ITEM 14 - Information

March 17, 2010

Briefing on Changes in Daily Travel Patterns Based on the Results of the 1994 and 2007/2008 Regional Household Travel Surveys

Staff

Recommendation: Receive briefing on changes in daily travel

patterns based on an analysis of the 1994 and 2007/2008 Household Travel Survey

data.

Issues: None

Background: At the May 20, 2009 meeting, the Board

was briefed on travel and socio-economic results focused on regional activity centers from the 2007/2008 survey of over 10,000

households in the Washington

Metropolitan region.

This analysis of the 1994 and 2007/2008
Household Travel Survey data examines
the demographic, transportation and land
use factors that are influencing changes in
daily travel by transit, walking and biking,
and compares daily travel patterns for
households living within regional activity
centers with households in other

geographic areas.

National Capital Region Transportation Planning Board

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MEMORANDUM

March 11, 2010

To: Transportation Planning Board

From: Robert E. Griffiths,

Technical Services Director, DTP

Subject: Changes in Daily Travel Patterns based on the

Results of the 1994 and 2007/2008 Regional Household Travel Surveys

Staff has now had the opportunity to begin a more detailed analysis of the results of the 2007/2008 Regional Household Travel Survey and to compare these results with the data from the 1994 Household Travel Survey. This analysis reveals some very interesting changes in daily travel patterns and the demographic, transportation and land use factors that may be influencing these changes. Staff will be briefing the TPB on these significant changes its March 17, 2010 meeting.

Attached to this memorandum are four data tables highlighting some of the significant changes in daily travel patterns between the 1994 and 2007/2008 Regional Travel Surveys. The 2007/2008 data in these data tables have been seasonally adjusted to be directly comparable with the 1994 Travel Survey that was conducted only on non-holiday weekdays in the Spring and Fall of 1994. Also, because the 1994 Travel Survey only collected travel data for persons 5 and older, the data for the 2007/2008 Travel Survey in these tables are similarly presented for persons ages 5 or older. Because of statistical sample size considerations, data for the cities of Fairfax and Falls Church are included with travel data for Fairfax County and data for the cities of Manassas and Manassas Park are included with travel data for Prince William County. In Tables 3 and 4, jurisdictional data has been grouped by Core Jurisdictions, Inner Suburbs and Outer Suburbs subareas for statistical analysis reasons.

I look forward to briefing the TPB on the analysis of the 1994 and 2007/2008 Regional Household Travel Survey data on March 17^{th} .

Table 1
Change in Daily Household Trip Rates
by Jurisdiction
1994 - 2007

	1994	2007/2008	%
Jurisdiction	Trip Rate	Trip Rate	Change
District of Columbia,DC	6.9	6.6	-5%
Arlington County,VA	7.9	7.4	-6%
Alexandria,VA	7.3	7.2	-1%
Core Jursidictions	7.2	6.9	-4%
Montgomery County.MD	9.9	9.3	-6%
Prince George's County,MD	8.7	7.5	-14%
Fairfax County/Cities,VA	9.7	8.8	-9%
Inner Suburbs	9.4	8.6	-9%
Loudoun County,VA	9.3	8.0	-14%
Prince William County/Cities,VA	10.2	9.0	-12%
Frederick County,MD	9.5	9.8	4%
Calvert County,MD	9.4	9.5	0%
Charles County,MD	10.1	9.3	-7%
Stafford County,VA	10.4	10.1	-3%
Outer Suburbs	9.9	9.1	-8%
Region	8.9	8.3	-7%

Source: 1994 & 2007/2008 TPB Household Travel Surveys

Note: For comparison purposes with the 1994 HTS the 2007/2008 HTS data have been seasonally adjusted to represent non-holiday

weekdays in the Spring and Fall

Table 2 Change in Household Trip Rates 1994-2007/2008

		1004 2001/2	-000	1994	2007/2008	%
	Household Size	1994_%	2007/2008_%	HH Trip Rate	HH Trip Rate	<u>Change</u>
Regional Average	1 - Person HH	22%	31%	4.2	3.9	-7 %
	2 - Person HH	33%	31%	7.2	7.1	-2 %
	3 - Person HH	18%	15%	9.8	9.8	0%
	4+ - Person HH	26%	23%	14.6	14.9	2%
	All Households	100%	100%	8.9	8.3	-7%
By Jurisdiction						
District of Columbia,DC	1 - Person HH	37%	49%	4.0	3.9	0%
	2 - Person HH	35%	25%	7.1	7.0	-1%
	3 - Person HH	13%	13%	9.1	9.4	3 %
	4+ - Person HH	15%	13%	11.9	13.0	9%
	All Households	100%	100%	6.9	6.6	-5%
Arlington County,VA	1 - Person HH	40%	43%	4.0	4.2	4%
	2 - Person HH	32%	30%	<i>7.5</i>	6.9	-8%
	3 - Person HH	17%	11%	11.3	10.6	-6%
	4+ - Person HH	12%	15%	17.0	<i>15.2</i>	-11%
	All Households	100%	100%	7.9	7.4	-6%
Alexandria,VA	1 - Person HH	42%	46%	4.5	4.3	-4%
	2 - Person HH	34%	28%	7.2	8.0	10%
	3 - Person HH	11%	15%	9.7	8.6	-11%
	4+ - Person HH	14%	10%	14.1	16.3	15%
	All Households	100%	100%	7.3	<i>7.2</i>	-1%
Montgomery County.MD	1 - Person HH	18%	25%	4.2	3.8	-9 %
	2 - Person HH	34%	33%	7.4	6.9	-7%
	3 - Person HH	18%	15%	10.5	10.7	2%
	4+ - Person HH	31%	27 %	15.4	16.4	7%
	All Households	100%	100%	9.9	9.3	-6%
Prince George's County,MD	1 - Person HH	21%	32%	4.4	3.8	-14%
	2 - Person HH	33%	29%	7.1	6.7	-5%
	3 - Person HH	20%	17%	9.3	8.6	-7%
	4+ - Person HH	27%	22%	13.4	12.9	<i>-3%</i>
	All Households	100%	100%	8.7	<i>7.5</i>	-14%
Fairfax County/Cities,VA	1 - Person HH	17%	27%	4.6	3.8	-18%
	2 - Person HH	34%	31%	7.4	7.3	0%
	3 - Person HH	21%	16%	9.5	9.7	2%
	4+ - Person HH	28%	26%	15.5	15.1	-3%
	All Households	100%	100%	9.7	8.8	-9%

Table 2 Change in Household Trip Rates 1994-2007/2008

				1994	2007/2008	%
	Household Size	1994_%	2007/2008_%	HH Trip Rate	HH Trip Rate	Change
Loudoun County,VA	1 - Person HH	16%	29%	3.2	3.4	5%
	2 - Person HH	30%	32%	7.0	7.2	3%
	3 - Person HH	20%	15%	10.9	10.5	-4%
	4+ - Person HH	33%	24%	13.3	13.0	-2 %
	All Households	100%	100%	9.3	8.0	-14%
Prince William County/Cities,VA	1 - Person HH	10%	22%	4.2	4.0	-4%
	2 - Person HH	30%	35%	6.8	7.1	5%
	3 - Person HH	22%	12%	10.0	9.8	-2 %
	4+ - Person HH	37%	30%	14.8	14.4	-3 %
	All Households	100%	100%	10.2	9.0	-1 2 %
Frederick County,MD	1 - Person HH	16%	20%	3.8	4.2	10%
	2 - Person HH	34%	38%	7.4	7.6	2%
	3 - Person HH	21%	16%	9.7	11.1	14%
	4+ - Person HH	30%	26%	14.7	16.7	14%
	All Households	100%	100%	9.5	9.8	4%
Charles County,MD	1 - Person HH	9%	19%	3.4	4.3	27%
harles County,MD	2 - Person HH	35%	34%	6.2	7.4	19%
	3 - Person HH	19%	15%	10.4	7.9	-24 %
	4+ - Person HH	37%	31%	15.2	15.3	1%
	All Households	100%	100%	10.1	9.3	-7%
Calvert County,MD	1 - Person HH	8%	14%	4.5	4.6	3%
	2 - Person HH	32%	35%	6.5	5.6	-14%
	3 - Person HH	27%	21%	9.1	11.0	20%
	4+ - Person HH	33%	30%	13.7	15.3	11%
	All Households	100%	100%	9.4	9.5	0 %
Stafford County,VA	1 - Person HH	9%	25%	2.4	3.9	64%
	2 - Person HH	33%	25%	6.8	6.8	-1%
	3 - Person HH	14%	25%	9.4	11.4	22%
	4+ - Person HH	44%	25%	15.2	18.3	20%
	All Households	100%	100%	10.4	10.1	-3%

Table 3
Change in Per Person Trip Rates
1994 - 2007/2008

	Age	1994	2007/2008	1994	2007/2008	1994	2007/2008	%
-	<u>Group</u>	HH Pop	HH Pop	<u>Trips</u>	<u>Trips</u>	Trip Rate	Trip Rate	Change
Regional Average	0-4		320,189		999,088		3.1	
	5-15	545,180	748,044	1,783,554	2,331,122	3.3	3.1	-5%
	16-24	376,801	347,427	1,385,523	1,157,138	3.7	3.3	-9%
	25-34	662,447	489,083	2,633,435	1,789,114	4.0	3.7	-8%
	35-44	779,068	734,399	3,295,343	3,109,243	4.2	4.2	0%
	45-54	618,499	761,517	2,508,576	3,113,698	4.1	4.1	1%
	55-64	302,651	616,160	1,122,121	2,275,287	3.7	3.7	0%
	65+	385,511	503,114	1,085,485	1,677,681	2.8	3.3	18%
	5-65+	3,670,156	4,199,744	13,814,037	15,453,283	3.8	3.7	-2%
	0-65+		4,519,933		16,452,371		3.7	
			-	-				
Core Jurisdictions	0-4		62,085		202,484		3.3	
	5-15	63,230	100,773	193,786	290,448	3.1	2.9	-6%
	16-24	80,915	54,249	273,380	157,150	3.4	2.9	-14%
	25-34	151,980	149,819	605,286	597,272	4.0	4.0	0%
	35-44	149,280	135,615	630,131	582,566	4.2	4.3	2%
	45-54	129,688	112,379	517,708	482,371	4.0	4.3	8%
	55-64	68,985	106,829	238,298	414,977	3.5	3.9	12%
	65+	108,763	83,082	299,951	256,212	2.8	3.1	12%
	5-65+	752,840	742,745	2,758,540	2,780,996	3.7	3.7	2%
Inner Suburbs	0-4		173,398		540,206		3.1	
	5-15	346,369	448,172	1,136,703	1,389,345	3.3	3.1	-6%
	16-24	210,961	201,239	802,091	695,340	3.8	3.5	-9%
	25-34	371,595	224,630	1,476,428	746,452	4.0	3.3	-16%
	35-44	489,760	406,344	2,099,676	1,692,653	4.3	4.2	-3%
	45-54	372,900	451,269	1,543,523	1,862,895	4.1	4.1	0%
	55-64	180,134	361,261	701,038	1,296,164	3.9	3.6	-8%
	65+	229,914	308,091	669,893	1,039,113	2.9	3.4	16%

Source: 1994 2007/2008 TPB Household Travel Surveys

Note: For comparison purposes with the 1994 HTS the 2007/2008

Table 3
Change in Per Person Trip Rates
1994 - 2007/2008

	Age	1994	2007/2008	1994	2007/2008	1994	2007/2008	%
<u>-</u>	<u>Group</u>	HH Pop	HH Pop	<u>Trips</u>	<u>Trips</u>	Trip Rate	Trip Rate	Change
	5-65+	2,201,632	2,401,006	8,429,352	8,721,961	3.8	3.6	-5%
Outer Suburbs	0-4		84,706		256,398		3.0	
	5-15	135,581	199,100	453,065	651,330	3.3	3.3	-2 %
	16-24	84,925	91,939	310,052	304,648	3.7	3.3	-9%
	25-34	138,872	114,634	551,721	445,390	4.0	3.9	-2 %
	35-44	140,028	192,440	565,536	834,024	4.0	4.3	7 %
	45-54	115,912	197,870	447,345	768,432	3.9	3.9	1%
	55-64	53,533	148,070	182,785	564,146	3.4	3.8	12%
	65+	46,834	111,941	115,641	382,356	2.5	3.4	38%
	5-65+	715,684	1,055,994	2,626,145	3,950,326	3.7	3.7	2%

Source: 1994 & 2007 TPB Household Travel Surveys

Table 4
Change in Daily Travel Modal Shares
1994 - 2007/2008

	Age Change in Mode Share 1994 to 2007/2008										
-	<u>Group</u>	<u>Total</u>	<u>Auto D</u>	<u>Transit</u>	<u>Auto P</u>	<u>Walk</u>	<u>Bike</u>	<u>Other</u>			
Regional Average	0-4										
	5-15	0.0%	0.0%								
	16-24	0.0%	-6.9%								
	25-34	0.0%	-6.4%								
	35-44	0.0%	0.9%	-0.2%	-3.9%	2.8%	0.4%	0.0%			
	45-54	0.0%	2.5%	0.6%	-3.8%	0.8%	0.3%	-0.4%			
	55-64	0.0%	-6.6%	3.8%	-1.1%	3.4%	0.6%	0.0%			
	65+	0.0%	0.2%	-0.5%	0.0%	-0.4%	0.2%	0.5%			
	5-65+	0.0%	-2.2%	0.7%	-0.5%	1.6%	0.2%	0.2%			
Core Jurisdictions	0-4										
	5-15	0.0%	0.0%	7.7%	-16.1%	4.5%	1.5%	2.4%			
	16-24	0.0%	-3.9%	12.0%	-10.4%	-0.2%	-0.8%	3.3%			
	25-34	0.0%	-10.1%	6.0%	-3.5%	8.7%	-0.1%	-0.9%			
	35-44	0.0%	-0.3%	-2.4 %	-2.1 %	4.5%	1.0%	-0.6%			
	45-54	0.0%	-1.9%	0.3%	1.0%	-0.3%	1.0%	-0.1%			
	55-64	0.0%	- 8.2 %	3.3%	-3.2%	8.1%	1.0%	-1.0%			
	65+	0.0%	-0.3%	3.0%	-7.4%	2.7%	1.0%	1.0%			
	5-65+	0.0%	-4.6%	2.6%	-3.4%	4.6%	0.6%	0.2%			
Inner Suburbs	0-4										
	5-15	0.0%	0.0%	-0.1%	2.1%	-0.6%	0.0%	-1.3%			
	16-24	0.0%	-9.6%	2.9%	2.1%	2.6%	0.4%	1.6%			
	25-34	0.0%	-3.0%	-1.3%	1.3%	1.4%	1.1%	0.5%			
	35-44	0.0%	-0.8%	0.8%	-3.5%	3.0%	0.3%	0.3%			
	45-54	0.0%	1.8%	1.6%	-5.3%	2.3%	0.1%	-0.5%			
	55-64	0.0%	-6.4%	5.0%	-2.7 %	3.1%	0.6%	0.4%			
	65+	0.0%	-1.5%	0.0%	-0.1%	1.1%	0.1%	0.4%			
	5-65+	0.0%	-2.9%	0.8%	-0.5%	1.8%	0.3%	0.6%			

Source: 1994 2007/2008 TPB Household Travel Surveys

Note: For comparison purposes with the 1994 HTS the 2007/2008

Table 4
Change in Daily Travel Modal Shares
1994 - 2007/2008

	Age Change in Mode Share 1994 to 2007/2008										
-	<u>Group</u>	<u>Total</u>	<u>Auto D</u>	<u>Transit</u>	<u>Auto P</u>	<u>Walk</u>	<u>Bike</u>	<u>Other</u>			
Outer Suburbs	0-4										
	5-15	0.0%	0.0%	-0.2%	11.8%	-1.8%	-1.9%	- 7.9 %			
	16-24	0.0%	-8.4%	-0.4%	2.7%	1.5%	-0.7%	5.3%			
	25-34	0.0%	1.4%	0.6%	-0.5%	-0.2%	-0.2%	-1.1%			
	35-44	0.0%	2.6%	1.0%	-6.1%	2.7%	0.2%	-0.3%			
	45-54	0.0%	1.8%	1.5%	-4.6%	0.7%	0.7%	-0.1%			
	55-64	0.0%	-8.5%	2.8%	3.4%	2.4%	0.2%	-0.4%			
	65+	0.0%	-3.0%	0.8%	4.5%	-2.6%	0.0%	0.4%			
	5-65+	0.0%	-0.1%	0.9%	0.4%	0.5%	-0.3%	-1.5%			

Table 4
Change in Daily Travel Modal Shares
1994 - 2007/2008

	Age	Mode Sh	are in 199	94				Mode Sh	are in 200	7/2008			
=	<u>Group</u>	Auto D	<u>Transit</u>	Auto P	<u>Walk</u>	<u>Bike</u>	Other	Auto D	Transit	Auto P	<u>Walk</u>	<u>Bike</u>	<u>Other</u>
Regional Average	0-4							0.0%	1.3%	86.2%	10.7%	0.3%	1.5%
	5-15	0.0%	1.3%	57.8%	12.3%	1.5%	27.0%	0.0%	2.3%	60.2%	12.1%	1.1%	24.2%
	16-24	54.1%	6.3%	25.7%	7.8%	0.9%	5.2%	47.2%	8.6%	26.7%	8.7%	0.8%	8.0%
	25-34	73.1%	8.0%	9.5%	7.7%	0.6%	1.2%	66.7%	10.3%	8.7%	12.3%	1.1%	0.9%
	35-44	75.3%	6.3%	9.2%	7.7%	0.3%	1.1%	76.2%	6.1%	5.3%	10.5%	0.7%	1.1%
	45-54	75.2%	6.1%	10.4%	6.9%	0.2%	1.2%	77.7%	6.8%	6.6%	7.6%	0.6%	0.8%
	55-64	80.1%	4.1%	9.7%	5.0%	0.1%	1.0%	73.6%	7.9%	8.5%	8.3%	0.7%	1.0%
	65+	74.0%	3.7%	15.7%	5.5%	0.0%	1.0%	74.2%	3.1%	15.7%	5.2%	0.3%	1.6%
	5-65+	63.3%	5.6%	18.0%	7.8%	0.5%	4.9%	61.1%	6.3%	17.4%	9.3%	0.7%	5.1%
Core Jurisdictions	0-4							0.0%	4.7%	73.3%	21.4%	0.2%	0.4%
	5-15	0.0%	7.5%	58.6%	24.4%	1.1%	8.3%	0.0%	15.2%	42.6%	28.9%	2.6%	10.7%
	16-24	33.9%	17.8%	21.7%	20.5%	1.7%	4.4%	30.0%	29.8%	11.3%	20.3%	0.9%	7.6%
	25-34	53.4%	16.2%	9.0%	17.7%	1.8%	1.9%	43.3%	22.2%	5.4%	26.4%	1.6%	1.0%
	35-44	55.2%	15.1%	6.7%	19.7%	0.9%	2.5%	54.9%	12.7%	4.6%	24.1%	1.8%	1.8%
	45-54	59.2%	13.8%	8.3%	16.1%	0.9%	1.7%	57.3%	14.1%	9.3%	15.7%	1.9%	1.6%
	55-64	64.0%	11.0%	9.3%	13.2%	0.0%	2.5%	55.8%	14.3%	6.1%	21.3%	1.0%	1.4%
	65+	58.5%	9.8%	17.9%	11.8%	0.1%	1.9%	58.1%	12.8%	10.5%	14.5%	1.1%	2.9%
	5-65+	50.7%	13.9%	14.1%	17.6%	1.0%	2.8%	46.1%	16.5%	10.7%	22.1%	1.6%	2.9%
Inner Suburbs	0-4							0.0%	0.7%	87.4%	9.4%	0.5%	2.0%
	5-15	0.0%	0.7%	59.2%	11.9%	1.3%	27.0%	0.0%	0.6%	61.3%	11.2%	1.2%	25.6%
	16-24	58.3%	4.5%	26.0%	5.4%	0.6%	5.2%	48.7%	7.3%	28.1%	8.0%	1.1%	6.8%
	25-34	77.1%	7.1%	9.3%	5.6%	0.3%	0.7%	74.1%	5.8%	10.6%	7.0%	1.3%	1.2%
	35-44	78.7%	5.0%	9.8%	5.5%	0.2%	0.8%	77.8%	5.8%	6.3%	8.5%	0.5%	1.0%
	45-54	78.5%	5.0%	10.3%	5.0%	0.1%	1.1%	80.3%	6.5%	5.1%	7.2%	0.2%	0.6%
	55-64	84.3%	2.5%	9.3%	3.2%	0.2%	0.5%	77.9%	7.5%	6.6%	6.3%	0.7%	0.9%
	65+	81.1%	1.5%	14.1%	2.9%	0.0%	0.4%	79.6%	1.5%	14.0%	3.9%	0.1%	0.8%
Courses 1004 2007/2009 TDB Uc	5-65+	66.5%	4.2%	18.3%	5.9%	0.4%	4.7%	63.6%	5.0%	17.9%	7.6%	0.7%	5.3%

Source: 1994 2007/2008 TPB Household Travel Surveys

Table 4
Change in Daily Travel Modal Shares
1994 - 2007/2008

	Age	Mode Sh	Mode Share in 1994						Mode Share in 2007/2008				
-	<u>Group</u>	<u>Auto D</u>	<u>Transit</u>	<u>Auto P</u>	<u>Walk</u>	<u>Bike</u>	<u>Other</u>	<u>Auto D</u>	<u>Transit</u>	<u>Auto P</u>	<u>Walk</u>	<u>Bike</u>	<u>Other</u>
Outer Suburbs	0-4							0.0%	0.0%	93.8%	4.9%	0.0%	1.3%
	5-15	0.0%	0.2%	54.2%	8.3%	2.1%	35.1%	0.0%	0.0%	65.9%	6.6%	0.2%	27.3%
	16-24	61.1%	0.9%	28.6%	2.9%	0.7%	5.7%	52.7%	0.5%	31.3%	4.5%	0.0%	11.0%
	25-34	84.1%	1.4%	10.3%	2.5%	0.2%	1.5%	85.4%	2.0%	9.8%	2.3%	0.0%	0.4%
	35-44	85.3%	1.2%	10.0%	2.4%	0.1%	1.0%	87.9%	2.2%	3.9%	5.0%	0.3%	0.7%
	45-54	82.2%	1.2%	13.0%	2.8%	0.0%	0.8%	84.0%	2.7%	8.5%	3.5%	0.7%	0.7%
	55-64	85.1%	1.2%	11.4%	1.1%	0.1%	1.1%	76.7%	4.1%	14.8%	3.4%	0.3%	0.8%
	65+	73.4%	0.2%	19.3%	4.8%	0.0%	2.2%	70.3%	1.0%	23.8%	2.2%	0.0%	2.6%
	5-65+	66.4%	1.0%	20.9%	3.6%	0.5%	7.6%	66.4%	1.9%	21.3%	4.1%	0.3%	6.0%