

**2010 to 2016 TAF Forecast Variance:
Large and Medium Hub Airports**

Large Hub	Total Passenger Enplanements					Large Hub	Total Airport Operations				
	1 YR OUT	2 YR OUT	3 YR OUT	4 YR OUT	5 YR OUT		1 YR OUT	2 YR OUT	3 YR OUT	4 YR OUT	5 YR OUT
ATL	-1.2%	-0.9%	-0.2%	0.8%	2.2%	ATL	1.6%	5.0%	9.2%	14.3%	18.1%
BOS	-3.1%	-6.0%	-8.9%	-11.2%	-14.7%	BOS	-0.4%	-0.5%	-1.1%	-1.4%	-3.4%
BWI	-1.4%	-2.5%	-2.1%	-0.9%	0.1%	BWI	1.5%	5.2%	9.6%	15.2%	18.7%
CLT	-0.1%	0.1%	1.0%	2.5%	4.1%	CLT	1.2%	3.4%	6.2%	10.4%	13.6%
DCA	-1.5%	-4.2%	-8.3%	-10.6%	-15.4%	DCA	0.8%	1.2%	0.9%	0.5%	-1.3%
DEN	-1.9%	-2.3%	-0.8%	0.8%	2.9%	DEN	1.3%	5.6%	11.2%	17.5%	23.3%
DFW	-2.3%	-2.4%	-2.5%	-3.3%	-3.7%	DFW	0.6%	2.1%	3.0%	4.6%	5.0%
DTW	0.8%	1.6%	2.6%	3.9%	4.9%	DTW	2.3%	6.2%	10.7%	15.1%	17.5%
EWR	-0.4%	-1.7%	-1.6%	-2.0%	-3.4%	EWR	1.2%	2.3%	4.9%	7.3%	7.1%
FLL	-2.2%	-4.1%	-5.6%	-6.8%	-8.0%	FLL	1.4%	2.3%	3.3%	4.5%	5.2%
HNL	-1.2%	-1.6%	-1.1%	-0.9%	-2.1%	HNL	-2.5%	-4.0%	-6.3%	-9.5%	-10.8%
IAD	-0.9%	3.4%	10.7%	18.6%	27.4%	IAD	1.6%	9.0%	18.5%	29.6%	40.7%
IAH	1.3%	4.8%	9.0%	11.7%	17.4%	IAH	1.9%	7.5%	13.8%	19.0%	26.3%
JFK	-2.6%	-2.8%	-2.7%	-2.9%	-1.5%	JFK	0.6%	2.4%	3.5%	4.0%	7.0%
LAS	-1.4%	-2.0%	-1.5%	-0.7%	0.0%	LAS	-0.4%	1.9%	4.5%	7.1%	10.3%
LAX	-2.6%	-5.6%	-7.3%	-9.3%	-11.1%	LAX	0.3%	-1.0%	-0.9%	-1.8%	-1.2%
LGA	-2.2%	-4.0%	-5.7%	-7.4%	-8.9%	LGA	1.6%	3.0%	4.1%	4.4%	4.7%
MCO	-2.5%	-1.5%	-1.1%	-0.7%	-0.2%	MCO	0.6%	4.1%	7.3%	9.9%	13.0%
MDW	-3.8%	-6.2%	-7.2%	-8.3%	-9.6%	MDW	-0.7%	1.5%	3.6%	5.7%	8.2%
MIA	-2.3%	-2.7%	-3.0%	-4.2%	-5.4%	MIA	1.0%	1.9%	2.2%	2.0%	2.5%
MSP	-1.4%	-1.8%	-2.1%	-2.0%	-2.2%	MSP	0.0%	2.5%	5.5%	9.0%	10.6%
ORD	-0.9%	-2.0%	-0.9%	-1.2%	-0.5%	ORD	1.2%	3.3%	6.9%	10.4%	14.4%
PDX	-2.1%	-4.8%	-6.8%	-6.6%	-6.8%	PDX	0.8%	2.7%	5.3%	8.5%	14.3%
PHL	0.3%	4.0%	7.1%	10.9%	15.3%	PHL	2.3%	8.0%	13.6%	20.4%	26.9%
PHX	-1.8%	-0.8%	0.1%	0.3%	1.4%	PHX	0.4%	3.4%	6.7%	10.2%	13.4%
SAN	-2.9%	-3.8%	-4.5%	-6.7%	-8.5%	SAN	0.4%	2.1%	3.9%	3.7%	4.2%
SEA	-1.2%	-4.0%	-7.7%	-11.9%	-15.9%	SEA	0.9%	-1.2%	-4.4%	-9.2%	-11.7%
SFO	-1.9%	-5.0%	-6.6%	-8.5%	-10.7%	SFO	0.1%	0.0%	1.7%	2.1%	3.8%
SLC	-1.2%	-1.7%	-1.4%	-2.6%	-2.7%	SLC	1.1%	5.2%	9.0%	12.4%	16.2%
TPA	-1.6%	-1.0%	-1.0%	-0.9%	0.3%	TPA	-0.1%	2.9%	5.3%	7.6%	10.6%
Mean error	-1.5%	-2.1%	-2.0%	-2.0%	-1.8%	Mean error	0.8%	2.9%	5.4%	7.8%	10.2%
Median error	-1.6%	-2.2%	-1.9%	-2.0%	-2.2%	Median error	0.8%	2.6%	5.1%	7.5%	10.4%
Standard deviation	1.1%	2.7%	4.8%	6.8%	9.5%	Standard deviation	1.0%	2.8%	5.3%	8.3%	11.1%

Medium Hub	Total Passenger Enplanements					Medium Hub	Total Airport Operations				
	1 YR OUT	2 YR OUT	3 YR OUT	4 YR OUT	5 YR OUT		1 YR OUT	2 YR OUT	3 YR OUT	4 YR OUT	5 YR OUT
ABQ	-1.6%	3.3%	9.2%	16.4%	21.4%	ABQ	-0.2%	4.5%	11.0%	17.0%	20.7%
ANC	-2.8%	-3.2%	-5.6%	-5.8%	-10.5%	ANC	0.5%	1.3%	1.5%	1.0%	4.5%
AUS	-3.5%	-6.9%	-10.7%	-14.3%	-17.9%	AUS	-1.0%	-0.5%	-2.1%	-3.0%	-3.9%
BDL	-0.6%	-0.7%	0.4%	-0.5%	-1.0%	BDL	2.0%	5.9%	10.9%	14.4%	19.5%
BNA	-1.8%	-6.0%	-8.2%	-10.1%	-11.8%	BNA	-0.6%	-1.2%	-0.5%	0.2%	0.6%
BUF	1.0%	4.5%	10.2%	17.2%	22.4%	BUF	6.9%	14.6%	20.7%	28.9%	37.7%
CLE	0.2%	3.9%	9.7%	18.4%	22.6%	CLE	3.2%	16.3%	32.9%	59.7%	71.6%
CMH	0.6%	0.0%	-0.7%	0.1%	0.5%	CMH	0.3%	2.5%	4.5%	7.4%	9.1%
CVG	0.1%	4.5%	9.0%	12.0%	16.3%	CVG	1.3%	6.9%	11.6%	17.8%	23.6%
DAL	-4.1%	-10.1%	-16.8%	-24.5%	-32.4%	DAL	-0.8%	-2.6%	-5.2%	-7.0%	-9.7%
HOU	-4.3%	-8.3%	-12.0%	-15.5%	-18.5%	HOU	0.7%	1.9%	2.7%	3.9%	4.4%
IND	-0.6%	-0.2%	-2.1%	-2.1%	-3.1%	IND	-0.1%	1.6%	2.3%	4.8%	6.2%
JAX	0.7%	2.4%	5.4%	7.3%	10.1%	JAX	0.2%	1.2%	2.6%	4.5%	4.7%
MCI	-0.2%	-0.1%	2.4%	5.3%	8.2%	MCI	1.3%	6.5%	14.1%	21.7%	30.4%
MKE	0.5%	9.9%	19.8%	27.1%	38.1%	MKE	1.1%	12.1%	22.5%	33.0%	44.5%
MSY	-2.2%	-5.5%	-8.9%	-13.3%	-17.5%	MSY	0.8%	0.8%	0.7%	0.1%	-1.6%
OAK	-2.6%	-6.2%	-8.5%	-11.7%	-13.9%	OAK	-0.9%	-0.6%	0.7%	0.9%	1.5%
OGG	-1.4%	-2.1%	-3.8%	-5.5%	-8.3%	OGG	-0.7%	0.1%	1.1%	3.6%	2.4%
OMA	-0.1%	-0.1%	2.1%	4.9%	7.6%	OMA	1.1%	4.8%	9.3%	13.3%	18.8%
ONT	-2.1%	0.3%	2.8%	3.7%	6.5%	ONT	-2.2%	-0.9%	-0.6%	-1.3%	-1.7%
PBI	-1.8%	-0.8%	-1.2%	-1.8%	-0.3%	PBI	-1.6%	-0.6%	-0.6%	-0.8%	0.1%
PIT	-0.1%	2.1%	5.5%	8.9%	12.0%	PIT	-0.1%	2.8%	4.7%	7.4%	9.7%
RDU	-0.1%	-1.6%	-1.9%	-1.4%	-1.3%	RDU	-0.8%	0.5%	3.4%	5.8%	7.8%
RSW	-1.5%	0.0%	-0.7%	0.2%	3.7%	RSW	-0.1%	4.0%	6.6%	11.8%	16.2%
SAT	-2.2%	-0.5%	2.5%	4.5%	5.7%	SAT	0.2%	3.6%	7.7%	11.9%	14.0%
SJC	-1.7%	-5.0%	-7.4%	-9.9%	-12.1%	SJC	-1.8%	-3.3%	-4.3%	-5.7%	-6.5%
SJU	-1.3%	-1.4%	-1.5%	-0.3%	1.0%	SJU	1.8%	3.9%	4.4%	6.1%	10.4%
SMF	-1.8%	-2.2%	-2.0%	-1.6%	-0.9%	SMF	1.4%	4.5%	8.7%	12.4%	16.9%
SNA	-1.5%	-2.7%	-5.1%	-5.9%	-9.1%	SNA	-1.2%	-2.5%	-3.2%	-4.8%	-4.8%
STL	-0.6%	-0.5%	3.0%	7.3%	11.8%	STL	0.6%	3.0%	7.1%	11.9%	16.6%
Mean error	-1.2%	-1.1%	-0.5%	0.3%	1.0%	Mean error	0.4%	3.0%	5.8%	9.2%	12.1%
Median error	-1.4%	-0.6%	-1.0%	-0.4%	0.1%	Median error	0.2%	2.2%	3.9%	5.9%	8.5%
Standard deviation	1.4%	4.2%	7.8%	11.3%	15.0%	Standard deviation	1.7%	4.7%	8.4%	13.6%	17.0%

Note:

The table presents the variance of the TAF forecasts prepared in 2010 through 2016. The variance measurements include the mean error by airport and the mean error, median error, and standard deviation by airport group. The large and medium hubs are based on the classification in the 2017 TAF. The out year figures by airport are the mean percent difference between the forecasts and actuals for each possible TAF. For example, the 2 year out figures by airport are the mean percent difference between the forecasts and actuals for the forecast years 2012, 2013, 2014, 2015, 2016, and 2017 where the forecasts are based on the 2010, 2011, 2012, 2013, 2014, and 2015 TAF, respectively.