

# **APPENDIX A**

## **MASTER PLAN UPDATE AVIATION FORECAST SUPPLEMENT**

### **Sensitivity Analysis To Evaluate Impact of American Airlines Downsizing on St. Louis International Airport Master Plan and Part 150 Study**

#### **Preamble:**

In September 2009, American Airlines announced a significant reduction in its 2010 flight schedule to 36 daily flights and 9 destinations. The schedule cuts primarily reflected a strategic de-emphasis of STL as a connecting hub in American Airlines domestic network. In order to determine the potential impact of American's service cuts on the baseline forecast developed for the master plan a sensitivity analysis was conducted in October/November 2009 that could be used to evaluate proposed facility requirements developed for the Master Plan and noise analysis conducted for the Part 150 Study.

Analysis Conducted in October/November 2009.  
Document published for distribution to FAA in August 2010.

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## **A.1 IMPACT ON PASSENGER ENPLANEMENT FORECAST:**

**Table A-1, Comparison of Enplaned Passenger Forecasts**, provides a comparison of the STL Master Plan base case passenger forecasts versus the sensitivity analysis for originating, connecting, and total enplanements. Results are shown for the 5-year, 10-year, and 20-year planning horizon.

Based on the sensitivity analysis, the total enplaned passenger forecast was reduced by 9.2 percent or 916,300 enplanements at the 20-year planning level percent. The origin and destination passenger forecast was assumed to remain unchanged as Southwest, in particular, and other airlines operating at STL would likely backfill much of the demand for travel to and from the St. Louis area. The reduction in enplanements is assumed to primarily impact connecting activity at STL over the long term. As a result, the sensitivity analysis projects connecting activity at STL will account for 14 percent of total enplanements at the 20-year planning level versus 22 percent in the baseline master plan forecast.

**Table A-1**  
**COMPARISON OF ENPLANED PASSENGER FORECASTS:**  
**Lambert-St. Louis International Airport**

	<b>2008</b>	<b>2013</b>	<b>2018</b>	<b>2028</b>
<b>Originating</b>				
Master Plan Base Case	5,663,666	5,891,500	6,463,200	7,742,800
Sensitivity Analysis	5,663,666	5,891,500	6,463,200	7,742,800
Net Difference	0	0	0	0
% Difference	0.0%	0.0%	0.0%	0.0%
<b>Connecting</b>				
Master Plan Base Case	1,544,224	1,556,900	1,841,700	2,179,900
Sensitivity Analysis	1,544,224	966,700	1,055,600	1,263,600
Net Difference	0	-590,200	-786,100	-916,300
% Difference	0.0%	-37.9%	-42.7%	-42.0%
<b>Total</b>				
Master Plan Base Case	7,207,890	7,448,400	8,304,900	9,922,700
Sensitivity Analysis	7,207,890	6,858,200	7,518,800	9,006,400
Net Difference	0	-590,200	-786,100	-916,300
% Difference	0.0%	-7.9%	-9.5%	-9.2%

Source: Landrum & Brown, Inc.

## A.2 IMPACT ON PASSENGER OPERATIONS FORECAST:

**Table A-2, Comparison of Passenger Operations Forecasts**, provides information on the average size of passenger aircraft as measured by seats per flight and passenger operations projections for the Master Plan base case versus the sensitivity analysis.

The passenger operations forecast was reduced to a greater degree than the enplanement forecast based on American Airlines decision to reduce service levels at STL. This is largely due to an assumed reallocation of O&D traffic among the carriers at STL and in particular Southwest which has historically operated larger aircraft on average than American and the reduction of regional jet activity associated with American Connection at STL. Moving forward, American has also announced it will shift its activity to predominantly narrow-body MD80 and 737-800 aircraft at STL in 2010 and this assumption was adopted under the sensitivity scenario. With the average size of aircraft assumed to be larger under the sensitivity scenario there will need to be fewer operations to meet the projected 20-year demand level. As a result, passenger operations were reduced 18.9 percent in the sensitivity scenario versus the baseline master plan forecast at the 20-year planning level.

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**Table A-2**  
**COMPARISON OF PASSENGER OPERATIONS FORECASTS**  
**Lambert-St. Louis International Airport**

	2008	2013	2018	2028
<b>Average Seats per Flight</b>				
Master Plan Base Case	93	94	95	97
Sensitivity Analysis	93	108	110	112
% Difference	0.0%	14.4%	15.2%	16.1%
<b>Passenger Operations</b>				
Master Plan Base Case	221,410	223,940	244,940	283,080
Sensitivity Analysis	221,410	185,196	199,121	229,440
Net Difference	0	-38,744	-45,819	-53,640
% Difference	0.0%	-17.3%	-18.7%	-18.9%

Source: Landrum & Brown, Inc.

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**Table A-3, Forecast Comparison by Passenger Carrier Group**, provides a more detailed comparison of the Master Plan base case and the sensitivity analysis with carrier allocations for American (AA), Southwest (WN), and all other passenger carriers (OAL).

## **A.3 CONCLUSIONS**

The sensitivity analysis results in lower enplanement volumes and commercial passenger operations versus the Master Plan Base Case. However, the results of the sensitivity analysis should not impact the alternatives developed for the Master Plan Update and the Part 150 Study. It should be noted that cargo, general aviation, and military forecasts remain unchanged from the Master Plan Forecasts.

The terminal planning alternatives developed for the Master Plan already account for the potential impact of American downsizing and adequate space is being reserved for gates and associated terminal areas for passenger carriers at STL. In terms of the airfield, the sensitivity analysis does not change the Airport Reference Code outlined in the Master Plan Update.

The Future (2015) Baseline developed for the Part 150 Study remains valid as it provides a more conservative measure of the overall noise exposure around the Lambert Airport. Furthermore, the forecast operating levels do not impact this 2010 Noise Compatibility Program (NCP) Update, as the St. Louis Airport Authority and the FAA are committed to completing the remedial sound insulation program for those properties that were eligible under the 1997 NCP. The Future (2015) Noise Exposure Contour results in no new impacts to residential or other noise-sensitive land uses around Lambert; therefore, this 2010 NCP Update Study recommends no changes to the existing NCP.

The FAA's Appendix C is provided in Table 4 for the Master Plan Base Case Forecasts, the Sensitivity Analysis, the 2008 TAF, and the 2009 TAF. These can be compared with the FAA's Draft 2010 TAF for STL when it is released later this year.

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**Table A-3  
FORECAST COMPARISON BY PASSENGER CARRIER GROUP  
Lambert-St. Louis International Airport**

STL BASE FORECAST METRICS					
Originating Enplanements					
	2008	2013	2018	2028	AAG
AA	2,068,143	1,939,400	2,082,200	2,471,100	0.9%
WN	1,746,374	2,030,100	2,241,500	2,699,300	2.2%
OAL	1,849,149	1,922,000	2,139,500	2,572,400	1.7%
Total	5,663,666	5,891,500	6,463,200	7,742,800	1.6%
Connecting Enplanements					
	2008	2013	2018	2028	AAG
AA	1,085,379	1,039,600	1,256,400	1,534,000	1.7%
WN	357,998	406,400	469,800	520,000	1.9%
OAL	100,847	110,900	115,500	125,900	1.1%
Total	1,544,224	1,556,900	1,841,700	2,179,900	1.7%
Total Enplanements					
	2008	2013	2018	2028	AAG
AA	3,153,522	2,979,000	3,338,600	4,005,100	1.2%
WN	2,104,372	2,436,500	2,711,300	3,219,300	2.1%
OAL	1,949,996	2,032,900	2,255,000	2,698,300	1.6%
Total	7,207,890	7,448,400	8,304,900	9,922,700	1.6%
Passenger Operations (In + Out)					
	2008	2013	2018	2028	AAG
AA	95,426	91,400	102,400	121,000	1.2%
WN	52,556	58,400	64,000	74,000	1.7%
OAL	73,428	74,140	78,540	88,080	0.9%
Total	221,410	223,940	244,940	283,080	1.2%
Avg. Seats per Flight					
	2008	2013	2018	2028	AAG
AA	84	84	84	83	-0.1%
WN	136	137	137	137	0.0%
OAL	74	73	76	81	0.5%
Total	93	94	95	97	0.2%

STL SENSITIVITY ANALYSIS-AA CUTS					
Originating Enplanements					
	2008	2013	2018	2028	AAG
AA	2,068,143	1,120,000	1,202,500	1,427,100	-1.8%
WN	1,746,374	2,624,300	2,870,600	3,441,900	3.5%
OAL	1,849,149	2,147,200	2,390,100	2,873,800	2.2%
Total	5,663,666	5,891,500	6,463,200	7,742,800	1.6%
Connecting Enplanements					
	2008	2013	2018	2028	AAG
AA	1,085,379	197,700	212,200	251,800	-7.0%
WN	357,998	656,100	717,600	860,500	4.5%
OAL	100,847	113,000	125,800	151,300	2.0%
Total	1,544,224	966,800	1,055,600	1,263,600	-1.0%
Total Enplanements					
	2008	2013	2018	2028	AAG
AA	3,153,522	1,317,700	1,414,700	1,678,900	-3.1%
WN	2,104,372	3,280,400	3,588,200	4,302,400	3.6%
OAL	1,949,996	2,260,200	2,515,900	3,025,100	2.2%
Total	7,207,890	6,858,200	7,518,800	9,006,400	1.1%
Passenger Operations (In + Out)					
	2008	2013	2018	2028	AAG
AA	95,426	24,140	26,794	31,798	-5.3%
WN	52,556	78,627	84,699	98,897	3.2%
OAL	73,428	82,428	87,628	98,744	1.5%
Total	221,410	185,196	199,121	229,440	0.2%
Avg. Seats per Flight					
	2008	2013	2018	2028	AAG
AA	84	132	132	132	2.3%
WN	136	137	137	137	0.0%
OAL	74	73	76	81	0.5%
Total	93	108	110	112	0.9%

Note: Figures may not sum to totals due to rounding

Source: Landrum & Brown, Inc.

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**Table A-4**  
**SUMMARY OF FORECASTS**  
**Lambert-St. Louis International Airport**

		MASTER PLAN	2008	MP VS.	AA CUTS	2009	SENSITIVITY VS.
YEAR		FORECAST	TAF <sup>4</sup>	2008 TAF	SENSITIVITY FCST.	TAF	2009 TAF
<b>Passenger Enplanements</b>							
Base Yr.	2008	7,207,890	6,984,154	3.2%	7,207,890	6,984,154	3.2%
Base Yr. +5 Yrs.	2013	7,448,400	7,080,612	5.2%	6,858,200	5,958,422	15.1%
Base Yr. +10 Yrs.	2018	8,304,900	8,127,042	2.2%	7,518,800	6,750,144	11.4%
Base Yr. +15 Yrs.	2023	9,077,800	9,331,255	-2.7%	8,229,100	7,596,285	8.3%
<b>Commercial Operations <sup>1</sup></b>							
Base Yr.	2008	224,596	241,314	-6.9%	224,596	241,314	-6.9%
Base Yr. +5 Yrs.	2013	227,130	224,860	1.0%	188,390	192,173	-2.0%
Base Yr. +10 Yrs.	2018	248,270	244,598	1.5%	202,450	205,802	-1.6%
Base Yr. +15 Yrs.	2023	267,130	266,084	0.4%	217,230	221,676	-2.0%
<b>Total Operations <sup>2</sup></b>							
Base Yr.	2008	248,397	255,893	-2.9%	248,397	255,893	-2.9%
Base Yr. +5 Yrs.	2013	251,930	239,754	5.1%	213,190	203,013	5.0%
Base Yr. +10 Yrs.	2018	276,770	260,447	6.3%	230,950	217,373	6.2%
Base Yr. +15 Yrs.	2023	297,030	282,927	5.0%	247,130	234,011	5.6%
<b>Based Aircraft <sup>3</sup></b>							
Base Yr.	2008	35	35	0.0%	35	35	0.0%
Base Yr. +5 Yrs.	2013	21	33	-36.4%	21	34	-38.2%
Base Yr. +10 Yrs.	2018	24	31	-22.6%	24	34	-29.4%
Base Yr. +15 Yrs.	2023	25	29	-13.8%	25	34	-26.5%

- Notes: 1 Air taxi operations are included in the commercial operations totals for the TAF.  
The Master Plan forecast groups air taxi operations in the non-commercial category.  
2 Excludes overflights  
3 Includes military based aircraft.  
4 Data shown for the FAA 2008 TAF is presented on a fiscal year basis (12 months ended September)

Sources: FAA, Terminal Area Forecasts; Landrum & Brown, Inc.