

# APPENDIX E

## AVIATION ACTIVITY FORECASTS

### E.1 PURPOSE AND CONTEXT

This appendix presents the St. George Airport (SGU) aviation activity forecasts for the period of 2003 through 2020. Among the components that have been projected are total annual enplanements, air carrier/air taxi operations, freighter operations, general aviation operations, and military operations.

### E.2 AIR TRADE AREA

The Air Trade Area is a geographically defined area from which the airport derives its local aviation demand. The main elements of this regional socioeconomic base include area population, employment, and personal income levels. For purposes of this report, the air trade area is defined to be the St. George Metropolitan Statistical Area (MSA), which is made up of Washington County.

The historical and forecast population, employment, and income data used in developing the enplaned passenger forecast was obtained from Woods & Poole Economics, Inc., an independent, non-partisan organization that carries out research in the public interest.<sup>1</sup> The data used in this report includes total population, total employment, total personal income, and per capita personal income.

#### E.2.1 POPULATION

Population in the St. George MSA has increased at an average annual compound growth rate of 5.76 percent from 1992 to 2003. In 1990, the population was 48,560; by 2000, it was 90,354. Continued population growth in the Air Trade Area is expected over the forecast horizon, 2003 through 2030, an average of 3.05 percent per annum. By 2030, an estimated 234,779 people are expected to reside in the Air Trade Area.

#### E.2.2 EMPLOYMENT

Employment in the St. George MSA increased significantly between 1992 and 2003, with an average annual compound growth rate of 7.33 percent. Employment growth over the forecast horizon is projected to be an average annual compound growth rate of 3.03 percent.

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<sup>1</sup> Woods & Poole Economics, Inc., *2004 MSA Profile; Metropolitan Area Projections to 2030*; January 2004.

### **E.2.3 PERSONAL INCOME**

Personal income in the St. George MSA also increased significantly over the last 11 years at an average annual compound growth rate of 7.39 percent. The projection for the period 2003 through 2030 is for an average rate of 4.47 percent per annum.

### **E.3 AIR SERVICE**

The existing airport is served by SkyWest Airlines, providing six daily flights to Salt Lake City and two daily flights to Los Angeles on 30-seat Embraer EMB-120 Brasilia aircraft. The existing airport's mesa-top location allows for the existing runway length of 6,607 feet, which cannot be extended, thereby restricting the size of commercial aircraft that may use the facility to Class B-II.

According to a survey of local travel agencies, only 20 to 40 percent of local airline ticket reservations originate from SGU. The remaining ticket reservations originate from Las Vegas McCarran International Airport (LAS), which is about a two-hour drive from St. George. The 60 to 80 percent of local passengers that fly from Las Vegas are referred to as "leakage."

### **E.4 ENPLANEMENT FORECAST APPROACH AND METHODOLOGY**

Two forecast scenarios were developed for this proposed replacement airport analysis: Existing Airport and Proposed Replacement Airport. The Existing Airport scenario assumes no changes to the existing facility. The Proposed Replacement Airport scenario assumes the construction of the airport as proposed, with a 9,300-foot runway posing no constraints to local air service.

For this forecast effort, a combination of two forecast methodologies was employed to forecast enplaned passengers, including a conventional multi-linear regression analysis (econometric) and an air service, "bottom up" approach.

- Econometric – The econometric approach (regression) attempts to predict future enplanements by using "demand drivers" such as population, personal income, and yield (ticket price).
- Air Service – The Air Service approach (airline schedules) develops future airline schedules based on principles of air service, trending airline metrics (e.g., load factors), and undocumented demand.

#### **E.4.1 SOURCES OF DATA**

Data sources used for the SGU passenger and operations forecasts included the following:

- Official Airline Guide (OAG)<sup>2</sup> – airline schedules

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<sup>2</sup> *Official Airline Guide*, April and May 2004; Back Aviation Solutions.

- U.S. Department of Transportation (USDOT) Passenger Ticket Survey, 1990-2000<sup>3</sup> – Local passenger counts and average local yield. Yield is the revenue per flight mile received by the airlines for carrying each passenger. Passenger origin and destination data is also provided by the USDOT survey, but it was not used for the SGU forecast effort as it is not representative of local demand due to the extremely high leakage rate to LAS.
- Federal Aviation Administration (FAA) 2003 Terminal Area Forecasts (TAF)<sup>4</sup> – local enplaned passenger and aircraft operations forecasts by the FAA.
- FAA Aerospace Forecast, Fiscal Years 2004-2015<sup>5</sup> – projections for yield.
- Woods & Poole Economics, 1970-2030<sup>6</sup> – Socioeconomic data.
- Airport statistics provided by airport management.
- Airport/Airline staff interviews.

#### E.4.2 ECONOMETRIC RESULTS

Total annual enplanements were first forecast using a multi-linear regression approach. A number of regression equations were constructed where the independent variables were different combinations of population, employment, and personal income statistics that were presented in **Section E.2.1** and local yield. The independent variables were regressed against historical local enplanements. Several of the regressions yielded high correlation coefficients with good statistical output.

A three-variable regression equation provided the “best fit” with the historical data and was chosen for the Existing Airport scenario. The independent variables were population, per capita personal income, and yield. The results of the three-variable regression are shown in **Figure E.1**. The projected average annual growth rate was 3.7 percent in the 2003 to 2010 period and 3.4 percent in the 2010 to 2020 period, resulting in an average annual growth rate of 3.5 percent during the forecast period.

A second, slightly more aggressive, two-variable regression was selected for the Proposed Replacement Airport scenario that used total personal income and yield as independent variables. The higher growth rate produced by this regression was deemed more representative of the potential growth rate for demand under the Proposed Replacement Airport scenario due to the lifting of the aircraft limitations of the existing facility. The results of the two-variable regression are shown in **Figure E.1**. The projected average annual growth rate was 4.5 percent in the 2003 to 2010 period and 4.1 percent in the 2010 to 2020 period, resulting in an average annual growth rate of 4.3 percent during the forecast period.

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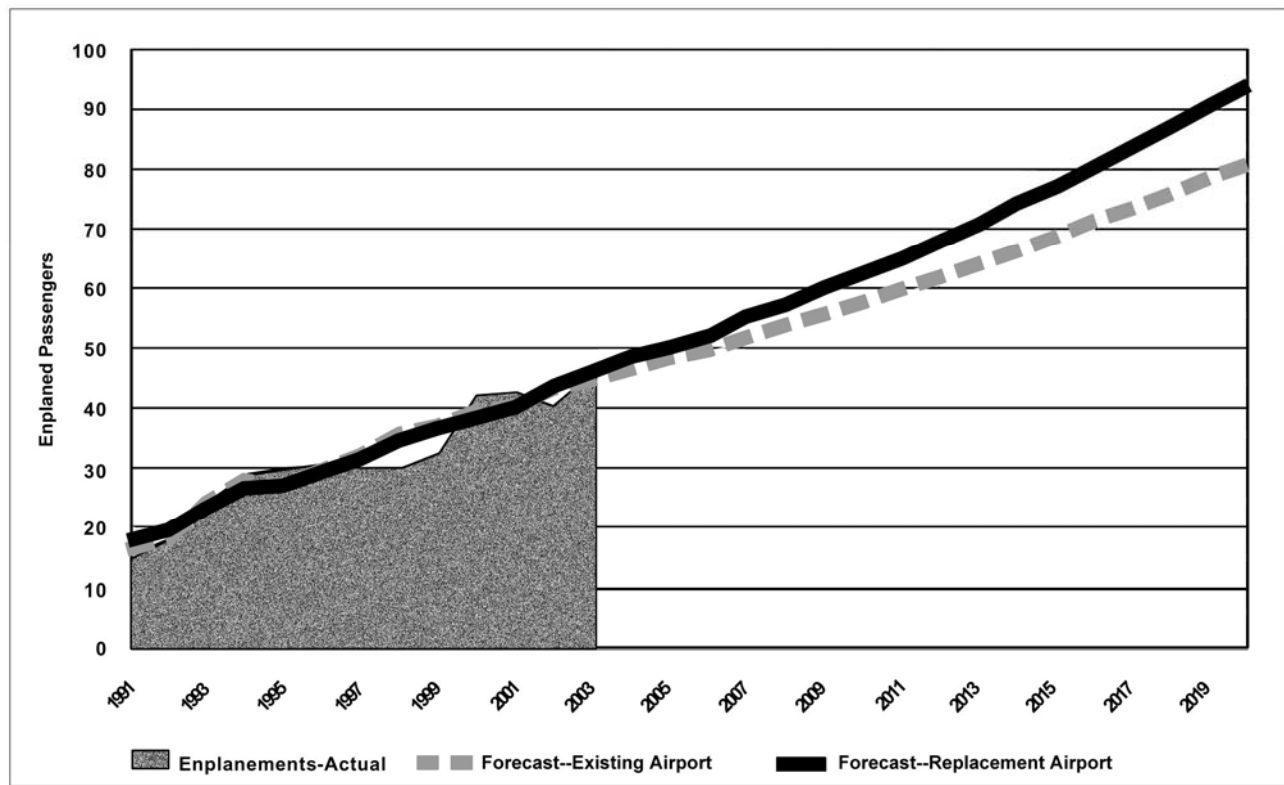
<sup>3</sup> U.S. Department of Transportation Domestic Passenger Origin-Destination Survey; U.S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information via Data Base Products, Inc., 1992 through 2003.

<sup>4</sup> *2003 Terminal Area Forecasts (TAF)*, prepared by Federal Aviation Administration. Available at FAA website: <http://api.hq.faa.gov/taf03/intro.htm>.

<sup>5</sup> FAA Aerospace Forecasts, Fiscal Years 2004-2015, March 2004, prepared by Federal Aviation Administration, FAA-APO-04-1.

<sup>6</sup> Woods & Poole Economics, Inc., *2004 MSA Profile; Metropolitan Area Projections to 2030*; January 2004.

**Figure E.1**  
**FORECAST ENPLANEMENTS DEVELOPED THROUGH REGRESSION ANALYSES**



### E.4.3 AIR SERVICE COMPONENT

In addition to completing a regression analysis to derive total forecast enplanements, the potential for new air service for both scenarios was evaluated as part of the forecasting analysis. Due to the restrictions of the current airfield, no new service points, other than Salt Lake City and Los Angeles, are assumed in the Existing Airport scenario. The SkyWest Delta Connection service to Salt Lake City is profitable with load factors approaching 55 percent. SkyWest's United Express service to Los Angeles International is less used by fare-paying passengers, but serves as an important link into the United Airlines system for both SkyWest employees and aircraft. Because this route is principally flown to transport company employees to headquarters and ferry aircraft for maintenance, it is unlikely that additional frequencies could be justified in the foreseeable future.

With the construction of the proposed replacement airport, the airline(s) would have the option to add new aircraft and new service points. SkyWest would immediately add 50-seat CRJ-200 aircraft to their SGU fleet and would add 70-seat aircraft as demand warranted. The larger equipment could be either CRJ-700 or Dash 8-400, or both.

The larger, longer-range aircraft would allow non-stop service to many more markets than could reasonably be served today. However, the variety of markets and low fares available at LAS likely would not allow SGU carriers to be competitive. The majority of the local demand will continue to be served by driving to/from LAS.

Because of the high percentage of leakage to LAS, reliable data does not exist to document the top origin and destination markets for St. George customers. Of the passengers that do fly from SGU, more than half are flying only to Salt Lake City or Los Angeles and not connecting to other cities. Based on discussions with SkyWest, the only two markets that appear to be viable new service points from SGU are Denver and Phoenix. SkyWest would be interested in adding service to Denver right away, but it would need the improved facilities afforded by the proposed replacement airport in order to provide the 50-seat CRJ-200 that would be needed to serve this market. There appears to be sufficient demand to support non-stop service between Phoenix and St. George. However, because SkyWest is a regional partner with both United and Delta and does not operate as a stand-alone airline, it is not likely to offer flights to Phoenix. SkyWest's role in its partnerships with United and Delta is to transport passengers to United and Delta hub airports. SkyWest has no current plans to operate as an independent carrier and offer direct service from one spoke market to another. Atlantic Coast Airlines, a former regional partner of United and Delta in the eastern U.S., recently began operating as an independent carrier, Independence Air. SkyWest will be evaluating the success of Independence Air as it plans its own future.<sup>7</sup> Mesa Airlines, a regional partner of America West, would be the best candidate to approach regarding Phoenix-St. George service.

#### E.4.4 FORECAST ENPLANEMENTS

The enplanement forecasts for the Existing Airport and Proposed Replacement Airport scenarios are presented in **Table E.1**.<sup>8</sup> The constrained and unconstrained scenarios from the *1998 Site Selection and Master Plan Study (1998 Master Plan)* and the *2003 Terminal Area Forecast (2003 TAF)*, prepared by the FAA, are also presented for comparison. The constrained *1998 Master Plan* and *2003 TAF* forecasts are most comparable to the Existing Airport scenario. The constrained *1998 Master Plan* forecast projected an average annual growth rate of 4.9 percent between 2003 and 2020. The *2003 TAF* projected an average annual growth rate of 2.6 percent between 2003 and 2020. Since enplanements in 2003 were higher than either forecast projected, the actual growth rates required to reach the 2020 forecast levels of enplanements for the *1998 Master Plan* and *2003 TAF* are 4.3 percent and 1.9 percent, respectively. This is characterized by the understatement in forecast 2003 enplanements, as compared to actual 2003 enplanements. The constrained *1998 Master Plan* forecast projected 41,000 in

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<sup>7</sup> Telephone conversation between Consultant and Steve Hart, Vice President Market Planning, SkyWest Airlines, April 28, 2004. Telephone conversation between Consultant and Eric Kristensen, Vice President Planning, SkyWest Airlines, May 4, 2004.

<sup>8</sup> FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

2003; 10.1 percent below the actual of 45,583. The 2003 TAF projected 40,265 in 2003; 11.7 percent below the actual. The average annual growth rate for the five-year period 1998 to 2003 was 8.7 percent.

It is not reasonable to expect enplanements to continue to grow at the recent average annual rate of 8.7 percent through 2020; however the implied TAF growth rate of 1.9 percent per annum certainly appears to understate the likely level of activity. The forecast growth rate developed for the Existing Airport scenario, 3.6 percent annually as discussed in **Section E.4.2**, more reasonably reflects the long-term local demand for the existing constrained facility. As shown in **Table E.1**, the 3.7 percent short-term, and 3.4 percent long-term annual growth rates produced by the regression model were applied to the base year enplanements, resulting in an average annual growth rate of 3.6 percent between 2003 and 2020.

**Table E.1** also shows the forecasts for the Proposed Replacement Airport scenario. This scenario is comparable to the "unconstrained" 1998 Master Plan scenario. (The TAF is designed to forecast activity levels at existing airports only, and does not project demand for a proposed facility. Thus, the TAF forecasts are not validly comparable to the replacement airport scenario forecasts.) The unconstrained 1998 Master Plan enplanement forecast is based on the premise that the Proposed Replacement Airport will allow the airlines to capture 72 percent of local demand. As previously discussed, the competition from the airlines serving LAS would make recapturing that level of leakage very difficult.

With an estimated local demand of less than 300,000 enplanements in 2020, airlines could not offer competitively-priced flights to markets other than major carriers' hubs. The Proposed Replacement Airport scenario assumes a much smaller recapture rate than the unconstrained 1998 Master Plan forecast, growing from serving approximately 30 percent of the local demand today to approximately 40 percent with the proposed replacement facility. Some recapture of the leakage to LAS is likely because of the potential for improved service from the proposed replacement airport, in the form of jet service to Salt Lake City and the high probability of new jet service to Denver.

**Table E.1**  
**REVENUE ENPLANEMENTS FORECAST**

	Calendar Year	Landrum & Brown Analysis, 2004		Master Plan/Final EA <sup>1</sup>		FAA 2003 TAF <sup>2</sup>
		Existing Airport	Repl. Airport	Constrained	Unconstrained	
Historical	1992	17,958	--	--	--	17,958
	1993	23,707	--	--	--	23,707
	1994	29,089	--	--	--	29,089
	1995	30,022	--	--	--	29,989
	1996	30,571	--	--	--	31,352
	1997	29,591	--	--	--	28,766
	1998	30,060	--	--	--	26,447
	1999	32,653	--	--	--	33,006
	2000	42,172	--	--	--	38,808
	2001	42,347	--	--	--	46,347
	2002	40,054	--	--	--	39,241
2003	45,583	--	--	--	--	
Forecasts	1998	--	--	32,910	70,600	--
	2003	--	--	41,000	90,000	40,265
	2010	58,900	78,500	57,100	127,900	49,374
	2020	82,500	117,700	92,600	212,600	62,388
<b>• Average Annual Compound Growth Rates (AACGR)</b>						
	1992-2003	8.8%	--	--	--	--
	1998-2003	8.7%	--	4.5%	5.0%	--
	2003-2010	3.7%	8.1%	4.8%	5.1%	3.0%
	2010-2020	3.4%	4.1%	5.0%	5.2%	2.4%
	2003-2020	3.6%	5.7%	4.9%	5.2%	2.6%
	2003 Actual to 2020 Forecast	3.6%	5.7%	4.3%	9.5%	1.9%

<sup>1</sup> Master Plan forecast interpolated to show 2010 and 2020 numbers. The "constrained" forecast represents future conditions with the existing airport. Forecasts would be constrained by the inability of the airport to accommodate aircraft larger than 30-seat turboprops. The "unconstrained" forecast represents conditions with the proposed replacement airport.

<sup>2</sup> The TAF is prepared on a Federal fiscal year basis (October to September). The 2003 TAF used 2002 as a base year.

Note: FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Sources: St. George Municipal Airport records.

Site Selection and Master Plan, St. George Municipal Airport, prepared by Creamer & Noble Engineers and Barnard Dunkelberg & Company. October 1998.

Final Environmental Assessment for the Proposed Replacement Airport at St. George, Utah. Prepared by Creamer & Noble, Engineers and Barnard Dunkelberg & Company. January 30, 2001.

2003 Terminal Area Forecasts (TAF), prepared by Federal Aviation Administration. Available at FAA website: <http://api.hq.faa.gov/taf03/intro.htm>.

Landrum & Brown analysis, 2004.

## E.5 AIRCRAFT OPERATIONS FORECAST

The methodology for the forecast of each segment is outlined in the following sections.<sup>9</sup>

### E.5.1 COMMERCIAL PASSENGER OPERATIONS

The operations (takeoffs and landings) forecast for commercial passenger aircraft is a derived forecast that is calculated based on the enplaned passenger forecast, the average size of aircraft (gauge; average seats per departure) and average percentage of seats filled (load factor). Outlined below are the inputs to the operations forecast.

- Enplaned Passengers – The enplaned passenger forecast for each scenario, presented in the previous section, was the basis for the aircraft operations forecast.
- Average Load Factor – Historical average load factors were calculated by dividing total enplaned passengers by total available departing seats (or capacity). Total seat capacity was obtained from the OAG database. The average load factor at St. George in 2003 was 50.2 percent. Average load factors are forecast to increase to approximately 53.6 percent in 2010 and 55.5 percent by 2020 in the Existing Airport scenario, which reflects a return to the higher loads experienced historically and the levels at similar domestic airports. The FAA's Aerospace Forecast, 2004-2015, projects average load factors for regional carriers to be 64 to 67 percent. Load factors at St. George have historically been tempered by the low passenger loads to and from Los Angeles. Average load factors in the Proposed Replacement Airport scenario are projected to be 55 percent in 2010, increasing to 60 percent in 2020, due to the improved service afforded by the faster, more comfortable regional jets. This rise in average load factor will be the result of local passengers taking advantage of new service to Denver and the flying public's preference, in general, to travel on jet aircraft rather than turboprops.
- Average Seats per Departure – The Average Seats per Departure (ASPD) metric is calculated by dividing the total number of scheduled departing seats by the total number of scheduled departures. Since the existing airport is served with only one type and configuration of aircraft, the ASPD is the capacity of the Embraer 120 Brasilia; 30 seats. Since the Embraer 120 Brasilia is assumed to be the only commercial passenger aircraft type in the Existing Airport scenario, the ASPD will remain 30 seats during the forecast period. In the Proposed Replacement Airport scenario, the addition of 50-seat regional jets and ultimately 70-seat aircraft to the fleet will raise the projected ASPD to 41.1 seats in 2010 and 53.3 seats in 2020.
- Average Enplanements per Departure – The Average Enplanements per Departure was calculated by multiplying average load factor by ASPD.

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<sup>9</sup> FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.



- Commercial Passenger Aircraft Operations – The enplaned passenger forecast for each scenario is divided by the average enplanements per departure for each scenario to calculate the annual departures. Departures are multiplied by two to calculate operations.

**Table E.2** shows the key variables used in deriving the commercial passenger operations forecasts for the Existing Airport and Proposed Replacement Airport scenarios.

**Table E.2**  
**COMMERCIAL PASSENGER OPERATIONS FORECAST**

	Existing Airport Scenario		Proposed Replacement Airport Scenario	
	2010	2020	2010	2020
Enplaned Passengers Forecast	58,900	82,500	78,500	117,700
Average Seats per Departure	30	30	41.1	53.3
Average Load Factor	53.6%	55.5%	55%	60%
Air Carrier Departures	3,661	4,955	3,470	3,680
Total Air Carrier Operations	7,322	9,910	6,940	7,360

Notes:

Computations made with the rounded data presented in this table may yield different results than indicated.

FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Source: Landrum & Brown analysis, 2004.

Commercial passenger operations are forecast to increase from 6,056 in 2003 to 9,910 in 2020, an average annual increase of 2.9 percent in the Existing Airport scenario. Despite the higher forecast enplanements in the Proposed Replacement Airport scenario, operations are forecast to increase to 7,360 in 2020 because of the larger average aircraft size. This is an average annual increase of 1.2 percent.

### E.5.2 CARGO AIRCRAFT (FREIGHTER) FORECASTS

Existing cargo service is provided by four carriers: Federal Express, United Parcel Service, DHL (formerly Airborne), and Pony Express. FedEx flies to LAS on weekdays. UPS, DHL, and Pony Express serve Salt Lake City. Cargo volumes and shipments are not known to be suffering from any constraints that are posed by the existing airport. Thus, there is no reason to expect that cargo volumes from the Proposed Replacement Airport would be any greater than from the Existing Airport Scenario.

Only very limited data on enplaned cargo loads and operations (takeoffs and landings) are available for the airport. The record of cargo operations over the last several years, shown in **Table E.3**, indicates no growth trend. Thus, cargo

operations are projected to remain flat during the forecast period at 2,184 annually for both the Existing and Proposed Replacement Airport scenarios.

### **E.5.3 GENERAL AVIATION AND NON-COMMERCIAL AIR TAXI AIRCRAFT OPERATIONS**

General aviation and non-commercial air taxi<sup>10</sup> operations include all segments of the aviation industry except commercial air carriers and military. Operations by this group have varied in a small range from a low of 33,274 to a high of 39,125 during the period 1992 through 2003, as shown in **Table E.3**. The combined average annual growth rate for both categories was 0.6 percent during the period, with non-commercial air taxi decreasing by an average of 1.5 percent per year and general aviation increasing by an average of 0.7 percent per year.

**Table E.3** shows that general aviation operations are forecast to grow at the same rate forecast in the *2003 TAF* for "local" general aviation operations from 2003 to 2020 -- 0.9 percent, slightly higher than the historic rate for the 1992-2003 period. Non-commercial air taxi operations are projected to increase at the same rate forecast in the *2003 TAF* for itinerant general aviation operations from 2003 to 2020, 1.3 percent per annum on average.

### **E.5.4 MILITARY AIRCRAFT OPERATIONS**

Because military operations are not based on economic factors, they are inherently difficult to forecast. St. George is not currently and is not expected to become an official joint use civilian-military airport, with military aviation units based at the airport, so military activity is likely to remain minor in the future. Under both scenarios, military operations are forecast to remain flat at approximately 210 per year, as projected in the TAF.

### **E.5.5 TOTAL ANNUAL AIRCRAFT OPERATIONS**

*Existing Airport Scenario* – *Table E.3* shows that total annual operations are expected to increase from 43,714 in 2003 to approximately 53,734 in 2020, an annual average growth rate of 1.2 percent. This compares to the average annual growth rate of 1.3 percent in the *2003 TAF*. *Proposed Replacement Airport Scenario* – As shown in **Table E.4**, total annual operations are expected to increase from 43,714 in 2003 to approximately 51,184 in 2020, an annual average growth rate of 0.9 percent.

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<sup>10</sup> The air taxi category includes aircraft carrying passengers or cargo for hire or compensation, with maximum capacities of 60 passengers or 18,000 pounds of payload. Commuter airline aircraft are commonly classified as "air taxi," although the distinction between "air taxi" and "air carrier" is becoming less clear as commuter carriers add more regional jets seating over 60 passengers to their fleets. At airports with airport traffic control towers, the controllers are responsible for tracking operations by user category. Operations in the air taxi category are often logged inconsistently because of the difficulty in distinguishing general aviation operations from air taxi operations. Because St. George does not have an airport traffic control tower, air taxi and general aviation operations must be estimated through consultations with local users, review of fuel sales, review of flight plan data, and other indirect indicators. For purposes of the St. George forecast analysis, all commuter airline operations are classified as "commercial passenger" operations. "Non-commercial air taxi" includes business jet operations. "General aviation" includes operations by helicopters, single engine aircraft, and light twin-engine propeller aircraft.

Tables E.5 and E.6 show the projected aircraft fleet mixes for the Existing Airport and Proposed Replacement Airport forecast scenarios, respectively.

**Table E.3**  
**AIRCRAFT OPERATIONS FORECAST**  
**Existing Airport Scenario**

EXISTING AIRPORT									
	Year	Commercial Passenger	Other				Total	Master Plan Constrained	FAA 2003 TAF
			All Cargo	Non-Comm. Air Taxi	General Aviation	Military			
Historic	1993	8,019	N/A	1,274	32,000	210	41,503	--	--
	1994	8,008	N/A	1,274	36,618	210	46,110	--	--
	1995	6,800	N/A	1,274	35,426	210	43,710	--	--
	1996	6,800	N/A	1,274	35,426	210	43,710	--	--
	1997	5,566	2,616	3,866	35,000	210	45,400	--	--
	1998	4,242	2,616	3,866	35,259	210	45,400	--	45,400
	1999	4,516	2,616	3,058	35,000	210	45,400	--	45,400
	2000	5,376	2,614	2,200	35,000	210	45,400	--	45,400
	2001	6,322	2,626	1,952	35,000	210	46,110	--	46,110
	2002	6,388	2,602	1,910	35,000	210	46,110	--	46,110
	2003	6,056	2,104	1,095	34,249	210	43,714	--	43,268
Forecast	1998	--	--	--	--	--	--	46,193	--
	2003	--	--	--	--	--	--	52,410	--
	2010	7,320	2,184	1,260	36,640	210	47,614	63,000	47,849
	2020	9,910	2,184	1,360	40,070	210	53,734	83,000	54,201
Average Annual Compound Growth Rates (AACGR)									
	1992-2003	-2.8%	N/A	-1.5%	0.7%	0.0%	0.5%	--	--
	1998-2003	7.4%	-4.3%	-22.3%	-0.6%	0.0%	-0.8%	2.6%	-1.0%
	2003-2010	2.7%	0.5%	2.0%	1.0%	0.0%	1.2%	2.7%	1.4%
	2010-2020	3.1%	0.0%	0.8%	0.9%	0.0%	1.2%	2.8%	1.3%
	2003-2020	2.9%	0.2%	1.3%	0.9%	0.0%	1.2%	2.7%	1.3%

Notes: Master Plan forecast interpolated to show 2010 and 2020 numbers.

General aviation operations are approximately 57% local and 43% itinerant (2003 TAF).

FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Sources: St. George Municipal Airport records.

Site Selection and Master Plan, St. George Municipal Airport, prepared by Creamer & Noble Engineers and Barnard Dunkelberg & Company. October 1998.

2003 Terminal Area Forecasts (TAF), prepared by Federal Aviation Administration. Available at FAA website: <http://api.hq.faa.gov/taf03/intro.htm>.

Landrum & Brown analysis, 2004.

**Table E.4**  
**AIRCRAFT OPERATIONS FORECAST**  
**Proposed Replacement Airport Scenario**

PROPOSED REPLACEMENT AIRPORT								
	Year	Commercial Passenger	Other				Total	Master Plan Unconstrained
			All Cargo	Non-Comm. Air Taxi	General Aviation	Military		
Historic	2003	6,056	2,104	1,095	34,249	210	43,714	--
Forecast	1998	--	--	--	--	--	--	50,711
	2003	--	--	--	--	--	--	56,060
	2010	6,940	2,184	1,260	36,640	210	47,234	66,300
	2020	7,360	2,184	1,360	40,070	210	51,184	82,600
	<b>Average Annual Compound Growth Rates (AACGR)</b>							
	1998-2003	--	--	--	--	--	--	2.0%
	2003-2010	2.0%	0.5%	2.0%	1.0%	0.0%	1.1%	2.4%
	2010-2020	0.6%	0.0%	0.8%	0.9%	0.0%	0.8%	2.2%
	2003-2020	1.2%	0.2%	1.3%	0.9%	0.0%	0.9%	2.3%

Notes: Master Plan forecast interpolated to show 2010 and 2020 numbers.

General aviation operations are approximately 57% local and 43% itinerant (2003 TAF).

FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Sources: Site Selection and Master Plan, St. George Municipal Airport, prepared by Creamer & Noble Engineers and Barnard Dunkelberg & Company. October 1998.

Landrum & Brown analysis, 2004.

**Table E.5  
FLEET MIX FORECAST - EXISTING AIRPORT SCENARIO**

Type	Aircraft	Passenger Seats	Class	EXISTING AIRPORT				EXISTING AIRPORT				EXISTING AIRPORT			
				Departing Passenger Seats	Aircraft Ops	% of Total	% of Total	Departing Passenger Seats	Aircraft Ops	% of Total	% of Total	Departing Passenger Seats	Aircraft Ops	% of Total	% of Total
Passenger	Embraer 120 Brasilia	30	Turbo Prop	90,840	6,056	13.9 %	109,800	7,320	15.4 %	148,650	9,910	18.4%			
	Canadair CRJ-200	50	Regiona l Jet	0	0	0.0%	0	0	0.0%	0	0	0.0%			
	Canadair CRJ-700	70	Regiona l Jet	0	0	0.0%	0	0	0.0%	0	0	0.0%			
	DeHavilland Dash 8-400	70	Turbo Prop	0	0	0.0%	0	0	0.0%	0	0	0.0%			
All-Cargo	Metro II/Metro III	--	Turbo Prop	--	526	1.2%	--	624	1.3%	--	624	1.2%			
	Cessna 208 Caravan	--	Turbo Prop	--	526	1.2%	--	520	1.1%	--	520	1.0%			
	Chieftain/ Navajo/ Piper	--	Prop	--	1,052	2.4%	--	1,040	2.2%	--	1,040	1.9%			
	Citation/ Lear 35/ GIV/GV	--	Busines s Jet	--	1,095	2.5%	--	1,260	2.6%	--	1,360	2.5%			
General Aviation	Single Engine	--	Prop	--	25,124	57.5 %	--	27,515	57.8 %	--	30,945	57.6%			
	Multi Engine	--	Prop	--	5,475	12.5 %	--	5,475	11.5 %	--	5,475	10.2%			
	Robinson R22	--	Helicopt er	--	3,650	8.3%	--	3,650	7.7%	--	3,650	6.8%			
Military	King Air/ Lear/ Helicopters	--	Mixed	--	210	0.5%	--	210	0.4%	--	210	0.4%			
	<b>TOTAL</b>		<b>TOTAL</b>	<b>90,840</b>	<b>43,714</b>	<b>100 %</b>	<b>109,800</b>	<b>47,614</b>	<b>100 %</b>	<b>148,650</b>	<b>53,734</b>	<b>100%</b>			

Note: FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Sources: St. George Municipal Airport records.

2003 Terminal Area Forecasts (TAF), prepared by Federal Aviation Administration. Available at FAA website: <http://api.hq.faa.gov/taf03/intro.htm>.

Official Airline Guide (OAG).

Landrum & Brown analysis, 2004.

**TABLE E.6  
FLEET MIX FORECAST – PROPOSED REPLACEMENT AIRPORT SCENARIO**

Type	Aircraft	Passenger Seats	Class	PROPOSED REPLACEMENT AIRPORT				2010 – PROPOSED REPLACEMENT AIRPORT				2020 – PROPOSED REPLACEMENT AIRPORT			
				2003 – EXISTING AIRPORT	2010 – PROPOSED REPLACEMENT AIRPORT	2020 – PROPOSED REPLACEMENT AIRPORT	% Of Total	Departing Passenger Seats	Aircraft Ops	% of Total	Departing Passenger Seats	Aircraft Ops	% of Total	Departing Passenger Seats	Aircraft Ops
Passenger	Embraer 120 Brasilia	30	Turbo Prop	90,840	6,056	13.9%	46,260	3,084	6.5%	18,390	1,228	2.4%			
	Canadair CRJ-200	50	Regional Jet	0	0	0.0%	96,400	3,856	8.2%	92,000	3,680	7.2%			
	Canadair CRJ-700	70	Regional Jet	0	0	0.0%	0	0	0.0%	42,910	1,226	2.4%			
	DeHavilland Dash 8-400	70	Turbo Prop	0	0	0.0%	0	0	0.0%	42,910	1,226	2.4%			
All-Cargo	Metro II/Metro III	--	Turbo Prop	--	526	1.2%	--	624	1.3%	--	624	1.2%			
	Cessna 208 Caravan	--	Turbo Prop	--	526	1.2%	--	520	1.1%	--	520	1.0%			
	Chieftain/Navajo/Piper	--	Prop	--	1,052	2.4%	--	1,040	2.2%	--	1,040	2.0%			
	Citation/Lear 35/GIV/GV	--	Business Jet	--	1,095	2.5%	--	1,260	2.7%	--	1,360	2.7%			
General Aviation	Single Engine	--	Prop	--	25,124	57.5%	--	27,515	58.3%	--	30,945	60.5%			
	Multi Engine	--	Prop	--	5,475	12.5%	--	5,475	11.6%	--	5,475	10.7%			
	Robinson R22	--	Helicopter	--	3,650	8.3%	--	3,650	7.7%	--	3,650	7.1%			
Military	King Air/Lear/Helicopters	--	Mixed	--	210	0.5%	--	210	0.4%	--	210	0.4%			
			TOTAL	90,840	43,714	100%	142,660	47,234	100%	196,210	51,184	100%			

Note: FAA reviewed the forecast prepared by Landrum & Brown for this EIS and stated that they believe the forecast assumptions and methodology used to prepare the forecast are reasonable and based on sound analytical methods. E-mail to Consultant from Robert Bowles, FAA. June 17, 2004.

Sources: St. George Municipal Airport records. 2003 Terminal Area Forecasts (TAF), prepared by Federal Aviation Administration. Available at FAA website: <http://api.hq.faa.gov/taf03/intro.htm>.

Official Airline Guide (OAG).

Landrum & Brown analysis, 2004.