

# Memorandum

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Date: November 18, 2010

To: Files

From: Ron Milone

Re: Jurisdiction Level Performance of the Version 2.3 Demographic Models

Attached to this memorandum are jurisdiction level summaries of the Version 2.3 demographic models applied on the 3,722 TAZ system. A summary of the regional estimated and observed totals are shown on the table below. Please be aware that Clarke County figures are generated by the model and are included in all estimated summaries. The 2007 ACS did not include information for this county, however, and so no observed figures are shown below.

## Regional Estimated and Observed Demographic Totals

Demographic Model	Modeled Dimension	Estimated HHs	Estimated Distribution	Observed HH's	Observed Distribution	Difference HH's	Difference Distribution
HH Size	1 Psn	664,559	28.40%	649,305	27.94%	15,254	0.46%
Model	2 Psns	723,464	30.92%	713,509	30.70%	9,955	0.22%
	3 Psns	392,846	16.79%	385,435	16.59%	7,411	0.20%
	4+ Psns	558,997	23.89%	575,731	24.77%	-16,734	-0.88%
	Total	2,339,865	100.00%	2,323,980	100.00%	15,885	0.00%
HH Income	< 50.00k	635,803	27.17%	640,594	27.56%	-4,791	-0.39%
Model	50.00k-99.99k	726,626	31.05%	731,729	31.49%	-5,103	-0.43%
	100.k-149.99k	483,261	20.65%	470,110	20.23%	13,151	0.42%
	> 150.00k	494,175	21.12%	481,547	20.72%	12,628	0.40%
	Total	2,339,865	100.00%	2,323,980	100.00%	15,885	0.00%
HH Vehicle Availability	0 Vehs.	202,548	8.46%	200,561	8.63%	1,987	-0.17%
Model	1 Veh.	739,590	31.38%	733,753	31.57%	5,837	-0.20%
	2 Vehs.	870,770	37.49%	865,514	37.24%	5,256	0.24%
	3+ Vehs.	526,954	22.68%	524,152	22.55%	2,802	0.13%
	Total	2,339,865	100.00%	2,323,980	100.00%	15,885	0.00%

The sequence of jurisdiction level summary tables is as follows:

- Estimated Households by size, Observed Households by size, Difference (E-O) Households by Size (pages 2-4)
- Estimated Households by income, Observed Households by income, Difference (E-O) Households by Income (pages 5-7)
- Estimated Households by Vehicles Available, Observed Households by Vehicles Available, Difference (E-O) Households by Vehicles Available (pages 8-10)

### Estimated 2007 Households by Size

Jurisdiction	Household Size					Percent of Households by Size				
	1 Psn	2 Psns	3 Psns	4+ Psns	Total	1 Psn	2 Psns	3 Psns	4+ Psns	Total
0 District of Columbia	117,357	74,187	29,517	31,076	252,137	46.5%	29.4%	11.7%	12.3%	100.0%
1 Montgomery County	91,072	103,926	58,714	88,985	342,696	26.6%	30.3%	17.1%	26.0%	100.0%
2 Prince George's County	75,136	93,210	52,061	73,577	293,985	25.6%	31.7%	17.7%	25.0%	100.0%
3 Arlington County	40,372	27,545	11,167	12,027	91,110	44.3%	30.2%	12.3%	13.2%	100.0%
4 Alexandria City	29,825	18,246	6,797	6,562	61,430	48.6%	29.7%	11.1%	10.7%	100.0%
5 Fairfax County	99,136	119,414	66,326	95,668	380,545	26.1%	31.4%	17.4%	25.1%	100.0%
6 Loudoun County	21,050	29,067	16,926	25,146	92,188	22.8%	31.5%	18.4%	27.3%	100.0%
7 Prince William County	27,783	42,647	26,615	42,053	139,098	20.0%	30.7%	19.1%	30.2%	100.0%
9 Frederick County	19,943	25,857	14,909	21,887	82,596	24.1%	31.3%	18.1%	26.5%	100.0%
10 Howard County	21,800	31,011	18,555	28,029	99,395	21.9%	31.2%	18.7%	28.2%	100.0%
11 Anne Arundel County	51,163	60,310	32,963	45,957	190,393	26.9%	31.7%	17.3%	24.1%	100.0%
12 Charles County	11,163	15,733	9,280	13,891	50,067	22.3%	31.4%	18.5%	27.7%	100.0%
14 Carroll County	12,930	19,034	11,498	17,635	61,096	21.2%	31.2%	18.8%	28.9%	100.0%
15 Calvert County	5,871	8,996	5,601	8,787	29,256	20.1%	30.7%	19.1%	30.0%	100.0%
16 St. Mary's County	8,964	11,416	6,580	9,602	36,562	24.5%	31.2%	18.0%	26.3%	100.0%
17 King George County	1,706	2,566	1,556	2,401	8,228	20.7%	31.2%	18.9%	29.2%	100.0%
18 Fredericksburg City	3,647	2,877	1,222	1,283	9,029	40.4%	31.9%	13.5%	14.2%	100.0%
19 Stafford County	7,023	11,996	7,758	12,623	39,400	17.8%	30.4%	19.7%	32.0%	100.0%
20 Spotsylvania County	7,013	10,532	6,361	9,801	33,708	20.8%	31.2%	18.9%	29.1%	100.0%
21 Fauquier County	5,641	7,264	4,131	5,899	22,935	24.6%	31.7%	18.0%	25.7%	100.0%
22 Clarke County	1,427	1,701	930	1,262	5,319	26.8%	32.0%	17.5%	23.7%	100.0%
23 Jefferson County	4,538	5,930	3,381	4,845	18,694	24.3%	31.7%	18.1%	25.9%	100.0%
<b>Total Modeled Area</b>	664,559	723,464	392,846	558,997	2,339,865	28.4%	30.9%	16.8%	23.9%	100.0%

**Observed (ACS) 2007 Households by Size**

Jurisdiction	Household Size					Percent of Households by Size				
	1 Psn	2 Psns	3 Psns	4+ Psns	Total	1 Psn	2 Psns	3 Psns	4+ Psns	Total
0 District of Columbia	120,261	72,412	28,014	30,352	251,039	47.9%	28.8%	11.2%	12.1%	100.0%
1 Montgomery County	85,440	108,265	59,754	90,081	343,540	24.9%	31.5%	17.4%	26.2%	100.0%
2 Prince George's County	87,040	84,558	51,136	74,880	297,614	29.2%	28.4%	17.2%	25.2%	100.0%
3 Arlington County	38,147	28,973	11,679	12,730	91,529	41.7%	31.7%	12.8%	13.9%	100.0%
4 Alexandria City	28,500	19,390	7,031	6,901	61,822	46.1%	31.4%	11.4%	11.2%	100.0%
5 Fairfax County	93,403	120,134	62,334	98,683	374,554	24.9%	32.1%	16.6%	26.3%	100.0%
6 Loudoun County	24,338	21,675	14,107	26,487	86,607	28.1%	25.0%	16.3%	30.6%	100.0%
7 Prince William County	23,959	38,760	25,938	46,030	134,687	17.8%	28.8%	19.3%	34.2%	100.0%
9 Frederick County	18,931	24,672	16,792	21,466	81,861	23.1%	30.1%	20.5%	26.2%	100.0%
10 Howard County	20,083	29,894	18,557	30,332	98,866	20.3%	30.2%	18.8%	30.7%	100.0%
11 Anne Arundel County	47,422	63,263	32,980	45,209	188,874	25.1%	33.5%	17.5%	23.9%	100.0%
12 Charles County	10,086	16,278	9,823	12,814	49,001	20.6%	33.2%	20.0%	26.2%	100.0%
14 Carroll County	9,510	19,462	10,984	18,827	58,783	16.2%	33.1%	18.7%	32.0%	100.0%
15 Calvert County	5,472	9,441	4,589	9,639	29,141	18.8%	32.4%	15.7%	33.1%	100.0%
16 St. Mary's County	8,591	10,303	6,665	11,282	36,841	23.3%	28.0%	18.1%	30.6%	100.0%
17 King George County	1,338	2,741	1,228	2,386	7,693	17.4%	35.6%	16.0%	31.0%	100.0%
18 Fredericksburg City	3,617	2,487	1,244	1,212	8,560	42.3%	29.1%	14.5%	14.2%	100.0%
19 Stafford County	5,796	13,271	8,184	12,168	39,419	14.7%	33.7%	20.8%	30.9%	100.0%
20 Spotsylvania County	8,248	12,391	7,717	13,246	41,602	19.8%	29.8%	18.5%	31.8%	100.0%
21 Fauquier County	5,032	8,434	3,777	6,000	23,243	21.6%	36.3%	16.3%	25.8%	100.0%
23 Jefferson County	4,091	6,705	2,902	5,006	18,704	21.9%	35.8%	15.5%	26.8%	100.0%
<b>Total Modeled Area</b>	<b>649,305</b>	<b>713,509</b>	<b>385,435</b>	<b>575,731</b>	<b>2,323,980</b>	<b>27.9%</b>	<b>30.7%</b>	<b>16.6%</b>	<b>24.8%</b>	<b>100.0%</b>

**2007 Jurisdiction Level Difference (Estimated - Observed) in Households by Size**

Jurisdiction		Household Size				Percent of Households by Size				
		1 Psn	2 Psns	3 Psns	4+ Psns	Total	1 Psn	2 Psns	3 Psns	4+ Psns
0	District of Columbia	-2,904	1,775	1,503	724	1,098	-1.36%	0.58%	0.55%	0.23%
1	Montgomery County	5,632	-4,339	-1,040	-1,096	-844	1.70%	-1.19%	-0.26%	-0.26%
2	Prince George's County	-11,904	8,652	925	-1,303	-3,629	-3.69%	3.29%	0.53%	-0.13%
3	Arlington County	2,225	-1,428	-512	-703	-419	2.63%	-1.42%	-0.50%	-0.71%
4	Alexandria City	1,325	-1,144	-234	-339	-392	2.45%	-1.66%	-0.31%	-0.48%
5	Fairfax County	5,733	-720	3,992	-3,015	5,991	1.11%	-0.69%	0.79%	-1.21%
6	Loudoun County	-3,288	7,392	2,819	-1,341	5,581	-5.27%	6.50%	2.07%	-3.31%
7	Prince William County	3,824	3,887	677	-3,977	4,411	2.19%	1.88%	-0.12%	-3.94%
9	Frederick County	1,012	1,185	-1,883	421	735	1.02%	1.17%	-2.46%	0.28%
10	Howard County	1,717	1,117	-2	-2,303	529	1.62%	0.96%	-0.10%	-2.48%
11	Anne Arundel County	3,741	-2,953	-17	748	1,519	1.76%	-1.82%	-0.15%	0.20%
12	Charles County	1,077	-545	-543	1,077	1,066	1.71%	-1.80%	-1.51%	1.59%
14	Carroll County	3,420	-428	514	-1,192	2,313	4.99%	-1.95%	0.13%	-3.16%
15	Calvert County	399	-445	1,012	-852	115	1.29%	-1.65%	3.40%	-3.04%
16	St. Mary's County	373	1,113	-85	-1,680	-279	1.20%	3.26%	-0.09%	-4.36%
17	King George County	368	-175	328	15	535	3.34%	-4.44%	2.95%	-1.83%
18	Fredericksburg City	30	390	-22	71	469	-1.86%	2.81%	-1.00%	0.05%
19	Stafford County	1,227	-1,275	-426	455	-19	3.12%	-3.22%	-1.07%	1.17%
20	Spotsylvania County	-1,235	-1,859	-1,356	-3,445	-7,894	0.98%	1.46%	0.32%	-2.76%
21	Fauquier County	609	-1,170	354	-101	-308	2.95%	-4.61%	1.76%	-0.09%
22	Clarke County	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
23	Jefferson County	447	-775	479	-161	-10	2.40%	-4.13%	2.57%	-0.85%
<b>Total Modeled Area</b>		15,254	9,955	7,411	-16,734	15,885	0.46%	0.22%	0.20%	-0.88%

### Estimated 2007 Households by Income Quartile

		Households By Income Quartile					Percent Households By Income Quartile				
		<50.00k	50.00k-99.99k	100.k-149.99k	>150k	Total	<50.00k	50.00k-99.99k	100.k-149.99k	>150k	Total
0	District of Columbia	115,499	74,308	34,650	27,680	252,137	45.8%	29.5%	13.7%	11.0%	100.0%
1	Montgomery County	76,520	99,147	73,002	94,027	342,696	22.3%	28.9%	21.3%	27.4%	100.0%
2	Prince George's County	94,621	96,862	56,870	45,632	293,985	32.2%	32.9%	19.3%	15.5%	100.0%
3	Arlington County	24,351	29,010	19,041	18,708	91,110	26.7%	31.8%	20.9%	20.5%	100.0%
4	Alexandria City	18,753	19,986	11,876	10,815	61,430	30.5%	32.5%	19.3%	17.6%	100.0%
5	Fairfax County	72,713	104,902	84,930	117,999	380,545	19.1%	27.6%	22.3%	31.0%	100.0%
6	Loudoun County	16,872	25,556	21,897	27,863	92,188	18.3%	27.7%	23.8%	30.2%	100.0%
7	Prince William County	33,832	44,135	30,945	30,185	139,098	24.3%	31.7%	22.2%	21.7%	100.0%
9	Frederick County	23,416	28,519	17,542	13,119	82,596	28.4%	34.5%	21.2%	15.9%	100.0%
10	Howard County	20,037	29,118	23,353	26,887	99,395	20.2%	29.3%	23.5%	27.1%	100.0%
11	Anne Arundel County	49,471	65,465	42,382	33,074	190,393	26.0%	34.4%	22.3%	17.4%	100.0%
12	Charles County	12,957	17,090	11,175	8,845	50,067	25.9%	34.1%	22.3%	17.7%	100.0%
14	Carroll County	16,827	21,642	13,261	9,367	61,096	27.5%	35.4%	21.7%	15.3%	100.0%
15	Calvert County	7,041	9,840	6,724	5,651	29,256	24.1%	33.6%	23.0%	19.3%	100.0%
16	St. Mary's County	11,665	12,968	7,249	4,680	36,562	31.9%	35.5%	19.8%	12.8%	100.0%
17	King George County	2,771	3,020	1,568	869	8,228	33.7%	36.7%	19.1%	10.6%	100.0%
18	Fredericksburg City	4,798	2,851	976	405	9,029	53.1%	31.6%	10.8%	4.5%	100.0%
19	Stafford County	8,896	13,419	9,400	7,684	39,400	22.6%	34.1%	23.9%	19.5%	100.0%
20	Spotsylvania County	9,233	12,262	7,368	4,845	33,708	27.4%	36.4%	21.9%	14.4%	100.0%
21	Fauquier County	6,053	7,995	5,077	3,809	22,935	26.4%	34.9%	22.1%	16.6%	100.0%
22	Clarke County	1,707	1,950	1,051	612	5,319	32.1%	36.7%	19.8%	11.5%	100.0%
23	Jefferson County	7,771	6,579	2,924	1,420	18,694	41.6%	35.2%	15.6%	7.6%	100.0%
<b>Total Modeled Area</b>		<b>635,803</b>	<b>726,626</b>	<b>483,261</b>	<b>494,175</b>	<b>2,339,865</b>	<b>27.2%</b>	<b>31.1%</b>	<b>20.7%</b>	<b>21.1%</b>	<b>100.0%</b>

**Observed (ACS) 2007 Households by Income Quartile**

Jurisdiction	Households By Income Quartile					Percent Households By Income Quartile				
	< 50.00k	50.00k- 99.99k	100.k- 149.99k	> 150.00k	Total	< 50.00k	50.00k- 99.99k	100.k- 149.99k	> 150.00k	Total
0 District of Columbia	116,933	64,073	31,777	38,256	251,039	46.6%	25.5%	12.7%	15.2%	100.0%
1 Montgomery County	85,772	99,422	65,794	92,552	343,540	25.0%	28.9%	19.2%	26.9%	100.0%
2 Prince George's County	98,879	114,185	49,785	34,765	297,614	33.2%	38.4%	16.7%	11.7%	100.0%
3 Arlington County	21,340	26,982	17,990	25,217	91,529	23.3%	29.5%	19.7%	27.6%	100.0%
4 Alexandria City	18,382	18,626	12,348	12,466	61,822	29.7%	30.1%	20.0%	20.2%	100.0%
5 Fairfax County	71,219	104,502	86,543	112,290	374,554	19.0%	27.9%	23.1%	30.0%	100.0%
6 Loudoun County	14,193	24,646	23,242	24,526	86,607	16.4%	28.5%	26.8%	28.3%	100.0%
7 Prince William County	31,437	47,805	31,414	24,031	134,687	23.3%	35.5%	23.3%	17.8%	100.0%
9 Frederick County	23,572	27,009	19,456	11,824	81,861	28.8%	33.0%	23.8%	14.4%	100.0%
10 Howard County	19,101	29,132	23,410	27,223	98,866	19.3%	29.5%	23.7%	27.5%	100.0%
11 Anne Arundel County	50,888	67,660	39,344	30,982	188,874	26.9%	35.8%	20.8%	16.4%	100.0%
12 Charles County	12,944	16,685	11,991	7,381	49,001	26.4%	34.1%	24.5%	15.1%	100.0%
14 Carroll County	16,450	18,940	14,610	8,783	58,783	28.0%	32.2%	24.9%	14.9%	100.0%
15 Calvert County	6,133	9,287	7,876	5,845	29,141	21.0%	31.9%	27.0%	20.1%	100.0%
16 St. Mary's County	11,101	13,662	7,509	4,569	36,841	30.1%	37.1%	20.4%	12.4%	100.0%
17 King George County	2,357	2,967	1,576	793	7,693	30.6%	38.6%	20.5%	10.3%	100.0%
18 Fredericksburg City	4,775	2,377	817	591	8,560	55.8%	27.8%	9.5%	6.9%	100.0%
19 Stafford County	9,050	13,172	9,067	8,130	39,419	23.0%	33.4%	23.0%	20.6%	100.0%
20 Spotsylvania County	12,943	16,413	7,416	4,830	41,602	31.1%	39.5%	17.8%	11.6%	100.0%
21 Fauquier County	5,962	7,460	5,511	4,310	23,243	25.7%	32.1%	23.7%	18.5%	100.0%
23 Jefferson County	7,163	6,724	2,634	2,183	18,704	38.3%	35.9%	14.1%	11.7%	100.0%
<b>Total Modeled Area</b>	<b>640,594</b>	<b>731,729</b>	<b>470,110</b>	<b>481,547</b>	<b>2,323,980</b>	<b>27.56%</b>	<b>31.49%</b>	<b>20.23%</b>	<b>20.72%</b>	<b>100.00%</b>

**2007 Jurisdiction Level Difference (Estimated - Observed) in Households by Income Quartile**

		Households By Income Quartile					Percent Household s By Income Quartile			
		< 50.00k	50.00k- 99.99k	100.k- 149.99k	> 150.00k	Total	< 50.00k	50.00k- 99.99k	100.k- 149.99k	> 150.00k
0	District of Columbia	-1,434	10,235	2,873	-10,576	1,098	-0.77%	3.95%	1.08%	-4.26%
1	Montgomery County	-9,252	-275	7,208	1,475	-844	-2.64%	-0.01%	2.15%	0.50%
2	Prince George's County	-4,258	-17,323	7,085	10,867	-3,629	-1.04%	-5.42%	2.62%	3.84%
3	Arlington County	3,011	2,028	1,051	-6,509	-419	3.41%	2.36%	1.24%	-7.02%
4	Alexandria City	371	1,360	-472	-1,651	-392	0.79%	2.41%	-0.64%	-2.56%
5	Fairfax County	1,494	400	-1,613	5,709	5,991	0.09%	-0.33%	-0.79%	1.03%
6	Loudoun County	2,679	910	-1,345	3,337	5,581	1.91%	-0.74%	-3.08%	1.91%
7	Prince William County	2,395	-3,670	-469	6,154	4,411	0.98%	-3.76%	-1.08%	3.86%
9	Frederick County	-156	1,510	-1,914	1,295	735	-0.45%	1.53%	-2.53%	1.44%
10	Howard County	936	-14	-57	-336	529	0.84%	-0.17%	-0.18%	-0.48%
11	Anne Arundel County	-1,417	-2,195	3,038	2,092	1,519	-0.96%	-1.44%	1.43%	0.97%
12	Charles County	13	405	-816	1,464	1,066	-0.54%	0.08%	-2.15%	2.60%
14	Carroll County	377	2,702	-1,349	584	2,313	-0.44%	3.20%	-3.15%	0.39%
15	Calvert County	908	553	-1,152	-194	115	3.02%	1.76%	-4.04%	-0.74%
16	St. Mary's County	564	-694	-260	111	-279	1.77%	-1.62%	-0.56%	0.40%
17	King George County	414	53	-8	76	535	3.04%	-1.86%	-1.43%	0.25%
18	Fredericksburg City	23	474	159	-186	469	-2.64%	3.81%	1.27%	-2.42%
19	Stafford County	-154	247	333	-446	-19	-0.38%	0.64%	0.86%	-1.12%
20	Spotsylvania County	-3,710	-4,151	-48	15	-7,894	-3.72%	-3.08%	4.03%	2.76%
21	Fauquier County	91	535	-434	-501	-308	0.74%	2.76%	-1.57%	-1.94%
22	Clarke County	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
23	Jefferson County	608	-145	290	-763	-10	3.27%	-0.76%	1.56%	-4.08%
<b>Total Modeled Area</b>		-4,791	-5,103	13,151	12,628	15,885	-0.39%	-0.43%	0.42%	0.40%

**Estimated 2007 Households by Vehicles Available**

Jurisdiction	Vehicle Availability					Percent of HHs by Vehicle Available				
	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.	Total	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.	Total
0 District of Columbia	96,081	104,736	41,300	10,020	252,137	38.1%	41.5%	16.4%	4.0%	100.0%
1 Montgomery County	22,256	111,569	131,022	77,849	342,696	6.5%	32.6%	38.2%	22.7%	100.0%
2 Prince George's County	22,657	98,683	113,356	59,289	293,985	7.7%	33.6%	38.6%	20.2%	100.0%
3 Arlington County	13,020	44,539	25,339	8,214	91,110	14.3%	48.9%	27.8%	9.0%	100.0%
4 Alexandria City	6,659	31,315	18,244	5,212	61,430	10.8%	51.0%	29.7%	8.5%	100.0%
5 Fairfax County	17,136	117,680	152,757	92,971	380,545	4.5%	30.9%	40.1%	24.4%	100.0%
6 Loudoun County	2,103	22,127	38,757	29,200	92,188	2.3%	24.0%	42.0%	31.7%	100.0%
7 Prince William County	4,156	34,382	59,330	41,230	139,098	3.0%	24.7%	42.7%	29.6%	100.0%
9 Frederick County	2,368	21,347	34,519	24,361	82,596	2.9%	25.8%	41.8%	29.5%	100.0%
10 Howard County	2,930	25,471	41,449	29,545	99,395	2.9%	25.6%	41.7%	29.7%	100.0%
11 Anne Arundel County	5,777	54,570	80,810	49,235	190,393	3.0%	28.7%	42.4%	25.9%	100.0%
12 Charles County	1,614	12,761	20,947	14,745	50,067	3.2%	25.5%	41.8%	29.5%	100.0%
14 Carroll County	1,084	12,909	26,291	20,813	61,096	1.8%	21.1%	43.0%	34.1%	100.0%
15 Calvert County	535	5,988	12,293	10,440	29,256	1.8%	20.5%	42.0%	35.7%	100.0%
16 St. Mary's County	898	8,888	15,442	11,334	36,562	2.5%	24.3%	42.2%	31.0%	100.0%
17 King George County	142	1,693	3,579	2,813	8,228	1.7%	20.6%	43.5%	34.2%	100.0%
18 Fredericksburg City	623	3,868	3,359	1,179	9,029	6.9%	42.8%	37.2%	13.1%	100.0%
19 Stafford County	777	8,309	17,240	13,074	39,400	2.0%	21.1%	43.8%	33.2%	100.0%
20 Spotsylvania County	794	8,018	14,775	10,120	33,708	2.4%	23.8%	43.8%	30.0%	100.0%
21 Fauquier County	434	5,104	9,548	7,848	22,935	1.9%	22.3%	41.6%	34.2%	100.0%
22 Clarke County	112	1,288	2,255	1,664	5,319	2.1%	24.2%	42.4%	31.3%	100.0%
23 Jefferson County	392	4,345	8,158	5,798	18,694	2.1%	23.2%	43.6%	31.0%	100.0%
<b>Total Modeled Area</b>	<b>202,548</b>	<b>739,590</b>	<b>870,770</b>	<b>526,954</b>	<b>2,339,865</b>	<b>8.7%</b>	<b>31.6%</b>	<b>37.2%</b>	<b>22.5%</b>	<b>100.0%</b>



**Observed (ACS) 2007 Households by Vehicles Available**

Jurisdiction	Vehicle Availability					Percent Vehicle Available				
	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.	Total	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.	Total
0 District of Columbia	89,143	109,226	42,287	10,383	251,039	35.5%	43.5%	16.8%	4.1%	100.0%
1 Montgomery County	26,284	112,020	136,089	69,147	343,540	7.7%	32.6%	39.6%	20.1%	100.0%
2 Prince George's County	27,761	106,437	101,453	61,963	297,614	9.3%	35.8%	34.1%	20.8%	100.0%
3 Arlington County	9,378	44,960	26,962	10,229	91,529	10.2%	49.1%	29.5%	11.2%	100.0%
4 Alexandria City	6,676	33,419	18,029	3,698	61,822	10.8%	54.1%	29.2%	6.0%	100.0%
5 Fairfax County	12,024	110,164	160,649	91,717	374,554	3.2%	29.4%	42.9%	24.5%	100.0%
6 Loudoun County	1,197	22,455	41,528	21,427	86,607	1.4%	25.9%	47.9%	24.7%	100.0%
7 Prince William County	3,409	31,296	60,905	39,077	134,687	2.5%	23.2%	45.2%	29.0%	100.0%
9 Frederick County	3,078	20,700	33,440	24,643	81,861	3.8%	25.3%	40.8%	30.1%	100.0%
10 Howard County	2,440	24,722	44,292	27,412	98,866	2.5%	25.0%	44.8%	27.7%	100.0%
11 Anne Arundel County	8,472	50,321	79,565	50,516	188,874	4.5%	26.6%	42.1%	26.7%	100.0%
12 Charles County	1,307	13,069	16,589	18,036	49,001	2.7%	26.7%	33.9%	36.8%	100.0%
14 Carroll County	2,323	11,045	23,103	22,312	58,783	4.0%	18.8%	39.3%	38.0%	100.0%
15 Calvert County	537	5,719	11,476	11,409	29,141	1.8%	19.6%	39.4%	39.2%	100.0%
16 St. Mary's County	1,551	7,877	14,924	12,489	36,841	4.2%	21.4%	40.5%	33.9%	100.0%
17 King George County	188	1,317	3,172	3,016	7,693	2.4%	17.1%	41.2%	39.2%	100.0%
18 Fredericksburg City	1,141	4,080	2,374	965	8,560	13.3%	47.7%	27.7%	11.3%	100.0%
19 Stafford County	475	8,276	16,985	13,683	39,419	1.2%	21.0%	43.1%	34.7%	100.0%
20 Spotsylvania County	1,855	8,179	15,643	15,925	41,602	4.5%	19.7%	37.6%	38.3%	100.0%
21 Fauquier County	693	4,199	8,087	10,264	23,243	3.0%	18.1%	34.8%	44.2%	100.0%
23 Jefferson County	629	4,272	7,962	5,841	18,704	3.4%	22.8%	42.6%	31.2%	100.0%
<b>Total Modeled Area</b>	<b>200,561</b>	<b>733,753</b>	<b>865,514</b>	<b>524,152</b>	<b>2,323,980</b>	<b>8.6%</b>	<b>31.6%</b>	<b>37.2%</b>	<b>22.6%</b>	<b>100.0%</b>

**2007 Jurisdiction Level Difference (Estimated - Observed) in Households by Vehicles Available**

Jurisdiction	Vehicle Availability					Percent Vehicle Available			
	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.	Total	0 Vehs.	1 Veh.	2 Vehs.	3+ Vehs.
0 District of Columbia	6,938	-4,490	-987	-363	1,098	2.60%	-1.97%	-0.46%	-0.16%
1 Montgomery County	-4,028	-451	-5,067	8,702	-844	-1.16%	-0.05%	-1.38%	2.59%
2 Prince George's County	-5,104	-7,754	11,903	-2,674	-3,629	-1.62%	-2.20%	4.47%	-0.65%
3 Arlington County	3,642	-421	-1,623	-2,015	-419	4.04%	-0.24%	-1.65%	-2.16%
4 Alexandria City	-17	-2,104	215	1,514	-392	0.04%	-3.08%	0.54%	2.50%
5 Fairfax County	5,112	7,516	-7,892	1,254	5,991	1.29%	1.51%	-2.75%	-0.06%
6 Loudoun County	906	-328	-2,771	7,773	5,581	0.90%	-1.93%	-5.91%	6.93%
7 Prince William County	747	3,086	-1,575	2,153	4,411	0.46%	1.48%	-2.57%	0.63%
9 Frederick County	-710	647	1,079	-282	735	-0.89%	0.56%	0.94%	-0.61%
10 Howard County	490	749	-2,843	2,133	529	0.48%	0.62%	-3.10%	2.00%
11 Anne Arundel County	-2,695	4,249	1,245	-1,281	1,519	-1.45%	2.02%	0.32%	-0.89%
12 Charles County	307	-308	4,358	-3,291	1,066	0.56%	-1.18%	7.98%	-7.36%
14 Carroll County	-1,239	1,864	3,188	-1,499	2,313	-2.18%	2.34%	3.73%	-3.89%
15 Calvert County	-2	269	817	-969	115	-0.01%	0.84%	2.64%	-3.47%
16 St. Mary's County	-653	1,011	518	-1,155	-279	-1.75%	2.93%	1.73%	-2.90%
17 King George County	-46	376	407	-203	535	-0.72%	3.46%	2.27%	-5.02%
18 Fredericksburg City	-518	-212	985	214	469	-6.43%	-4.82%	9.47%	1.78%
19 Stafford County	302	33	255	-609	-19	0.77%	0.09%	0.67%	-1.53%
20 Spotsylvania County	-1,061	-161	-868	-5,805	-7,894	-2.10%	4.13%	6.23%	-8.26%
21 Fauquier County	-259	905	1,461	-2,416	-308	-1.09%	4.19%	6.84%	-9.94%
22 Clarke County	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
23 Jefferson County	-237	73	196	-43	-10	-1.27%	0.40%	1.07%	-0.21%
<b>Total Modeled Area</b>	1,987	5,837	5,256	2,802	15,885	0.03%	0.04%	-0.03%	-0.03%

# Memorandum

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Date: November 18, 2010

To: Files

From: Ron Milone

Re: Performance of Trip Generation Models

This memorandum presents jurisdiction level results of applying the Version 2.3 trip generation models that were statistically estimated using the 2007/08 HTS to the 2007 zonal land use file (the "Pseudo Round 8.0" land activity). The simulated results are compared to observed (HTS-based) trip ends which have also been summarized at the jurisdiction level. The comparisons pertain to motorized trip- ends (productions and attractions) by purpose and total non-motorized productions.

A review of area type results from early applications of the model indicated that small adjustments were necessary to the estimated trip generation model (and sub-models) to better match observed figures from the survey. In most cases the adjustments were within +/- 15%. The final production and attraction adjustments, arrayed by purpose and mode (motorized and non-motorized) are shown on Table 1.

Tables 2 through 5 show estimated and observed results for motorized trip productions by HB purpose, trip attractions by purpose, non-motorized trip productions (all HB purposes) and non-motorized trip attractions (all purposes) respectively. A review of these comparisons by TPB staff and TFS members may lead to modifications to the TPB's use of area type adjustments.

**Table 1: Area Type Adjustments Used in Trip Generation Application**

Motorized Production Adjustments

AreaType->	1	2	3	4	5	6
HBW	1.1358	1.1180	1.0554	0.9175	0.9577	0.9307
HBS	0.8092	0.9504	1.0793	0.9059	1.0751	0.8620
HBO	1.1067	1.1181	1.0303	0.9647	1.0109	0.8324
NHB	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
NHO	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Motorized Attraction Adjustments

AreaType->	1	2	3	4	5	6
HBW	1.0765	0.8478	0.9612	1.1045	0.9871	1.0383
HBS	0.7952	1.0967	1.1577	0.8770	0.9437	0.5187
HBO	1.1542	1.1304	0.9307	1.0635	1.0480	0.8032
NHB	1.1457	0.8686	0.9843	1.5731	1.1860	1.0919
NHO	0.7953	1.0652	1.0724	0.9180	1.0899	0.7224

Nonmotorized Production Adjustments

AreaType->	1	2	3	4	5	6
HBW	1.4424	1.1007	1.0554	0.9175	0.9577	0.9307
HBS	1.2222	1.2677	1.0793	0.9059	1.0751	0.8619
HBO	0.9363	1.3047	1.0303	0.9647	1.0109	0.8325
NHB	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
NHO	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Nonmotorized Attraction Adjustments

AreaType->	1	2	3	4	5	6
HBW	1.2809	1.0087	1.1436	1.3141	1.1746	1.2354
HBS	1.0758	1.2904	1.3709	1.0385	1.1175	0.6141
HBO	0.6886	1.2374	1.0476	1.1970	1.1796	0.9041
NHB	1.0477	1.0620	0.8302	1.3269	1.0004	0.9211
NHO	1.2008	1.0651	0.8146	0.6974	0.8280	0.5488

**Table 2: Estimated and Observed Motorized Trip Productions**

Jurisdiction	Estimated Motorized Productions				Observed Motorized Productions				Est./Obs. Motorized Productions			
	HBW	HBS	HBO	Total	HBW	HBS	HBO	Total	HBW	HBS	HBO	Total
1 DC Core	32,452	16,148	36,170	84,770	31,734	11,075	28,824	71,633	1.02	1.46	1.25	1.18
2 DC NonCore	246,145	163,970	357,762	767,877	245,659	148,875	433,070	827,604	1.00	1.10	0.83	0.93
3 Montgomery	561,222	443,148	1,031,878	2,036,248	529,265	437,409	1,073,158	2,039,832	1.06	1.01	0.96	1.00
4 Prince George	450,296	381,307	829,838	1,661,441	448,374	333,554	797,376	1,579,304	1.00	1.14	1.04	1.05
5 Arlington Core	6,502	3,489	8,108	18,099	8,333	3,541	4,895	16,769	0.78	0.99	1.66	1.08
6 Arlington NonCore	120,808	78,232	182,090	381,130	124,769	86,933	196,104	407,806	0.97	0.90	0.93	0.93
7 Alexandria	84,110	53,947	121,158	259,215	88,446	57,289	117,756	263,491	0.95	0.94	1.03	0.98
8 Fairfax	644,102	512,067	1,176,026	2,332,195	646,717	520,157	1,194,840	2,361,714	1.00	0.98	0.98	0.99
9 Loudoun	158,160	133,709	293,259	585,128	147,802	126,148	269,148	543,098	1.07	1.06	1.09	1.08
10 Prince William	232,917	202,901	449,886	885,704	241,034	232,504	421,893	895,431	0.97	0.87	1.07	0.99
11 Frederick	127,799	106,302	230,353	464,454	144,834	105,886	239,478	490,198	0.88	1.00	0.96	0.95
12 Carroll	79,650	78,789	170,175	328,614	74,869	81,332	155,919	312,120	1.06	0.97	1.09	1.05
13 Howard	139,019	135,790	302,335	577,144	137,973	132,018	281,848	551,839	1.01	1.03	1.07	1.05
14 Anne Arundel	245,344	241,820	519,894	1,007,058	248,422	269,742	533,098	1,051,262	0.99	0.90	0.98	0.96
15 Calvert	48,821	40,259	88,475	177,555	47,951	43,284	99,257	190,492	1.02	0.93	0.89	0.93
16 St. Mary's	56,872	46,750	98,760	202,382	77,477	44,551	97,723	219,751	0.73	1.05	1.01	0.92
17 Charles	80,716	67,873	147,779	296,368	77,225	71,199	137,396	285,820	1.05	0.95	1.08	1.04
18 Fauquier	34,495	27,010	57,868	119,373	31,760	23,278	51,017	106,055	1.09	1.16	1.13	1.13
19 Stafford	65,332	57,085	127,567	249,984	63,140	64,931	110,213	238,284	1.03	0.88	1.16	1.05
20 Clarke/Jefferson	33,045	26,592	55,712	115,349	31,328	20,156	53,038	104,522	1.05	1.32	1.05	1.10
21 F'burg/Spotsylvania	61,525	55,214	114,669	231,408	60,263	63,382	103,800	227,445	1.02	0.87	1.10	1.02
22 King George	12,187	9,733	21,157	43,077	14,098	4,878	21,058	40,034	0.86	2.00	1.00	1.08
<b>Grand Total</b>	<b>3,521,519</b>	<b>2,882,135</b>	<b>6,420,919</b>	<b>12,824,573</b>	<b>3,521,473</b>	<b>2,882,122</b>	<b>6,420,909</b>	<b>12,824,504</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>

**Table 3: Estimated and Observed Motorized Trip Attractions**

Jurisdiction	Estimated Motorized Attractions						Observed Motorized Attractions						Est./Obs. Motorized Attractions					
	HBW	HBS	HBO	NHW	NHO	Total	HBW	HBS	HBO	NHW	NHO	Total	HBW	HBS	HBO	NHW	NHO	Total
1 DC Core	611,443	61,131	206,959	104,623	74,378	1,058,534	641,056	43,128	206,192	125,471	61,018	1,076,865	0.95	1.42	1.00	0.83	1.22	0.98
2 DC NonCore	248,796	168,789	437,082	95,999	165,102	1,115,768	238,579	97,280	419,668	103,509	137,324	996,360	1.04	1.74	1.04	0.93	1.20	1.12
3 Montgomery	468,679	411,256	914,015	230,725	401,853	2,426,528	456,248	449,950	1,109,212	231,729	468,706	2,715,845	1.03	0.91	0.82	1.00	0.86	0.89
4 Prince George	310,412	413,377	787,392	168,260	399,761	2,079,202	318,140	332,007	667,416	179,977	316,879	1,814,419	0.98	1.25	1.18	0.93	1.26	1.15
5 Arlington Core	63,454	8,205	40,064	22,362	12,524	146,609	64,941	4,901	16,006	16,402	7,891	110,141	0.98	1.67	2.50	1.36	1.59	1.33
6 Arlington NonCore	135,080	97,101	184,690	55,958	89,211	562,040	156,763	86,327	194,736	64,692	57,998	560,516	0.86	1.12	0.95	0.86	1.54	1.00
7 Alexandria	114,898	67,255	137,113	46,425	63,705	429,396	83,823	58,400	130,732	45,174	74,775	392,904	1.37	1.15	1.05	1.03	0.85	1.09
8 Fairfax	601,389	517,179	1,093,741	300,721	508,064	3,021,094	612,734	557,832	1,204,248	310,566	499,228	3,184,608	0.98	0.93	0.91	0.97	1.02	0.95
9 Loudoun	121,394	107,870	274,496	60,035	115,835	679,630	103,236	118,643	264,554	55,617	116,682	658,732	1.18	0.91	1.04	1.08	0.99	1.03
10 Prince William	125,314	212,245	367,620	70,709	203,329	979,217	132,271	227,606	391,896	75,948	207,942	1,035,663	0.95	0.93	0.94	0.93	0.98	0.95
11 Frederick	113,317	99,139	229,337	57,828	104,961	604,582	97,779	98,552	210,981	55,530	123,482	586,324	1.16	1.01	1.09	1.04	0.85	1.03
12 Carroll	57,737	53,987	154,322	28,405	64,642	359,093	49,306	83,673	160,124	25,562	82,844	401,509	1.17	0.65	0.96	1.11	0.78	0.89
13 Howard	138,245	114,432	304,407	58,932	123,663	739,679	107,979	138,268	291,550	49,932	124,458	712,187	1.28	0.83	1.04	1.18	0.99	1.04
14 Anne Arundel	250,984	265,305	545,039	119,737	270,400	1,451,465	205,803	264,141	511,990	116,602	261,204	1,359,740	1.22	1.00	1.06	1.03	1.04	1.07
15 Calvert	30,316	34,109	73,623	16,267	38,395	192,710	22,263	27,418	105,189	16,297	45,001	216,168	1.36	1.24	0.70	1.00	0.85	0.89
16 St. Mary's	49,523	45,037	99,660	25,831	51,122	271,173	65,702	43,270	87,981	41,994	60,151	299,098	0.75	1.04	1.13	0.62	0.85	0.91
17 Charles	53,634	79,575	127,994	31,561	79,910	372,674	42,573	81,890	129,107	34,518	90,923	379,011	1.26	0.97	0.99	0.91	0.88	0.98
18 Fauquier	21,455	22,066	49,997	10,430	24,251	128,199	14,923	18,638	43,386	5,574	28,094	110,615	1.44	1.18	1.15	1.87	0.86	1.16
19 Stafford	37,609	31,189	109,860	17,207	36,262	232,127	30,201	54,587	86,766	19,147	50,813	241,514	1.25	0.57	1.27	0.90	0.71	0.96
20 Clarke/Jefferson	23,248	17,259	52,243	11,074	22,630	126,454	17,412	18,471	51,083	3,693	24,168	114,827	1.34	0.93	1.02	3.00	0.94	1.10
21 F'burg/Spotsylvania	50,173	54,611	120,049	23,406	56,835	305,074	44,596	74,255	122,685	28,469	73,735	343,740	1.13	0.74	0.98	0.82	0.77	0.89
22 King George	5,799	3,429	17,181	2,305	4,663	33,377	14,891	2,865	15,439	4,720	3,744	41,659	0.39	1.20	1.11	0.49	1.25	0.80
Grand Total	3,632,899	2,884,546	6,326,884	1,558,800	2,911,496	17,314,625	3,521,219	2,882,102	6,420,941	1,611,123	2,917,060	17,352,445	1.03	1.00	0.99	0.97	1.00	1.00

**Table 4: Estimated and Observed Non-Motorized Trip Productions (HB Purposes only)**

Jurisdiction	Estimated Nonmotorized Productions Total	Observed Nonmotorized Productions Total	Est./Obs. NonMotorized Productions Total
1 DC Core	72,795	63,993	1.14
2 DC NonCore	173,104	205,081	0.84
3 Montgomery	134,918	188,730	0.71
4 Prince George	91,355	84,809	1.08
5 Arlington Core	5,603	2,097	2.67
6 Arlington NonCore	67,867	67,556	1.00
7 Alexandria	42,878	39,660	1.08
8 Fairfax	136,506	103,581	1.32
9 Loudoun	22,892	20,635	1.11
10 Prince William	33,522	28,914	1.16
11 Frederick	17,972	26,471	0.68
12 Carroll	8,644	7,909	1.09
13 Howard	24,113	24,867	0.97
14 Anne Arundel	44,005	31,133	1.41
15 Calvert	4,166	6,304	0.66
16 St. Mary's	4,697	918	5.12
17 Charles	10,257	8,789	1.17
18 Fauquier	2,526	644	3.92
19 Stafford	7,602	1,617	4.70
20 Clarke/Jefferson	2,395	2,330	1.03
21 F'burg/Spotsylvania	7,444	3,074	2.42
22 King George	0	0	N/A
Grand Total	915,261	919,112	1.00

Note: Only home-based trips are included

**Table 5: Estimated and Observed Non-Motorized Trip Attractions (All Purposes)**

Jurisdiction	Estimated Total	Observed Total	Est/Obs.
1 DC Core	402,998	389,005	1.04
2 DC NonCore	254,861	276,051	0.92
3 Montgomery	184,567	268,431	0.69
4 Prince George	118,497	117,302	1.01
5 Arlington Core	21,676	16,068	1.35
6 Arlington NonCore	102,305	109,865	0.93
7 Alexandria	70,163	66,586	1.05
8 Fairfax	183,812	146,278	1.26
9 Loudoun	28,217	27,807	1.01
10 Prince William	41,119	39,965	1.03
11 Frederick	30,046	36,094	0.83
12 Carroll	11,927	11,927	1.00
13 Howard	31,115	32,006	0.97
14 Anne Arundel	68,922	49,890	1.38
15 Calvert	6,144	7,156	0.86
16 St. Mary's	8,957	3,483	2.57
17 Charles	13,876	10,388	1.34
18 Fauquier	4,054	1,305	3.11
19 Stafford	9,521	1,504	6.33
20 Clarke/Jefferson	3,449	4,459	0.77
21 F'burg/Spotsylvania	11,728	6,480	1.81
22 King George	991	617	1.61
<b>Grand Total</b>	<b>1,608,945</b>	<b>1,622,667</b>	<b>0.99</b>



