SAN DIEGO
International Airport

AIRPORT MASTER PLAN
SAN DIEGO INTERNATIONAL AIRPORT

CHAPTER 4

Aviation Demand Forecasts

HNTB

SAN DIEGO INTERNATIONAL AIRPORT

MAY 2008

4. AVIATION DEMAND FORECASTS

4.1 Aviation Demand Forecasts

Prepared by SH&E for the Authority, the Aviation Activity Forecasts were the basis for more detailed, derivative forecasts prepared by HNTB for this Master Plan analysis. The HNTB forecasts are described in this section in addition to a review and validation of the base forecasts prepared by SH&E, which will be essential in determining airport facility requirements, including gate requirements addressed in Chapter 5, Gate Requirements, of this document.

4.2 Review and Validation of Forecast

Published in February 2004, the forecast used 2002 as the base year for analysis. The forecast included a low and a high estimate and provided runway-constrained scenarios for each case. The report assessed forecasts for domestic and international passengers, air cargo tonnage, aircraft operations by major category, and fleet mix. The passenger forecast was prepared using a statistical forecasting model based on regional income and air carrier fares, which was similar to the method used in the 2001 Master Plan. Peak hour passenger projections were not evaluated in this effort.

The review and validation of the forecast consists of two steps. First, the assumptions and approach are reviewed for reasonableness, and second, the forecast results are compared with the most recent available information on Airport activity.

4.2.1 Approach and Assumptions

The passenger and cargo projections were determined with use of current aircraft operation projections, including a detailed analysis of load factors, existing and projected airline fleet retirements, and known acquisition programs. The constrained forecasts include an in-depth analysis of the factors determining airline reactions to a single runway constrained environment present at SDIA.

However, there are several assumptions in the SH&E forecast which merit further discussion:

- General aviation (GA) operations are projected to increase although recent historical trends suggest a decline. One prediction in particular is not supported with documentation: that a major concentration of fractional ownership programs and business jets would result in an increase in GA operations at SDIA in the future. Additionally, neither of these is a completely new phenomenon at SDIA, and both have failed to halt the gradual decline in GA operations at the Airport.
- Select fleet mix assumptions made for the 2030 forecast are unlikely to materialize. The 2030 forecast assumes an increase in 737-400 series and -500 series aircraft towards the end of forecast period. In 2030 these aircraft would be approximately forty years old and would likely be phased out of the operating fleet of most US airlines due to the maintenance costs required for aircraft of this age. Thus, this assumption is unlikely to materialize.
- The forecast projects a phase-out of turboprop aircraft by 2010. This is consistent with a national trend found in other markets. However, most SDIA turboprops are flown to Los Angeles International Airport (LAX), which is only 109 miles from SDIA. For such short flights, turboprops are more economical than regional jets and may continue to be used for flights between SDIA and LAX, at least until more efficient regional jets emerge.
- The forecast projects a significant shift in the distribution of flights by length-of-haul with a much more rapid increase in long-haul flights than in short-haul flights. This is a reasonable assumption given existing trends and industry economics. This assumption has implications for the hourly distribution of activity. Because of differences in time zones, there is a gap in East Coast arrivals until about 9:00

AM. Likewise, there is gap in East Coast departures from about 3:00 PM until late in the evening. As the long-haul component of SDIA activity becomes more prevalent, the hourly distribution of activity will shift with potential implications for facility requirements.

4.2.2 Comparison with Actual Activity

Table 4-1 compares the actual activity to date (through December 2006) with the high and low unconstrained aviation activity forecasts. With the high scenario, the constrained forecast is similar to the unconstrained forecast until 2015. In the low scenario, the constrained forecast is similar the unconstrained forecast until 2022.

As shown in **Table 4-1**, actual passenger enplanements exceed the 2004 high forecast by approximately 3.9 percent and the low forecast by approximately 5.0 percent. The increase above forecast levels is entirely attributable to domestic activity. International enplanements declined significantly in 2004 with the loss of British Airways daily service to London, as well as some service to Canada (though Canadian service has resumed to some degree). Aircraft operations, however, are more closely tracking the low forecast than the high forecast.

The differences between the actual and the forecast activities are still within the range of variability normally expected from year to year. No definitive determination can be made at this time if actual activity is tracking closer to the high forecast or the low forecast.

4.2.3 Recommendations

The forecasts are valid in approach and assumptions. The assumptions regarding the GA forecast and fleet mix merit further investigation but do not warrant a revision of the forecasts. Because the forecasts are recent, it is not possible to determine with a degree of reliability whether the low or high forecast will prove more accurate. In planning, the practice is to delay the implementation of improvements if actual activity tracks more slowly than forecast activity. On the contrary, if actual activity outpaces the forecasts, acceleration of the phasing of improvements should be planned. It is recommended to use the high aviation activity forecasts for the purposes of this Master Plan.

Table 4-1

Comparison of Forecast Aviation Activity Level to Actual Activity Levels Through 2006

Activity Category	2002	2003	2004	2005	2006	2010	2020	2030
Forecast Activity								
High - Unconstrained[2]								
Passenger Enplanements								
Domestic	7,321,641	7,497,360	7,738,224	8,060,303	8,438,000	9,417,820	12,295,248	15,382,283
International	150,003	149,000	141,000	160,000	167,000	342,000	670,000	954,000
Total	**7,471,644**	**7,646,360**	**7,879,224**	**8,220,303**	**8,605,000**	**9,759,820**	**12,965,248**	**16,336,283**
Operations								
Passenger	174,370	178,298	182,226	186,155	190,083	205,796	263,756	326,970
Cargo[3]	4,634	4,694	4,755	4,815	4,875	5,116	8,755	11,515
General Aviation[3]	15,044	15,230	15,416	15,601	15,786	16,530	20,348	25,049
Military	1,253	1,130	1,130	1,130	1,130	1,130	1,130	1,130
Total	**195,301**	**199,352**	**203,526**	**207,701**	**211,874**	**228,572**	**293,989**	**364,664**
Low - Unconstrained[2]								
Passenger Enplanements								
Domestic	7,321,641	7,497,360	7,647,308	7,755,243	7,900,000	8,502,533	10,544,669	12,922,281
International	150,003	149,000	139,000	144,000	148,000	318,000	502,000	636,000
Total	**7,471,644**	**7,646,360**	**7,786,308**	**7,899,243**	**8,048,000**	**8,820,533**	**11,046,669**	**13,558,281**
Operations								
Passenger	174,370	175,820	177,270	178,720	180,171	185,971	225,444	272,890
Cargo[3]	4,634	4,645	4,655	4,666	4,676	4,718	6,716	9,016
General Aviation[3]	15,044	15,057	15,071	15,084	15,099	15,150	17,239	19,616
Military	1,253	1,130	1,130	1,130	1,130	1,130	1,130	1,130
Total	**195,301**	**196,652**	**198,126**	**199,599**	**201,076**	**206,969**	**250,529**	**302,652**
Actual Activity[1]								
Passenger Enplanements								
Domestic	7,321,641	7,506,858	8,124,791	8,561,714	8,633,671			
International	150,003	130,335	75,896	130,980	125,998			
Total	**7,471,644**	**7,637,193**	**8,200,687**	**8,692,694**	**8,759,669**			
Operations								
Passenger	174,370	172,790	178,538	190,002	188,830			
Cargo	4,634	4,916	4,960	7,206	6,592			
General Aviation	15,044	14,535	13,734	13,586	13,657			
Military	1,253	1,251	1,241	571	412			
Total Actual Activity	**195,301**	**193,492**	**198,473**	**211,365**	**209,491**			
Differences[4]								
High Unconstrained								
Passenger Enplanements	***0%***	***-0.12%***	***4.08%***	***5.75%***	***1.80%***			
Operations	***0%***	***-2.94%***	***-2.48%***	***1.76%***	***-1.12%***			
Low Unconstrained								
Passenger Enplanements	***0%***	***-0.12%***	***5.32%***	***10.04%***	***8.84%***			
Operations	***0%***	***-1.61%***	***0.18%***	***5.89%***	***4.18%***			

1 San Diego International Airport, Air Traffic Reports.
2 SH&E, San Diego International Airport, Aviation Activity Forecasts.
3 Values for 2003, 2004, 2005, and 2006 are interpolated.
4 Percent by which actual activity level trails or exceeds forecast activity levels.

Sources: As noted and HNTB analysis.

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