

Household Travel Survey Findings

Technical Committee
Cooperative Forecasting Group
September 15, 2004



Background

◆ One Day Travel Survey

- 3,519 Households (388 weekend/3131 weekday)
- 7,825 Persons
- 5,639 Vehicles
- 28,895 Unlinked Trips/27,365 Linked Trips

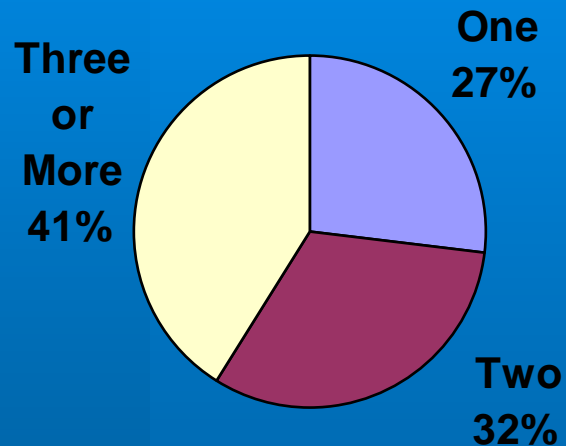
◆ Survey Period: June 2001 – July 2002

Clean Survey and Data Preparation

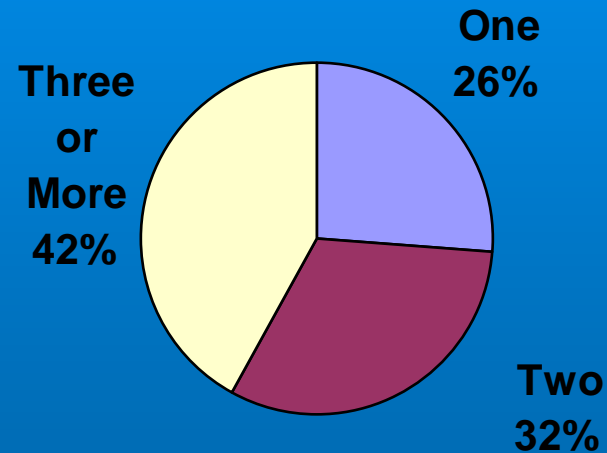
- ◆ **Geocoding Verified**
 - Household
 - Trip (Street Location, Intersection, ZIP, Unknown)
 - Business Name, Trip Type, Mode, and Other Members
- ◆ **Reviewed/Verified Trip Type (Work, School, Shopping, Service)**
- ◆ **Linked Trips (Serve Passenger, Stop for Gas and Change Modes)**
- ◆ **Create Trip Tours**

Baltimore Region Share of Households by Persons/HH

2000 Census



2001 NHTS



Household Size

	2001 NHTS	2000 Census				
Inside Baltimore City	2.50	2.43				
Outside Baltimore City	2.66	2.59				
Baltimore Region	2.62	2.54				
		1980 Census	1990 Census	1993 HTS	2000 Census	2001 NHTS
Baltimore Region		2.80	2.64	2.64	2.54	2.62

Household Average Person Trip Rates by Size (linked)

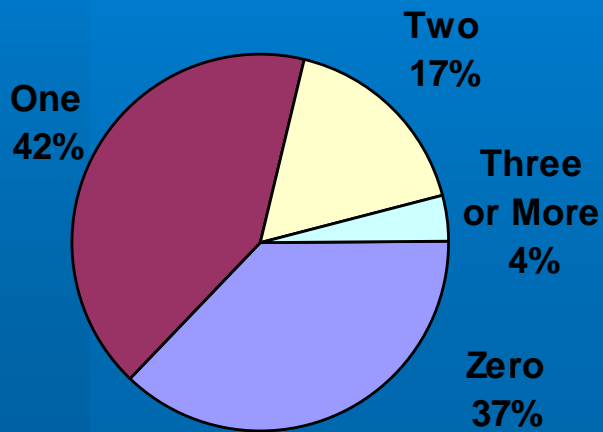
	Person Trips (Motorized and Non-Motorized)				
	One	Two	Three	Four or More	Total
Baltimore City	3.04	6.64	8.15	13.36	6.72
Anne Arundel County	3.43	7.48	10.81	16.53	9.77
Baltimore County	3.26	6.98	10.42	14.51	8.48
Carroll County	3.16	6.86	11.52	15.53	9.70
Harford County	3.29	7.05	11.35	13.60	8.94
Howard County	4.42	7.75	9.73	16.52	9.58
Inside City	3.04	6.64	8.15	13.36	6.72
Outside City	3.44	7.18	10.60	15.26	9.09
Baltimore Region	3.28	7.05	10.07	14.87	8.45



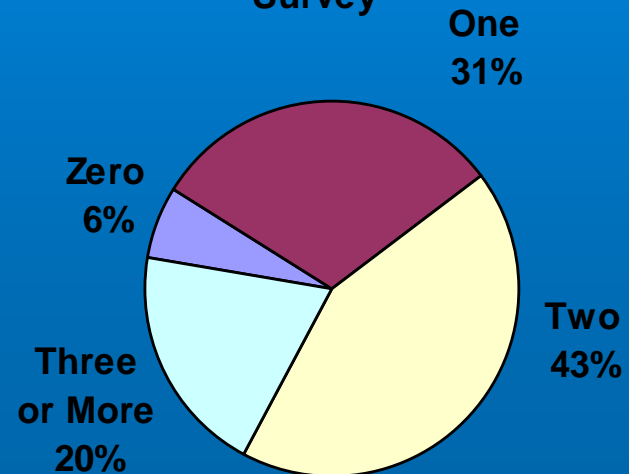
Vehicle Availability

	1990 Census	2001 NHTS	2000 Census
Inside Baltimore City	0.93	0.89	0.95
Outside Baltimore City	1.87	1.86	1.82
Baltimore Region	1.57	1.60	1.59

Inside Baltimore City 2001 NHTS

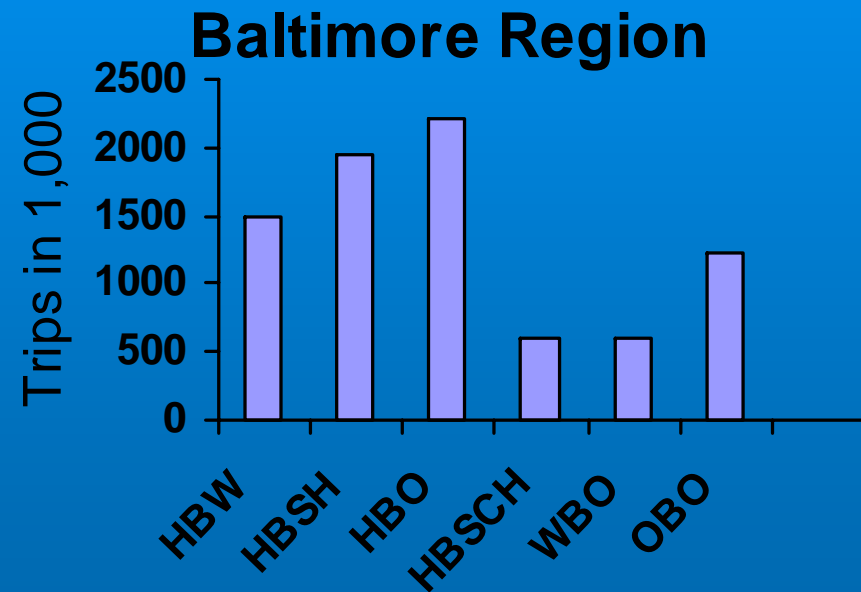
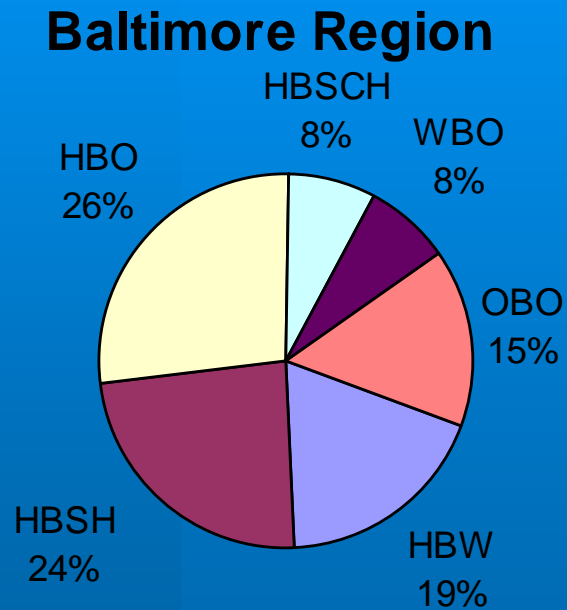


2001 National Household Travel Survey



Baltimore Region Trip Purposes

Person Trips



Baltimore Region Motorized Person Vehicle Miles of Travel

Per Household	HBW	HBSH	HBO	HBSCH	WBO	OBO	All Trips
Inside Baltimore City	10.87	5.64	6.66	1.10	2.91	5.22	32.39
Outside Baltimore City	24.20	12.89	18.22	3.61	6.01	7.84	72.76
Baltimore Region	20.62	10.94	15.11	2.93	5.17	7.13	61.90
Per Person	HBW	HBSH	HBO	HBSCH	WBO	OBO	All Trips
Inside Baltimore City	4.90	2.54	3.00	0.49	1.31	2.35	14.60
Outside Baltimore City	9.34	4.98	7.03	1.39	2.32	3.03	28.09
Baltimore Region	8.28	4.39	6.07	1.18	2.08	2.86	24.86
Per Trip	HBW	HBSH	HBO	HBSCH	WBO	OBO	All Trips
Inside Baltimore City	9.58	4.65	4.82	3.86	8.24	5.45	6.08
Outside Baltimore City	14.77	6.15	8.52	5.54	9.60	6.16	8.64
Baltimore Region	13.71	5.89	7.81	5.31	9.36	6.01	8.16



Baltimore Region Travel Mode

	Auto Driver	Auto Passenger	Transit Bus	Transit Rail	School Bus	Other	Non Motorized
Inside Baltimore City	39.8%	20.8%	14.4%	1.9%	1.0%	1.5%	20.7%
Outside Baltimore City	61.0%	27.1%	0.7%	0.5%	3.3%	0.1%	7.4%
Baltimore Region	56.4%	25.7%	3.6%	0.8%	2.8%	0.4%	10.2%

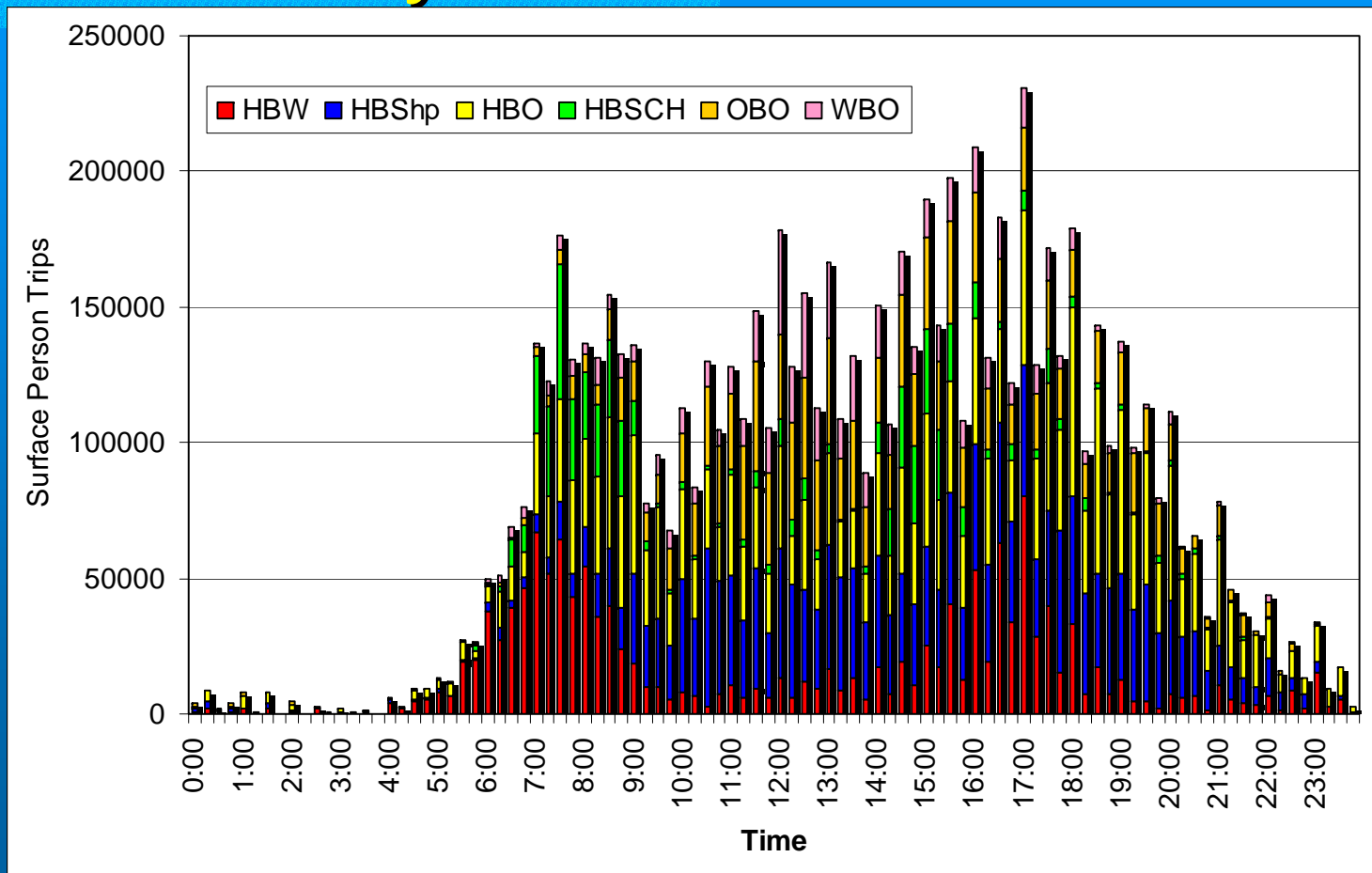


Baltimore Region Travel Mode - HBW

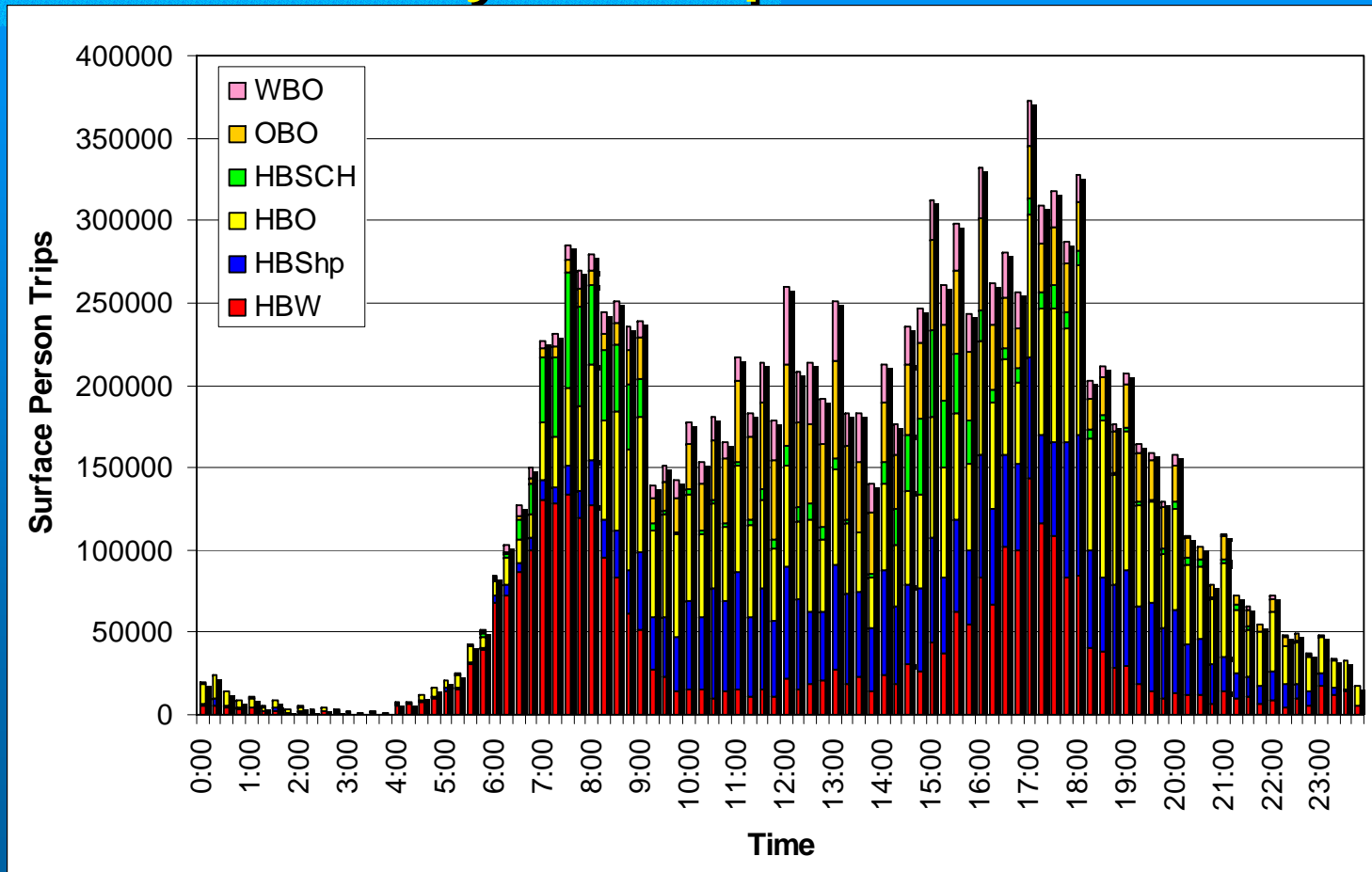
	Auto Driver	Auto Passenger	Transit Bus	Transit Rail	School Bus	Other	Non Motorized
Inside Baltimore City	53.8%	8.4%	20.8%	6.9%	0.1%	9.6%	0.3%
Outside Baltimore City	88.7%	6.1%	0.8%	2.3%	0.0%	2.0%	0.2%
Baltimore Region	81.1%	6.6%	5.1%	3.3%	0.0%	3.6%	0.2%



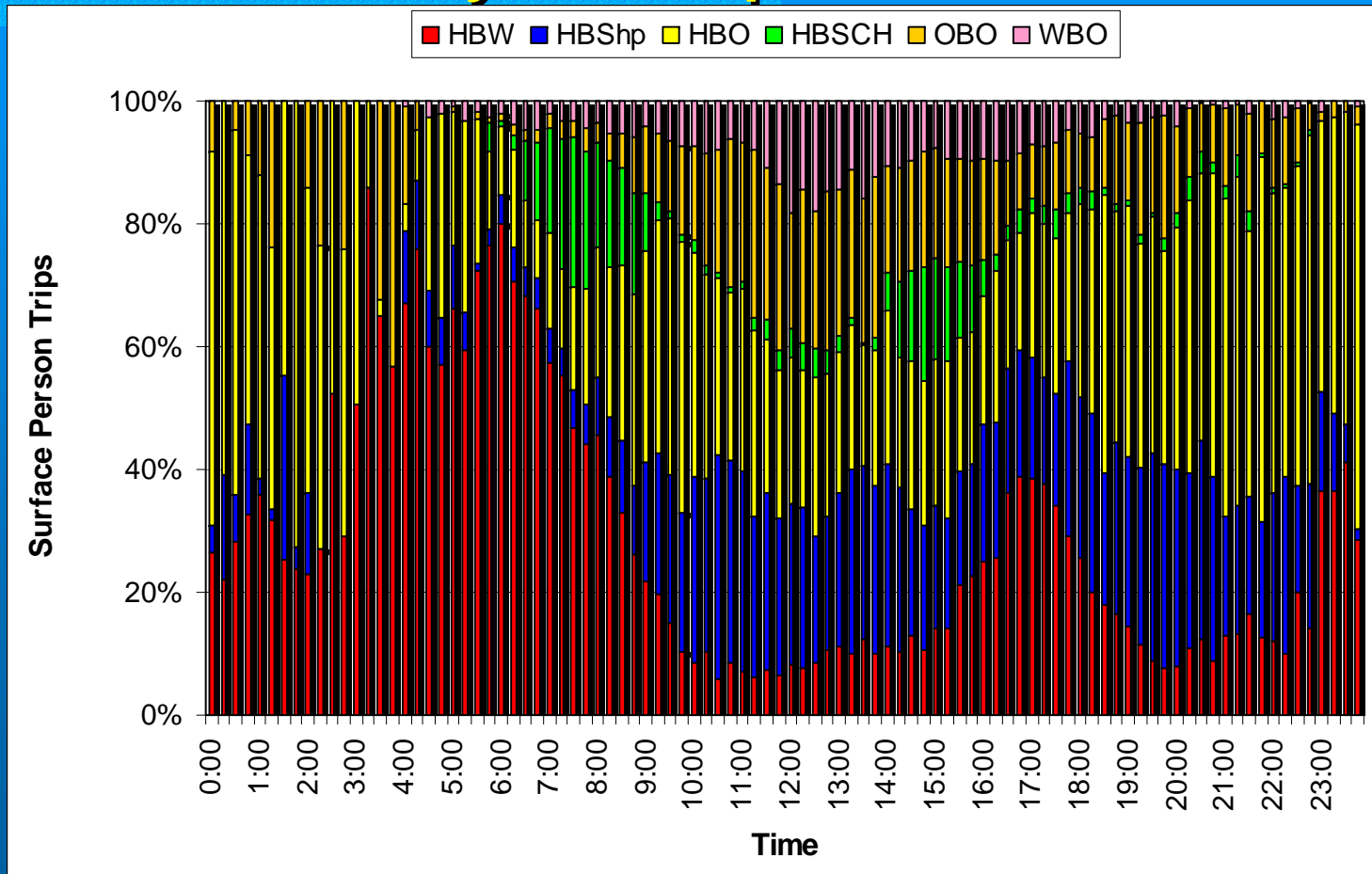
Baltimore Region Person Trips Time of Day - Start



Baltimore Region Person Trips Time of Day – Trips in Motion



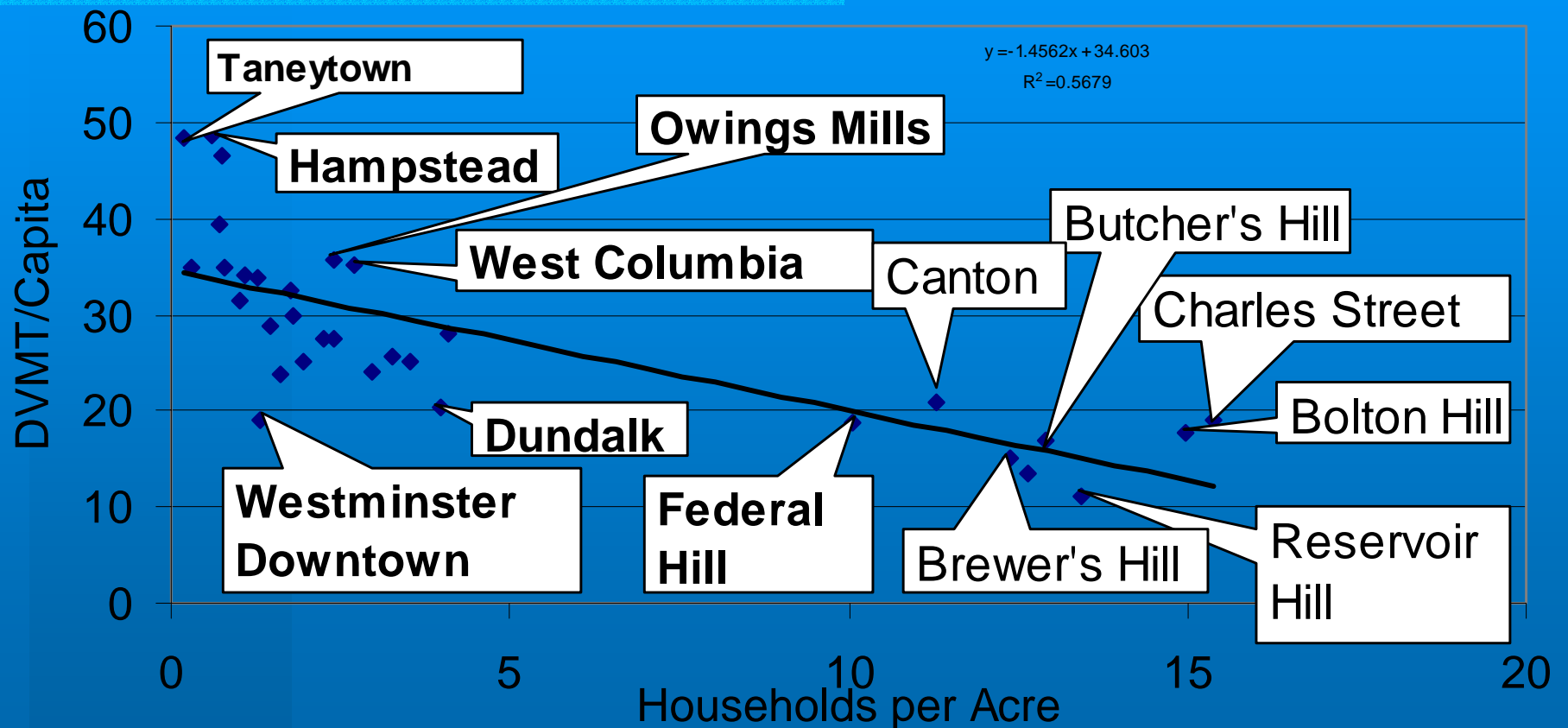
Baltimore Region Person Trips Time of Day – Trips in Motion



Cross Class Analysis

- ◆ Identified 32 Clusters (Neighborhood) of Surveyed Households
- ◆ 1,089 Households (<10 to 190 records)
- ◆ Capturing
 - Different Landuse from Rural to City Center (.15 HH per Acre – 19.14 HH per Acre)
 - Different Accessibility to Jobs using Different Modes

Daily Per Capita VMT by Residential Density



Next Steps

- ◆ **Finalize Findings Report**
- ◆ **Continue Work Using Cross Classification**
 - Add Design, Diversification, and Density Variables
- ◆ **Estimate Models for Household Characteristics**
 - Auto Availability, Worker
- ◆ **Evaluate Trip Generation Models**
 - Trips/Tours