

TPB's Development of Airport Passenger Trip Forecasts

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How are airport passenger trips currently handled by the model?

One of several exogenous travel markets:

1. External auto person and trucks
2. Through auto driver and trucks
3. Three “miscellaneous” auto driver purposes:
 - Visitor/Tourist
 - School
 - Taxi
4. Airport passenger auto drivers



Current developments

- The 2007 Baltimore-Washington Air Passenger Survey has been released
- Zonal land activity at the 3,722 TAZ level to be released:
 - Rnd. 7.2A 'psuedo' land use file about to be released
 - Round 8.0 Coop. Forecasts are forthcoming
- Version 2.3 model calibration work requires that TPB assemble the best 2007 inputs available
- The processing of new airport travel forecasts on new TAZ system is underway (along with other external travel markets)



Development overview

- Airport passenger trip forecasts are developed using a FRATAR technique involving:
 1. An observed base year i-j travel pattern
 - ongoing Wash.-Balt. Regional Air Passenger Surveys
 - Aviation Analysis Zones (AAZ's) used, about 132
 2. A basis for growth
 - Maryland Aviation Administration (MAA) and Metropolitan Washington Airport Authority (MWAA) enplanement forecasts (airport end)
 - Cooperative HH and Job forecasts (non-airport end)
- Frequency of the TPB airport passenger trip forecasts
 - Forecasts are updated with each new round of Coop. Forecasts
 - *Auto Driver* trip tables are developed for years represented in the Cooperative Forecasts; off-year trips are interpolated

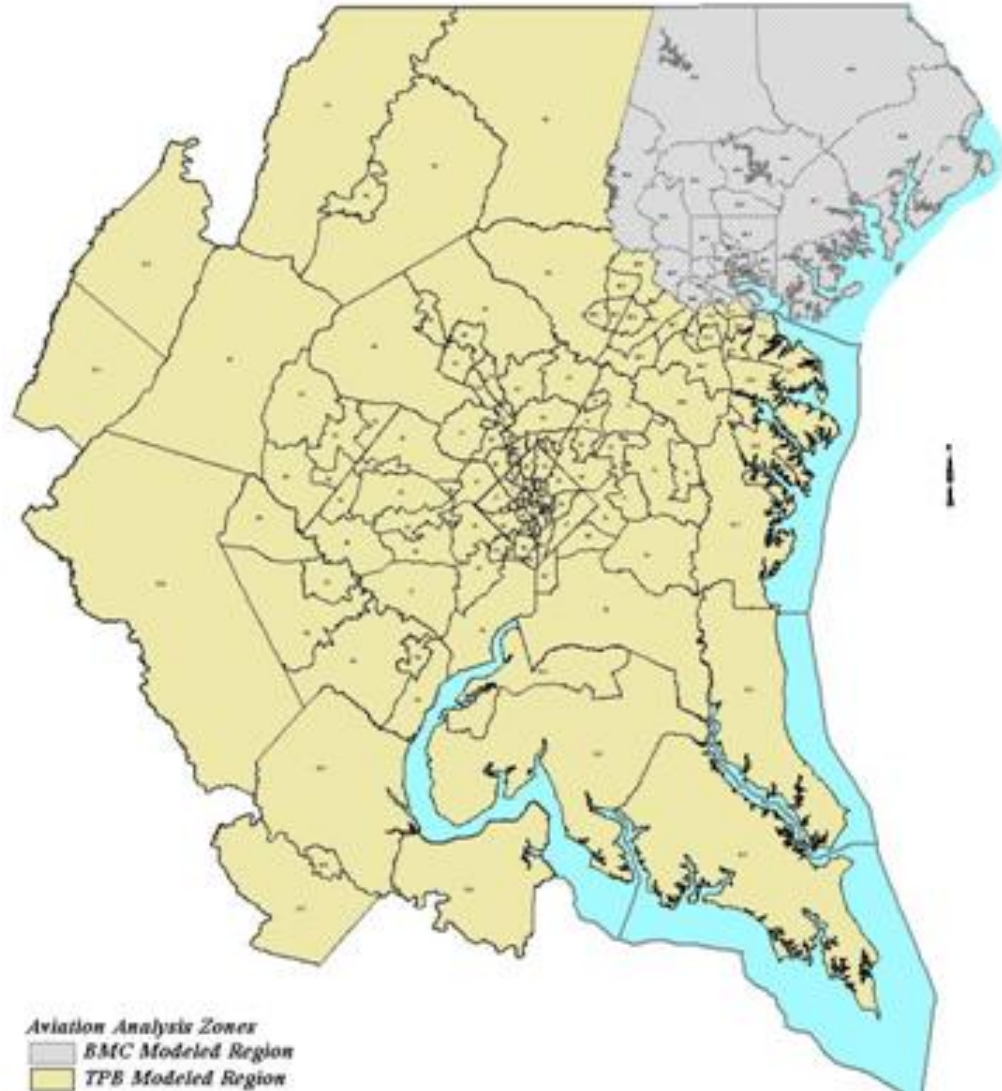


BW Air Passenger Survey background

- Ongoing survey program provides information every two years
- Survey collected at the 3 major commercial airports over 2 weeks (weekdays & weekends)
- Air Passengers interviewed at *departure* gates
- Sampling frame based on flight schedules
- Collected information:
 - O-D airports
 - residency and socio-econ. data
 - arrival trip data (origin location, purpose, mode)
- Survey weights reflect *annualized* enplanements



Aviation
Analysis
Zones
(AAZs)
for the
Washington
-Baltimore
Air System
Planning
Region



Issue: An enplanement survey is not a travel survey

- Enplanements represent local originations and transfers from connecting flights
 - Assume the share of originations/transfers remain constant)
- MAA/MWAA forecasts enplanements, not originations
 - Assume enplanement growth applies to local origination growth
- Reverse direction information not known; Drop-off vs. parking information limited
- Survey weighting is annualized
 - (i.e., Avg. annual enplanements developed, not Avg. Weekday)



Processing steps- in a nutshell

- Selected records obtained from the survey
 - *Weekday obs., local* originations in modeled area
- Annualized survey weights adjusted to reflect weekday weights
(annualized weight / 260 weekdays per year)
- Selected records segmented by
 - Airport
 - Status (resident, non-resident)
 - Origination Purpose (Home-based, NH-Based)
 - Mode: Auto dr., Auto pax., public transit, non-public transit, and other
- Base year and future year trip tables are finalized
 - Future auto driver trips developed with FRATAR method at AAZ level
 - One-way trips converted to two-way (daily) by assuming symmetry
 - Auto Dr. trips at AAZ level “split” to the zone level based on land use proration



2007 Annual Weekday Enplanements by Airport in the TPB Modeled Region

Enplanement Type	B.W.I.	National	Dulles	Total
Local Originations	4,153,000	6,406,000	5,005,000	15,564,000
Flight Connections	1,106,000	740,000	4,115,000	5,961,000
Total	5,259,000	7,146,000	9,120,000	21,525,000

Source: MWCOG 2007 Regional Air Passenger Survey

Weekday Originations to Airports

Weekday originations from inside and outside of the TPB modeled region

Enplanement Type	B.W.I.	National	Dulles	Total
Local Originations	16,000	24,600	19,300	59,900
Externals (Outside Area)	9,100	400	700	10,200
Total	25,100	25,000	20,000	70,100

TPB area originations by status (resident/nonresident)

Originations by Resident/Non-Resident	B.W.I.	National	Dulles	Total
Resident	8,600	9,500	10,300	28,400
Non-Resident	7,400	15,100	9,000	31,500
Total	16,000	24,600	19,300	59,900

Source: MWCOG 2007 Regional Air Passenger Survey



Local Weekday Originations by Airport and Mode of Access

	B.W.I.	National	Dulles	Total
Auto Driver	8,000	11,800	10,600	30,400
Auto Passenger	5,400	6,000	6,400	17,800
Transit	600	3,900	100	4,600
Airport Transit	2,100	2,900	2,000	7,000
Other Modes	0	100	0	100
Total	16,100	24,700	19,100	59,900

These are one-way trips to the airports, all modes
Includes both HB and NHB purposes

Total Weekday Auto Driver Air Pax Trips Existing vs. Updated Forecasts

Airport	Existing Forecasts <i>Based on 2000 AP Survey</i>			Updated Forecasts <i>Based on 2007 AP Survey</i>		
	2007	2030	('30/'07)	2007	2030	('30/'07)
BWI	18,600	33,900	1.82	16,000	29,200	1.83
DCI	17,700	23,100	1.31	23,600	28,000	1.19
IAD	20,200	53,000	2.62	21,300	54,300	2.55
Total	56,500	110,000	1.95	60,900	111,500	1.83

These are two-way auto driver trips to/from the airports
Includes both HB and NHB purposes

Conclusions and Next Steps

- Airport passenger forecasts are developed as an exogenous input to the model
- The forecasts are not explicitly modeled as such, but they are continuously updated with the best possible information available
- A new set of airport passenger trips will be produced using the 2007 Air Pass. Survey and Round 8.0 Cooperative Forecasts on the new 3,722 TAZ system
- TPB stays abreast of airport modeling techniques which might be considered in the future...
- ... but, the Washington, D.C. area presents unique challenges for developing a regional airport model

