMER aerotek, inc.

Exhibit 3-8

Operating Revenues and System Enplanements, All U.S. Carriers, 1994-2003



Source: Air Transport Association of America
Prepared by: KRAMER aerotek, inc.

The financial pressures on legacy carriers to cut costs and reduce capacity have been intense. US Airways has declared Chapter 11 bankruptcy twice; United Airlines has operated in bankruptcy for over two years. Other legacy carriers have approached near bankruptcy and are still experiencing significant operating losses. Since 2000, the new industry economics have resulted in many small-city routes being dropped in favor of larger markets where high-density routes can sustain large passenger volumes at reduced fares. The legacy carriers also replaced larger jets with regional jets in thin markets or during off peak times of the day.

To offset lower fare structures in markets where the low-cost carriers operate, the legacy carriers have retained higher fares in markets with no or limited low-fare service. These industry forces affect airline service in Minnesota, where average fares are among the highest in the country and the presence of low cost carriers remains limited.

3.2.2 Regional Factors

The availability of competitively priced and convenient air service at MSP and STC, the strength of the regional economy, and population growth will determine passenger and cargo demand at STC. Consequently, an understanding of these underlying trends is important to forecasting aviation activity. In addition, several regional factors will influence the commercial use of the Airport. Among the most important are:

- Expansion of the Minneapolis-St. Paul metropolitan area along the northwest I-94 corridor.

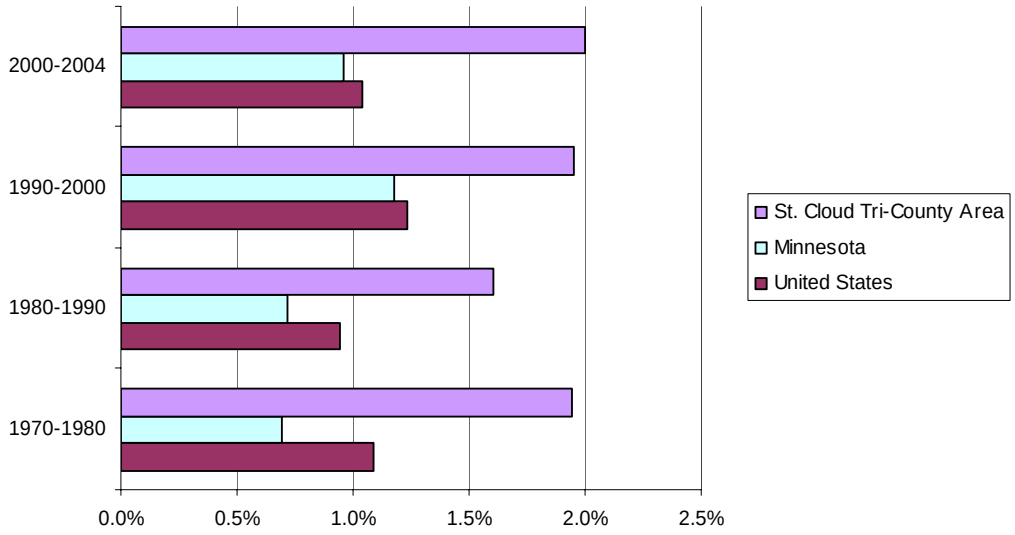
- Increasing highway congestion into the Twin Cities and the effectiveness of mitigation measures, such as the Northstar Commuter Rail.
- Regional initiatives to develop an air freight logistics and distribution center.

3.2.2.1 Population

St. Cloud Regional Airport is located in Sherburne County, one of the fastest growing counties in the State. Between 1990 and 2004, population in this county increased 80 percent. Sherburne County was recently included in the Minneapolis-St. Paul Metropolitan Statistical Area (MSA). For forecasting purposes, STC's primary service area consists of three counties: Benton, Sherburne, and Stearns counties. As **Exhibit 3-9** shows, these counties are growing faster than the State of Minnesota and the United States.

Exhibit 3-9

Average Annual Population Growth



Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

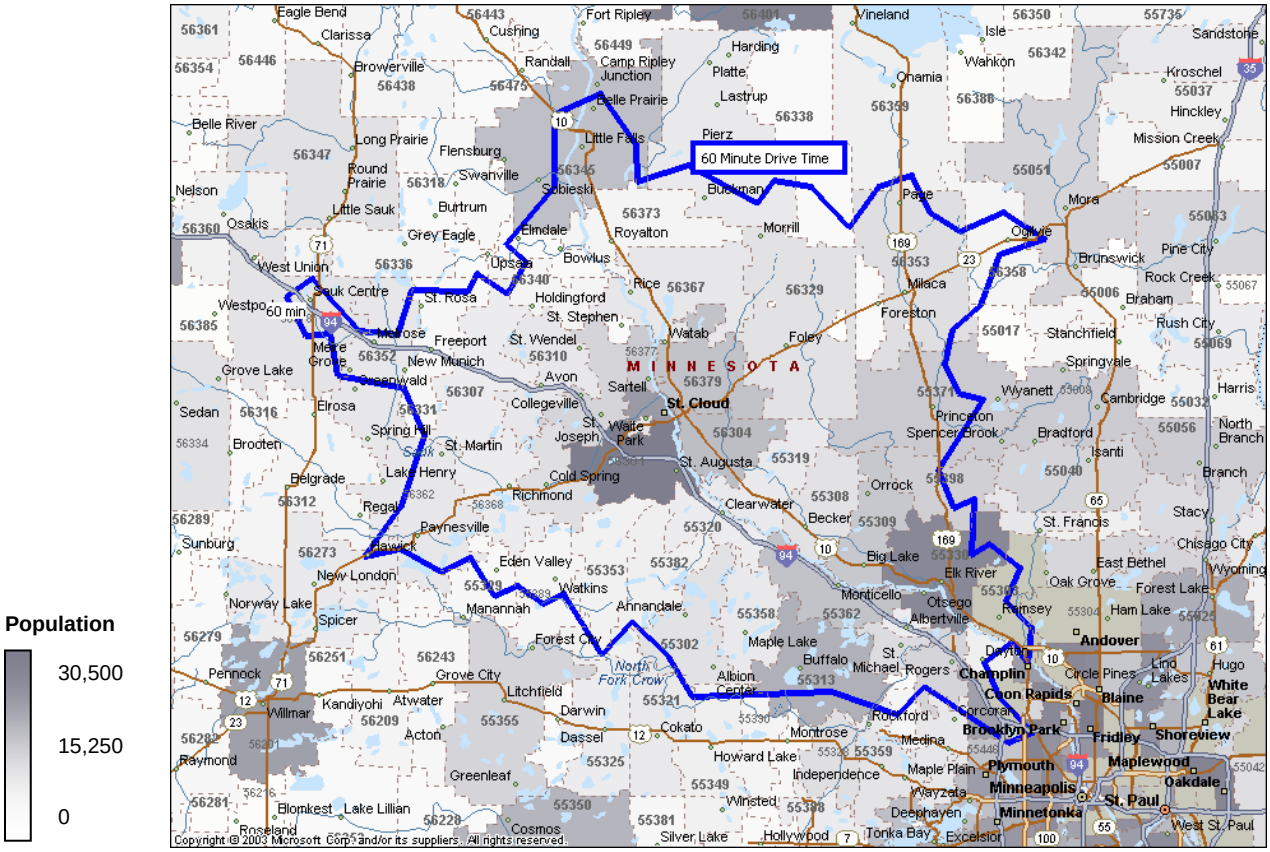
The tri-county area was used to define the primary service area for STC. In reality, the market reach of STC will depend on the quality and frequency of service offered. **Exhibit 3-10** shows the geographic area within 60 minutes driving time of the Airport. Previous surveys[8] have indicated that awareness and use of STC is concentrated within the St. Cloud metropolitan area, northward to Camp Ripley and northwest to Alexandria. Survey respondents located to the south within a 60-minute driving time did not have high awareness of the Airport and typically used MSP as their airport of choice. Exhibit 3-10 also shows population densities by zip code. Growth patterns suggest that the population centers around Monticello and Big Lake are expanding northwest along the I-94 corridor. If STC were to receive air service to an alternate hub, its attractiveness would increase for passengers willing to drive north for direct service to a hub other than MSP.

[8] Tier 2 Air Service Study, Minnesota in Partnership with Wisconsin, June 2003.

Table 3-5 shows historical and projected population for the tri-county area, the State of Minnesota, and the United States. The tri-county area has grown from 3.5 percent of the State's population in 1970 to 4.9 percent in 2004. Projections indicate that, by the end of the Master Plan forecast period in 2025, the population of the St. Cloud tri-county area will be approximately 350,000, representing 5.5 percent of the State's total population. The St. Cloud area is also growing at a higher rate than the entire United States.

Exhibit 3-10

St. Cloud Service Area within a 60-Minute Driving Time



Sources: Microsoft Mappoint North America, KRAMER aerotek, inc.
Prepared by: KRAMER aerotek, inc.

Table 3-5

Historical and Projected Population

Year	St. Cloud Tri-County Area [1]	Minnesota	St. Cloud Percent of Minnesota	United States	St. Cloud Percent of United States
Historical					
1970	135,294	3,815,018	3.5%	203,982,313	0.07%
1971	138,230	3,852,534	3.6%	206,860,314	0.07%
1972	139,879	3,866,802	3.6%	209,283,987	0.07%
1973	143,843	3,884,982	3.7%	211,357,665	0.07%
1974	146,684	3,898,158	3.8%	213,341,613	0.07%
1975	150,265	3,925,329	3.8%	215,465,210	0.07%
1976	152,301	3,956,157	3.8%	217,562,808	0.07%
1977	155,784	3,979,289	3.9%	219,760,030	0.07%
1978	158,491	4,003,956	4.0%	222,095,369	0.07%
1979	161,290	4,037,277	4.0%	224,567,355	0.07%
1980	164,038	4,086,729	4.0%	227,225,622	0.07%
1981	166,217	4,111,733	4.0%	229,465,841	0.07%
1982	167,994	4,131,462	4.1%	231,664,847	0.07%
1983	169,504	4,141,478	4.1%	233,792,714	0.07%
1984	171,285	4,157,709	4.1%	235,825,529	0.07%
1985	173,805	4,184,311	4.2%	237,924,747	0.07%
1986	176,369	4,205,284	4.2%	240,133,891	0.07%
1987	179,286	4,235,186	4.2%	242,289,858	0.07%
1988	183,389	4,296,159	4.3%	244,499,828	0.08%
1989	187,337	4,338,020	4.3%	246,819,820	0.08%
1990	192,400	4,389,857	4.4%	249,622,814	0.08%
1991	195,547	4,440,859	4.4%	252,980,941	0.08%
1992	198,949	4,495,572	4.4%	256,514,224	0.08%
1993	203,231	4,555,954	4.5%	259,918,588	0.08%
1994	207,083	4,610,355	4.5%	263,125,821	0.08%
1995	211,292	4,660,180	4.5%	266,278,393	0.08%
1996	214,877	4,712,827	4.6%	269,394,284	0.08%
1997	219,100	4,763,390	4.6%	272,646,925	0.08%
1998	222,413	4,813,412	4.6%	275,854,104	0.08%
1999	227,432	4,873,481	4.7%	279,040,168	0.08%
2000	233,384	4,934,248	4.7%	282,224,366	0.08%
2001	238,225	4,984,535	4.8%	285,317,572	0.08%
2002	243,654	5,019,720	4.9%	288,368,706	0.08%
2003	248,255	5,075,182	4.9%	291,416,527	0.09%
2004	252,614	5,126,153	4.9%	294,197,263	0.09%
Projected					
2009	274,904	5,393,914	5.1%	308,864,745	0.09%
2014	297,665	5,672,012	5.2%	324,114,957	0.09%
2019	321,130	5,964,975	5.4%	340,211,281	0.09%
2024	345,123	6,267,943	5.5%	356,897,688	0.10%

Notes:
1/ Includes Benton, Sherburne, and Stearns Counties.

Source: Woods & Poole Economics
Prepared By: KRAMER aerotek, inc.

3.2.2.2 Employment

Employment in the tri-county area is growing faster than employment in the State of Minnesota. **Exhibit 3-11** presents a comparison of total employment in the tri-county area and the State for a 34-year period. Employment in the St. Cloud area has tripled, from approximately 50,000 in 1970 to 154,000 in 2004. In fact, employment has grown more rapidly than population in St. Cloud, as **Exhibit 3-12** shows. This trend was especially true in the mid 1980s, when population was growing at an average annual rate of 1.5 percent and employment was growing at an annual average rate of 5 percent. Since 2000, employment and population have been growing in step.

Table 3-6 presents historical and projected employment for the St. Cloud tri-county area, the State of Minnesota, and the United States. By the end of the Master Plan forecast period, total employment for the tri-county area is projected to be nearly 215,000, representing almost 5 percent of Minnesota's employment. Since 2000, employment has grown an average of 3.9 percent per year. Employment growth in Central Minnesota, including Benton, Sherburne, Stearns, and Wright Counties, is expected to be the fastest of any region in the State through 2010.[9]

The current mix of industries shows a preponderance of employment in the trade, transportation and utilities sector, followed by employment in education and health services. Manufacturing is the third largest employment sector in the tri-county area. The two fastest growing sectors in the region are financial activities and professional and business services. The largest employers are: CentraCare Health Systems/St. Cloud Hospital, the State of Minnesota, St. Cloud Public Schools, Electrolux Home Products, Bankers Systems Inc., and Cold Sprint Granite.[10]

3.2.2.3 Income

Table 3-7 presents historical and projected income (in 1996 dollars) for the St. Cloud tri-county area and for the State of Minnesota. Personal income in the St. Cloud area accounts for an increasing share of total State of Minnesota income. In 1970, the tri-county area accounted for approximately 2.7 percent of State income. By the end of the forecast period (2024), it is projected that the tri-county area will account for 4 percent of State income. The increasing share of personal income corresponds to the higher rate of job growth in Central Minnesota.

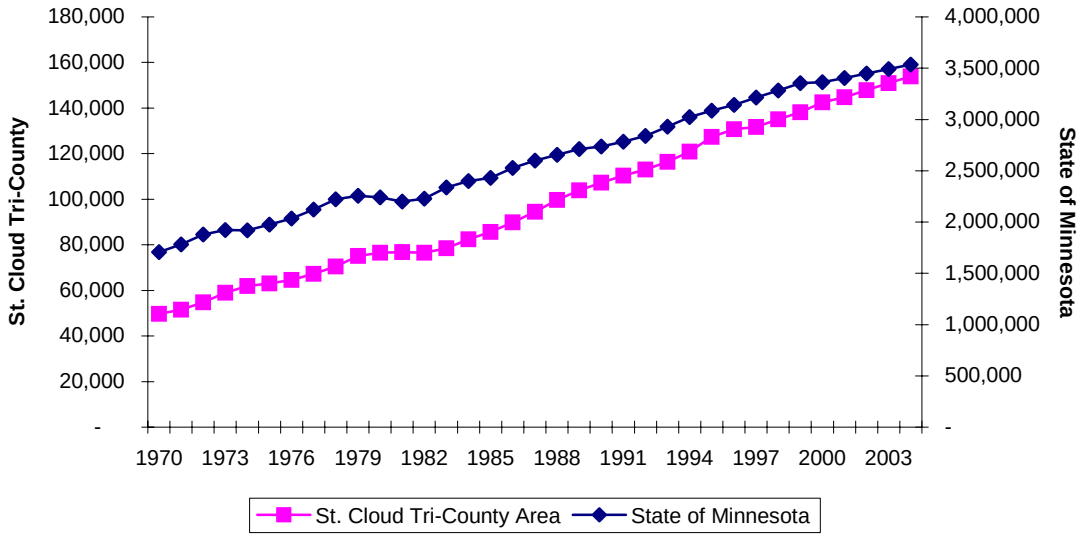
Exhibit 3-13 presents a comparison of per capita constant dollar income in the St. Cloud area with per capita income in the State of Minnesota and the United States. The St. Cloud area has historically experienced lower per capita income. In 2004, per capita income in the St. Cloud tri-county area was $23,419 (1996 dollars); in Minnesota, $31,294; and in the United States, $28,695.

In general, St. Cloud per capita income growth trends track those of the State and the United States.

[9] Minnesota Department of Employment and Economic Development.
[10] St. Cloud Area Economic Development Partnership.

Exhibit 3-11

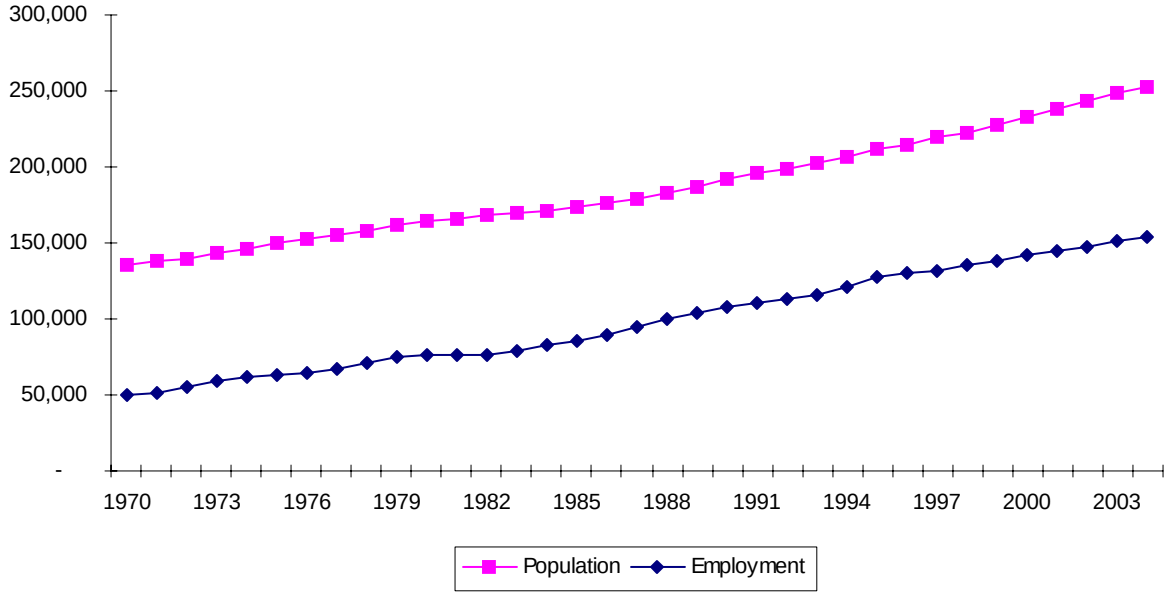
Employment Growth, St. Cloud Tri-County Area and State of Minnesota, 1970-2004



Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

Exhibit 3-12

Comparison of Employment Growth and Population Growth, St. Cloud Tri-County Area, 1970-2004



Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

Table 3-6

Historical and Projected Employment

Year	St. Cloud Tri-County Area [1]	Minnesota	St. Cloud Percent of Minnesota	United States	St. Cloud Percent of United States
Historical					
1970	49,769	1,706,082	2.9%	91,281,592	0.05%
1971	51,549	1,780,095	2.9%	91,586,388	0.06%
1972	54,789	1,877,807	2.9%	94,317,198	0.06%
1973	58,916	1,921,463	3.1%	98,432,497	0.06%
1974	61,954	1,920,402	3.2%	100,117,788	0.06%
1975	63,020	1,976,584	3.2%	98,906,591	0.06%
1976	64,641	2,033,768	3.2%	101,597,185	0.06%
1977	67,240	2,123,129	3.2%	105,049,188	0.06%
1978	70,499	2,221,802	3.2%	109,688,591	0.06%
1979	75,146	2,254,392	3.3%	113,289,086	0.07%
1980	76,532	2,241,147	3.4%	114,231,191	0.07%
1981	76,815	2,200,850	3.5%	115,304,001	0.07%
1982	76,533	2,228,070	3.4%	114,557,288	0.07%
1983	78,439	2,335,538	3.4%	116,056,680	0.07%
1984	82,418	2,399,328	3.4%	121,091,084	0.07%
1985	85,685	2,432,115	3.5%	124,511,686	0.07%
1986	89,926	2,526,293	3.6%	126,981,295	0.07%
1987	94,560	2,598,587	3.6%	130,416,397	0.07%
1988	99,639	2,653,793	3.8%	134,517,889	0.07%
1989	103,900	2,712,466	3.8%	137,240,800	0.08%
1990	107,327	2,737,328	3.9%	139,426,897	0.08%
1991	110,381	2,783,460	4.0%	138,663,782	0.08%
1992	112,994	2,840,096	4.0%	139,305,095	0.08%
1993	116,356	2,930,204	4.0%	141,996,389	0.08%
1994	120,871	3,022,363	4.0%	145,571,597	0.08%
1995	127,285	3,085,769	4.1%	149,358,798	0.09%
1996	130,711	3,141,263	4.2%	152,607,201	0.09%
1997	131,688	3,214,232	4.1%	156,230,193	0.08%
1998	135,024	3,282,539	4.1%	160,256,211	0.08%
1999	138,191	3,353,750	4.1%	163,348,266	0.08%
2000	142,539	3,364,025	4.2%	167,283,783	0.09%
2001	144,752	3,405,096	4.3%	167,535,730	0.09%
2002	147,867	3,447,977	4.3%	169,625,596	0.09%
2003	150,926	3,490,873	4.3%	171,800,746	0.09%
2004	153,948	3,534,036	4.4%	173,952,384	0.09%
Projected					
2009	168,907	3,712,598	4.5%	184,922,759	0.09%
2014	183,978	3,953,170	4.7%	196,633,630	0.09%
2019	199,286	4,214,396	4.7%	209,156,607	0.10%
2024	214,859	4,498,197	4.8%	222,545,895	0.10%

Notes:
1/ Includes Benton, Sherburne, and Stearns Counties.

Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

Table 3-7

Personal Income (Thousands of 1996 Dollars)

Year	St. Cloud Tri-County Area [1]	Minnesota	St. Cloud Percent of Minnesota	St. Cloud Avg. Annual Growth	Minnesota Avg. Annual Growth
Historical					
1970	$1,465,495	$ 55,221,343	2.7%	7.1%	4.0%
1971	$1,523,353	$ 56,386,333	2.7%	3.9%	2.1%
1972	$1,631,458	$ 59,226,720	2.8%	7.1%	5.0%
1973	$1,851,792	$ 66,226,531	2.8%	13.5%	11.8%
1974	$1,860,425	$ 64,771,462	2.9%	0.5%	-2.2%
1975	$1,881,504	$ 64,207,705	2.9%	1.1%	-0.9%
1976	$1,993,337	$ 66,428,013	3.0%	5.9%	3.5%
1977	$2,139,010	$ 70,411,199	3.0%	7.3%	6.0%
1978	$2,258,072	$ 74,107,260	3.0%	5.6%	5.2%
1979	$2,379,593	$ 76,245,546	3.1%	5.4%	2.9%
1980	$2,398,153	$ 76,356,991	3.1%	0.8%	0.1%
1981	$2,465,358	$ 77,476,068	3.2%	2.8%	1.5%
1982	$2,527,265	$ 78,050,136	3.2%	2.5%	0.7%
1983	$2,535,619	$ 78,798,990	3.2%	0.3%	1.0%
1984	$2,801,300	$ 86,362,023	3.2%	10.5%	9.6%
1985	$2,897,358	$ 88,954,495	3.3%	3.4%	3.0%
1986	$3,060,219	$ 91,836,269	3.3%	5.6%	3.2%
1987	$3,156,516	$ 94,803,787	3.3%	3.1%	3.2%
1988	$3,251,615	$ 96,357,711	3.4%	3.0%	1.6%
1989	$3,439,164	$ 100,509,464	3.4%	5.8%	4.3%
1990	$3,514,598	$ 102,528,903	3.4%	2.2%	2.0%
1991	$3,537,031	$ 102,029,925	3.5%	0.6%	-0.5%
1992	$3,684,984	$ 105,894,612	3.5%	4.2%	3.8%
1993	$3,766,482	$ 106,377,186	3.5%	2.2%	0.5%
1994	$3,939,107	$ 111,962,589	3.5%	4.6%	5.3%
1995	$4,067,243	$ 115,646,588	3.5%	3.3%	3.3%
1996	$4,332,346	$ 122,079,581	3.5%	6.5%	5.6%
1997	$4,453,559	$ 126,560,678	3.5%	2.8%	3.7%
1998	$4,912,343	$ 135,912,432	3.6%	10.3%	7.4%
1999	$5,029,301	$ 140,505,427	3.6%	2.4%	3.4%
2000	$5,276,625	$ 148,092,514	3.6%	4.9%	5.4%
2001	$5,404,007	$ 150,405,544	3.6%	2.4%	1.6%
2002	$5,574,808	$ 153,647,977	3.6%	3.2%	2.2%
2003	$5,744,761	$ 157,010,761	3.7%	3.0%	2.2%
2004	$5,915,905	$ 160,417,643	3.7%	3.0%	2.2%
Projected					
2009	6,809,157	178,548,785	3.8%	2.3%	1.6%
2014	7,784,003	198,957,709	3.9%	2.7%	2.2%
2019	8,850,781	221,950,959	4.0%	2.6%	2.2%
2024	10,019,339	247,897,486	4.0%	2.5%	2.2%

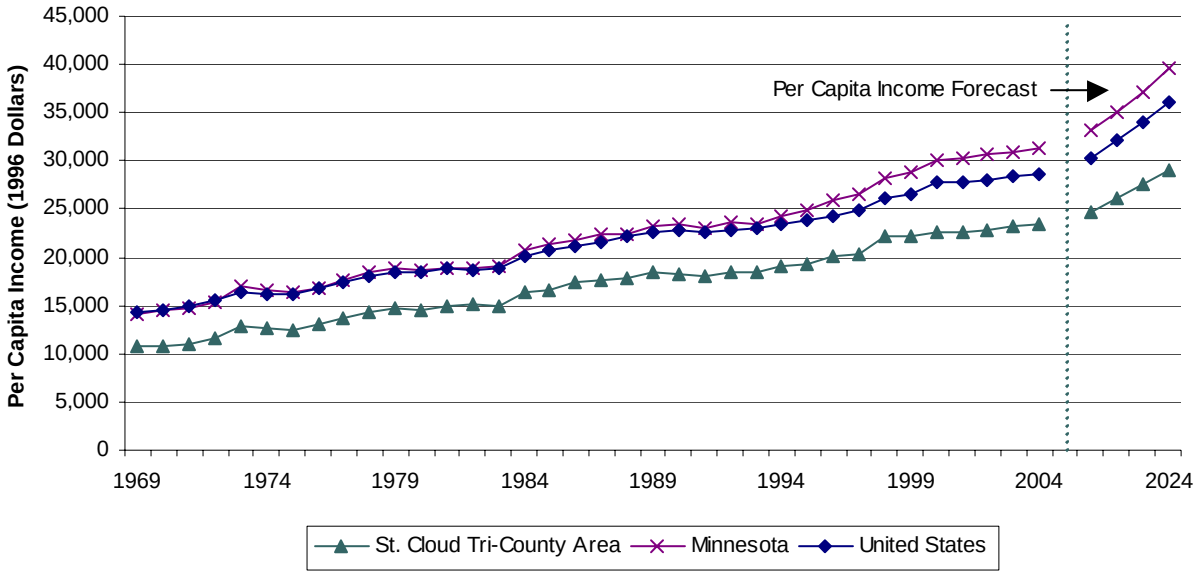
Notes:

1/ Includes Benton, Sherburne, and Stearns Counties.

Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

Exhibit 3-13

Per Capita Income, 1996 Dollars



Source: Woods & Poole Economics
Prepared by: KRAMER aerotek, inc.

3.2.2.4 Other Regional Factors Influencing Aviation Demand

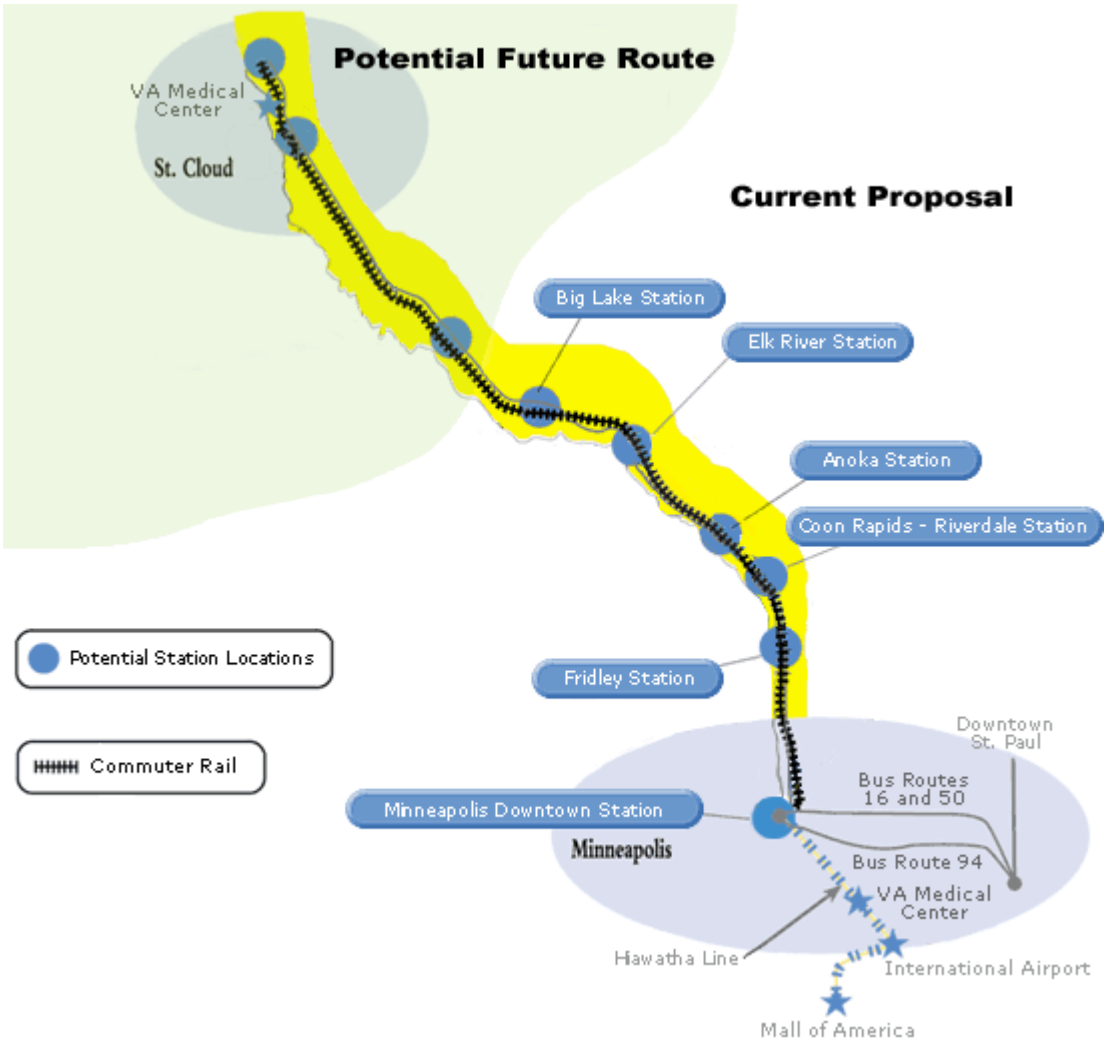
In addition to the socio-economic dynamics of demand, two other factors may affect the use of St. Cloud Regional Airport: (1) completion of the Northstar Commuter Rail system and (2) development of an air freight logistics and distribution center.

The first phase of the Northstar Commuter Rail project is proposed to extend commuter rail 40 miles on existing track along Highways 10 and 47 from Big Lake to downtown Minneapolis. **Exhibit 3-14** shows the initial routing, which includes six stations and opportunities at downtown Minneapolis to transfer to the Hiawatha Line, which is light rail transit going directly to the Lindbergh and Humphrey Terminals at MSP. The Minnesota Legislature is considering a plan to finance the project with State bonds.

A second phase of the Northstar Commuter Rail is proposed to extend the line up to St. Cloud; however, a timeline for the St. Cloud extension is not yet established. The effect of the Northstar Commuter Rail on air service at STC is not known at this time. Phase One of the project, extending the rail to Big Lake, is not likely to significantly affect STC unless a low cost carrier were to establish a significant presence at MSP or STC. For current service offerings, St. Cloud area passengers who drive to MSP are not likely to drive to Big Lake, park, and transfer at Downtown Minneapolis for light rail connection to MSP**.** The extension of the Northstar Commuter Rail to St. Cloud will likely alter travel patterns; however, with Phase Two currently unscheduled, a sensitivity analysis of the effect of the Northstar Commuter Rail is not yet warranted.

Exhibit 3-14

Northstar Commuter Rail Route Map



Source: http://www.northstartrain.org
Prepared by: KRAMER aerotek, inc.

Several government groups have joined together to promote development of an air freight logistics and distribution center in Minnesota. The objective is to capture and consolidate air cargo that is traveling by truck from Minnesota to Chicago and then transferred onto aircraft. The distribution center would provide a secure and fully electronic environment for freight forwarders, truckers, and handlers to consolidate otherwise fragmented operations.

Several locations were identified as potential sites for this logistics and distribution center, including St. Cloud. However, sites directly south of MSP are currently considered to have the greatest potential for development. Most Central Minnesota air freight will continue to be trucked to MSP or to airports out of the State.

3.2.3 Local Factors

Three local factors will affect aviation activity at STC in the near term. These are:

- An aggressive community effort to enhance air service.
- Start-up of a new Airport traffic control tower at STC.
- Relocation of the Minnesota Air National Guard's Army Aviation Support Facility to STC.

The City of St. Cloud has entered into an agreement with Northwest Airlines to add an extra flight to its schedule beginning in April 2005 for nine months. To provide this service, Northwest required a revenue guarantee and established revenue targets. The community contends that, since over 80 percent of air passengers drive to MSP, more air service will increase the use of STC. The baseline forecasts reflect the fact that this is a service driven market and increased service will result in increased numbers of enplaned passengers.

In November 2004, the STC airport traffic control tower began operations. Prior to this time, activity estimates were based on sample aircraft counts. While the number of commercial service operations is a matter of public record, the numbers of local and itinerant general aviation operations have been estimated. Out of necessity, aircraft operations at STC were forecast on the basis of historical estimates. However, now that traffic accounts can be accurately counted, activity forecasts should be re-evaluated against actual traffic counts in 12 months.

In 2009, the Minnesota Air National Guard will move half of its Army helicopter operations from St. Paul to St. Cloud. Construction of a new Army Aviation Support Facility at STC will begin in fall 2007. It is expected that 12 Black Hawk helicopters will be based at St. Cloud, designed primarily for medical missions. The helicopters will add approximately 1,800 local military operations to the Airport per year, beginning in spring 2009.

3.3 Forecast Methodologies

This section describes the alternative methodologies used to develop the forecasts for scheduled service and general aviation operations at the Airport. Included are a short-term forecast (2005-2009), a medium-term forecast (2009-2014), and a long-term forecast (2014-2024). The forecasts encompass enplaned passengers, commuter/regional aircraft operations, based aircraft, general aviation operations, military operations, and aircraft fleet mix.

In forecasting aviation activity at St. Cloud Regional Airport, certain assumptions were made about the development of the airline industry as well as economic growth in the St. Cloud tri-county area and in the United States. These assumptions and the forecasts represent average trends that can be expected over a 20-year period. Key factors used to forecast future aviation activity include:

- Future growth in the area's air travel demand
- Effect of national air travel demand on STC
- Ability of the Airport to capture air travel demand
- Potential changes in use of the Airport due to changes in service both at STC and MSP

3.3.1 Context for Forecasts

As previously noted, STC is located in Sherburne County, northwest of Minneapolis-St. Paul, along the fast growing I-94 corridor. The U.S. Department of Commerce, Bureau of the Census recently included Sherburne County in the Minneapolis-St. Paul MSA, confirming a steady expansion of the metropolitan area. Driving time to MSP from the St. Cloud area is 1.5 to 2 hours, depending on traffic. This places the St. Cloud area well within the market reach of MSP. Consequently, the number of Airport passengers is only a fraction of the total passenger demand for air service. Previous diversion studies suggest that 80-85 percent of all area passengers drive to MSP for air travel. Typical economic indicators of air travel demand would indicate a larger pool of passengers than actually use the local airport.

Factors that lead passengers to choose MSP include the high frequency of service to varied destinations, ability to reach many destinations with fewer connections, ample facilities, relatively convenient access, and strong advertising. Factors that lead passengers to choose St. Cloud Regional Airport include ease and convenience, and occasionally lower cost or only marginally higher cost.

The market base for STC is fundamentally service driven. To date, Northwest Airlines has maintained a relatively constant level of air service at the Airport. Most of the growth in air service and, particularly, low cost options for air service have occurred at MSP. Consequently, diversion rates are increasing and it appears that MSP is absorbing the new demand for air service generated by the population growth in the St. Cloud tri-county area.

3.3.2 Forecast Scenarios

Because air service at STC is limited, traditional forecasting methods that emphasize the importance of socio-economic trends tend to overstate local passenger demand. This was evident in the regression analyses that were used to initially forecast numbers of enplaned passengers at STC. The regression analyses related historical numbers of enplaned passengers at STC to population, employment, and per capita income. These variables alone did not adequately forecast enplaned passengers.

To address (1) the presence of MSP within a two hour drive time; (2) very positive projections of population and employment in the tri-county area throughout the Master Plan forecast period; and (3) the fact that the market for St. Cloud is service driven rather than demand driven, the following four forecast scenarios were developed:

- Baseline Forecast
- Addition of Air Service to a Second Hub (Second Hub Scenario)
- Entry of Scheduled Charter Service (Charter Scenario)
- Entry of Service by a High Frequency, Low Cost Carrier (Low Cost Carrier Scenario)

The purpose of the four scenarios is to explore the Airport's air service potential and to help develop a Master Plan that is flexible enough to accommodate a full build-out of air service at STC, should the Airport's full potential be realized.

The results of these four forecast scenarios are presented in Sections 3.4 and 3.5.

3.3.3 Market Share Approach

The market share approach is one of the most common forecasting methods for small hub and non hub airports. In this approach, it is assumed that the historical relationship between airport enplaned passengers and total U.S. enplaned passengers will continue into the future. National forecasts of enplaned passengers are prepared by the FAA and presented in its annual *Aerospace Forecasts*. These forecasts take a top down approach, considering such factors as the nation's economic growth rate, aviation trends, pricing, and fuel costs to anticipate how the demand for air service will grow during the next 10 and 20 years.

In a market share approach, it is presumed that, in the absence of significant local factors, airport activity will increase at a rate comparable to the national rate. Local factors can be reflected in the forecast by showing an increase or decrease in the airport's share of total U.S. passengers.

Table 3-8 presents historical and forecast enplaned passengers at STC using the market share approach. Historical growth in numbers of regional/commuter passengers is the U.S. benchmark. This category of passengers underwent important structural changes in the last five years. As the legacy carriers moved quickly to reduce costs, the regional carriers took over many of the low density, short haul routes, mostly replacing mainline jets with regional jets. In addition, the regional carriers continued to provide feeder service to large hubs. This segment of the market underwent a significant contraction over the last five years. In fact, small communities are among the hardest hit by reductions in legacy carrier service. Minnesota has not been immune to this trend, despite a continued dominance of Northwest at MSP and minimal inroads to date by the low cost carriers.

Since 2000, Northwest has discontinued service to Grand Rapids and summer service to Ely. Northwest even cut back service to St. Cloud to four flights per weekday after September 11, 2001. The FAA Aerospace Forecasts indicate that the surge in the use of regional jets will stabilize and that, over the Master Plan forecast period, most growth in enplaned passengers will take place on larger jet aircraft. As a result, enplaned passengers on commuter aircraft will decline nationwide. Using this market share approach, St. Cloud's market share of U.S. enplaned passengers is expected to similarly decline. Over the forecast period, the market share approach suggests a compounded annual growth rate of 2.9 percent for STC compared to an annual growth rate of 4.4 percent for the United States. In the early forecast years, national trends are likely to be mirrored at STC for a number of important reasons.

- In the short-term, diversion to MSP is likely to remain a major constraint to STC enplaned passenger growth. Without competition by a second carrier, Northwest will continue to offer turboprop service at the Airport. The Saab 340 fleet will be replaced within the next 10 years with small regional jets. However, because of St. Cloud's proximity to MSP and the fact that the Saab aircraft is more economical for a short haul flight, Northwest is more likely to increase Saab frequencies until the aircraft go off lease. Passengers that prefer jet aircraft will continue to drive to MSP.
- The increased presence of low-fare service at MSP could increase leakage.
- While fuel availability is not likely to be an issue, the high cost of fuel could result in further airline cutbacks on short haul routes where driving is an option.

Table 3-8

Forecast Regional/Commuter Enplaned Passengers, Market Share Approach

	St. Cloud Regional Airport		United States		Airport
Year	Enplaned Passengers	Annual Growth	Commuter Passengers	Annual Growth	Market Share
Historical					
1994	8,569	-	55,200,000	-	0.0155%
1995	7,721	-9.9%	55,400,000	0.4%	0.0139%
1996	9,469	22.6%	59,700,000	7.8%	0.0159%
1997	16,471	73.9%	62,200,000	4.2%	0.0265%
1998	21,522	30.7%	65,700,000	5.6%	0.0328%
1999	26,464	23.0%	73,100,000	11.3%	0.0362%
2000	23,711	-10.4%	79,700,000	9.0%	0.0298%
2001	23,113	-2.5%	80,400,000	0.9%	0.0287%
2002	22,739	-1.6%	88,600,000	10.2%	0.0257%
2003	20,540	-9.7%	105,100,000	18.6%	0.0195%
2004	21,892	6.6%	124,800,000	18.7%	0.0175%
Forecast					
2005	27,270	24.6%	139,500,000	11.8%	0.0195%
2006	29,050	6.5%	149,700,000	7.3%	0.0194%
2007	29,200	0.5%	158,500,000	5.9%	0.0184%
2008	29,400	0.7%	165,300,000	4.3%	0.0178%
2009	29,500	0.3%	172,600,000	4.4%	0.0171%
2010	30,000	1.7%	179,900,000	4.2%	0.0167%
2011	30,700	2.3%	187,400,000	4.2%	0.0164%
2012	31,300	2.0%	195,200,000	4.2%	0.0161%
2013	31,900	1.9%	203,200,000	4.1%	0.0157%
2014	32,500	1.9%	211,500,000	4.1%	0.0154%
2015	33,200	2.2%	220,100,000	4.1%	0.0151%
2016	33,900	2.1%	228,500,000	3.8%	0.0149%
2017	34,600	2.1%	236,700,000	3.6%	0.0146%
2018	35,100	1.4%	244,800,000	3.4%	0.0144%
2019	35,700	1.7%	253,000,000	3.3%	0.0141%
2020	36,300	1.7%	261,100,000	3.2%	0.0139%
2021	37,000	1.9%	269,200,000	3.1%	0.0137%
2022	37,600	1.6%	277,400,000	3.0%	0.0136%
2023	38,200	1.6%	285,500,000	2.9%	0.0134%
2024	38,800	1.6%	293,700,000	2.9%	0.0132%
Compounded Annual Growth					
1994 - 2004		9.8%		8.5%	
2004 - 2009		6.1%		6.7%	
2009 - 2014		2.0%		4.1%	
2014 - 2019		1.9%		3.6%	
2019 - 2024		1.7%		3.0%	
2004 - 2024		2.9%		4.4%	

Note: Following development of the market share approach, Northwest has discontinued an additional daily flight, originally scheduled for part of 2005 and all of 2006, in January 2006. This change in projected activity is reflected in the Baseline Forecast described in Section 3.4, which is partially based on the market share approach. Therefore, enplaned passenger projections based on the market share approach differ between data presented here and subsequent presentation of the forecast.

Sources: City of St. Cloud (STC: 1994 - 2003), KRAMER aerotek, inc., 2004; Ricondo & Associates, Inc., 2004; and FAA Aerospace Forecasts, Federal Fiscal Years 2004 - 2015.

Prepared by: KRAMER aerotek, inc.

Applying the market share approach, enplaned passengers at the Airport are forecast to number 29,500 in 2009 and 38,800 in 2024, representing an annual compound growth rate of 2.9 percent for the forecast period. In comparison, the annual compounded growth rate forecast by the FAA for total U.S. commuter enplanements is 4.4 percent for 2004 through 2024. The forecast also reflects a high growth rate in 2005 as a result of the additional daily flight between MSP and STC that Northwest added to their STC schedule in 2005.[11]

3.3.4 Socioeconomic Regression Analysis

Typically, the demand for air service at an airport is driven by factors related to population, employment, and income. To test these relationships at STC, a mathematical model was developed to correlate the past relationships of these independent variables to STC's enplaned passengers and to forecast this relationship over the forecast period. In the model, enplaned passengers was the dependent variable used to test the linear relationship between enplaned passengers and a set of independent variables:

- Population in the St. Cloud tri-county area
- Total civilian employment
- Per capita income (1996 constant dollars)
- Per capita income and market share

Table 3-9 presents the resulting forecasts using each of these independent variables. The coefficient of determination, r^2, which measures the strength of the linear relationship between enplaned passengers and each of these variables, was weak for population and employment and stronger for per capita income and market share. This result is probably caused by a very positive outlook for population growth and employment overstating enplanements at St. Cloud because of its proximity to MSP. The combined use of per capita income and market share produced a very high coefficient of determination because St. Cloud's market share of U.S. enplanements decreases and dampens growth in enplaned passengers. The resulting forecast using the socioeconomic regression approach appears too low in view of the FAA's 2004 Terminal Area Forecast for STC, and because the community of St. Cloud is aggressively pursuing air service development options that would increase Northwest's daily departures.

[11] Subsequent to development of the market share approach, Northwest does not plan to continue this additional flight beyond 2006. This change in future service is reflected in the forecasts discussed in Sections 3.4 and 3.5.

Table 3-9

Comparison of Socioeconomic Regression Analysis Independent Variables

Year	Passenger Market Share/ New Service[1/]	Population Regression[2/]	Employment Regression[2/]	Constant per Capita Income (PCI) Regression[2/]	Constant PCI & Market Share Combined
Historical					
1994	8,569	8,569	8,569	8,569	8,569
1995	7,721	7,721	7,721	7,721	7,721
1996	9,469	9,469	9,469	9,469	9,469
1997	16,471	16,471	16,471	16,471	16,471
1998	21,522	21,522	21,522	21,522	21,522
1999	26,464	26,464	26,464	26,464	26,464
2000	23,711	23,711	23,711	23,711	23,711
2001	23,113	23,113	23,113	23,113	23,113
2002	22,739	22,739	22,739	22,739	22,739
2003	20,540	20,540	20,540	20,540	20,540
2004	21,892	21,892	21,892	21,892	21,892
Forecast					
2009	29,500	33,236	33,254	30,242	24,398
2014	32,500	40,591	40,631	35,423	27,524
2019	35,700	48,174	48,125	40,717	30,943
2024	38,800	55,927	55,748	46,232	34,673
R Square	**NA**	**0.5473**	**0.5751**	**0.8006**	**0.9763**
Compounded Annual Growth					
1994-2004	9.8%	9.8%	9.8%	9.8%	9.8%
2004 - 2009	6.1%	8.7%	8.7%	6.7%	2.2%
2009 - 2014	2.0%	4.1%	4.1%	3.2%	2.4%
2014 - 2019	1.9%	3.5%	3.4%	2.8%	2.4%
2019 - 2024	1.7%	3.0%	3.0%	2.6%	2.3%
2004 - 2024	7.8%	9.8%	9.8%	8.8%	2.3%

Note:

1/ Following development of the market share approach, Northwest has discontinued an additional daily flight, originally scheduled for part of 2005 and all of 2006, in January 2006. This change in projected activity is reflected in the Baseline Forecast described in Section 3.4, which is partially based on the market share approach. Therefore, enplaned passenger projections based on the market share approach differ between data presented here and subsequent presentation of the forecast.

2/ For the St. Cloud tri-county area, consisting of Benton, Sherburne, and Stearns Counties.

Sources: City of St. Cloud (STC: 1994 – 2003), KRAMER aerotek, inc., 2004; Ricondo & Associates, Inc., 2004; Woods & Poole Economics, 2004; FAA Terminal Area Forecast, 2004

Prepared by: KRAMER aerotek, inc.

3.4 Baseline Forecast of Enplaned Passengers

The Baseline Forecast of enplaned passengers was developed considering normal growth conditions, with an underlying assumption that, for the forecast period, STC will remain a single carrier, single destination airport. The Baseline Forecast was guided by national trends and several key local factors that would modify a strictly top down national approach. Early on in the forecast period, the market share approach appears to accurately predict passenger demand at STC. In this top down approach, it was presumed, in the absence of significant new local factors, that Airport activity will increase at a rate comparable to the national rate. The national forecasts take into account the nation's economic growth rate, aviation trends, pricing, and fuel costs to anticipate growth in the demand for air service during the next 10 and 20 years. Of importance to STC is the assumption that smaller airports will account for decreasing shares of U.S. passengers over the initial forecast period, even as turboprop frequencies increase. Once Northwest replaces its Saab fleet with regional jets, per capita income becomes a better predictor of enplaned passengers.

A static situation at STC was not assumed in the Baseline Forecast. Several important local factors will shape STC's air service. These include:

- Efforts by Central Minnesota entities to enhance its air service during the beginning years of the forecast period.
- On-going and considerable diversion to MSP.
- Adjustments in numbers of enplaned passengers based on assumptions about increased service frequencies to MSP over the forecast period.
- Anticipation of an increase in numbers of enplaned passengers around 2015 when the Saab 340 fleet is retired and replaced by regional jets.

The assumptions underlying the Baseline Forecast are therefore driven by growth trends and air service development, as follows:

- The community will support efforts already in place to increase Northwest's frequencies to MSP starting in 2005.
- In 2005, service frequencies on Saab 340 aircraft will increase to six on weekdays and five on weekend days; however, this frequency will drop to five on weekdays and four on weekend days in 2006.
- In 2010, service frequencies increase to six on weekdays and five on weekend days for three months per year.
- In 2012, the six weekday and five per weekend day service frequency is extended to six months per year.
- In 2015-2016, Northwest begins to retire its Saab fleet and upgrades STC service with 44-seat regional jets.
- As the quality of air service improves with the upgrade to an all regional jet fleet, diversion rates diminish and per capita income becomes a better predictor of demand for air service by 2015.

- By 2017, STC service is all regional jet service, with three flights on weekdays and two on weekend days.
- Over the forecast period, STC enplaned passengers increase at a compounded annual growth rate of 2.2 percent, which is slower than the forecast national average of 4.4 percent per year for commuter passengers.

Table 3-10 presents the Baseline Forecast of enplaned passengers derived using the market share approach until 2015. Thereafter, when Northwest continues to replace its Saab fleet with regional jets, local air service becomes more attractive and the rates of growth forecast using per capita income as the independent variable are applied through 2024. Thus, in the first 10 years of the Master Plan forecast period, enplaned passengers are forecast to increase from 22,073 in 2004 to 26,900 in 2014. In 2019, passengers are forecast to number 30,197, and in 2024, 33,837.

Exhibit 3-15 presents a comparison of all the forecasts that went into development of the Baseline Forecast. As shown, the population and employment regression forecasts far outpace the other forecasts. The market share forecast and the TAF are close approximations because both use a top down methodology. The Baseline Forecast is slightly higher than the TAF.

Table 3-11 presents a comparison of the Baseline Forecast of enplaned passengers with the FAA's 2004 Terminal Area Forecast for the Airport. Throughout the forecast period, the Baseline Forecast is within five percent of the FAA's 2004 Terminal Area Forecast.

Table 3-10

Enplaned Passengers - Baseline Forecast

	St. Cloud Regional Airport		United States	
Year	Enplanements	Annual Growth	Commuter Enplanements	Annual Growth
Historical				
1994	8,569	-	55,200,000	-
1995	7,721	-9.9%	55,400,000	0.4%
1996	9,469	22.6%	59,700,000	7.8%
1997	16,471	73.9%	62,200,000	4.2%
1998	21,522	30.7%	65,700,000	5.6%
1999	26,464	23.0%	73,100,000	11.3%
2000	23,711	-10.4%	79,700,000	9.0%
2001	23,113	-2.5%	80,400,000	0.9%
2002	22,739	-1.6%	88,600,000	10.2%
2003	20,540	-9.7%	105,100,000	18.6%
2004	22,073	7.5%	124,800,000	18.7%
Forecast				
2005	25,215	14.2%	139,500,000	11.8%
2006	22,638	-10.2%	149,700,000	7.3%
2007	23,500	3.8%	158,500,000	5.9%
2008	24,000	2.1%	165,300,000	4.3%
2009	24,500	2.1%	172,600,000	4.4%
2010	25,000	2.0%	179,900,000	4.2%
2011	25,500	2.0%	187,400,000	4.2%
2012	26,000	2.0%	195,200,000	4.2%
2013	26,500	1.9%	203,200,000	4.1%
2014	26,900	1.5%	211,500,000	4.1%
2015	27,500	2.2%	220,100,000	4.1%
2016	28,163	2.4%	228,500,000	3.8%
2017	28,828	2.4%	236,700,000	3.6%
2018	29,503	2.3%	244,800,000	3.4%
2019	30,197	2.4%	253,000,000	3.3%
2020	30,923	2.4%	261,100,000	3.2%
2021	31,652	2.4%	269,200,000	3.1%
2022	32,376	2.3%	277,400,000	3.0%
2023	33,097	2.2%	285,500,000	2.9%
2024	33,837	2.2%	293,700,000	2.9%
Compounded Annual Growth				
1994 - 2004		9.9%		8.5%
2004 - 2009		2.1%		6.7%
2009 - 2014		1.9%		4.1%
2014 - 2019		2.3%		3.6%
2019 - 2024		2.3%		3.0%
2004 - 2024		2.2%		4.4%

Note:

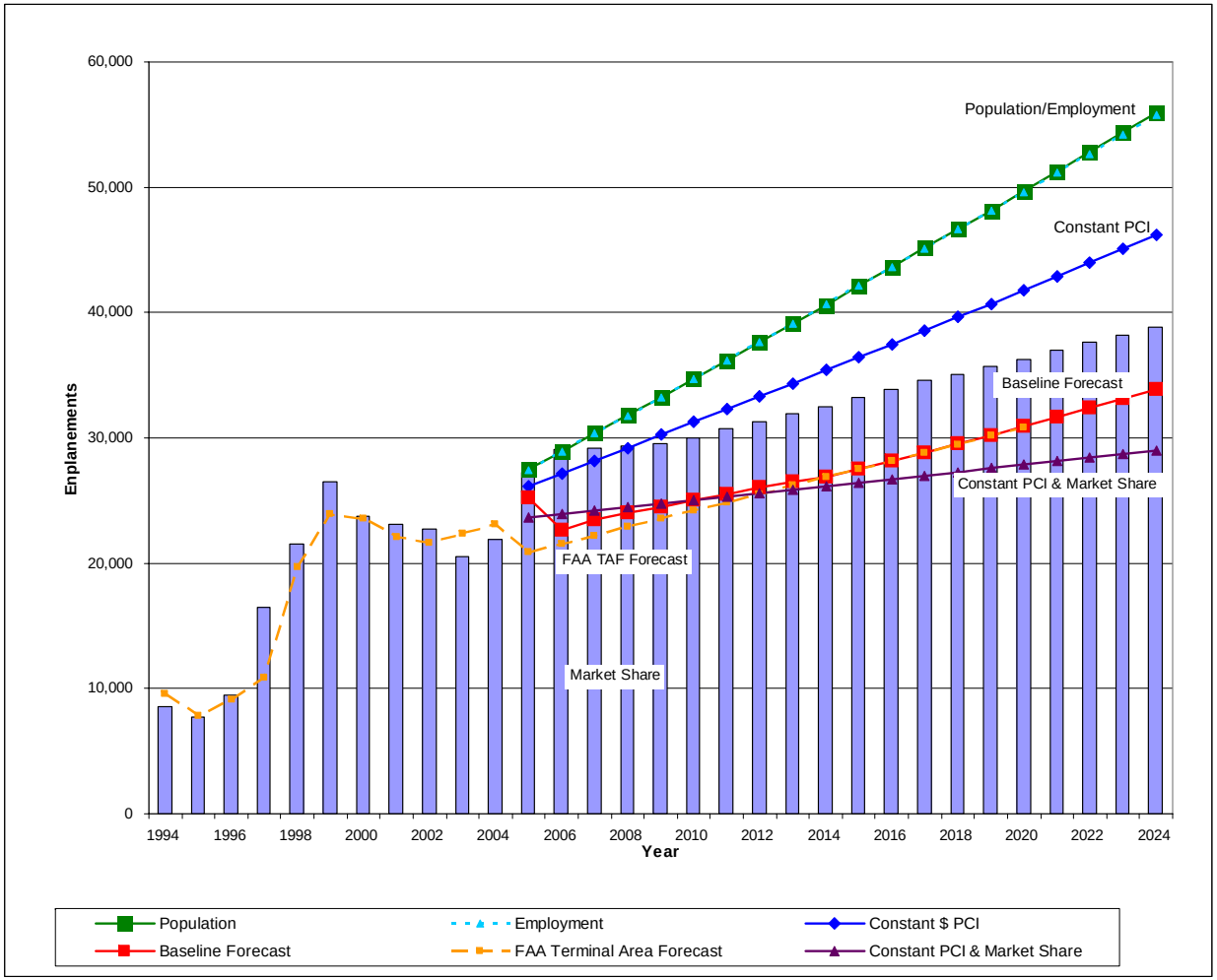
1/ Market Share Methodology until 2015; Per Capita Income-Market Share Regression Growth Rates, 2016-2024.

2/ The portion of the Baseline Forecast based on the market share approach, as presented in Table 3-8, has been updated to reflect frequency changes in Northwest's daily service.

Source: KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek, inc.

Exhibit 3-15

Comparison of Results from Various Methodologies for Baseline Forecast



Sources: KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005; and FAA Terminal Area Forecast, 2004
Prepared by: KRAMER aerotek, inc.

Table 3-11

Comparison of Baseline Forecast of Enplaned Passengers and the TAF

Year	Baseline Forecast	FAA Terminal Area Forecast	Difference	FAA % Difference
1994	8,569	9,560	(991)	-10.4%
1995	7,721	7,781	(60)	-0.8%
1996	9,469	9,124	345	3.8%
1997	16,471	10,879	5,592	51.4%
1998	21,522	19,732	1,790	9.1%
1999	26,464	23,956	2,508	10.5%
2000	23,711	23,557	154	0.7%
2001	23,113	22,044	1,069	4.8%
2002	22,739	21,631	1,108	5.1%
2003	20,540	22,387	(1,847)	-8.3%
2004	22,073	23,143	(1,070)	-4.6%
Forecast				
2009	24,500	23,539	961	4.1%
2014	26,900	26,846	54	0.2%
2019	30,197	30,152	45	0.2%
2024	33,837	-		

Sources: KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005; and FAA Terminal Area Forecast, 2004
Prepared by: KRAMER aerotek, inc.

3.5 Alternative Demand Scenarios

As discussed earlier, three alternative demand scenarios were tested to anticipate the consequences of a fuller build out of air service at STC. The three scenarios include the addition of regional jet service to another hub airport (Second Hub Scenario), the initiation of seasonal and non-seasonal charter activity (Charter Scenario), and the entry of a low cost carrier offering 10 to 15 daily jet flights (Low Cost Carrier Scenario). Each of these scenarios is discussed below.

3.5.1 Second Hub Scenario

Currently, STC has service to one hub airport, MSP. The community of St. Cloud has aggressively sought to attract either United or American to provide service between STC and Chicago O'Hare International Airport. This airport was chosen because Chicago is one of Central Minnesota's top destination cities. O'Hare is also the next closest large-hub airport with a large choice of connecting opportunities. However, capacity constraints at O'Hare severely limit opportunities for small markets such as St. Cloud to secure Chicago service at this time. As of March 2005, the United States Department of Transportation (USDOT) has in place operating restrictions at O'Hare. These restrictions limit the ability for airlines to add new markets such as STC. The FAA issued a Record of Decision in September 2005 for the modernization of O'Hare, which is intended to increase capacity and reduce delay. Such improvements are expected to provide additional capacity that would allow normal market conditions to determine new service areas.

Another alternative to Chicago would be Detroit, which is Northwest's second major northern hub. Detroit was considered as a viable alternative once high-frequency service was established to MSP.

The synergy between MSP and Detroit Metropolitan Wayne County Airport could provide many domestic and international connecting opportunities for Central Minnesota passengers.

In this scenario, it is presumed that St. Cloud would support high-frequency STC-MSP Saab service and that in 2012, Northwest Airlines would introduce regional jet service to Detroit according to the following limited build-out schedule:

- Detroit service would begin with one Canadair Regional Jet (44 seat) round trip in the morning.
- Northwest converts to an all regional jet aircraft fleet by 2017.
- Second Detroit flight would be added in 2017 (44- to 50-seat aircraft)

The restrained development of this service reflects actual Northwest practice at the airports in Rochester and Duluth, where limited Detroit service was introduced either as a competitive response to the entry of another carrier or one flight was added to take advantage of international morning connections at Detroit that are not available at MSP.

The introduction of Detroit service also presumes that STC would draw on a larger service area, particularly to the north, including Brainerd. This assumption is supported by the fact that no other Central Minnesota airport would offer service to Detroit, and that a small number of passengers to the north would use STC for a nonstop Detroit flight rather than drive all the way to MSP.

The passenger forecast for the Second Hub Scenario was based on an analysis of potential passengers in the region that either traveled directly to Detroit, connected for international flights, or preferred a single connection over Detroit rather than the double connection required if MSP service were selected.

To estimate the number of enplaned passengers for the Second Hub Scenario, the Baseline Forecast was presumed. Detroit passengers were added in the same proportion as seats added to the market. Because Northwest could carry passengers to either MSP or Detroit, the forecasts include total enplaned passengers for both markets rather than allocate passengers to one market or another. **Table 3-12** shows forecast enplaned passengers with the addition of service to a second hub. Introduction of second-hub service would add close to 12,000 enplaned passengers at STC in 2012, for a total of 37,800 enplaned passengers at the initiation of Detroit service. By 2017, when a second flight would be introduced, STC would support an all regional jet aircraft fleet. The newer aircraft would likely attract additional passengers that would have otherwise driven to MSP. The number of enplaned passengers is forecast to be 60,300 in 2024 under the Second Hub Scenario. Over the forecast period, the number of enplaned passengers is forecast to increase at an average annual rate of 5.2 percent.

Table 3-12

Enplaned Passengers at STC – Second Hub Scenario

Year	Enplaned Passengers	Annual Growth
1994	8,569	-
1995	7,721	-9.9%
1996	9,469	22.6%
1997	16,471	73.9%
1998	21,522	30.7%
1999	26,464	23.0%
2000	23,711	-10.4%
2001	23,113	-2.5%
2002	22,739	-1.6%
2003	20,540	-9.7%
2004	22,073	7.5%
Forecast		
2009	24,500	2.1%
2014	39,161	1.6%
2019	53,809	2.4%
2024	60,302	2.2%
Compounded Annual Growth		
1994 - 2004		11.1%
2004 - 2009		2.1%
2009 - 2014		9.8%
2014 - 2019		6.6%
2019 - 2024		2.3%
2004 - 2024		5.2%

Sources: City of St. Cloud and KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek, inc.

3.5.2 Charter Scenario

Several airlines within the United States have become specialists in providing charter or scheduled leisure service. The frequency is typically one or two flights per week to either a high-density market or a leisure destination. Sun Country Airlines, based in Mendota Heights, Minnesota, operates extensive B-737-800 charter service in 32 markets. Allegiant Airlines is based in Las Vegas, and flies two to five weekly trips to and from 15 cities using MD-83 or MD-87 aircraft.

The addition of jet charters to leisure markets is a potential scenario for STC, as the Airport has accommodated several Sun Country charters over the last year. The following assumptions were used to develop the passenger forecast under this scenario:

- Seasonal charter service at the Airport would be provided during October 15, 2005, and April 15, 2006, with one flight per month to Las Vegas.
- An additional flight per month to Orlando would be provided during the 2007/2008 season; followed by an additional flight per month to Laughlin, Nevada (90 miles from Las Vegas) during the 2009/2010 season.

- An additional flight per month to one of these three cities would be provided during the 2011/2012 season, and two non-seasonal additional flights would be provided per month, followed by a fifth seasonal flight per month during the 2013/2014 season.
- One additional flight would be provided in each of the remaining years (combination of seasonal and non-seasonal traffic).
- Flights would be provided on aircraft with approximately 150 seats (B-737/MD-80 or equivalent) and operate at an 80 percent load factor.

Table 3-13 shows forecast enplaned passengers at the Airport under the Charter Scenario. This new charter service would add up to approximately 6,400 enplaned passengers at the Airport through the forecast period, with annual growth of approximately 2.0 percent following the ramp-up of charter activity between 2005 and 2014.

3.5.3 Low Cost Carrier Scenario

North Central Minnesota is one of the few remaining areas in the United States without substantial service by the low cost carriers. This lack of low-fare service is the result of Northwest Airlines aggressively defending its territory. However, with the low-cost carriers controlling more than a third of domestic service, an increase in additional low-cost carrier activity remains a reasonable expectation for Minnesota over the forecast period. Two relevant models have emerged nationally for low cost airline service. The Southwest Airlines-type saturation model presumes introduction of service with a minimum of 8 frequencies per day building to 15 or more frequencies. The other model involves a one- to three-frequency feed to a low cost carrier focus city. JetBlue operates in this manner, as do Frontier Airlines and Spirit Airlines.

To date, all low-frequency, low-cost airline service in the State has occurred at MSP. This is consistent with national trends for the low cost carriers to select the largest, highest-density markets. High-saturation carrier Southwest Airlines has elected, in many cases, to operate at perimeter airports that have at least 1,000,000 potential passengers within a 90-minute drive window. These airports typically offer lower operating costs and less congestion than large-hub airports. St. Cloud Regional Airport fits this model; however, the entry of low-cost carrier service at STC would have significant effects on the airfield, terminal, and landside facilities at the Airport. To test the implications for planning purposes of a low-cost carrier saturation-type entry, a Low Cost Carrier Scenario was developed.

Table 3-13

Enplaned Passengers at STC- Charter Scenario

Year	Baseline Forecast	Annual Growth	Charter Scenario	Annual Growth	Total Enplaned Passengers	Annual Growth
Historical						
1994	8,569	-	0	-	8,569	-
1995	7,721	-9.9%	0	-	7,721	-9.9%
1996	9,469	22.6%	0	-	9,469	22.6%
1997	16,471	73.9%	0	-	16,471	73.9%
1998	21,522	30.7%	0	-	21,522	30.7%
1999	26,464	23.0%	0	-	26,464	23.0%
2000	23,711	-10.4%	0	-	23,711	-10.4%
2001	23,113	-2.5%	0	-	23,113	-2.5%
2002	22,739	-1.6%	0	-	22,739	-1.6%
2003	20,540	-9.7%	0	-	20,540	-9.7%
2004	22,073	7.5%	0	-	22,073	7.5%
Forecast						
2009	24,500	2.1%	2,160	50.0%	26,660	4.8%
2014	26,900	1.5%	5,160	2.4%	32,060	1.6%
2019	30,197	2.4%	5,760	2.1%	35,957	2.3%
2024	33,837	2.2%	6,360	1.9%	40,197	2.2%
Compounded Annual Growth						
1994 - 2004		9.9%		-		9.9%
2004 - 2009		2.1%		-		3.8%
2009 - 2014		1.9%		19.0%		3.8%
2014 - 2019		2.3%		2.2%		2.3%
2019 - 2024		2.3%		2.0%		2.3%
2004 - 2024		2.2%		-		3.0%

Sources: City of St. Cloud and KRAMER aerotek, inc.
Prepared by: Ricondo & Associates, Inc.

To profitably operate a low-cost carrier saturation-type business from St. Cloud, the airline would need to draw on Minneapolis-St. Paul demand, much like the Manchester, New Hampshire market drew from the Boston metropolitan area when Southwest Airlines entered that market. Northwest Airlines would undoubtedly match low fares and strive to keep passengers at MSP. At STC, it is anticipated that Northwest might accelerate and enhance service to a second hub more quickly.

The Low Cost Carrier Scenario required a set of assumptions to estimate passenger flows and operations. These assumptions are as follows:

- Operations would be conducted using B-737-700 or comparable medium narrow-body aircraft with 145 seats. The load factor would begin at 60 percent and increase to 70 percent as the service becomes established.
- Development of Service
  - 2012 Low-cost carrier begins with eight flights per day: four to Chicago Midway/four to Denver: Northwest responds by adding two flights to Detroit immediately plus converts two morning/one evening flights MSP to regional jet flights; matches fares.
  - 2013 Low-cost carrier load factor increases to 65 percent.
  - 2014 Low-cost carrier load factor increases to 70 percent.
  - 2015 Low-cost carrier adds two flights to Phoenix; Northwest converts to all regional jets.
  - 2018 Low-cost carrier adds two flights to Baltimore (or possibly Reagan Washington National Airport).
  - 2024 Low-cost carrier has five flights to Chicago Midway, four to Denver; three to Baltimore or Washington; and three to Phoenix (15 total)

- Low-Cost Carrier Annual Departures and Enplaned Passengers
  - 8 per day = 2,774 annual departures and 279,550 enplaned passengers
  - 10 per day = 3,468 annual departures and 349,437 enplaned passengers
  - 15 per day = 5,201 annual departures and 524,156 enplaned passengers

Table 3-14 presents the enplaned passenger forecast under the Low Cost Carrier Scenario. In this scenario, the low-cost carrier entry into service at the Airport would take place in year eight of the planning period, followed by introduction of second-hub service by Northwest. The results would be a dramatic increase in numbers of enplaned passengers, as STC would attract a considerable number of passengers from the Minneapolis/St. Paul metropolitan area. The number of enplaned passengers under this scenario would increase to approximately 559,600 over the planning period, for a compounded annual growth rate of 17.5 percent.

Table 3-14

Enplaned Passengers at STC - Low Cost Carrier Scenario

Year	Northwest	Low Cost Carrier	Total Enplaned Passengers
Historical			
1994	8,569		8,569
1995	7,721		7,721
1996	9,469		9,469
1997	16,471		16,471
1998	21,522		21,522
1999	26,464		26,464
2000	23,711		23,711
2001	23,113		23,113
2002	22,739		22,739
2003	20,540		20,540
2004	22,073		22,073
Forecast			
2009	24,500		24,500
2014	47,074	270,761	317,835
2019	69,833	446,255	516,088
2024	78,259	481,354	559,613
Compounded Annual Growth			
1994 - 2004			9.9%
2004 - 2009			2.1%
2009 - 2014			67.0%
2014 - 2019			10.2%
2019 - 2024			1.6%
2004 - 2024			17.5%

Sources: City of St. Cloud (STC: 1994 - 2003); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek, inc.

3.5.4 Comparison of Enplaned Passengers under All Forecast Scenarios

The four forecast scenarios were developed to examine the implications of different thresholds of activity: service to one hub (MSP), the addition of service to a second hub, the buildup of scheduled charter activity, and the entry of a low cost carrier using a saturation model and providing point-to-point service to four new domestic markets.

Single carrier service to one or two hubs as anticipated under the Baseline Forecast and Second Hub Scenario represents steady, but slow, development of passengers and operations at the Airport. The single carrier (Northwest) would proceed cautiously to develop its service in an orderly and profitable manner. The issue of incremental traffic would remain, because if Northwest could serve St. Cloud passengers at MSP, it would continue to do so, compared to the added cost and risk of providing service to a second hub. The national trend is to "privatize" the "spoke" portion of the trip

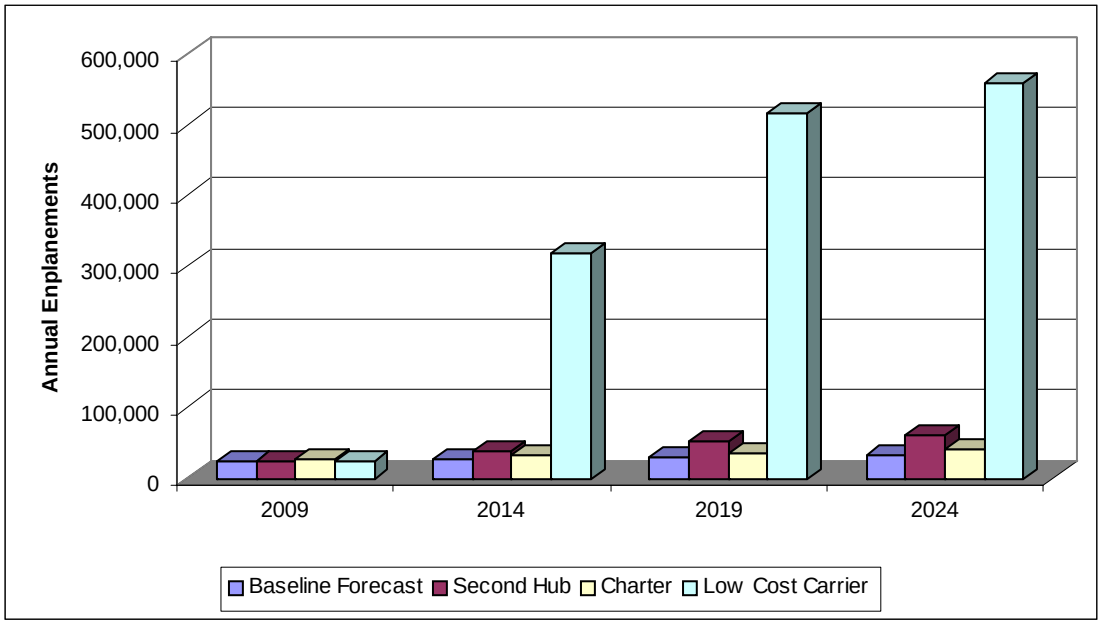
(in the car) to the hub or other large airport. This is true for the legacy carriers that seek to reduce their operating costs and it is also true of airlines providing point-to-point service that requires passengers to drive to the closest large airport to begin their trip.

The entry of service by a low cost carrier at the Airport would be anticipated to invite a more aggressive response from Northwest, both with respect to accelerated start-up of service to a second hub and the replacement of Saab aircraft with regional jets. The result of the competition would be an immediate and significant buildup of service at St. Cloud.

Exhibit 3-16 and **Table 3-15** present a comparison of enplaned passengers under these scenarios.

Exhibit 3-16

Comparison of Enplaned Passengers at STC – All Scenarios



Source: KRAMER aerotek inc., 2005; and Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek inc. and Ricondo & Associates, Inc.

Table 3-15

Comparison of Enplaned Passenger Forecasts – All Scenarios

Forecast Year	Baseline Forecast	Second Hub Scenario	Charter Scenario	Low Cost Carrier Scenario
2009	24,500	24,500	26,660	24,500
2014	26,900	39,161	32,060	317,835
2019	30,197	53,809	35,957	516,088
2024	33,837	60,302	40,197	559,613
Compounded Annual Growth				
1994-2004	9.9%	9.9%	9.9%	9.9%
2004 - 2009	2.1%	2.1%	3.8%	2.1%
2009 - 2014	1.9%	9.8%	3.8%	67.0%
2014 - 2019	2.3%	6.6%	2.3%	10.2%
2019 - 2024	2.3%	2.3%	2.3%	1.6%
2004 - 2024	2.2%	5.2%	3.0%	17.5%

Source: KRAMER aerotek, inc. and Ricondo & Associates, Inc.
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

In addition to forecasting annual activity levels for the Airport, it was necessary to forecast design level activity, defined herein as activity during the peak hour of an average day in the peak month (Peak Hour). These design level forecasts are critical, as most airports are designed to accommodate peak hour and average day demands. For purposes of this Master Plan, a peak month percentage of 10.4 percent of annual activity and a peak hour percentage of 25 percent of the average day were used to derive Peak Hour activity levels at the Airport.

Table 3-16 presents passenger peaking factors under each scenario for specific planning years. As shown, Peak Hour activity at the Airport is expected to increase dramatically under the charter and low cost carrier scenarios over the planning period. The number of peak hour passengers would increase by approximately 54 percent under the Baseline Scenario and would nearly triple under the Second Hub Scenario compared with 2004.

Table 3-16

Estimated Passenger Peaking Activity by Scenario and Forecast Year

	Historical	Forecast			
	2004	2009	2014	2019	2024
Baseline Scenario					
Annual Enplanements	22,073	24,500	26,900	30,197	33,837
Peak Month Enplanements	2,296	2,548	2,798	3,140	3,519
ADPM Enplanements	74	82	90	101	114
Peak Hour Enplanements	13	15	16	18	20
Peak Hour Deplanements	13	15	16	18	20
Peak Hour Passengers	26	30	32	36	40
Second Hub Scenario					
Annual Enplanements	22,073	24,500	39,161	53,809	60,302
Peak Month Enplanements	2,296	2,548	4,073	5,596	6,271
ADPM Enplanements	74	82	131	181	202
Peak Hour Enplanements	13	15	24	33	37
Peak Hour Deplanements	13	15	24	33	37
Peak Hour Passengers	26	30	48	66	74
Charter Scenario					
Annual Enplanements	22,073	26,660	32,060	35,957	40,197
Peak Month Enplanements	2,296	2,908	3,398	3,740	4,119
ADPM Enplanements	74	202	210	221	234
Peak Hour Enplanements	13	135	136	138	140
Peak Hour Deplanements	13	135	136	138	140
Peak Hour Passengers	26	270	272	276	280
Low Cost Carrier Scenario					
Annual Enplanements	22,073	24,500	317,835	516,088	559,613
Peak Month Enplanements	2,296	2,548	33,055	53,673	58,200
ADPM Enplanements	74	82	1,066	1,731	1,877
Peak Hour Enplanements	13	15	192	312	338
Peak Hour Deplanements	13	15	192	312	338
Peak Hour Passengers	26	30	384	624	676

Sources: St. Cloud Regional Airport Master Plan, 1996; KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

3.6 Air Cargo Activity

Since the last STC Master Plan was prepared in 1996, a significantly greater amount of air cargo is being trucked within the United States. Currently, more than 980 city pairs in North America are served by ground-based cargo operations. Even the major integrated carriers (e.g., FedEx, UPS Air Cargo, DHL Worldwide Express) have either acquired or developed extensive ground services operations. Trucking operations typically handle line hauls within a 300- to 400-mile radius of an air hub, in this case MSP.

With these trends in place, air cargo at STC is expected to be limited to belly cargo on passenger aircraft. Mesaba is de-emphasizing cargo on its passenger flights. In any case, Saab operations offer limited capacity for air freight. The same can be said of regional jets. Under all four forecast scenarios, air freight activity is expected to be a by-product of air service and aircraft type used. Introduction of all-cargo carrier service is not anticipated.

Plans to locate an air cargo distribution center south of MSP are not likely to affect air freight handled at STC. Air cargo leaving Central Minnesota by truck is already bypassing STC.

The air cargo forecasts presented in **Table 3-17** below were developed using Boeing's North American cargo growth rates, with actual STC air cargo lift in 2004 as the basis. During the forecast period, a relatively small amount of air cargo growth is expected: 3.3 tons in 2004 to 7.7 tons in 2024. All of this cargo would be carried in the belly hold of passenger aircraft.

Table 3-17

Cargo Forecasts

Year	Pounds	Tons	% Change
Historical			
2000	13,701	6.9	--
2001	12,702	6.4	-7%
2002	9,502	4.8	-25%
2003	9,931	5.0	5%
2004	6,698	3.3	-33%
Forecast			
2009	8,307	4.2	4.4%
2014	10,303	5.2	4.4%
2019	12,595	6.3	4.1%
2024	15,398	7.7	4.1%
Compounded Annual Growth			
1998 - 2004		-13.3%	
2004 - 2009		4.4%	
2009 - 2014		4.4%	
2014 - 2019		4.1%	
2019 - 2024		4.1%	
2004 - 2024		4.2%	

Sources: Northwest AirLink, KRAMER aerotek, inc. Ricondo & Associates, Inc., and Boeing *World Air Cargo Forecast*, 2004/2005
Prepared by: KRAMER aerotek, inc.

3.7 Aircraft Operations Forecasts and Fleet Mix Projections

As part of the Master Plan effort, commercial and general aviation operations were forecast and the aircraft fleet mix was projected. Commercial and general aviation operations are presented separately to more clearly discern the inherent operational differences between the two groups.

3.7.1 Commercial Service Operations

A series of tables and exhibits are provided in this section to describe forecast operations, fleet mix, and peak hour operations for the Baseline Forecast and each of the alternative scenarios.

The total number of commercial service operations would be lowest under the Baseline Forecast, higher under the Second Hub Scenario, higher still under the Charter Scenario, and highest under the Low Cost Carrier Scenario. **Tables 3-18, 3-19, 3-20,** and **3-21** present annual commercial service operations under the various demand scenarios, respectively.

The character of operations and fleet mix varies from scenario to scenario. Under the Baseline Forecast and Second Hub Scenario, the fleet mix would consist of turboprops in the early to mid-range years of the forecast period for this Master Plan Update, then shift to regional jets. In the Charter Scenario, medium narrow-body passenger jets would be added to the mix on a seasonal basis, primarily B 737 and MD 80 aircraft. For the Low Cost Carrier Scenario, a majority of medium narrow-body passenger jets would also be added, in addition to the regional aircraft. **Tables 3-22, 3-23, 3-24,** and **3-25** present the fleet mix under the Baseline Forecast and the Second Hub, Charter, and Low Cost Carrier Scenarios, respectively.

Exhibit 3-17 and **Table 3-26** present comparisons of commercial service operations under all scenarios.

3.7.2 General Aviation

General Aviation (GA) represents all aspects of civil aviation with the exception of scheduled air service and military operations. GA activities include training new pilots, business aviation, recreational flying, and helicopter activity. The types of GA aircraft range from one-seat, single engine aircraft to sophisticated long-range corporate jets. This section addresses the following aspects of general aviation at St. Cloud Regional Airport:

- Based Aircraft
- General Aviation Operations and Fleet Mix

The single largest factor that will influence planning to accommodate the mix and level of general aviation activity at STC in the future is more information. In November 2004, STC's Airport traffic control tower began operations. Prior to the tower coming on line, operations at the Airport were estimated. As tower data are made available for monthly and annual periods, it will provide a much better understanding of peak hour operations and the mix of traffic at STC. The general aviation forecasts presented in this Master Plan Update were based on the best available current data, which are estimates of activity and forecast national trends.

Table 3-18

Forecast Commercial Service Operations – Baseline Forecast

Year	Regional/Commuter Enplanements	Seats	Average Seats	Local Load Factor	Regional/Commuter Departures	Regional/Commuter Operations	Operations Growth Rate
Historical							
1998	21,522	102,152	34	21.1%	3,002	6,004	
1999	26,464	117,470	34	22.5%	3,455	6,910	15.1%
2000	23,711	84,898	34	27.9%	2,497	4,994	-27.7%
2001	23,113	81,668	34	28.3%	2,402	4,804	-3.8%
2002	22,739	79,605	34	28.6%	2,352	4,704	-2.1%
2003	20,540	91,460	34	22.5%	2,690	5,380	14.4%
2004	22,073	62,968	34	35.1%	1,852	3,704	-31.2%
Projected							
2005	25,215	65,926	34	38.2%	1,939	3,878	4.7%
2006	22,638	56,594	34	40.0%	1,665	3,330	-14.1%
2007	23,500	56,594	34	41.5%	1,665	3,330	0.0%
2008	24,000	56,594	34	42.4%	1,665	3,330	0.0%
2009	24,500	56,594	34	43.3%	1,665	3,330	0.0%
2010	25,000	59,595	34	41.9%	1,753	3,506	5.3%
2011	25,500	59,595	34	42.8%	1,753	3,506	0.0%
2012	26,000	62,596	34	41.5%	1,841	3,682	5.0%
2013	26,500	62,596	34	42.3%	1,841	3,682	0.0%
2014	26,900	62,596	34	43.0%	1,841	3,682	0.0%
2015	27,500	72,129	36	38.1%	2,018	4,036	9.6%
2016	28,163	71,221	37	39.5%	1,917	3,834	-5.0%
2017	28,828	73,239	44	39.4%	1,665	3,330	-13.1%
2018	29,503	73,239	44	40.3%	1,665	3,330	0.0%
2019	30,197	73,239	44	41.2%	1,665	3,330	0.0%
2020	30,923	73,239	44	42.2%	1,665	3,330	0.0%
2021	31,652	73,239	44	43.2%	1,665	3,330	0.0%
2022	32,376	73,239	44	44.2%	1,665	3,330	0.0%
2023	33,097	73,239	44	45.2%	1,665	3,330	0.0%
2024	33,837	73,239	44	46.2%	1,665	3,330	0.0%
Compounded Annual Growth							
1999 - 2004						-11.7%	
2004 - 2009						-2.1%	
2009 - 2014						2.0%	
2014 - 2019						-2.0%	
2019 - 2024						0.0%	
2004 - 2024						-0.5%	

Sources: City of St. Cloud (historical); KRAMER aerotek, inc.; and Ricondo & Associates, Inc., 2005 (forecasts)
Prepared by: KRAMER aerotek, inc.

Table 3-19

Forecast Commercial Service Operations – Second Hub Scenario

Year	Regional/Commuter Enplaned Passengers	Seats	Average Seats	Load Factor	Regional/Commuter Aircraft Departures	Regional/Commuter Aircraft Operations	Operations Growth Rate
Historical							
1998	21,522	102,068	34	21.1%	3,002	6,004	
1999	26,464	117,470	34	22.5%	3,455	6,910	15.1%
2000	23,711	84,898	34	27.9%	2,497	4,994	-27.7%
2001	23,113	81,668	34	28.3%	2,402	4,804	-3.8%
2002	22,739	79,968	34	28.4%	2,352	4,704	-2.1%
2003	20,540	91,460	34	22.5%	2,690	5,380	14.4%
2004	22,073	62,968	34	35.1%	1,852	3,704	-31.2%
Projected							
2005	25,215	65,926	34	38.2%	1,939	3,878	4.7%
2006	22,638	56,610	34	40.0%	1,665	3,330	-14.1%
2007	23,500	56,610	34	41.5%	1,665	3,330	0.0%
2008	24,000	56,610	34	42.4%	1,665	3,330	0.0%
2009	24,500	56,610	34	43.3%	1,665	3,330	0.0%
2010	25,000	59,602	34	41.9%	1,753	3,506	5.3%
2011	25,500	59,602	34	42.8%	1,753	3,506	0.0%
2012	37,809	78,759	36	48.0%	2,188	4,376	24.8%
2013	38,535	78,759	36	48.9%	2,188	4,376	0.0%
2014	39,161	78,759	36	49.7%	2,188	4,376	0.0%
2015	40,055	89,897	38	44.6%	2,366	4,731	8.1%
2016	41,022	88,286	39	46.5%	2,264	4,528	-4.3%
2017	51,366	103,774	44	49.5%	2,359	4,717	4.2%
2018	52,570	103,774	44	50.7%	2,359	4,717	0.0%
2019	53,809	103,774	44	51.9%	2,359	4,717	0.0%
2020	55,103	106,133	45	51.9%	2,359	4,717	0.0%
2021	56,403	106,133	45	53.1%	2,359	4,717	0.0%
2022	57,695	106,133	45	54.4%	2,359	4,717	0.0%
2023	58,981	106,133	45	55.6%	2,359	4,717	0.0%
2024	60,302	106,133	45	56.8%	2,359	4,717	0.0%
Compounded Annual Growth							
1998 - 2004						-7.7%	
2004 - 2009						-2.1%	
2009 - 2014						5.6%	
2014 - 2019						1.5%	
2019 - 2024						0.0%	
2004 - 2024						1.2%	

Sources: Historic - City of St. Cloud; Forecast - KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005
Prepared by: KRAMER aerotek, inc.

Table 3-20

Forecast Commercial Service Operations – Charter Scenario

Year	Regional/ Commuter Operations	Charter Enplaned Passengers	Charter Seats	Charter Load Factor	Charter Aircraft Departures	Charter Aircraft Operations	Passenger Airline Aircraft Operations
Historical							
1998	6,004	0	-	-	0	0	6,004
1999	6,910	0	-	-	0	0	6,910
2000	4,994	0	-	-	0	0	4,994
2001	4,804	0	-	-	0	0	4,804
2002	4,704	0	-	-	0	0	4,704
2003	5,380	0	-	-	0	0	5,380
2004	3,704	0	-	-	0	0	3,704
Forecast							
2005	3,878	720	150	80.0%	6	12	3,890
2006	3,330	720	150	80.0%	6	12	3,342
2007	3,330	1,440	150	80.0%	12	24	3,354
2008	3,330	1,440	150	80.0%	12	24	3,354
2009	3,330	2,160	150	80.0%	18	36	3,366
2010	3,506	2,160	150	80.0%	18	36	3,542
2011	3,506	4,320	150	80.0%	36	72	3,578
2012	3,682	4,320	150	80.0%	36	72	3,754
2013	3,682	5,040	150	80.0%	42	84	3,766
2014	3,682	5,160	150	80.0%	43	86	3,768
2015	4,036	5,280	150	80.0%	44	88	4,124
2016	3,834	5,400	150	80.0%	45	90	3,924
2017	3,330	5,520	150	80.0%	46	92	3,422
2018	3,330	5,640	150	80.0%	47	94	3,424
2019	3,330	5,760	150	80.0%	48	96	3,426
2024	3,330	6,360	150	80.0%	53	106	3,436
Compounded Annual Growth							
1999 - 2004	-11.7%					-	-11.7%
2004 - 2009	-2.1%					-	-1.9%
2009 - 2014	2.0%					19.0%	2.3%
2014 - 2019	-2.0%					2.2%	-1.9%
2019 - 2024	0.0%					2.0%	0.1%
2004 - 2024	-0.5%					-	-0.4%

Source: City of St. Cloud (historical); KRAMER aerotek, inc. and Ricondo & Associates, Inc. (forecasts)
Prepared by: Ricondo & Associates, Inc.

Table 3-21

Forecast Commercial Service Operations –Low Cost Carrier Scenario

Year	Air Carrier/ Regional Enplanements	Departure Seats	Average Seats	Load Factor	Air Carrier/ Regional Departures	Air Carrier/ Regional Operations	Operations Growth Rate
Historical							
1998	21,522	102,152	34	21.1%	3,002	6,004	
1999	26,464	117,470	34	22.5%	3,455	6,910	15.1%
2000	23,711	84,898	34	27.9%	2,497	4,994	-27.7%
2001	23,113	81,668	34	28.3%	2,402	4,804	-3.8%
2002	22,739	79,605	34	28.6%	2,352	4,704	-2.1%
2003	20,540	91,460	34	22.5%	2,690	5,380	14.4%
2004	22,073	62,968	34	35.1%	1,852	3,704	-31.2%
Projected							
2005	25,215	64,245	34	39.2%	1,939	3,878	4.7%
2006	22,638	67,184	34	33.7%	1,665	3,330	-14.1%
2007	23,500	67,184	34	35.0%	1,665	3,330	0.0%
2008	24,000	67,184	34	35.7%	1,665	3,330	0.0%
2009	24,500	67,184	34	36.5%	1,665	3,330	0.0%
2010	25,000	70,123	34	35.7%	1,753	3,506	5.3%
2011	25,500	70,123	34	36.4%	1,753	3,506	0.0%
2012	277,510	491,332	98	56.5%	5,027	10,055	186.8%
2013	297,723	491,332	98	60.6%	5,027	10,055	0.0%
2014	317,835	493,111	99	64.5%	4,978	9,956	-1.0%
2015	389,114	604,458	101	64.4%	5,970	11,940	19.9%
2016	425,376	656,773	104	64.8%	6,312	12,623	5.7%
2017	425,237	656,773	88	64.7%	7,445	14,890	18.0%
2018	514,480	772,270	104	66.6%	7,445	14,890	0.0%
2019	516,088	772,270	104	66.8%	7,445	14,890	0.0%
2020	517,767	772,270	99	67.0%	7,791	15,581	4.6%
2021	554,553	822,411	106	67.4%	7,791	15,581	0.0%
2022	556,230	822,411	106	67.6%	7,791	15,581	0.0%
2023	557,898	822,411	106	67.8%	7,791	15,581	0.0%
2024	559,613	822,411	106	68.0%	7,791	15,581	0.0%
Compounded Annual Growth							
1999 - 2004						-11.7%	
2004 - 2009						-2.1%	
2009 - 2014						24.5%	
2014 - 2019						8.4%	
2019 - 2024						0.9%	
2004 - 2024						7.4%	

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005 (forecasts)
Prepared by: KRAMER aerotek, inc.

Table 3-22

Projected Commercial Service Fleet Mix – Baseline Forecast

		Historical—2004		Projected							
				2009		2014		2019		2024	
Aircraft Size	Seats	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent
4-14 Seats	9	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
15-19 Seats	19	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
20-40 Seats	34	1,852	100.0%	1,665	100.0%	1,841	100.0%	-	0.0%	-	0.0%
41-60 Seats	44	0	0.0%	-	0.0%	-	0.0%	1,665	100.0%	1,665	100.0%
60 + Seats	64	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total		1,852	100.0%	1,665	100.0%	1,841	100.0%	1,665	100.0%	1,665	100.0%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005 (projected)
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc

Table 3-23

Projected Commercial Service Fleet Mix: Second Hub Scenario

		Historical--2004		Projected							
				2009		2014		2019		2024	
Aircraft Size	Seats	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent
4-14 Seats	9	0	0.0%	-	0.0%	-	0.0%		0.0%	-	0.0%
15-19 Seats	19	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
20-40 Seats	34	1,852	100.0%	1,665	100.0%	1,871	85.5%	-	0.0%	-	0.0%
41-60 Seats	44	0	0.0%	-	0.0%	317	14.5%	2,359	100.0%	2,359	100.0%
60 + Seats	64	0	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Total		1,852	100.0%	1,665	100.0%	2,188	100.0%	2,359	100.0%	2,359	100.0%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005 (projected)
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

Table 3-24

Projected Commercial Service Fleet Mix: Charter Scenario

		Historical--2004		Projected							
				2009		2014		2019		2024	
Aircraft Size	Seats	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent
4-14 Seats	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
15-19 Seats	19	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
20-40 Seats	34	1,852	100.0%	1,683	99.1%	1,849	98.0%	0	0.0%	0	0.0%
41-60 Seats	44	0	0.0%	0	0.0%	0	0.0%	1,665	97.2%	1,665	96.9%
60 + Seats	64	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
B-737/MD-80	150	0	0.0%	15	0.9%	43	2.0%	48	2.8%	53	3.1%
Total		1,852	100.0%	1,683	100.0%	1,884	100.0%	1,713	100.0%	1,718	100.0%

Source: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005 (projected)
Prepared by: Ricondo & Associates, Inc.

Table 3-25

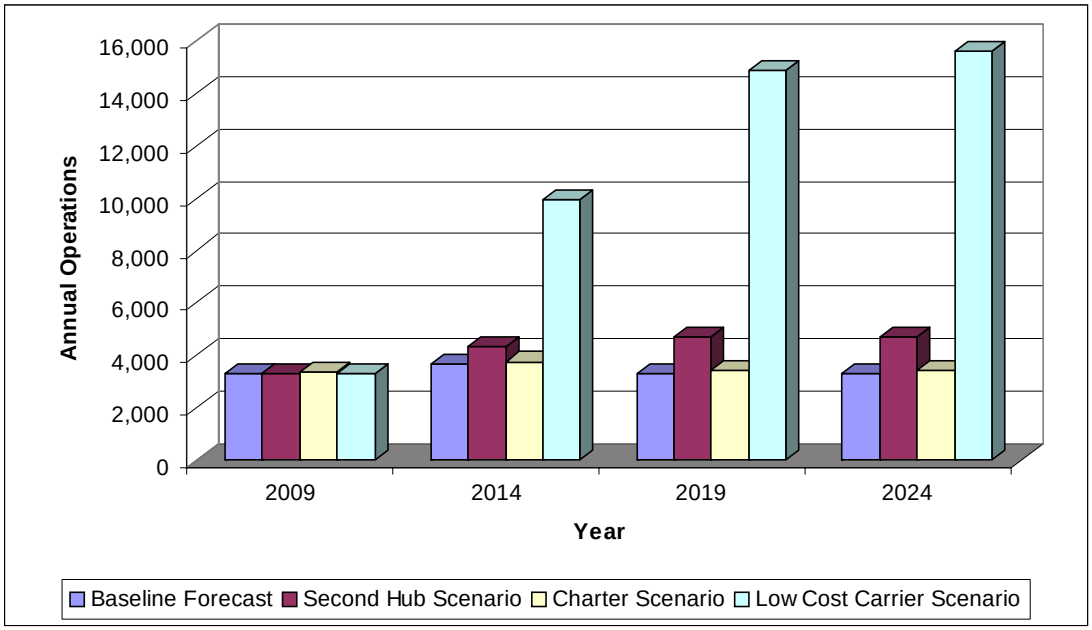
Projected Commercial Service Fleet Mix – Low Cost Carrier Scenario

		Historical--2004		Projected							
				2009		2014		2019		2024	
Aircraft Size	Seats	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent	Departures	Percent
4-14 Seats	9	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
15-19 Seats	19	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
20-40 Seats	34	1,852	100.0%	1,665	100.0%	2,026	40.7%	0	0.0%	0	0.0%
41-60 Seats	44	0	0.0%	0	0.0%	0	0.0%	1,675	22.5%	1,675	21.5%
60 + Seats	64	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
B-737-700	145	0	0.0%	0	0.0%	2,952	59.3%	5,770	77.5%	6,116	78.5%
Total		1,852	100.0%	1,665	100.0%	4,978	100.0%	7,445	100.0%	7,791	100.0%

Source: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; and Ricondo & Associates, Inc., 2005 (projected)
Prepared by: Ricondo & Associates, Inc.

Exhibit 3-17

Comparison of Commercial Service Aircraft Operations - All Scenarios



Sources: KRAMER aerotek, inc., and Ricondo & Associates, Inc.
Prepared by: KRAMER aerotek, inc., and Ricondo & Associates, Inc.

Table 3-26

Comparison of Commercial Service Aircraft Operations - All Scenarios

Forecast Year	Baseline Forecast	Second Hub Scenario	Charter Scenario	Low Cost Carrier Scenario
2009	3,330	3,330	3,366	3,330
2014	3,682	4,376	3,768	9,956
2019	3,330	4,717	3,426	14,890
2024	3,330	4,717	3,436	15,581
Compounded Annual Growth				
1994-2004	-11.8%	-11.8%	-11.8%	-11.8%
2004 - 2009	-2.1%	-2.1%	-1.9%	-2.1%
2009 - 2014	2.0%	5.6%	2.3%	24.5%
2014 - 2019	-2.0%	1.5%	-1.9%	8.4%
2019 - 2024	0.0%	0.0%	0.1%	0.9%
2004 - 2024	-0.5%	1.2%	-0.4%	7.4%

Sources: KRAMER aerotek, inc., and Ricondo & Associates, Inc.
Prepared by: KRAMER aerotek, inc., and Ricondo & Associates, Inc.

3.7.2.1 Based Aircraft and Fleet Mix

Numbers of based aircraft presented in the TAF appear to understate the number of based aircraft at STC. Current counts at the Airport indicate 95 based aircraft rather than 85 such aircraft. Private jets are becoming an increasing component of based aircraft.

Table 3-27 shows the based aircraft forecast for St. Cloud Regional Airport. The forecast is generally based on the TAF growth rate; however, the baseline year (2004) starts with the actual number of aircraft (95) based at the Airport in 2004. During the forecast period, the number of based aircraft is forecast to increase to 121, an increase of 26 based aircraft over 20 years. The most important unknown factor that may contribute to a faster growth in based aircraft is the recently opened Airport traffic control tower. The Tower may be a positive force in attracting additional based aircraft to STC, although there is no evidence to support a higher growth scenario at this time.

The number of based aircraft at STC is also sensitive to Airport rates and charges and the availability of hangar facilities. If rates or facilities were to change with respect to other area airports, the number of aircraft based at the Airport would likely change.

Table 3-28 presents the forecast of based aircraft at the Airport by aircraft type. In 2004, 82 percent of the based aircraft at STC were single-engine aircraft. Over the forecast period, the distribution of aircraft by type at STC will shift with trends similar to the distribution forecast nationwide by the FAA, with the exception of helicopters, which numbers will be augmented in 2009 at STC by the start-up of the Army Aviation Support Facility at STC. Growth in the number of based aircraft at the Airport is forecast to be slightly higher than the national growth rate, reflecting the higher rate of population growth in the St. Cloud region.

3.7.2.2 General Aviation Operations

General aviation operations are typically analyzed in terms of local and itinerant operations. Local operations consist of:

- Operations that occur in entirety within sight of the airport or in a local traffic pattern.
- Operations that are known to be departing for, or arriving from, flight in local practice areas within a 30 mile radius of the airport.
- Operations executing simulated precision, non-precision, and visual approaches or low passes at an airport (including touch-and-go training operations).[12]

All other flights are considered itinerant operations.

Exhibit 3-18 presents a comparison of annual general aviation operations at the Airport with total general aviation operations in the nation. Over the last 10 years, total STC operations have tracked U.S. trends in GA operations fairly closely. At the time of this analysis, the Airport traffic control tower had been in operation less than a year, thus, historical general aviation operations data are estimated based on activity sampling. General aviation operations forecasts were based on national trends and specific local factors that influence the mix and timing of GA operations.

[12] Local operations as defined by the FAA.

Table 3-27

Based Aircraft Forecast

Year	TAF Based Aircraft Forecast	Master Plan Forecast	TAF Growth Rate	Total U.S. Active GA Aircraft	Annual Growth Rate	Forecast Market Share
Historical						
1998	79	79	--	204,711	--	0.0386%
1999	79	83	0.0%	219,464	7.2%	0.0378%
2000	83	83	5.1%	217,533	-0.9%	0.0382%
2001	83	85	0.0%	211,447	-2.8%	0.0402%
2002	85	85	2.4%	211,244	-0.1%	0.0402%
2003	85	85	0.0%	211,190	0.0%	0.0402%
2004 Est.	85	95	0.0%	219,100	3.7%	0.0434%
Forecast						
2005	86	96	1.2%	227,585	3.9%	0.0422%
2006	86	97	0.0%	228,865	0.6%	0.0424%
2007	86	97	0.0%	230,635	0.8%	0.0421%
2008	87	98	1.2%	232,725	0.9%	0.0422%
2009	87	104	0.0%	234,805	0.9%	0.0444%
2010	87	105	0.0%	236,915	0.9%	0.0444%
2011	88	106	1.1%	239,005	0.9%	0.0445%
2012	88	107	0.0%	241,035	0.8%	0.0446%
2013	88	107	0.0%	242,915	0.8%	0.0442%
2014	89	110	1.1%	244,685	0.7%	0.0448%
2015	89	110	0.0%	246,415	0.7%	0.0445%
2016	89	111	0.0%	247,647	0.5%	0.0447%
2017	90	112	1.1%	248,885	0.5%	0.0450%
2018	90	113	0.0%	250,130	0.5%	0.0451%
2019	90	113	0.0%	251,380	0.5%	0.0449%
2020	92	116	2.2%	252,637	0.5%	0.0461%
2021		117	0.5%	253,900	0.5%	0.0461%
2022		119	0.5%	255,170	0.5%	0.0465%
2023		119	0.5%	256,446	0.5%	0.0465%
2024		121	0.5%	257,728	0.5%	0.0469%
Compounded Annual Growth						
1994 - 2004 Est.		3.1%		1.1%		
2004 Est. - 2009		1.9%		1.4%		
2009 - 2014		1.0%		0.8%		
2014 - 2019		0.6%		0.5%		
2019 - 2024		1.4%		0.5%		
2004 - 2024		1.2%		0.8%		

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005 (forecasts); and FAA Terminal Area Forecast, 2004

Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

Table 3-28

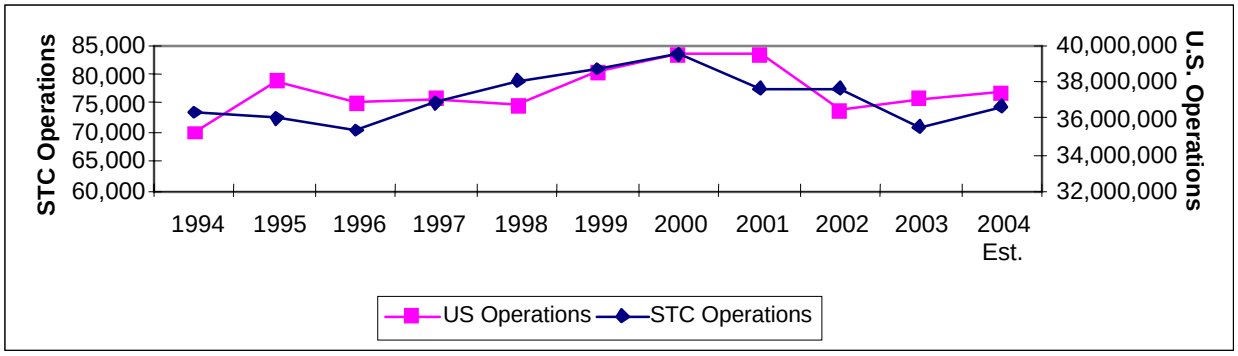
Projected Based Aircraft Fleet Mix

	Single Engine	Multi-Engine	Jet	Helicopter	Total
2004	78	10	5	2	95
Projected					
2009	80	10	6	8	104
2014	82	12	8	8	110
2019	83	13	9	8	113
2024	85	18	10	8	121
Percent of Based Aircraft Fleet					
2004	82%	11%	5%	2%	100%
2024	70%	15%	8%	7%	100%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005, and Ricondo & Associates, Inc., 2004 (projected)
Prepared by: KRAMER aerotek, inc. and Ricondo & Associates, Inc.

Exhibit 3-18

General Aviation Operations Comparison - United States and STC, 1994-2004

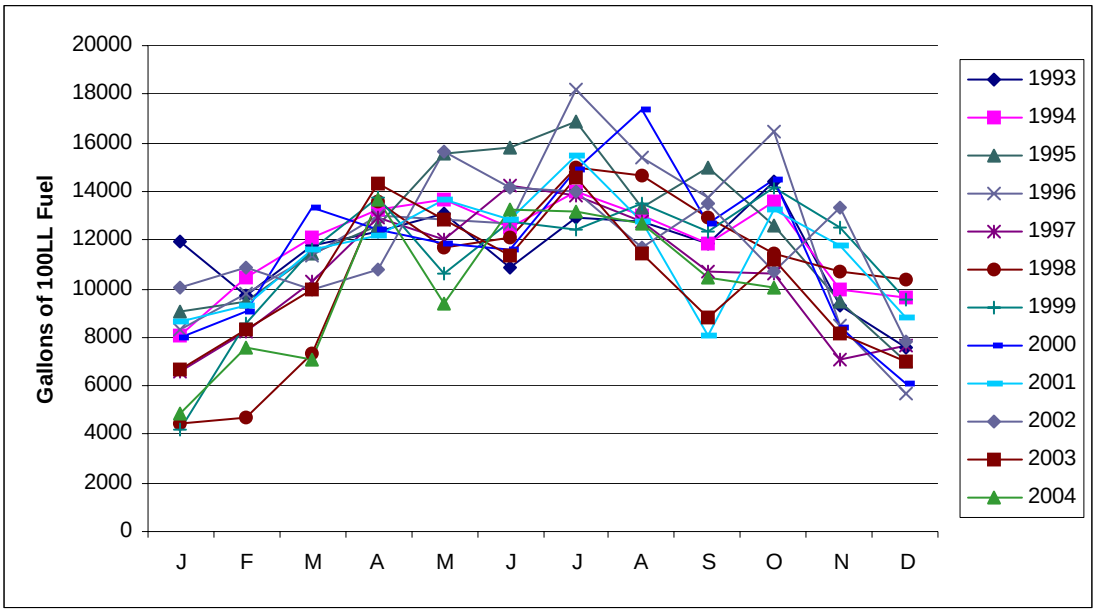


Sources: FAA Terminal Area Forecast, KRAMER aerotek, inc., Ricondo & Associates, Inc., and FAA Aerospace Forecasts, federal Fiscal Years 2004
Prepared by: KRAMER aerotek, inc.

Several local factors contribute to the specific character of general aviation operations at STC. St. Cloud State University operates a flight school at the Airport through Wright Aero. Pilot training accounts for many local touch-and-go operations and explains the relatively high number of local versus itinerant flights (52 percent versus 48 percent, respectively). Typically, itinerant operations can account for as much as 60 percent of all operations. Another factor contributing to seasonal variations in aviation activity in Central Minnesota is the hard winters and warm summers. Monthly fuels sales of aviation gas (avgas) indicate the seasonality of general aviation at the Airport, as **Exhibit 3-19** shows. November through February sales of avgas are often half of sales occurring during other months.

Exhibit 3-19

Monthly Avgas Fuel Sales at STC, 1993-2004



Source: St. Cloud Aviation fuel sales records
Prepared by: KRAMER aerotek, inc.

Table 3-29 presents historical and forecast general aviation operations at STC. It was assumed in developing the forecasts that the use of STC for flight training and the mix of itinerant and local operations would remain constant into the forecast years. Total general aviation operations were forecast based on the Airport's share of total U.S. general aviation operations. Total operations in 2004 were estimated to number 76,873. In 2024**,** total operations are forecast to number 106,990, representing a compounded annual growth rate of 1.7 percent. General aviation operations are not forecast to vary under the various commercial air service forecast scenarios.

3.7.3 Military Activity

Table 3-30 presents historical and forecast military operations. Military operations are not anticipated to fluctuate during the forecast period, except, beginning in mid-year 2009, when the Minnesota Air National Guard begins helicopter operations from the Airport, and in 2010, when these operations occur year round. Historically, itinerant military use of the Airport has been low, at approximately 300 operations per year.

Table 3-29

Historical and Forecast General Aviation Operations

Year	Itinerant	Itinerant Share	Local	Local Share	Total General Aviation Operations	FAA TAF Operations
Historical						
1994	31,000	44.3%	39,000	55.7%	70,000	70,000
1995	39,404	49.9%	39,500	50.1%	78,904	78,904
1996	35,700	47.5%	39,500	52.5%	75,200	75,200
1997	36,358	47.9%	39,500	52.1%	75,858	75,858
1998	35,172	47.1%	39,500	52.9%	74,672	74,672
1999	38,545	48.0%	41,675	52.0%	80,220	80,220
2000	40,020	48.1%	43,126	51.9%	83,146	83,146
2001	40,299	48.4%	43,026	51.6%	83,325	83,325
2002	35,745	48.6%	37,878	51.4%	73,623	73,623
2003	36,876	48.6%	39,014	51.4%	75,890	75,890
2004	37,469	48.7%	39,404	51.3%	76,873	76,873
Projected						
2005	38,570	47.9%	41,960	52.1%	80,530	
2009	41,100	47.9%	44,700	52.1%	85,800	81,888
2014	44,490	47.9%	48,400	52.1%	92,890	87,033
2019	47,810	47.9%	52,010	52.1%	99,820	91,679
2024	51,250	47.9%	55,740	52.1%	106,990	
Compounded Annual Growth						
1994 - 2004 Est.	1.9%		0.1%		0.9%	0.9%
2004 Est. - 2009	2.2%		2.6%		2.2%	1.3%
2009 - 2014	1.6%		1.6%		1.6%	1.2%
2014 - 2019	1.4%		1.4%		1.4%	1.0%
2019 - 2024	1.4%		1.4%		1.4%	
2004 - 2024	1.6%		1.7%		1.7%	

Sources: FAA Terminal Area Forecast, 2004; KRAMER aerotek, inc.; 2005; Ricondo & Associates, Inc., 2005; FAA Aerospace Forecasts; Federal Fiscal Years 2004 – 2015
Prepared by: KRAMER aerotek, inc.

Table 3-30

Historical and Forecast Military Operations

Year	Military Itinerant	Itinerant Share	Military Local	Local Share	Total Military Operations
Historical					
1994	300	100.0%	0	0.0%	300
1995	300	100.0%	0	0.0%	300
1996	300	100.0%	0	0.0%	300
1997	300	100.0%	0	0.0%	300
1998	300	100.0%	0	0.0%	300
1999	300	100.0%	0	0.0%	300
2000	300	100.0%	0	0.0%	300
2001	300	100.0%	0	0.0%	300
2002	300	100.0%	0	0.0%	300
2003	300	100.0%	0	0.0%	300
2004	300	100.0%	0	0.0%	300
Forecast					
2009	300	24.8%	912	75.2%	1,212
2014	300	14.1%	1,824	85.9%	2,124
2019	300	14.1%	1,824	85.9%	2,124
2024	300	14.1%	1,824	85.9%	2,124

Sources: St. Cloud Regional Airport; KRAMER aerotek, inc.,2005; Ricondo & Associates, Inc., 2005; and Army National Guard Aviation Office, 2004
Prepared by: KRAMER aerotek, inc.

3.7.4 Operations Summary

Tables 3-31, 3-32, 3-33, and **3-34** present total operations summaries for the Baseline Forecast and alternative demand scenarios, respectively. General aviation operations will remain the largest component of Airport activity under all four demand scenarios. **Exhibit 3-20** presents a comparison of operations under each scenario for selected years during the forecast period.

The following points summarize key findings with regard to forecast aircraft operations at the Airport:

- Regional/commuter operations are forecast to decrease from 3,704 in 2004 to 3,330 in 2024, following the replacement of Saab 340 aircraft with 44- to 50-seat regional jets, representing an annual decrease of 0.5 percent.
- Scheduled charter operations are forecast to increase to slightly over 100 in 2024.
- General aviation operations are forecast to increase from 76,873 in 2004 to approximately 107,000 in 2024. GA operations will be subject to an initial adjustment pending a 12-month record from the newly operational Airport traffic control tower.
- Military activity is forecast to remain constant following the addition of an estimated 1,800 helicopter operations in the second half of 2009.

Table 3-31

Forecast Annual Aircraft Operations – Baseline Forecast

Year	Passenger Airline Operations	General Aviation Operations	Military Operations	Total Operations
Historical				
1998	6,004	74,672	300	80,976
1999	6,910	80,220	300	87,430
2000	4,994	83,146	300	88,440
2001	4,804	83,325	300	88,429
2002	4,704	73,623	300	78,627
2003	5,380	75,890	300	81,570
2004	3,704	76,873	300	80,877
Projected				
2009	3,330	85,800	1,212	90,342
2014	3,682	92,890	2,124	98,696
2019	3,330	99,820	2,124	105,274
2024	3,330	106,990	2,124	112,444
Compounded Annual Growth				
1998 - 2004	-6.7%	0.4%	0.0%	0.0%
2004 - 2009	-2.1%	2.2%	32.2%	2.2%
2009 - 2014	2.0%	1.6%	11.9%	1.8%
2014 - 2019	-2.0%	1.4%	0.0%	1.3%
2019 - 2024	0.0%	1.4%	0.0%	1.3%
2004 - 2024	-0.5%	1.7%	10.3%	1.7%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005; and FAA Aerospace Forecasts; Federal Fiscal Years 2004 – 2015
Prepared by: KRAMER aerotek, inc.

Table 3-32

Forecast Annual Aircraft Operations – Second Hub Scenario

Year	Passenger Airline Operations	General Aviation Operations	Military Operations	Total Operations
Historical				
1998	6,004	74,672	300	80,976
1999	6,910	80,220	300	87,430
2000	4,994	83,146	300	88,440
2001	4,804	83,325	300	88,429
2002	4,704	73,623	300	78,627
2003	5,380	75,890	300	81,570
2004	3,704	76,873	300	80,877
Projected				
2009	3,330	85,800	1,212	90,342
2014	4,376	92,890	2,124	99,390
2019	4,717	99,820	2,124	106,661
2024	4,717	106,990	2,124	113,831
Compounded Annual Growth				
1998 - 2004	-6.7%	0.4%	0.0%	0.0%
2004 - 2009	-2.1%	2.2%	32.2%	2.2%
2009 - 2014	5.6%	1.6%	11.9%	1.9%
2014 - 2019	1.5%	1.4%	0.0%	1.4%
2019 - 2024	0.0%	1.4%	0.0%	1.3%
2004 - 2024	1.2%	1.7%	10.3%	1.7%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005; and FAA Aerospace Forecasts; Federal Fiscal Years 2004 - 2015
Prepared by: Ricondo & Associates, Inc.

Table 3-33

Forecast Annual Aircraft Operations – Charter Scenario

Year	Passenger Airline Operations	General Aviation Operations	Military Operations	Total Operations
Historical				
1998	6,004	74,672	300	80,976
1999	6,910	80,220	300	87,430
2000	4,994	83,146	300	88,440
2001	4,804	83,325	300	88,429
2002	4,704	73,623	300	78,627
2003	5,380	75,890	300	81,570
2004	3,704	76,873	300	80,877
Projected				
2009	3,366	85,800	1,212	90,378
2014	3,768	92,890	2,124	98,782
2019	3,426	99,820	2,124	105,370
2024	3,436	106,990	2,124	112,550
Compounded Annual Growth				
1998 - 2004	-6.7%	0.4%	0.0%	0.0%
2004 - 2009	-1.9%	2.2%	32.2%	2.2%
2009 - 2014	2.3%	1.6%	11.9%	1.8%
2014 - 2019	-1.9%	1.4%	0.0%	1.3%
2019 - 2024	0.1%	1.4%	0.0%	1.3%
2004 - 2024	-0.4%	1.7%	10.3%	1.7%

Sources: City of St. Cloud (historical); KRAMER aerotek, inc., 2005; Ricondo & Associates, Inc., 2005; and FAA Aerospace Forecasts, Federal Fiscal Years 2004 - 2015
Prepared by: Ricondo & Associates, Inc.

Table 3-34

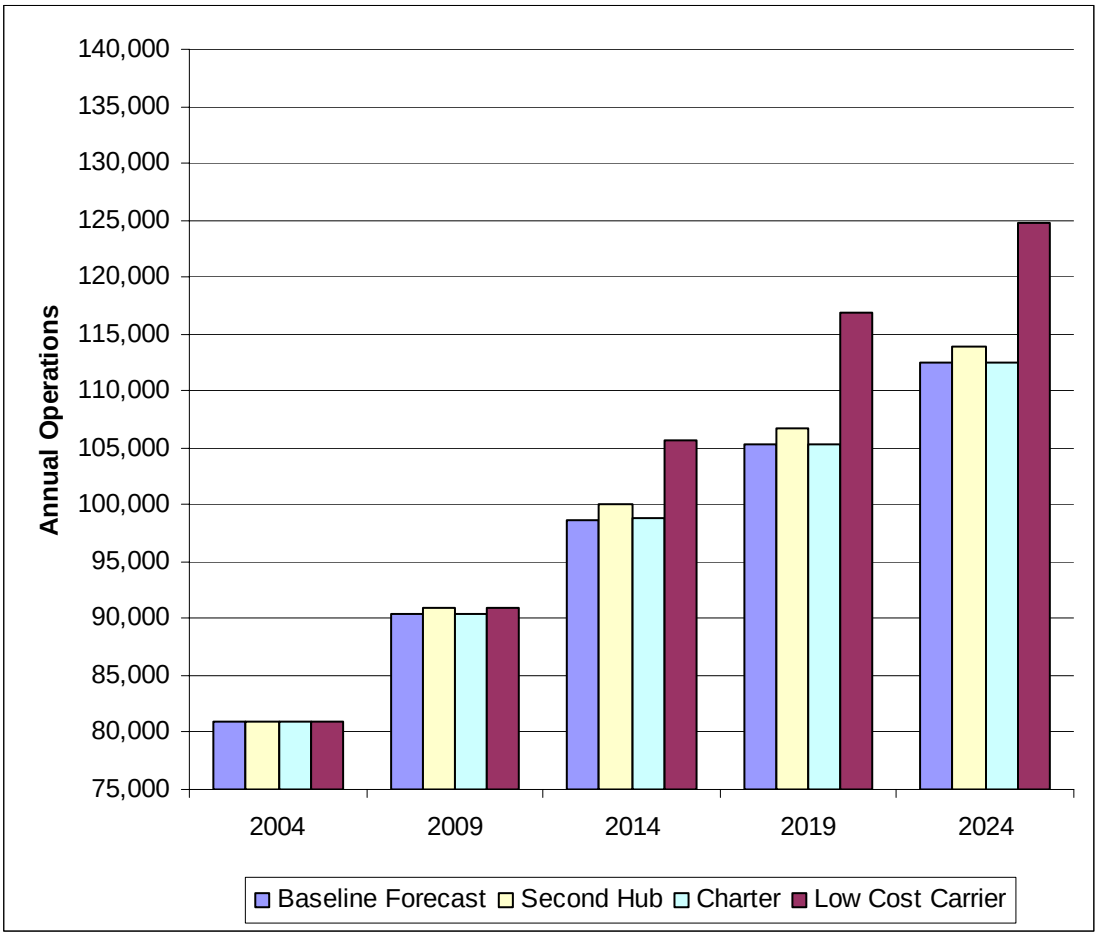
Forecast Annual Aircraft Operations – Low Cost Carrier Scenario

Year	Passenger Airline Operations	General Aviation Operations	Military Operations	Total Operations
Historical				
1998	6,004	74,672	300	80,976
1999	6,910	80,220	300	87,430
2000	4,994	83,146	300	88,440
2001	4,804	83,325	300	88,429
2002	4,704	73,623	300	78,627
2003	5,380	75,890	300	81,570
2004	3704	76,873	300	80,877
Projected				
2009	3,330	85,800	1,212	90,342
2014	9,956	92,890	2,124	104,970
2019	14,890	99,820	2,124	116,834
2024	15,581	106,990	2,124	124,695
Compounded Annual Growth				
1998 - 2004	-6.7%	0.4%	0.0%	0.0%
2004 - 2009	-2.1%	2.2%	32.2%	2.2%
2009 - 2014	24.5%	1.6%	11.9%	3.0%
2014 - 2019	8.4%	1.4%	0.0%	2.2%
2019 - 2024	0.9%	1.4%	0.0%	1.3%
2004 - 2024	7.4%	1.7%	10.3%	2.2%

Sources: City of St. Cloud (historical), KRAMER aerotek, inc., Ricondo & Associates, Inc., and FAA Aerospace Forecasts, Federal Fiscal Years 2004 - 2015
Prepared by: Ricondo & Associates, Inc.

Exhibit 3-20

Comparison of Operations for Baseline Forecast and Alternative Demand Scenarios



Sources: City of St. Cloud (historical), KRAMER aerotek, inc. and Ricondo & Associates, Inc. (forecasts)
Prepared by: Ricondo & Associates, Inc.

3.8 Planning Activity Levels

The enplaned passenger and aircraft operations forecasts are presented in **Tables 3-35** and **3-36,** respectively, for existing conditions (year 2004) and Planning Activity Levels (Pals) 1, 2, and 3, and Sensitivity Level (SL) 4. These correspond to annual forecast activity levels developed for the Baseline Forecast and the alternative demand scenarios. The purpose of the Pals and SL is to guide Airport officials in determining when, according to activity levels and not calendar years, Airport facilities would need to be expanded. By linking Airport expansion decisions to activity levels and not specific dates in time, an airport operator can be flexible and responsive with regard to facility development needs.

PALs were determined based on level and type of activity to provide benchmarks for expansion, and correlate to one or more of the demand scenarios in specific years, as follows:

- PAL 1 – Baseline Forecast 2009
- PAL 2 – Charter Scenario 2014
- PAL 3 – Second Hub Scenario 2014 with 2024 GA and Military activity
- SL 4 – Low Cost Carrier Scenario 2019 with 2024 GA and Military activity

Although tied to a specific year for forecasting purposes, the PALs and SL are intended to characterize a level and type of activity for use in planning and programming facility needs that may occur during that year, earlier, or later, depending on actual growth at the Airport. While PALs 1 through 3 represent steady growth of regional carrier commercial activity and initiation (in the case of PAL 2) of service by larger commercial jets, SL 4 represents an entirely different picture of activity with a Low Cost Carrier (LCC). The number of enplaned passengers and medium narrowbody jet operations under SL 4 is significantly higher than that under the PALs and would create a very different set of facility requirements in terms of terminal and passenger facilities than would the PALs. Therefore, this level of activity is used as a sensitivity analysis to identify the additional improvements that would be required to accommodate the LCC scenario. To ensure adequate planning for GA facilities and 2024 aircraft operations, both PAL 3 and SL 4 include full 2024 GA and military activity.

Table 3-35

Summary of Enplaned Passenger Planning Factors at Planning Activity Levels

	Existing 2004	PAL 1	PAL 2	PAL 3	SL 4
Air Carrier					
Annual Enplanements			5,160		446,255
Peak Month [1/]			600		46,411
PMAD Enplanements			120		1,497
Peak Hour Enplanements [2/]			120		269
Peak Hour Deplanements			120		269
Peak Hour Passengers			240		539
Commuter/Regional					
Annual Enplanements	22,073	24,500	26,900	39,161	69,833
Peak Month (10.4% of Annual)	2,296	2,548	2,798	4,073	7,263
PMAD Enplanements	74	82	90	131	234
Peak Hour Enplanements (18% of PMAD)	13	15	16	24	43
Peak Hour Deplanements	13	15	16	24	43
Peak Hour Passengers	27	30	32	48	85
Total Enplanements					
Total Annual Enplanements	22,073	24,500	32,060	39,161	516,088
Peak Month	2,296	2,548	3,398	4,073	53,673
Peak Month Average Day (PMAD)	74	82	210	131	1,731
Peak Hour Enplanements	13	15	136	24	312
Peak Hour Deplanements	13	15	136	24	312
Peak Hour Passengers	27	30	272	48	624

Notes:

1/ Peak month enplanements are 10.8 percent of annual for the Low Cost Carrier Scenario. In 2014, the Charter Scenario assumes that there will be 10 charter operations per month.

2/ Peak hour enplanements are 18 percent of PMAD for the Low Cost Carrier Scenario, 85 percent for the Charter Scenario.

Sources: KRAMER aerotek, inc. and Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Table 3-36

Summary of Aircraft Operations Planning Factors at Planning Activity Levels

	Existing 2004	PAL 1	PAL 2	PAL 3	SL 4
Air Carrier					
Annual Operations			86		9,018
Peak Month [1/]			10		938
PMAD			1		30
Peak Hour [2/]			1		5
Commuter/Regional					
Annual Operations	3,704	3,330	3,682	4,376	5,871
Peak Month (10.4% of Annual)	385	346	383	455	611
PMAD	12	11	12	15	20
Peak Hour (16.6% of PMAD)	2	2	2	2	3
General Aviation					
Annual Operations	76,873	85,800	92,890	106,990	106,990
Peak Month [3/]	8,764	9,781	10,589	12,197	12,197
PMAD	283	316	342	393	393
Peak Hour (16.6% of PMAD)	45	50	55	63	63
Military					
Annual Operations	300	1,212	2,124	2,124	2,124
Total Operations					
Total Annual Operations	80,877	90,342	98,782	113,490	124,033
Peak Hour (excluding military)	47	52	58	65	71
Based Aircraft	95	104	110	121	121

Notes:

1/ Peak month operations are 10.4 percent of annual for the LCC. In 2014, the Charter Scenario assumes that there will be 10 charter operations per month.

2/ Peak hour operations are 16.6 percent of PMAD for the Low-Cost Carrier Scenario and 100 percent of annual for the Charter Scenario.

3/ GA Peak Month factor based on fuel sales 1993-2004

Sources: KRAMER aerotek, inc. and Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.