

Status of the Version 2.3 Model on the 3,722 TAZ Area System

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Ron Milone
TPB



Version 2.3 Background

- Supported with new data, new TAZ system
- Primary Features:
 - New NL Mode Choice Model
 - Updated truck models
- Other Features: 5 trip purposes, up from 4:
 - HBW, HBS, HBO, NHB-Work, &NHB-Nonwork-Related
- Trip generation rates will reflect both motorized and non-motorized (walk and bike) travel markets for all purposes.
- TPB is considering additional features per recommendations from Cambridge Systematics, Inc.



Activities

- 2007/08 HTS Processing and Review
 - Trip geocoding completed (2,191 & 3,722 TAZ systems)
 - Holiday observations removed, survey re-weighted
 - Tabulations being prepared
 - Calibration files under construction
 - Demographic submodels
 - Trip generation
 - Production files
 - Attraction Files
 - Submodels (estimation of I-X prod's & non-motorized trip-ends)
 - Trip Distribution
 - Observed transit targets well along

Activities, continued

- Creation of standard land activity file per the new TAZ system
 - Pseudo Rnd. 8.0 land activity released at the last TFS meeting
 - 2000 –CTPP based zonal income ratios on the 2,191 TAZ system adapted to the 3,722 system
 - Standard file is now prepared in dBase form, as opposed to the fixed-format text file used in legacy model versions (now 'zone.dbf', instead of 'zone.asc')
 - Coordinates (X,Ys) have been added to standard zonal attributes



Activities, continued

- Zonal “area type” formulation revisited per new TAZ system & land use
- ‘Fine-resolution’ zonal attributes formulated
- Observed (2007) external and through trip compiled
- Linking Transportation Data Clearinghouse counts to the network (in progress)
- Linking observed speeds to the network (in progress)



Removing holiday-related data from the HTS

- Travel data collection occurred between February 2007 and May 2008
- Weekday data collected – both holidays and non-holidays
- Decision was made to remove holiday-related observations
- Implication: survey weighting would need to be adjusted



Federal Holidays 2007-2008

Holiday	Date
Washington's Birthday	Monday, February 19, 2007
Memorial Day	Monday, May 28, 2007
Independence Day	Wednesday, July 4, 2007
Labor Day	Monday, September 3, 2007
Columbus Day	Monday, October 8, 2007
Veterans Day	Monday, November 12, 2007
Thanksgiving Day	Thursday, November 22, 2007
Christmas Day	Tuesday, December 25, 2007
New Year's Day	Tuesday, January 1, 2008
Birthday of Martin Luther King, Jr.	Monday, January 21, 2008
Washington's Birthday	Monday, February 18, 2008
Memorial Day	Monday, May 26, 2008



Results of Survey Adjustment to the household & trip files

	Unweighted Observations	Weighted Observations
Initial HH File	11,436	2,339,595
Holiday-Related Survey Records	337	65,510
Final/ Adjusted HH File	11,099	2,339,281

	Unweighted Observations	Weighted Observations
Initial Trip File	87,926	20,306,341
Final/ Adjusted HH File	85,910	20,434,922

2007/08 HTS HH file crosstabs

HHs by Size and Vehicles Available					
	0_Veh_HH	1_Veh_HH	2_Veh_HH	3+Veh_HH	Sum
HH_Size1	95,464	467,178	78,828	19,422	660,893
HH_Size2	24,862	151,305	402,253	139,383	717,802
HH_Size3	6,931	63,791	165,876	145,973	382,571
HH_Size4+	8,905	52,751	300,413	215,946	578,015
Sum:	136,162	735,026	947,370	520,725	2,339,281
HHs by Size and Income Level					
	\$ 0 - 49.999K	\$50-99.999K	\$100-149.999K	\$ 150K+	Sum
HH_Size1	264,285	270,345	98,237	28,026	660,893
HH_Size2	126,264	235,381	216,585	139,572	717,802
HH_Size3	49,813	130,006	130,120	72,631	382,571
HH_Size4+	67,133	175,311	221,684	113,887	578,015
Sum:	507,496	811,043	666,627	354,116	2,339,281
HHs by Vehicles Available and Income Level					
	\$ 0 - 49.999K	\$50-99.999K	\$100-149.999K	\$ 150K+	Sum
HH_Veh_0	98,114	27,508	9,023	1,516	136,162
HH_Veh_1	261,280	309,248	123,517	40,981	735,026
HH_Veh_2	112,992	316,696	341,262	176,421	947,370
Veh_HH_3+	35,110	157,591	192,826	135,198	520,725
Sum:	507,496	811,043	666,627	354,116	2,339,281

Note: Holiday-related observations removed from the HH file, survey weights adjusted



2007/08 HTS trip file summary by purpose and primary mode

Washington, D.C. Region File								
Unweighted Trip Record Summary (All geocoded and nongeocoded trip records)								Modeled Total
Purpose	Transit	Auto Dr	Auto Pax	Walk	Bike	Other	Sum	(Trn/Auto/Walk/Bike)
HBW:	2,900	12,249	699	488	165	142	16,643	16,501
HBS:	401	8,683	3,281	995	50	56	13,466	13,410
HBO:	1,074	16,642	8,722	2,492	160	2,446	31,536	29,090
NHBW:	723	5,907	640	2,121	44	177	9,612	9,435
NHBN:	326	8,861	3,614	1,463	42	347	14,653	14,306
Sum:	5,424	52,342	16,956	7,559	461	3,168	85,910	82,742
Weighted Trip Record Summary (Internal and External Trip Records)								Modeled Total
Purpose	Transit	Auto Dr	Auto Pax	Walk	Bike	Other	Sum	(Trn/Auto/Walk/Bike)
HBW:	574,797	2,935,221	169,539	84,275	32,514	29,236	3,825,582	3,796,346
HBS:	70,250	1,962,979	893,626	180,660	8,798	9,412	3,125,726	3,116,313
HBO:	216,783	3,910,095	2,448,717	577,710	36,399	735,629	7,925,333	7,189,704
NHBW:	141,128	1,398,615	150,296	404,550	7,379	35,362	2,137,331	2,101,968
NHBN:	66,241	1,982,390	980,224	296,991	6,608	88,496	3,420,951	3,332,454
Sum:	1,069,199	12,189,300	4,642,403	1,544,186	91,699	898,135	20,434,922	19,536,787

Note: Holiday-related observations removed from the trip file, survey weights adjusted



What are some implications of the new data??

- 2007/08 HTS trip production rates were examined and compared to previous (1994 HTS-based) rates
- 2007/08 HTS auto driver trip lengths were examined and compared to against 2010 simulated trip lengths taken “off the shelf”

Comparison of Unweighted Daily HH Trip Rates by Purpose
1994 HTS vs. 2007/08 HTS

Purpose	1994 HTS	2007/08 HTS	Diff.	% Diff.
HBW	1.84	1.49	-0.35	-19.1%
HBS	0.98	1.21	0.23	23.9%
HBO	3.13	2.62	-0.50	-16.1%
NHB	2.45	2.08	-0.37	-15.0%
Total	8.38	7.40	-0.99	-11.8%

Rates reflect motorized & nonmotorized travel (I-I, I-X movements)



Comparison of Internal Auto Driver Trip Lengths by Trip Purpose

Version 2.2 Model (2010) vs. 2007/08 HTS

Purpose	Time (min)				Distance (mi)			
	V2.2 Model	2007/08HTS	Diff.	%Diff.	V2.2 Model	2007/08HTS	Diff.	%Diff.
HBW	35.1	45.52	10.42	29.7%	11.07	14.73	3.66	33.1%
HBS	10.5	12.53	2.03	19.3%	4.98	5.84	0.86	17.3%
HBO	10.15	14.61	4.46	43.9%	4.87	6.99	2.12	43.5%
NHB	15.97	15.29	-0.68	-4.3%	7.61	7.25	-0.36	-4.7%



Conclusions

- The HTS file has been refined in order to remove non-typical weekday conditions
- Calibration files are in formation. Calibration results for Demographic, Trip Generation, are expected at the next meeting
- Network path checking is a critical path item
- 2007/08 HTS-based trip rates are lower than those of the '94 HTS, especially for HBW trips
- 2007/08 HTS-based trip lengths are notably higher than those reflected in the existing 2.2 model simulation, especially for HBW and HBO trips



Timeline: Ver. 2.3 model (3,722 TAZ)

