Transportation for the 21st Century Household Travel Survey

TRAVEL SURVEY RESULTS FOR THE DVRPC REGION

PREPARED FOR
DELAWARE VALLEY REGIONAL
PLANNING COMMISSION

BY
NUSTATS RESEARCH & CONSULTING
IN ASSOCIATION WITH
CAMBRIDGE SYSTEMATICS

May 2001

Delaware Valley Regional Planning Commission

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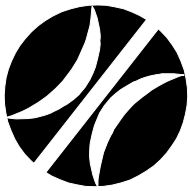
Delaware Valley Regional Planning Commission
The Bourse Building
111 South Independence Mall East
Philadelphia, PA 19106-2582

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty, and intercity agency that provides continuing, comprehensive, and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties, as well as the City of Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.



The DVRPC logo is adapted from the official seal of the Commission and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River flowing through it. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey. The logo combines these elements to depict the areas served by DVRPC.

This report has been prepared by NuStats Research & Consulting in partial fulfillment of the contract between the Delaware Valley Regional Planning Commission and NuStats Research & Consulting to design and conduct a regional household travel survey. The preparation of this report was funded through federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and the Pennsylvania and New Jersey Departments of Transportation. NuStats Research & Consulting is solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

TITLE	Date Published: May, 2001
Transportation for the 21st Century Household Travel Survey	
Travel Survey Results for the DVRPC Region	**Publication No.** 01028

Geographic Area Covered:

Pennsylvania counties of Bucks, Chester, Delaware, Montgomery and Philadelphia (along with a small portion of Berks County); the New Jersey counties of Burlington, Camden, Gloucester and Mercer; and the South Jersey counties of Atlantic, Cape May, Cumberland and Salem.

Key Words:

Household Travel Survey, recruitment interview, Households, Travel Modes, Survey Methods, Results, Travel Data, Travel Modes, Trip Rates, Non-motorized Trips, Transit Trips, Household Vehicle Availability, Employed Residents, Employment, and Household Median and Mean Income.

ABSTRACT

This report documents the methods used to conduct the Transportation for the 21st Century Household Travel Survey, as well as to present survey results. The study was conducted from March through December 2000 under the auspices of the Delaware Valley Regional Planning Commission and the Southern Jersey Transportation Planning Organization and funded through the Pennsylvania and New Jersey Departments of Transportation. Cambridge Systematics provided quality assurance under a subcontract to NuStats.

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EXECUTIVE SUMMARY

The purpose of this report is to document the methods used to conduct the Transportation for the 21st Century Household Travel Survey, as well as to present survey results. The study was conducted from March through December 2000 under the auspices of the Delaware Valley Regional Planning Commission and the Southern Jersey Transportation Planning Organization and funded through the Pennsylvania and New Jersey Departments of Transportation. Cambridge Systematics provided quality assurance under a subcontract to NuStats.

Household travel surveys such as this one are used to obtain information about work and non-work trip generation, trip distribution, modal choice, and traffic assignment as well as to obtain data on average vehicle occupancy. Updated household travel information can be used for modeling purposes as well as transportation planning projects such as high occupancy vehicle lanes, bicycle and pedestrian studies, welfare-to-work programs and development of traffic control studies. Prior to the Transportation for the 21st Century Survey, household travel surveys were conducted by the New Jersey Department of Transportation in 1987 for the New Jersey counties and by the Delaware Valley Regional Planning Commission in 1988 for the Pennsylvania counties. In addition, household travel data for Mercer County was collected as part of the 1997/98 Transportation Futures Project conducted for the North Jersey Transportation Planning Organization.

The study area consisted of the Pennsylvania counties of Bucks, Chester, Delaware, Montgomery and Philadelphia (along with a small portion of Berks County); the New Jersey Delaware Valley counties of Burlington, Camden, Gloucester and Mercer; and the South Jersey counties of Atlantic, Cape May, Cumberland and Salem. The resultant data set contains demographic and travel data on 5,677 households in the 14-county study area. Of the 5,677 households that participated in the study, 2,666 were from the Delaware Valley region of Pennsylvania, 1,551 were from the Delaware Valley region of New Jersey, and 1,460 were from Southern Jersey. Data collection was guided by sampling goals that focused on the geographic location of the household (to the county planning area) and the number of household vehicles available. The resultant data set only contains demographic and travel behavior information for households in which household members provided travel and activity data (regardless of age).

Like all recent household travel surveys, the Transportation for the 21st Century study relied on the willingness of area residents to complete diary records of all travel for a 24-hour period. It was based on telephone interviews of randomly selected households from the 14-county study area. Household recruitment for the study was conducted through the use of a "recruitment interview", in which respondents were informed of the survey, its purpose, and the obligation of all household members to complete the survey. Data on the household and household members were also collected during the recruitment interview. Participating households were assigned a specific "travel day" or 24-hour period on which to record their travel and activities. This travel day typically took place 7 to 10 days after the recruitment interview. Collection of the travel information was done through the use of a "retrieval interview."

There were 4,217 Delaware Valley households that participated in the study. Based on the 1997 DVRPC estimates of 1,964,507 households in the Delaware Valley region, this means that each household that participated in the study represented 466 households in the region when expanded. The 4,217 participating households were comprised of 9,358 people and had 6,926 vehicles available to them. The following is a synopsis of the travel and activity information provided during the course of this study.

Household Vehicle Availability. Data collection was guided by the desire to include in the final data set a sufficient distribution of households by vehicle availability to meet various modeling objectives. The desired goals and the distribution actually achieved are shown in Table E-1. As shown in that table, the goals were met or exceeded, with the exception of zero vehicle households, in which 90% of the goal was achieved. This is largely due to the fact that zero-vehicle households characteristics tend to include lower income households with episodic or no telephone service. It should be noted that zero-vehicle household goals were met in the Center City Philadelphia area, as reflected in the number of walk trips captured in the data collection effort.

Table E-1
Comparison of Sample Goals and Actual Responses by Household Vehicle Availability

Vehicles	Goal	Actual	Percent
0	517	465	90%
1	1,592	1,626	102%
2	2,332	2,366	101%
3+	1,206	1,220	101%
Totals	5,647	5,677	100.50%

Household Activities. All household members tracked travel and activities for a 24-hour period. Of the 40,989 activities reported, there was little variation in the distribution of reported activities across the study area.

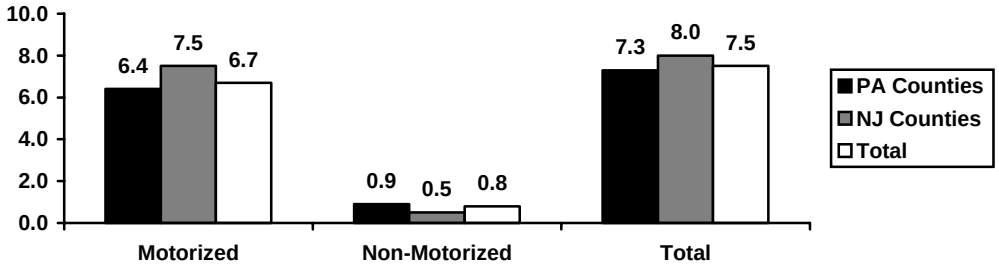
- ***19% were related to family or personal business***. Burlington County residents reported the highest percentage of family/personal business activities while Bucks and Mercer County residents reported the lowest percentage (21% and 18%, respectively).
- ***11% were work-related activities***. Households in Montgomery, Berks and Burlington Counties reported more work activities (12%) while those in Mercer County reported less (10%).
- ***5% were school or school-related activities.***

Trip Purposes. For modeling purposes, it is also important to understand trip purpose. Closely related to the reported activities, the trip purposes included work, school, shopping, serve passengers, and "other". There was little variation in the distribution of reported trip purposes across the study area.

- ***14% of trips were for work purposes***. Respondents in Montgomery, Berks and Burlington Counties reported slightly higher work trips (16%), while those in Delaware, Camden and Mercer Counties reported lower work trips (13%).
- ***6% of trips were related to school***. A slightly higher proportion of school trips were reported in Bucks and Delaware Counties (7%).
- ***12% of trips were for shopping***. Burlington County residents had a higher proportion of shopping trips (14%), while those in Gloucester County reported 10%.
- ***8% of trips were made solely to serve passengers***. Mercer County households reported slightly more serve passenger trips (10%), while Burlington County households reported a lower proportion (7%).

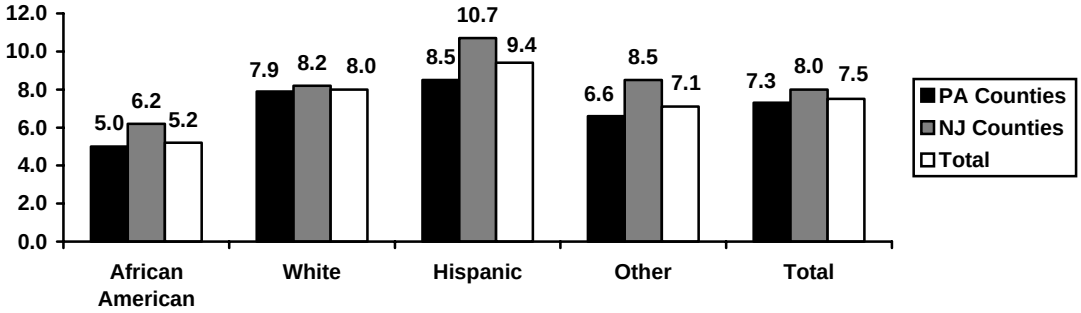
Household Trip Rates. The Delaware Valley households reported an average of 7.5 trips per household for the 24-hour travel period. NJ County households reported higher trips than those in the PA Counties. As shown in Figure E-1, the trip rates varied by trip types: motorized vs. non-motorized. While NJ County households reported more motorized trips, PA County households had more non-motorized trips. This was largely due to the walk trips reported in Philadelphia.

Figure E-1
Household Trip Rates by Trip Type



Hispanic households reported the highest overall daily trip rates (9.4), while those of African American descent reported the lowest (5.2).

Figure E-2
Household Trip Rates by Household Ethnicity



Travel by Households Receiving Welfare. In order to assist with monitoring and measuring the effect of recent welfare-to-work initiatives in the region, this study flagged households that reported receipt of welfare assistance in the past 12 months. As shown in Tables E-2 and E-3, the average daily household trip rate for this subgroup of 43 households was 5.3 (compared to the overall average of 7.5 for all households). Given the small sample size, this data is not available at the county level.

Table E-2
Average Household Trip Rates for Welfare Recipients by Household Vehicles

Household Vehicles	N	Trip Rate
0 vehicles	32	4.41
1 vehicle	7	3.69
2 vehicles	3	16.07
3+ vehicles	1	8.00
Total	**43**	**5.28**

Base: All households reporting with incomes less than $25,000 or that refused income reporting welfare assistance (n=43), unweighted.

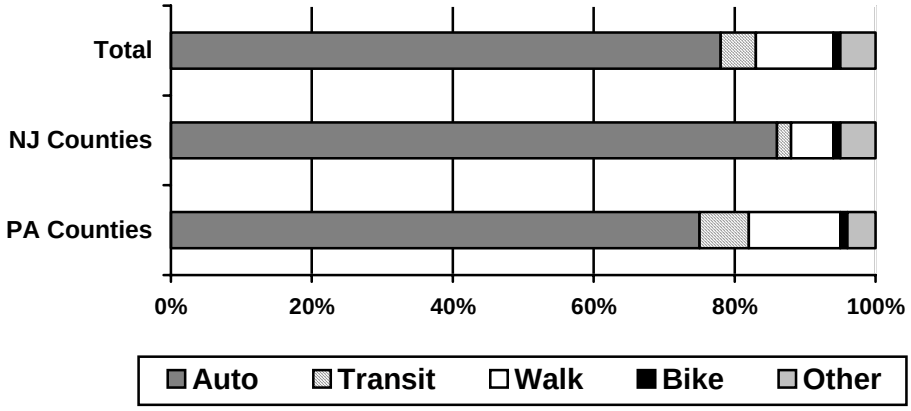
E-3
Average Household Trip Rates for Welfare Recipients by Household Income

Household Income	N	Trip Rate
< $15,000	30	4.41
$15,000 to < $25,000	10	8.13
Refused	2	4.00
Total	**43**	**5.28**

Base: All households reporting with incomes less than $25,000 or that refused income reporting welfare assistance (n=43), unweighted.

Travel Modes. For each trip reported, the respondents provided information on all travel modes used. This resulted in the collection of 51,911 modes for the 31,631 reported trips. Seventy-eight percent of all reported trips were made by auto (driver, passenger or motorcycle) while 5% were transit trips. The proportion of auto trips was higher in the NJ Counties, while PA County respondents reported more transit trips. The majority of transit, walk, and bike trips were made in Philadelphia.

Figure E-3
Major Travel Modes



The typical auto trip took about 20 minutes, while auto passengers reported trips of about 18 minutes in duration. Walk trips lasted about 16 minutes. Bus trips averaged 46 minutes, with those in the NJ Counties taking 10 minutes longer, on average.

Table E-4
Distribution of Travel Modes

Travel Mode	PA Counties		NJ Counties		Total	
	Percent	Duration (minutes)	Percent	Duration (minutes)	Percent	Duration (minutes)
Auto driver	56.3%	20.70	65.2%	19.93	58.9%	20.46
Auto passenger	18.7%	18.35	20.8%	18.07	19.3%	18.26
Walk	12.8%	16.39	6.5%	15.40	11.0%	16.23
School Bus	3.8%	25.23	4.0%	25.45	3.8%	25.29
Bus	4.5%	45.26	1.0%	55.58	3.5%	45.99
Bicycle	1.0%	14.01	0.6%	15.61	0.9%	15.94
Subway/elevated rail	0.9%	41.38	0.4%	43.82	0.7%	41.71
Commuter rail	0.6%	58.19	0.2%	59.83	0.5%	58.43
Shared ride	0.3%	20.79	0.5%	33.61	0.4%	25.19
Trolley	0.3%	44.15	0.1%	15.00	0.2%	43.49
Amtrak, other railroad	0.2%	79.87	0.2%	46.81	0.2%	78.17
Commuter van/shuttle	0.2%	27.88	0.1%	35.00	0.1%	28.61
Charter bus	0.1%	103.51	0.1%	102.54	0.1%	103.38
Other	0.3%	52.45	0.3%	26.75	0.3%	47.09
Total	**100.0%**		**100.0%**		**100.0%**	

Base: All reported travel modes (multiple response allowed), weighted.

Summary of Auto Trips. Most work-related auto trips were made by single occupant vehicles. As shown in Table E-5, Philadelphia residents were more likely to carpool than respondents in other counties.

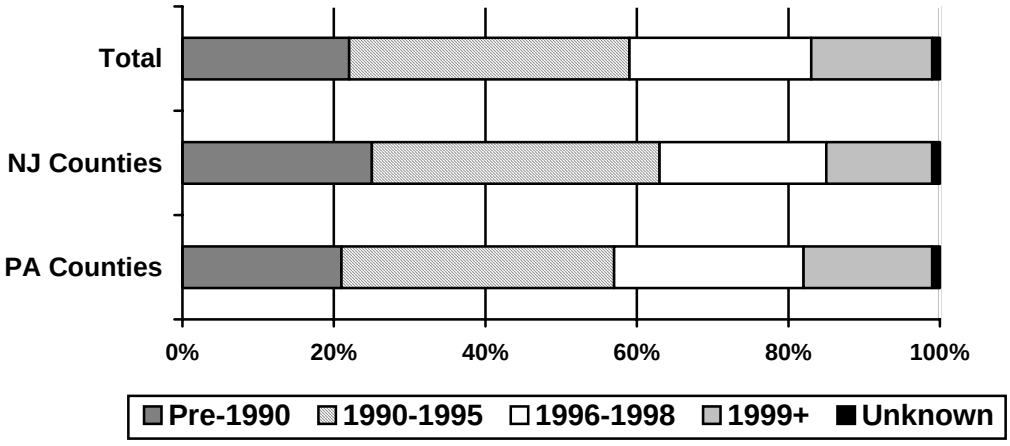
Table E-5
Number Traveling Together For Work Using Auto

County	N	1	2	3	4+	Total
Bucks	555	91.4%	6.5%	1.4%	0.7%	100.0%
Chester	388	92.3%	6.4%	0.8%	0.5%	100.0%
Delaware	443	92.6%	4.5%	1.8%	1.1%	100.0%
Mont/Berks	750	91.3%	6.5%	1.5%	0.7%	100.0%
Philadelphia	1,105	86.9%	10.5%	1.8%	0.8%	100.0%
PA Counties	**3,238**	**90.1%**	**7.6%**	**1.5%**	**0.7%**	**100.0%**
Burlington	365	90.1%	7.9%	0.5%	1.4%	100.0%
Camden	411	89.1%	8.0%	1.9%	1.0%	100.0%
Gloucester	209	90.9%	7.7%	0.5%	1.0%	100.0%
Mercer	267	90.3%	7.1%	1.5%	1.1%	100.0%
NJ Counties	**1,251**	**89.9%**	**7.8%**	**1.1%**	**1.1%**	**100.0%**
DVRPC Total	**4,488**	**90.1%**	**7.6%**	**1.4%**	**0.8%**	**100.0%**

Base: All auto trips, weighted.

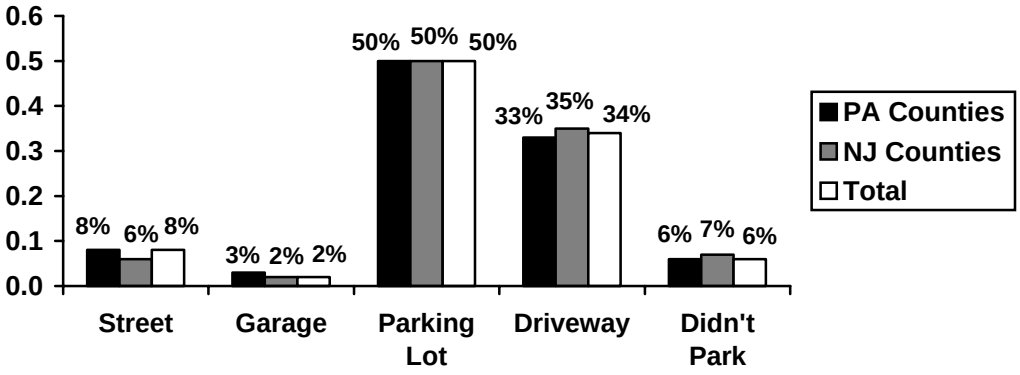
For each auto trip (regardless of trip purpose), detailed information was gathered on each vehicle. As shown in Table E-9, 37% of all household vehicles used during the 24-hour diary period were built between 1990 and 1995. An additional 24% were built between 1996 and 1998, while 22% were built prior to 1990. The older (pre-1990) vehicles were more likely to be found in NJ County households. The newer vehicles (1999 or later) were more likely to be found in PA Counties.

Figure E-4
Vehicle Age



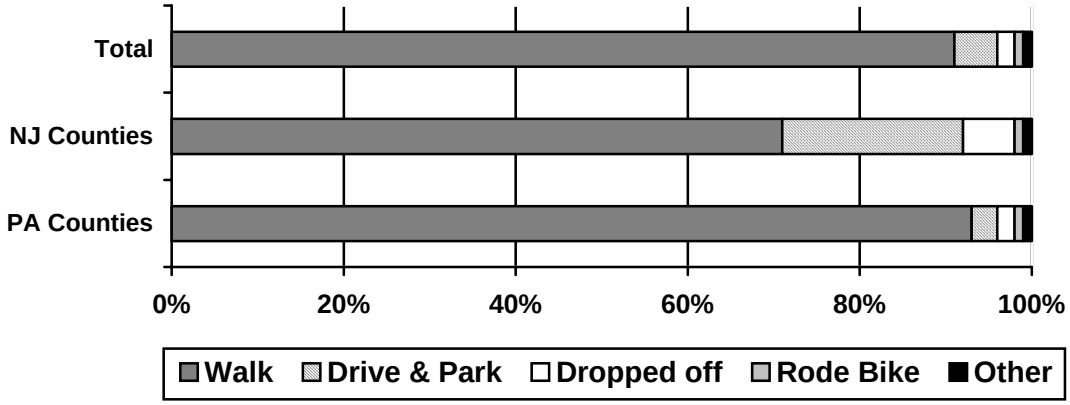
When respondents drove or rode in an automobile, most reported parking in a parking lot (50%) or in a driveway (34%). Street parking was most likely to take place in the PA Counties, mainly in Philadelphia.

Figure E-5
Parking Locations



Transit Trip Access. As demonstrated above, most transit trips were made in Philadelphia. Therefore, it follows that most transit trips began with walking (91%). Respondents in NJ Counties were most likely to drive and park to access transit (32%).

Figure E-6
Access Mode of Transit Riders



The data set produced as a result of the Transportation for the 21st Century Household Travel Survey represents an excellent source of regional travel behavior information for the transportation planning community. The project scope and complexity of the region, combined with careful survey design and execution, have provided for a high quality data set for use in future modeling efforts. As indicated by Cambridge Systematics thorough review of the final data set, as well as the tables and summaries presented throughout this report, the Transportation for the 21st Century data set will serve as a solid foundation for regional model update efforts.

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1. INTRODUCTION

This report documents the design, implementation, and results of the Transportation for the 21st Century Household Travel Survey, conducted by NuStats from March through December 2000. The study was conducted under the auspices of the Delaware Valley Regional Planning Commission and the Southern Jersey Transportation Planning Organization and funded through the Pennsylvania and New Jersey Departments of Transportation. Cambridge Systematics provided quality assurance under a subcontract to NuStats.

This study is an essential element in the transportation planning and modeling efforts for the Delaware Valley and South Jersey regions. Travel behavior data collected through the conduct of this study will help transportation planning efforts in the region, including:

- Improving highways to reduce traffic congestion,
- Providing better regional train service,
- Changing bus routes to provide more convenient service,
- Building bike and walking paths,
- Moving people and freight efficiently, and
- Reducing air pollution from cars and trucks.

1.1 Background

The Transportation for the 21st Century Household Travel Survey sampled 5,677 households in the 14-county study area comprised of the Delaware Valley region of Pennsylvania and New Jersey and the southern-most portion of New Jersey. Of the 5,677 households that participated in the study, 2,666 were from the Delaware Valley region of Pennsylvania, 1,551 were from the Delaware Valley region of New Jersey, and 1,460 were from Southern Jersey.

Like all recent household travel surveys, the Transportation for the 21st Century study relied on the willingness of area residents to complete diary records of all travel for a 24-hour period. It was based on telephone interviews of randomly selected households from the 14-county study area. Household recruitment for the study was conducted through the use of a "recruitment interview", in which respondents were informed of the survey, its purpose, and the obligation of all household members to complete the survey. Data on the household and household members were also collected during the recruitment interview. Participating households were assigned a specific "travel day" or 24-hour period on which to record their travel and activities. This travel day typically took place 7 to 10 days after the recruitment interview. Collection of the travel information was done through the use of a "retrieval interview."

1.2 Survey Purpose and Coverage

Household travel surveys are used to obtain information about work and non-work trip generation, trip distribution, modal choice, and traffic assignment as well as to obtain data on average vehicle occupancy. Updated household travel information can be used for modeling purposes as well as transportation planning projects such as high occupancy vehicle lanes, bicycle and pedestrian studies, welfare-to-work programs and development of traffic control studies. Prior to the Transportation for the 21st Century Survey, household travel surveys were conducted by the New Jersey Department of Transportation in 1987 for the New Jersey counties and by the Delaware Valley Regional Planning Commission in 1988 for the Pennsylvania counties. In addition, household travel data for Mercer County was collected as

part of the 1997/98 Transportation Futures Project conducted for the North Jersey Transportation Planning Organization.

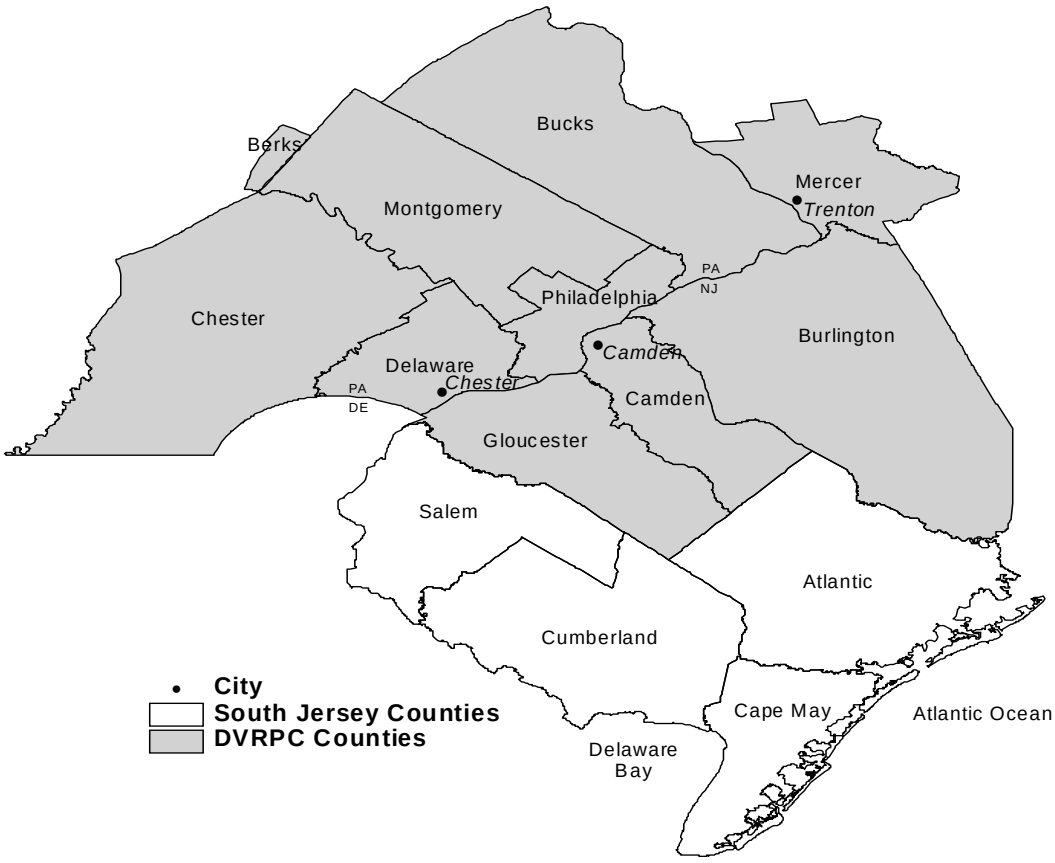
The purpose of the Transportation for the 21st Century Household Travel Survey was to provide data for continuing development and refinement of the Regional Travel Demand Forecasting Model, as well as to provide a better understanding of travel behavior in the Delaware Valley and South Jersey regions. Regional planners will use the data collected to:

- Validate current travel simulation models,
- Develop new travel and land use models,
- Improve air quality and conformity analysis,
- Prepare an environmental justice report, and
- Support other corridor and traffic studies.

The study area consisted of the Pennsylvania counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia (along with a small portion of Berks County); the New Jersey Delaware Valley counties of Burlington, Camden, Gloucester, and Mercer; and the South Jersey counties of Atlantic, Cape May, Cumberland, and Salem. This geographic area is depicted on the map on the following page.

A total of 7,540 households were recruited to participate in the study. Of these, 5,677 households (75%) completed travel diaries (the information was gathered from all household members regardless of age). The 5,677 households represent 13,830 persons, 10,570 vehicles, and 48,646 trips across all counties surveyed.

Figure 1-1 Study Area Geography



1.3 Survey Products

This report is published in two versions, each of which focuses on one portion of the study area. As detailed above, the 14-county study area was comprised of 10 counties in the Delaware Valley region of Pennsylvania and New Jersey, while the remaining four counties comprise the southern-most portion of New Jersey. Version I of this report focuses on the Delaware Valley region while Version II focuses on the South Jersey region. Both versions contain the same Introduction and Survey Methods summary, but the report sections that detail survey results are tailored to the individual regions.

In addition to this report, two other study publications are available:

a. Procedures & Resource Manual. The manual documents the data collection procedures and resources for the Transportation for the 21st Century Household Travel Survey. It contains 12 sections, the first two of which provide critical background information on the project and the sample expectations. Sections 3 through 8 document the sequential flow of data collection, followed by two sections that document the preparation of data for final delivery. The final sections of the manual provide key information regarding overall data organization and interviewer training materials.

b. Pilot Study Report. The pilot study report documents the design, implementation and results of a pilot study conducted as part of this project. The primary objectives of the pilot study were to test and refine survey procedures, materials, and computer-assisted telephone interviewing (CATI) programs. The pilot study was designed as a "dress rehearsal" and allowed for the full evaluation of survey procedures, from sample generation to data file preparation. Objective criteria were specified to evaluate the pilot study results and provide a complete assessment of instruments, procedures, and processes. The findings suggest that the processes worked as planned, staff was sufficiently trained, and data flow occurred as expected. Specific changes were recommended to fine-tune the procedures, materials, and training.

1.4 Contents of the Report

The purpose of this report is to document the methods used to conduct the Transportation for the 21st Century Household Travel Survey, as well as to present survey results. It is organized into chapters by major topics. In addition to this Introduction, the chapters include:

- Survey Methods,
- Survey Results,
- Survey Expansion and Travel Results, and
- Evaluation of Survey Results.

The **Survey Methods** chapter presents the methods used to conduct the survey. Essentially, the six main phases of data collection are presented and evaluated, along with the quality control guidelines established for use in the study. The phases include sample design, advance notification, recruitment, travel data retrieval, data processing, and geocoding.

The **Survey Results** chapter presents the demographic and travel data collected during the course of the Transportation for the 21st Century Household Travel Survey. The process used to weight the data is presented, along with the responses to all questions asked during the

conduct of the survey. The data are presented both for the region as a whole, as well as for the counties that comprise the region.

The fourth chapter of the report contains the **Survey Expansion and Travel Results.** In this portion of the report, the weighted data are expanded to represent the population of the study area. The expanded data are then examined in terms of vehicle availability and travel patterns. The fifth and final section of the report contains an evaluation of the survey results from a modeling perspective.

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2. SURVEY METHODS

The purpose of this chapter is to summarize the methods used to conduct the Transportation for the 21st Century Household Travel Survey. This survey was a multi-stage study, as it involved up to three telephone interviews and two mailings to the households. Prior to the start of data collection, a pilot test was conducted. The pilot test objectives were to refine the survey materials and to fine-tune the processes and programs that were used to carry out the travel behavior study. The principal component of the pilot test was a complete run-through of survey procedures for a small sample of study area households. Pilot test households were recruited, mailed packets, and re-contacted after an assigned travel day to retrieve travel data. "Complete" data from 97 households were collected, processed, and subjected to quality control procedures. The results of the pilot test are summarized in the Pilot Test Report. The data collection procedures used in the full study reflected changes based on the pilot test findings.

The survey processes used in the full study included: (1) sample design and performance, (2) advance call and notification, (3) recruitment and respondent packet mailing, (4) reminder calls and retrieval, (5) data processing, (6) geocoding, and (7) quality control. The purpose of this chapter is to describe each stage as well as evaluate how well that procedure worked.

2.1 Sample Design and Performance

The Transportation for the 21st Century Household Travel Survey was intended to represent the diverse population and travel patterns in the study area. As such, the sample design for the survey was designed to guide the collection of data such that the resultant data set would include adequate representation of households by geography as well as household data availability. The sample design was specified based on four primary criteria:

a. Produce statistically adequate observations at a geographic level that meet the modeling and administrative objectives of the Delaware Valley Regional Planning Commission and the South Jersey Transportation Planning Organization,
b. Produce data depicting the diverse travel patterns and mode usage across the study area,
c. Minimize selection bias across subgroups in the population, particularly those that are more difficult to reach (high income households, the very poor, mobile persons such as renters and others), and
d. Maximize participation rates overall.

The first two criteria were fundamental to the design of the survey sample. They were addressed primarily through the statistical method applied, the sample frames used, the actual process for drawing the sample and the documentation maintained. Meeting the remaining two criteria required a combination of sample design and the procedures for sample management.

The survey employed a probability sample selection process that selected households for inclusion in the study. The major requirement for probability samples was that the relative probability (or chance) of any given household in the universe being included in the sample was known. Once the sampling procedure was determined, the selection of specific households for inclusion in the sample was left entirely to chance.

The type of probability sampling employed was stratified sampling in which the sample elements were drawn proportionately to the households within each of the 90 county planning areas (CPAs) that comprise the 14 counties in the region specified for the study. The sample was

randomly generated across all telephone exchanges within each CPA. Thus, the sample design for each CPA was a strict probability sample for that area. The sampling frame included both listed and unlisted telephone numbers, where "listed" numbers were those for which a household address could be identified.

To ensure sufficient samples for modeling, two sampling goals were established. The first was strictly geographical: the required number of completed households by CPA. The second goal was established to ensure sufficient representation of households by vehicle availability for each county in the study area. The sample goals are shown in Tables 2-1 and 2-2.

Table 2-1
Sample Goals by County Planning Area

County	CPA	Goal	Percent
Philadelphia (PA)	1	83	1.5%
	2	67	1.2%
	3	29	0.5%
	4	89	1.6%
	5	92	1.6%
	6	58	1.0%
	7	35	0.6%
	8	18	0.3%
	9	43	0.8%
	10	63	1.1%
	11	98	1.7%
	12	60	1.1%
Delaware (PA)	13	85	1.5%
	14	87	1.5%
	15	149	2.6%
	16	95	1.7%
	17	41	0.7%
	18	18	0.3%
Chester (PA)	19	62	1.1%
	20	37	0.7%
	21	24	0.4%
	22	50	0.9%
	23	75	1.3%
	24	25	0.4%
	25	39	0.7%
	26	27	0.5%
	27	19	0.3%
	28	13	0.2%
	29	16	0.3%
Montgomery (PA)	30	52	0.9%
	31	30	0.5%
	32	91	1.6%
	33	31	0.5%
	34	75	1.3%
	35	63	1.1%
	36	51	0.9%
	37	89	1.6%
	38	21	0.4%
	39	37	0.7%
Bucks (PA)	40	27	0.5%
	41	14	0.2%
	42	36	0.6%
	43	47	0.8%
	44	19	0.3%
	45	9	0.2%
	46	75	1.3%

	47	24	0.4%
	48	65	1.2%
	49	40	0.7%
	50	68	1.2%
	51	54	1.0%
Mercer (NJ)	52	94	1.7%
	53	69	1.2%
	54	103	1.8%
	55	21	0.4%
	56	44	0.8%
	57	48	0.9%
Burlington (NJ)	58	106	1.9%
	59	166	2.9%
	60	52	0.9%
	61	46	0.8%
	62	15	0.3%
Camden (NJ)	63	108	1.9%
	64	96	1.7%
	65	107	1.9%
	66	46	0.8%
	67	85	1.5%
Gloucester (NJ)	68	123	2.2%
	69	54	1.0%
	70	108	1.9%
	71	69	1.2%
Berks (PA)	72	11	0.2%
Delaware Valley		**4186**	**74.1%**
Salem (NJ	75	80	1.4%
	76	126	2.2%
	77	94	1.7%
	78	36	0.6%
Cumberland (NJ)	79	112	2.0%
	80	147	2.6%
	81	76	1.3%
	82	35	0.6%
Atlantic (NJ)	83	43	0.8%
	84	55	1.0%
	85	74	1.3%
	86	84	1.5%
Cape May (NJ)	87	72	1.3%
	88	65	1.2%
	89	92	1.6%
	90	110	1.9%
	91	78	1.4%
	92	81	1.4%
South Jersey		**1460**	**25.9%**
Total		**5646**	**100.0%**

Table 2-2
Sample Goals by County and Household Vehicle Availability

County	Vehicles	Goal	Percent
Atlantic	0	38	0.7%
Atlantic	1	127	2.2%
Atlantic	2	147	2.6%
Atlantic	3+	79	1.4%
Bucks	0	18	0.3%
Bucks	1	89	1.6%
Bucks	2	214	3.8%
Bucks	3+	156	2.8%
Burlington	0	16	0.3%
Burlington	1	105	1.9%
Burlington	2	174	3.1%
Burlington	3+	90	1.6%
Camden	0	38	0.7%
Camden	1	118	2.1%
Camden	2	197	3.5%
Camden	3+	90	1.6%
Cape May	0	21	0.4%
Cape May	1	110	1.9%
Cape May	2	139	2.5%
Cape May	3+	91	1.6%
Chester	0	15	0.3%
Chester	1	67	1.2%
Chester	2	202	3.6%
Chester	3+	103	1.8%
Cumberland	0	18	0.3%
Cumberland	1	114	2.0%
Cumberland	2	151	2.7%
Cumberland	3+	88	1.6%
Delaware	0	32	0.6%
Delaware	1	144	2.6%
Delaware	2	206	3.6%
Delaware	3+	93	1.6%
Gloucester	0	15	0.3%
Gloucester	1	101	1.8%
Gloucester	2	148	2.6%
Gloucester	3+	92	1.6%
Mercer	0	24	0.4%
Mercer	1	121	2.1%
Mercer	2	160	2.8%
Mercer	3+	74	1.3%
Montgomery/Berks	0	24	0.4%
Montgomery/Berks	1	109	1.9%
Montgomery/Berks	2	288	5.1%
Montgomery/Berks	3+	130	2.3%
Philadelphia	0	243	4.3%
Philadelphia	1	295	5.2%
Philadelphia	2	171	3.0%
Philadelphia	3+	26	0.5%
Salem	0	15	0.3%
Salem	1	92	1.6%
Salem	2	135	2.4%
Salem	3+	94	1.7%
Total		**5647**	**100.0%**

The definition of a completed household was one in which travel and activity data were collected from all household members (regardless of age). A total of 5,677 households met this criterion. The distributions of completed households by CPA and County/Household Vehicles are shown in Tables 2-3 and 2-4.

Table 2-3
Comparison of Sample Goals and Actual Responses
By County Planning Areas

County	CPA	Goal	Actual	Percent
Philadelphia (PA)	1	83	79	95.2%
	2	67	70	104.5%
	3	29	30	103.4%
	4	89	84	94.4%
	5	92	105	114.1%
	6	58	50	86.2%
	7	35	38	108.6%
	8	18	18	100.0%
	9	43	44	102.3%
	10	63	59	93.7%
	11	98	88	89.8%
	12	60	67	111.7%
Delaware (PA)	13	85	76	89.4%
	14	87	91	104.6%
	15	149	148	99.3%
	16	95	104	109.5%
	17	41	49	119.5%
	18	18	29	161.1%
Chester (PA)	19	62	62	100.0%
	20	37	38	102.7%
	21	24	26	108.3%
	22	50	50	100.0%
	23	75	73	97.3%
	24	25	30	120.0%
	25	39	42	107.7%
	26	27	26	96.3%
	27	19	22	115.8%
	28	13	13	100.0%
	29	16	18	112.5%
Montgomery (PA)	30	52	47	90.4%
	31	30	37	123.3%
	32	91	88	96.7%
	33	31	37	119.4%
	34	75	81	108.0%
	35	63	55	87.3%
	36	51	47	92.2%
	37	89	86	96.6%
	38	21	22	104.8%
	39	37	46	124.3%
Bucks (PA)	40	27	35	129.6%
	41	14	11	78.6%
	42	36	39	108.3%
	43	47	39	83.0%
	44	19	34	178.9%
	45	9	11	122.2%
	46	75	72	96.0%
	47	24	23	95.8%
	48	65	75	115.4%
	49	40	31	77.5%
	50	68	63	92.6%
	51	54	52	96.3%
Mercer (NJ)	52	94	89	94.7%

	53	69	69	100.0%
	54	103	92	89.3%
	55	21	25	119.0%
	56	44	48	109.1%
	57	48	51	106.3%
Burlington (NJ)	58	106	119	112.3%
	59	166	162	97.6%
	60	52	48	92.3%
	61	46	48	104.3%
	62	15	26	173.3%
Camden (NJ)	63	108	100	92.6%
	64	96	101	105.2%
	65	107	100	93.5%
	66	46	44	95.7%
	67	85	83	97.6%
Gloucester (NJ)	68	123	123	100.0%
	69	54	56	103.7%
	70	108	113	104.6%
	71	69	54	78.3%
Berks (PA)	72	11	6	54.5%
Delaware Valley		**4186**	**4217**	**100.7%**
Salem (NJ	75	80	83	103.8%
	76	126	135	107.1%
	77	94	88	93.6%
	78	36	30	83.3%
Cumberland (NJ)	79	112	116	103.6%
	80	147	130	88.4%
	81	76	75	98.7%
	82	35	42	120.0%
Atlantic (NJ)	83	43	65	151.2%
	84	55	47	85.5%
	85	74	73	98.6%
	86	84	84	100.0%
Cape May (NJ)	87	72	94	130.6%
	88	65	66	101.5%
	89	92	87	94.6%
	90	110	98	89.1%
	91	78	68	87.2%
	92	81	79	97.5%
South Jersey		**1460**	**1460**	**100.0%**
Total		**5646**	**5677**	**100.5%**

Table 2-4
Comparison of Sample Goals and Actual Responses
by Household Vehicle Availability

County	Vehicles	Goal	Actual	Percent
Atlantic	0	38	48	126.3%
Atlantic	1	127	135	106.3%
Atlantic	2	147	164	111.6%
Atlantic	3+	79	82	103.8%
Bucks	0	18	14	77.8%
Bucks	1	89	107	120.2%
Bucks	2	214	207	96.7%
Bucks	3+	156	157	100.6%
Burlington	0	16	9	56.3%
Burlington	1	105	96	91.4%
Burlington	2	174	195	112.1%
Burlington	3+	90	103	114.4%
Camden	0	38	35	92.1%
Camden	1	118	122	103.4%
Camden	2	197	187	94.9%
Camden	3+	90	84	93.3%
Cape May	0	21	19	90.5%
Cape May	1	110	111	100.9%
Cape May	2	139	131	94.2%
Cape May	3+	91	71	78.0%
Chester	0	15	9	60.0%
Chester	1	67	73	109.0%
Chester	2	202	201	99.5%
Chester	3+	103	117	113.6%
Cumberland	0	18	16	88.9%
Cumberland	1	114	110	96.5%
Cumberland	2	151	154	102.0%
Cumberland	3+	88	83	94.3%
Delaware	0	32	27	84.4%
Delaware	1	144	150	104.2%
Delaware	2	206	224	108.7%
Delaware	3+	93	96	103.2%
Gloucester	0	15	10	66.7%
Gloucester	1	101	98	97.0%
Gloucester	2	148	150	101.4%
Gloucester	3+	92	88	95.7%
Mercer	0	24	23	95.8%
Mercer	1	121	109	90.1%
Mercer	2	160	165	103.1%
Mercer	3+	74	77	104.1%
Montgomery/Berks	0	24	19	79.2%
Montgomery/Berks	1	109	118	108.3%
Montgomery/Berks	2	288	285	99.0%
Montgomery/Berks	3+	130	130	100.0%
Philadelphia	0	243	222	91.4%
Philadelphia	1	295	310	105.1%
Philadelphia	2	171	164	95.9%
Philadelphia	3+	26	36	138.5%
Salem	0	15	14	93.3%
Salem	1	92	87	94.6%
Salem	2	135	139	103.0%
Salem	3+	94	96	102.1%
Total		**5647**	**5677**	**100.5%**

a. Household Response Rates. In addition to having sufficient sample sizes for modeling, it is also important to understand the level of effort required to attract, retain and obtain travel data from households in the study area. The response rate calculation is the best measure of this level of effort, as it indicates how many households must be recruited in order to obtain a completed household.

The response rate is the ratio between completed interviews and total eligible sample called on the telephone. The response rate is calculated for recruitment, then retrieval. The overall response rate is determined by multiplying the two resultant rates. As shown in Table 2-5, the recruitment rate is 43%, the retrieval rate is 75% and the overall response rate for the study was 33% (43% * 75%). In other words, 33% of all eligible households that were contacted actually completed the survey.

Table 2-5
Household Response Rates

Region	County	Recruitment Rate	Retrieval Rate	Overall Rate
Delaware Valley	**Overall**	**44.5%**	**75.6%**	**33.6%**
	Bucks (PA)	42.4%	76.0%	32.3%
	Chester (PA)	47.5%	76.2%	36.2%
	Delaware (PA)	51.2%	79.4%	40.7%
	Montgomery/Berks (PA)	46.8%	76.6%	35.9%
	Philadelphia (PA)	47.1%	74.6%	35.2%
	Burlington (NJ)	45.5%	75.5%	34.4%
	Camden (NJ)	39.9%	73.3%	29.3%
	Gloucester (NJ)	38.4%	77.4%	29.7%
	Mercer (NJ)	41.1%	71.5%	29.4%
South Jersey	**Overall**	**40.8%**	**74.5%**	**30.4%**
	Atlantic (NJ)	41.3%	76.1%	31.5%
	Cape May (NJ)	42.0%	74.1%	31.2%
	Cumberland (NJ)	34.1%	73.9%	25.2%
	Salem (NJ)	47.4%	73.4%	34.8%
Total		**43.4%**	**75.3%**	**32.7%**

The response rates achieved for this study compare favorably with those from other recent household travel surveys with similar study design. A comparison is shown in Table 2-6.

Table 2-6
Comparison of Household Response Rates
Among Other Metropolitan Areas

Survey	Type	Rate
2000 Philadelphia/South Jersey	1-day	33%
1997/98 Metropolitan NY/NJ/CT	1-day	34%
1999 Seattle	2-day	32%

b. Identification of Non-Response Bias. As with any survey, the issue of non-response bias is important and must be addressed. Non-response bias in a survey data set occurs when certain individuals selected in a sample do not participate in the survey. In order to determine if non-response bias is an issue in the Transportation for the 21st Century Household Travel Survey, respondent provided data was compared to census data and other available estimates to determine if specific sub-groups of the population were systematically declining to participate in the study. The goal is to have adequate representation from the study area population as a whole.

With an overall response rate of 33%, it is evident that a portion of eligible households did not participate in the study. Key demographics for retrieved households were compared to DVRPC's 1997 estimates (available only for household vehicles) and 1990 census data (for household size and household income) to understand the types of households not participating in the study. As shown in the following tables, the demographics of the households participating in the study tracked the 1997 estimates fairly well for household vehicles. The zero and one vehicle households are slightly underrepresented (9% and 5% respectively), while larger vehicle households are slightly over represented. The distribution of household size tracks the 1990 census data favorably, while the household income distributions (unadjusted for inflation) show a bias towards higher income households – resulting from the age of the census data and the positive correlation between income and telephone ownership.

Table 2-7
Comparison of Survey and DVRPC Household Distributions by Vehicle Availability

Household Vehicles	Survey Households	1997 DVRPC Estimates	Percent Difference
0	8.2%	17.2%	-9.0%
1	28.6%	33.8%	-5.2%
2	41.7%	35.5%	+6.2%
3+	21.5%	13.5%	+8.0%
Total	**100%**	**100%**	

Table 2-8
Comparison of Survey and Census Household Distributions by Household Size

Household Size	Survey Households	1990 Census Data	Percent Difference
1	25.2%	27.1%	-1.9%
2	37.9%	28.6%	+9.3%
3	15.7%	17.3%	-1.4%
4+	21.2%	26.9%	-5.7%
Total	**100%**	**100%**	

Table 2-9
Comparison of Survey and Census Household Distributions by Household Income

Household Income	Survey Households	1990 Census Data	Percent Difference
< $15,000	8.8%	28.9%	-20.1%
$15,000 to < $25,000	10.5%	15.8%	-5.3%
$25,000 to < $35,000	11.9%	13.7%	-1.8%
$35,000 to < $50,000	15.2%	17.8%	-2.6%
$50,000 to < $75,000	24.5%	15.7%	+8.8%
$75,000 to < $100,000	15.1%	5.2%	+9.9%
$100,000 to < $125,000	7.1%	1.6%	+5.5%
$125,000 to < $150,000	3.0%	0.5%	+2.5%
$150,000 or more	3.9%	0.9%	+3.0%
Total	**100%**	**100%**	

2.2 Advance Call and Notification

The purpose of the advance calls was to obtain or confirm mailing addresses for the sampled households. This was necessary given the fact that the study included both listed (i.e., household address known) and unlisted sample, the study utilized an advance call process to secure address information from unlisted households and pre-screen the sample for eligible households. In addition, household size, household vehicles, and household income were obtained. The advance call task reassured the respondent of project legitimacy, courteously persuaded respondents to provide basic information about the household, and provided answers to questions about the study and what participation entailed.

All households that were eligible and for whom addresses were obtained were mailed an advance letter and brochure. The advance letter served to introduce the household to the Transportation for the 21st Century Household Travel Survey. It was personalized to the household and printed on DVRPC or SJTPO letterhead. The purpose of the brochure was to provide detailed information about the survey, to explain what participation would entail and to provide answers to commonly asked questions. The project website was also referenced, if additional information was required.

Over the course of the entire study, advance calls were attempted on 20,423 sample pieces. Of these:

- 4,864 (24%) resulted in contact with eligible households.
- 7,364 (36%) were determined to be ineligible (non-working, non-household or non-voice lines, and
- 8,213 (40%) were unable to be classified as eligible or ineligible after eight call attempts.

Of the eligible households reached, 3,111 of the 4,864 agreed to receive an advance mailing (64%). The average length of the advance call was 4.3 minutes.

It is important to note that not all the sample received an advance call. For a majority of households with listed telephone numbers, the first contact was receipt of the advance notification. The first telephone contact for these households was the recruitment call.

2.3 Recruitment and Respondent Packet Mailing

Approximately five to seven days after the advance letters were mailed, the first recruitment attempts were made. The purpose of the recruitment interview was to secure participation from the household and to collect baseline demographics for the household and its members, vehicle information and work or school addresses. The interview was conducted using CATI technology. The day following recruitment, personalized diaries were prepared for each household and mailed.

The recruitment calls began in March 2000 and continued through May 2000, then began again in September 2000 and continued until November 2000, allowing for breaks during the summer months and Thanksgiving holiday. Over the course of the recruitment effort, 35,018 pieces of sample were called. Of these:

- 13,205 (38%) resulted in contact with eligible households.
- 13,427 (38%) were determined to be ineligible (non-working, non-household or non-voice lines, and
- 8,386 (24%) were unable to be classified as eligible or ineligible after 8 call attempts

Of the eligible households reached, 7,540 of the 13,205 agreed to participate in the study (57%). The average length of the recruitment call was 18.6 minutes. The recruitment instrument performed well. All respondents provided data for most questions (48 of 86 or 56%). Marginal item non-response was noted for 30 variables, while the income-related questions had the highest non-response. Item non-response by question is as follows:

a. Household Questions (5 out of 29 had non-response)

- Income sources (asked if income < $25k or income refused) – 25.4%
- Household income – 13.5%
- # Units in apartment building – 12.7%
- Length of time stayed at 2nd residence – 8.8%
- Receipt of advance letter – 8.5%
- Household ethnicity – 1.8%

b. Person Questions (31 out of 55 had non-response)

- Cost to park at school - 21.3% (asked of all students, regardless of reported mode to school)
- Cost of taking transit to work – 20.9%
- Time to walk from parking location to work – 11.2%
- Ending time for 2nd job – 11.2%
- Starting time for 2nd job – 10.7%
- Employer subsidizes transit costs – 9.3% (asked of all workers, regardless of reported mode to work)
- Type of disability – 6.9%
- Employer subsidized parking costs – 6.9% (asked of all workers, regardless of reported mode to work)
- Variation in work start time – 5.9%
- Variation in work end time – 5.9%
- Work parking location – 5.0%
- Activity if not employed – 4.4%
- Industry of 2nd job – 4.2%
- Work end time – 4.0%
- Mode to school – 3.8%
- Work start time – 3.7%
- Occupation of 2nd job – 3.7%
- Mode to work – 3.2%
- Cost to park at work – 3.2%
- Industry – 3.1%
- Type of work schedule – 2.9%
- Days worked on 2nd job – 2.9%
- Occupation – 2.8%
- Days telecommuted for 2nd job – 2.7%
- Weekdays worked – 2.6%
- Tenure at main job – 2.3%
- Vehicle needed for work – 2.2%
- Employer type – 2.1%
- Age – 1.5%
- Telecommuting days – 1.2%
- Weekend work detail – 1.1%

c. Vehicle Questions (2 out of 5 had non-response)

- Vehicle model – 2.6%
- Vehicle ownership – 1.0%

2.4 Reminder Calls and Retrieval

The reminder calls were made to all recruited households the night prior to their assigned travel days. The purpose of the reminder call was to confirm that each household had received its packet and to answer any last minute questions the household might have. Data retrieval began the day following the travel day or on the appointed day and time (as requested by the respondent).

The retrieval calls began in March 2000 and continued through May 2000, then began again in September 2000 and continued until December 2000, allowing for breaks during the summer months and Thanksgiving holiday. Over the course of the retrieval effort, all 7,540 recruited households were called. Of these, 5,677 (75%) resulted in completed household interviews. For the remaining 1,863 households (7540 – 5677) only demographic information is available (no travel data). The average length of the retrieval call was 18.6 minutes.

The retrieval instrument itself performed well. All respondents provided data for most questions (22 of 29 or 76%). Marginal item non-response was noted for seven variables, six of which were related to transit fare method of payment and fare amount paid. Item non-response by question is as follows:

- First fare payment method (cash, token, etc.) – 19.4%
- Second fare payment method – 13.3%
- Third fare payment method – 13.3%
- Third fare amount paid – 11.1%
- Second fare amount paid – 5.2%
- First fare amount paid – 2.9%
- Toll amount paid – 1.4%

2.5 Administrative Variables

Three questions on the recruitment questionnaire collected information necessary for data processing. These included whether the household had received an advance letter, whether the respondent had an email account, and the day of the week the household completed its diary task.

Table 2-10
Receipt of Advance Letter

County	N	Yes	No	Don't Recall	Not Sent	Total
Bucks	438	25.3%	13.0%	53.9%	7.8%	100.0%
Chester	325	31.4%	12.0%	46.5%	10.2%	100.0%
Delaware	439	38.5%	16.2%	33.5%	11.8%	100.0%
Mont/Berks	572	34.9%	14.2%	40.6%	10.3%	100.0%
Philadelphia	1319	31.4%	23.9%	35.9%	8.9%	100.0%
PA Counties	**3093**	**32.2%**	**18.2%**	**40.1%**	**9.5%**	**100.0%**
Burlington	309	34.0%	14.6%	40.1%	11.3%	100.0%
Camden	385	27.8%	19.0%	46.8%	6.5%	100.0%
Gloucester	173	30.5%	20.1%	42.5%	6.9%	100.0%
Mercer	257	25.2%	15.9%	51.9%	7.0%	100.0%
NJ Counties	**1124**	**29.3%**	**17.2%**	**45.6%**	**7.9%**	**100.0%**
DVRPC Total	**4217**	**31.4%**	**17.9%**	**41.5%**	**9.1%**	**100.0%**

Base: All households, weighted.

Table 2-11
Has E-Mail Account

County	N	Yes	No	Refused	Total
Bucks	438	8.0%	92.0%	0.0%	100.0%
Chester	325	13.8%	85.8%	0.3%	100.0%
Delaware	439	9.1%	90.2%	0.7%	100.0%
Mont/Berks	572	10.0%	89.7%	0.3%	100.0%
Philadelphia	1319	9.2%	90.4%	0.5%	100.0%
PA Counties	**3093**	**9.6%**	**90.0%**	**0.4%**	**100.0%**
Burlington	309	9.7%	89.6%	0.6%	100.0%
Camden	385	9.4%	90.4%	0.3%	100.0%
Gloucester	173	7.5%	91.3%	1.2%	100.0%
Mercer	257	12.4%	87.2%	0.4%	100.0%
NJ Counties	**1124**	**10.0%**	**89.6%**	**0.5%**	**100.0%**
DVRPC Total	**4217**	**9.7%**	**89.9%**	**0.4%**	**100.0%**

Base: All households, weighted.

Table 2-12
Distribution of Households by Day of Week

County	N	Monday	Tuesday	Wednesday	Thursday	Friday	Total
Bucks	438	23.3%	19.9%	18.8%	19.5%	18.5%	100.0%
Chester	325	17.8%	20.0%	16.9%	19.7%	25.5%	100.0%
Delaware	439	12.8%	18.9%	20.5%	25.7%	22.1%	100.0%
Mont/Berks	572	21.5%	20.7%	19.4%	18.6%	19.8%	100.0%
Philadelphia	1319	16.7%	16.3%	23.4%	18.8%	24.9%	100.0%
PA Counties	**3093**	**18.1%**	**18.4%**	**20.9%**	**19.9%**	**22.7%**	**100.0%**
Burlington	309	15.2%	17.2%	23.3%	22.0%	22.3%	100.0%
Camden	385	19.2%	19.7%	21.5%	19.2%	20.5%	100.0%
Gloucester	173	20.7%	14.9%	20.1%	20.1%	24.1%	100.0%
Mercer	257	19.5%	19.8%	25.7%	21.8%	13.2%	100.0%
NJ Counties	**1124**	**18.4%**	**18.3%**	**22.7%**	**20.7%**	**19.9%**	**100.0%**
DVRPC Total	**4217**	**18.0%**	**18.6%**	**20.9%**	**20.6%**	**21.9%**	**100.0%**

Base: All households, weighted.

2.6 Data Processing

The data collected through the advance calls, recruitment interviews and retrieval interviews were processed daily using NuStats' Continuous Data Flow (CDF) system. The CDF system served as the pipeline, channeling data from one stage to the next in a continuous fashion, preventing data progression if stage criteria were not met without impeding the overall flow of data. The CDF system used in this project had 14 stages.

The following table documents the continuous data flow stages from sample generation to timely data delivery. The progression criteria are stated in the third column. Two types of reports were used to monitor progress: production reports showed movement of the data (how many interviews completed previous night, geocoding progress, etc.); exception reports showed lack of movement – how many advance called households could not geocode and therefore were not mailed an advance notification? Both were critical to successful completion of the project.

Table 2-13
NuStats' Continuous Data Flow Progression

Stage	Stage Description	Progression Criteria
1	**Sample Generation**	None
2	**Geocode Home Addresses**	• Geocoded addresses go to Stage 3 • Ungeocoded listed addresses and unlisted telephone numbers go to Stage 3
3	**Advance Calls** – Sampled households are contacted to confirm / obtain home addresses and key demographic data (household size, household vehicles, and household income).	• If household agrees to receive advance mailing and address is confirmed, goes to Stage 4 • If household elects to receive advance mailing and address is changed, goes to Stage 2 • If address not obtained, sample cannot progress
4	**Advance Mailing** – Introductory letter with study brochure are mailed.	• If letter is mailed, goes to Stage 5 • If letter is not mailed, exception report generated to indicate reason
5	**Recruitment Call** – Households are recontacted to secure participation in the study. Those who agree to participate provide demographic data and are assigned travel days.	• If the interview is completed, goes to Stage 6 • If the interview is not completed, exception report is generated • If interview is not attempted, sample status is updated and sample is scheduled for callback according to sample management rules
6	**Geocode Habitual Addresses** – work and school addresses are geocoded.	• If address geocodes, goes to Stage 7 • If address does not geocode, exception report generated and also proceeds to Stage 7 but flagged with address information need
7	**Diary Placement** – A personalized diary packet is prepared and mailed to each recruited household	• If packet is mailed, goes to Stage 8 • If packet is not mailed, exception report generated to indicate reason
8	**Reminder Call** – Recruited households are contacted to confirm receipt of diary packet and remind about upcoming travel days.	• If household is ready, goes to Stage 9 • If household needs new packet, goes to Stage 7 • If household is rescheduled, can go to Stage 7 or 9 • If household refuses, exception report is generated and assigned to interviewer specializing in refusals
9	**Travel Days** – Household members record travel on assigned day.	
10	**Retrieval Interview** – The first retrieval call is placed the day following travel or at a respondent-designated time.	• If household provides data according to definition of "complete", goes to Stage 11 • If household provides partial data, exception report is generated and household does not progress • If household did not record travel data and is rescheduled, can go to Stage 7 or 9 • If household refuses, exception report is generated and assigned to interviewer specializing in refusals
11	**Field Edits** – the night the retrieval interview is completed, work is checked for completeness.	• If work meets standards, goes to Stage 12 • If work does not meet standards, exception report is generated and household is assigned for callback / correction
12	**Data Processing** – at the conclusion of each data collection shift, all data are processed and prepared for edit check and geocoding.	• If processed data meets completeness standards, goes to Stage 13 • If processed data does not meet completeness standards, exception report is generated and household is assigned for correction / callback
13	**Geocoding of Trip Ends** – all new address information (new or updates to previously collected information) is geocoded through both batch and interactive processes.	• If geocoded, goes to Stage 14 • If not geocoded, exception report is generated and household assigned for correction/callback • Daily reports monitoring hit rates
14	**Data Quality Checks** – all data is subjected to visual inspection and edit check program to ensure quality standards and data specifications are met.	• If passes, goes to Stage 15 • If fails, exception report is generated and household assigned for correction/callback • Daily reports monitoring pass rates
15	**Process complete** – data ready for delivery.	• If process complete, data flagged for delivery and process ends • If process not complete and time thresholds crossed, exception report is produced and data specialist addresses household to ensure data movement

2.7 Geocoding

The term “geocoding” defined the process of evaluating address information with the goal of assigning an exact latitude and longitude. This process took place throughout the course of the project, beginning with the home addresses, continuing with habitual addresses (work and school locations), and also including the trip ends (non-home and non-habitual locations) collected during the retrieval stage of the project.

Using ArcView software, all home, work, school and trip locations reported were subjected to the geocoding task. At the conclusion of the project, 30,268 addresses comprised the “location” file for the 5,677 households that completed the study. Of these, 94% were successfully matched to latitude/longitude coordinates. The distribution of addresses by type and geocoding status is shown in Table 2-14.

Table 2-14
Address Geocoding Outcomes

Address Type	Matched	Unmatched	% Matched	Out of Area
Home	5,677	0	100%	0
Habitual (work & school)	8,712	715	92%	495
Other Locations	13,991	1,173	92%	774
Total	**28,380**	**1,888**	**94%**	**1,269**

2.8 Quality Assurance

The data that summarizes the demographic and travel behavior characteristics of the 5,677 households was subjected to both manual and electronic quality checks. These checks reviewed the data for conformity to variable requirements, logistical consistency and quality standards. The checks included:

a. Across all files
- Range of values for each data item is valid, including values for non-response (i.e., responses cannot be outside range)

b. Household file
- Compare household size in household file with number of person records in person file for each household.
- Compare household vehicles in household file with number of vehicle records in vehicle file for each household.
- Sum number of places and trips in trip file for each household (includes total trips; motorized and non-motorized trips; and home-based work, home-based other, and non-home-based work trips)

c. Person file
- Verify that the number of places recorded for each person is at least as many as the number of places the respondent indicated visiting at the start of the retrieval interview.
- Verify that if employed, respondent went to work on travel day or provided reason for not.
- Verify that if a student, respondent went to school on travel day or provided reason for not.

d. Vehicle file
- Verify vehicle year if older than 1960.
- Re-contact household if vehicle make and model were not reported.

e. Trip file
- Verify that each household member has at least one place record.

- Verify that household and person records exist for each sample number in the trip file.
- Verify that travel times are consistent and logical: (1) arrival at place N is prior to departure from place N; (2) arrival at place N+1 is after departure from place N.
- Re-contact household if extreme trip durations and/or activity durations.
- Verify that all household members returned home at end of travel day or last reported location plausible.
- Verify that travel data exists for all places except Place 1.
- Verify that reported activities are consistent with the reported locations.

Any discrepancies were flagged for research, corrections and/or verification.

3. SURVEY RESULTS

The Transportation for the 21st Century Household Travel resulted in the creation of a data set that contains the demographic and travel behavior characteristics of 5,677 households in the 14-county study area. Of those 5,677 households, 4,217 were from the 10-county Delaware Valley region of Pennsylvania and New Jersey. These 10 counties fall under the jurisdiction of the Delaware Valley Regional Planning Commission (DVRPC) for regional transportation planning.

The 4,217 Delaware Valley households, when weighted, have 9,358 members, 6,069 vehicles, and reported a total of 31,631 trips. The purpose of this chapter is to document the procedures for weighting the data and to present the weighted survey results.

3.1 Weight Calculations

The creation of a household-level weight factor for the Delaware Valley households is comprised of five elements that aim to adjust the survey data to correct for differential rates of sampling that occurred and telephone ownership patterns.

a. Probability of Selection – Geography and Household Vehicle Availability

Under ideal sampling conditions, the study area is relatively homogenous with respect to telephone ownership. In those instances, the weight calculations would only need to take into account the sample size (the actual number of telephone numbers drawn and made available for contact) and the estimated universe of households within the study area. The unique relationship of those two numbers for each county would be the probability of selection, and the inverse of them would be the weight factor that would be applied to each household based on its county of residence.

The Delaware Valley region of Pennsylvania and New Jersey does not have this relative homogeneity. Certain locations had very high levels of telephone ownership turnover and very different rates of working telephone numbers, while others were much more stable. The first factor involved in weight calculation incorporated the probability of selection and took into account the heterogeneity of the counties in the study area. This approach combined weighting with geographic balancing and used the actual number of completed households and the universe of households by county.

The following tables illustrate the factor calculation process for the county strata: the number of completed households and household vehicles (Table 3-1), the number of households by vehicle availability in the universe (Table 3-2) and the weighting factor, which accounts for the probability of selection (Table 3-3). To explain how the specific weights contained in Table 3-3 were developed, the following example is provided for Philadelphia County households with zero vehicles.

- A total of 222 Philadelphia County 0-vehicle households completed the household travel survey, which is 5.26% of the total households in the DVRPC sample. This is shown in Table 3-1.
- According to DVRPC's 1997 Zonal Population and Employment Estimates, 11.63% of the households in the study area were 0-vehicle households from Philadelphia County, as displayed in Table 3-2.
- With a uniform sample, the percent of totals calculated for the sample and the universe would be the same, setting the probability of selection to 1.0. In the case of Philadelphia

County, the 0-vehicle survey households represented 5.26% of the total, while they accounted for 11.63% of the universe. To create the factor for 0-vehicle Philadelphia County households, the distribution of surveyed households was brought into line with the population of that same county. Specifically, 11.63% was divided by 5.26% to create the weight factor of 2.2090.

- This process was repeated for all cells in both Tables 3-1 and 3-2.
- Since the weights were applied by county, there is no need for a weight factor for the entire study region.

Table 3-1
Distribution of Surveyed Households by County

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles	Total
Burlington (NJ)	0.21%	2.28%	4.62%	2.44%	9.55%
Camden (NJ)	0.83%	2.89%	4.43%	1.99%	10.14%
Gloucester (NJ)	0.24%	2.32%	3.56%	2.09%	8.22%
Mercer (NJ)	0.55%	2.58%	3.91%	1.83%	8.87%
Bucks (PA)	0.33%	2.54%	4.91%	3.72%	11.50%
Chester (PA)	0.21%	1.73%	4.77%	2.77%	9.48%
Delaware (PA)	0.64%	3.56%	5.31%	2.28%	11.79%
Montgomery/Berks (PA)	0.45%	2.80%	6.76%	3.08%	13.09%
Philadelphia (PA)	5.26%	7.35%	3.89%	0.85%	17.35%
Total	**8.73%**	**28.05%**	**42.16%**	**21.06%**	**100.0%**

Table 3-2
Distribution of Universe Households by County

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles	Total
Burlington (NJ)	0.36%	2.28%	3.36%	1.45%	7.45%
Camden (NJ)	1.16%	3.18%	3.58%	1.36%	9.28%
Gloucester (NJ)	0.28%	1.26%	1.97%	0.81%	4.32%
Mercer (NJ)	0.72%	2.03%	2.47%	0.95%	6.17%
Bucks (PA)	0.53%	2.83%	5.00%	2.25%	10.61%
Chester (PA)	0.41%	1.93%	3.68%	1.62%	7.64%
Delaware (PA)	1.20%	3.71%	3.97%	1.45%	10.33%
Montgomery/Berks (PA)	0.95%	4.37%	6.18%	2.48%	13.98%
Philadelphia (PA)	11.63%	12.23%	5.25%	1.13%	30.24%
Total	**17.24%**	**33.82%**	**35.46%**	**13.50%**	**100%**

Table 3-3
Weighting Factor to Adjust for Probability of Selection

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles
Burlington (NJ)	1.6736	1.0009	0.7259	0.5951
Camden (NJ)	1.4030	1.0975	0.8078	0.6807
Gloucester (NJ)	1.1714	0.5409	0.5539	0.3386
Mercer (NJ)	1.3215	0.7844	0.6316	0.5215
Bucks (PA)	1.5883	1.1152	1.0186	0.6044
Chester (PA)	1.9026	1.1152	0.7724	0.5821
Delaware (PA)	1.8713	1.0419	0.7481	0.6369
Montgomery/Berks (PA)	2.1032	1.5623	0.9143	0.8046
Philadelphia (PA)	2.2090	1.6630	1.3506	1.3293

b. Probability of Selection – Telephone Lines per Household

The probability of selection calculation also assumed that each household in the universe had an equal probability of selection. In other words, it assumed that each household had one phone line, and therefore one chance of selection. As shown in Table 3-4, this was not the case in the Delaware Valley region as 17% of the households indicated they had more than one working phone line that was not dedicated solely for fax or modem use. By determining the number of lines represented (# phone lines multiplied by # households with that many lines), the 4,217 Delaware Valley households reported having 5,071 telephone (voice) lines available for their use.

The weighting factor to account for multiple phone numbers per household was created through a two-step process. First the actual number of voice lines available to each household was determined by subtracting the number of dedicated fax lines from the total phone lines available to the household. Then, FACTOR2 was created to adjust the data to compensate for cases where more than one phone line was available. Given the fact that not all households had only one line, those with one line were actually sampled at less than one chance of selection. These households (with only one line) therefore needed a factor of slightly more than one to reflect the disparity.

Table 3-4
Total Number of Phone Lines per Household

# Phone Lines per Household	# Households	# Lines Represented	FACTOR2
1	3,499	3,499	1.2025
2	616	1,232	0.5
3	76	228	0.33
4	18	72	0.25
5	8	40	0.20
Total	**4,217**	**5,071**	

c. Probability of Selection – Households per Telephone Number

The next weighting factor adjusted for multiple households sharing the same phone number. A total of 13 Delaware Valley households reported sharing a phone number with one other household, so the 4,217 phone numbers in the final sample actually represented 4,230 households. FACTOR3 was developed to adjust this so that each telephone number represented only one household.

Table 3-5
Total Number of Households per Phone Number

# Households per Phone Lines	# Phone Numbers	# Households Represented	FACTOR3
1	4,204	4,204	1.0030
2	13	26	2.0
Total	**4,217**	**4,230**	

d. Probability of Selection – Households with Episodic Phone Service

To account for non-telephone owning households in a telephone survey, an adjustment is required using data reported by those households reporting episodic telephone ownership. Episodic phone ownership is defined as telephone service that is turned on or off over a given period of time, largely due to a lack of financial resources (telephone service is disconnected due to non-payment and re-activated when the household is able to pay the outstanding bill). Households with episodic telephone service differ from households without telephones (i.e., households that have not had any telephone service established). They are also different from households who have been without service for a period of less than two weeks, as those service interruptions are typically associated with weather or equipment issues.

As shown in Table 3-6, most households (91%) were non-episodic (i.e., they reported no interruption of telephone service in the past year). An additional 363 households (9%) reported service interruptions of less than 2 weeks. However, 29 households (1%) reported having telephone interruption that lasted 2 weeks or longer in the year prior to the survey. These households represent the other non-telephone households with episodic service in the region.

Table 3-6
Distribution of Households by Service Interruption Lengths

Length of Service Interruption	Frequency	Percent
No service interruptions (non-episodic)	3825	90.7%
Less than 2 weeks (non-episodic)	363	8.6%
2 weeks but less than 1 month	11	0.3%
1 month but less than 3 months	10	0.2%
3 months but less than 6 months	6	0.1%
6 months but less than 1 year	2	0.0%
Total	**4,217**	**100%**

To determine the weighting factor required to adjust the data for episodic telephone ownership, the incidence of episodic telephone ownership in the Delaware Valley region was compared to non-telephone ownership data as reported in the March 2000 Current Population Survey (CPS) conducted jointly by the Bureau of Labor Statistics and the Bureau of the Census. Using the customized data access software provided on the CPS website, it was determined that 3.3% of households in Pennsylvania and New Jersey were non-telephone households (this includes both episodic and hard-core non-telephone ownership categories).

In reality, only about half of the CPS non-telephone households are episodic. This rate is based on a general pattern observed in anecdotal evidence collected through in-person interviews and postcard follow-up surveys conducted with non-telephone households by NuStats on other studies. There have been no papers published that can serve as a resource in this area. Based on NuStats experience, the CPS distribution was adjusted to allow for a direct comparison with the Delaware Valley data. Once the adjustment was made, FACTOR4 was a straightforward calculation, as shown in Table 3-7.

Table 3-7
Episodic Telephone Ownership Factor

Is phone service episodic?	DV Households	DV Percent	CPS Web Data	Adjusted CPS	FACTOR4
No	4,188	99.3%	96.7%	98.4%	0.9904
Yes	29	0.7%	3.3%	1.6%	2.3837
Total	**4,217**	**100%**	**100%**	**100%**	

e. Normalization of Weights

If the data weights were based on Factors 1 through 4 as presented in the tables above, the weighted data would represent 4,610 households rather than the 4,217 as actually contained in the data set. To account for this and still maintain the relative place of each household after weighting, all households were given a FACTOR5 value of 0.91475.

Once each household received a value for each of the five factors, the weight was calculated through a straight multiplication of factors 1 through 5. The weight was applied in the analysis of the data results as presented in the remainder of this report. An example of the effect of the weighting on the data is shown in Table 3-8, which shows the unweighted and weighted distributions of responses to the household vehicle question.

Table 3-8
Household Vehicles: Unweighted and Weighted Distributions

Household Vehicles	Unweighted Distribution	Weighted Distribution
0	8.2%	18.3%
1	28.6%	35.4%
2	41.7%	34.5%
3+	21.5%	11.8%
Total	**100%**	**100%**

3.2 Household Survey Results

A total of 4,217 Delaware Valley households participated in the Transportation for the 21st Century Household Travel Survey. The household data includes demographic information about the households, such as household size, household vehicles, dwelling type, home ownership status, tenure, and second homes. It also includes information necessary for the weighting process (number of telephones per household, number of households per telephone number, episodic telephone ownership) and summary statistics about the number of places and trips made during the travel day.

The tables in this section of the report present the weighted results for the 4,217 Delaware Valley households and include all household level variables collected during the survey.

a. Household Demographics

The following tables present the demographic characteristics of the Delaware Valley households that participated in the study. The household data includes demographic information about the households, such as household size, household vehicles, dwelling type, home ownership status, tenure, and second homes. It also includes administrative data (tracking advance letter

receipt, e-mail availability and day of week assigned for travel) and summary statistics about the number of places and trips made during the travel day.

Overall, there were 1.44 vehicles per household in the Delaware Valley region. Bucks and Chester County households had the highest average number of household vehicles (1.89 per household), followed by Burlington County (1.81 vehicles). Philadelphia had the lowest average (0.84 per household).

Table H-1
Household Vehicle Availability

County	N	0	1	2	3+	Total	Mean
Bucks	436	5.0%	28.4%	47.8%	18.8%	100.0%	1.89
Chester	323	5.6%	28.1%	47.5%	18.8%	100.0%	1.89
Delaware	439	12.3%	37.0%	38.1%	12.6%	100.0%	1.53
Mont/Berks	570	7.5%	33.0%	43.2%	16.3%	100.0%	1.74
Philadelphia	1327	39.6%	40.9%	16.5%	3.1%	100.0%	0.84
PA Counties	**3096**	**21.3%**	**35.7%**	**32.2%**	**10.8%**	**100.0%**	**1.36**
Burlington	308	5.2%	33.1%	44.2%	17.5%	100.0%	1.81
Camden	384	13.5%	36.5%	37.3%	12.7%	100.0%	1.54
Gloucester	172	7.5%	30.6%	46.8%	15.0%	100.0%	1.75
Mercer	257	12.0%	36.0%	38.8%	13.2%	100.0%	1.58
NJ Counties	**1121**	**10.0%**	**34.6%**	**41.0%**	**14.5%**	**100.0%**	**1.66**
DVRPC Total	**4217**	**18.3%**	**35.4%**	**34.5%**	**11.8%**	**100.0%**	**1.44**

Base: All households, weighted.

The average size of participating Delaware Valley households was 2.22 persons. Gloucester County had the highest average household size (2.52 persons), while Philadelphia had the lowest (1.99). Overall, the New Jersey households were larger than the Pennsylvania households (2.28 vs. 2.20, respectively).

Table H-2
Household Size

County	N	1	2	3	4+	Total	Mean
Bucks	436	24.5%	35.5%	16.2%	23.8%	100.0%	2.51
Chester	323	27.4%	39.7%	13.5%	19.4%	100.0%	2.34
Delaware	439	34.9%	34.9%	13.2%	17.8%	100.0%	2.23
Mont/Berks	570	29.9%	36.0%	13.8%	20.3%	100.0%	2.35
Philadelphia	1327	44.2%	33.2%	10.5%	12.1%	100.0%	1.99
PA Counties	**3096**	**35.7%**	**34.8%**	**12.6%**	**16.9%**	**100.0%**	**2.20**
Burlington	308	32.4%	35.6%	14.6%	17.5%	100.0%	2.24
Camden	384	34.6%	34.4%	13.3%	17.7%	100.0%	2.25
Gloucester	172	21.8%	41.4%	13.2%	23.6%	100.0%	2.52
Mercer	257	33.9%	34.6%	15.6%	16.0%	100.0%	2.18
NJ Counties	**1121**	**31.9%**	**35.9%**	**14.1%**	**18.1%**	**100.0%**	**2.28**
DVRPC Total	**4217**	**34.7%**	**35.1%**	**13.0%**	**17.2%**	**100.0%**	**2.22**

Base: All households, weighted.

The average number of workers was fairly consistent across the Delaware Valley region, at 1.03 workers per household. Bucks County had the highest number of workers (1.25), while Philadelphia had the lowest (0.86).

Table H-3
Household Distribution by Number of Workers

County	N	0	1	2	3+	Total	Mean
Bucks	436	22.8%	37.4%	33.1%	6.6%	100.0%	1.25
Chester	323	26.2%	37.5%	31.4%	4.9%	100.0%	1.16
Delaware	439	33.7%	35.5%	26.4%	4.3%	100.0%	1.03
Mont/Berks	570	26.7%	37.4%	30.2%	5.6%	100.0%	1.16
Philadelphia	1327	40.3%	37.6%	18.6%	3.6%	100.0%	0.86
PA Counties	**3096**	**32.9%**	**37.2%**	**25.3%**	**4.6%**	**100.0%**	**1.03**
Burlington	308	31.4%	37.2%	25.9%	5.5%	100.0%	1.07
Camden	384	31.4%	39.5%	25.5%	3.6%	100.0%	1.02
Gloucester	172	35.1%	29.3%	29.9%	5.7%	100.0%	1.08
Mercer	257	32.9%	35.3%	27.9%	3.9%	100.0%	1.04
NJ Counties	**1121**	**32.2%**	**36.3%**	**26.9%**	**4.6%**	**100.0%**	**1.05**
DVRPC Total	**4217**	**32.7%**	**37.0%**	**25.7%**	**4.6%**	**100.0%**	**1.03**

Base: All households, weighted.

On average, there were 0.53 students in each household in the Delaware Valley region. Bucks County had the highest average number of students per household (0.67), while Philadelphia had the lowest average (0.48 students).

Table H-4
Household Distribution by Number of Students

County	N	0	1	2	3+		Mean
Bucks	436	63.7%	14.4%	15.3%	6.6%	100.0%	0.67
Chester	323	68.7%	13.2%	13.5%	4.6%	100.0%	0.55
Delaware	439	69.5%	13.7%	11.6%	5.2%	100.0%	0.54
Mont/Berks	570	66.8%	17.0%	12.1%	4.2%	100.0%	0.55
Philadelphia	1327	72.3%	15.0%	8.0%	4.7%	100.0%	0.48
PA Counties	**3096**	**69.3%**	**14.9%**	**10.8%**	**4.9%**	**100.0%**	**0.54**
Burlington	308	70.2%	14.9%	10.4%	4.5%	100.0%	0.50
Camden	384	72.5%	10.9%	11.9%	4.7%	100.0%	0.52
Gloucester	172	63.8%	15.5%	13.8%	6.9%	100.0%	0.66
Mercer	257	72.0%	12.8%	11.7%	3.5%	100.0%	0.49
NJ Counties	**1121**	**70.5%**	**13.23%**	**11.7%**	**4.6%**	**100.0%**	**0.53**
DVRPC Total	**4217**	**69.6%**	**14.4%**	**11.1%**	**4.9%**	**100.0%**	**0.53**

Base: All households, weighted.

The Delaware Valley respondents represented a variety of ethnic backgrounds. Seventy-nine percent were white, 16% African American, 2% Hispanic, and 1% Asian/Pacific Islander. Philadelphia County had the greatest diversity represented in the survey, while Bucks and Chester Counties had the least.

Table H-5
Household Distribution by Ethnic Groups

County	N	Black/African American	White	Asian/Pacific Islander	American Indian	Hispanic	Other (specify)	Total
Bucks	436	1.6%	95.7%	0.5%	0.2%	0.9%	1.1%	100.0%
Chester	323	1.2%	95.7%	0.6%	0.6%	0.0%	1.9%	100.0%
Delaware	439	7.3%	88.6%	0.9%	0.7%	0.9%	1.6%	100.0%
Mont/Berks	570	4.2%	92.5%	0.7%	0.0%	0.3%	2.3%	100.0%
Philadelphia	1327	37.7%	55.2%	2.0%	0.5%	2.1%	2.5%	100.0%
PA Counties	**3096**	**18.3%**	**76.8%**	**1.2%**	**0.4%**	**1.2%**	**2.1%**	**100.0%**
Burlington	308	9.4%	85.7%	1.0%	0.0%	2.3%	1.6%	100.0%
Camden	384	10.1%	83.6%	0.5%	0.8%	2.3%	2.7%	100.0%
Gloucester	172	6.3%	89.1%	0.6%	0.6%	0.6%	2.8%	100.0%
Mercer	257	17.8%	75.2%	1.2%	0.8%	3.5%	1.5%	100.0%
NJ Counties	**1121**	**11.0%**	**83.3%**	**0.8%**	**0.4%**	**2.3%**	**2.2%**	**100.0%**
DVRPC Total	**4217**	**16.3%**	**78.5%**	**1.1%**	**0.4%**	**1.5%**	**2.2%**	**100.0%**

Base: All households, weighted.

Nearly 30% of all Delaware Valley Households reported a household income between $50,000 and $100,000, while 25% reported an income between $25,000 and $50,000. Twenty-three percent of respondents reported incomes of less than $25,000, while 9% reported incomes of $100,000 or greater.

Table H-6
Household Distribution by Income Range

County	N	<$25k	$25k-<$50k	$50k-<$100k	$100k+	Refused	Total
Bucks	436	14.9%	24.0%	33.9%	12.4%	14.9%	100.0%
Chester	323	15.4%	18.8%	33.8%	14.5%	17.5%	100.0%
Delaware	439	16.4%	26.3%	32.2%	9.8%	15.3%	100.0%
Mont/Berks	570	15.1%	20.3%	35.6%	12.3%	16.8%	100.0%
Philadelphia	1327	34.6%	27.4%	20.2%	4.7%	13.1%	100.0%
PA Counties	**3096**	**23.6%**	**24.6%**	**28.1%**	**8.9%**	**14.8%**	**100.0%**
Burlington	308	14.0%	24.4%	33.4%	12.3%	15.9%	100.0%
Camden	384	25.0%	26.3%	27.1%	8.9%	12.8%	100.0%
Gloucester	172	16.1%	25.3%	39.7%	8.0%	10.9%	100.0%
Mercer	257	21.3%	20.2%	33.7%	13.2%	11.6%	100.0%
NJ Counties	**1121**	**19.8%**	**24.2%**	**32.3%**	**10.6%**	**13.2%**	**100.0%**
DVRPC Total	**4217**	**22.6%**	**24.5%**	**29.2%**	**9.4%**	**14.4%**	**100.0%**

Base: All households, weighted.

To assist with monitoring and measuring the effect of recent welfare-to-work initiatives in the region, all Delaware Valley households that reported an income of less than $25,000 or refused to provide an income were asked about the sources of their household income. The purpose of this question was to specifically identify households that received welfare benefits, in order to enhance the welfare-to-work initiatives underway. As shown in Table H-7, 5% of the Delaware Valley households who either reported incomes under $25,000 or refused to provide income received welfare benefits in 1999.

Table H-7
Distribution of Low Income Households (<$25k) by Source of Income

County	N	Welfare	Other Govt Sources	None	Refused	Total
Bucks	82	2.3%	25.0%	44.3%	28.4%	100.0%
Chester	68	1.3%	16.0%	52.0%	30.7%	100.0%
Delaware	85	1.0%	22.9%	51.0%	25.1%	100.0%
Mont/Berks	105	1.6%	30.3%	43.4%	24.7%	100.0%
Philadelphia	369	7.6%	27.7%	43.6%	21.1%	100.0%
PA Counties	**711**	**4.6%**	**26.1%**	**45.3%**	**24.0%**	**100.0%**
Burlington	34	0.0%	26.3%	47.4%	26.3%	100.0%
Camden	73	6.0%	21.7%	49.4%	22.9%	100.0%
Gloucester	17	0.0%	20.0%	50.0%	30.0%	100.0%
Mercer	37	2.3%	34.9%	44.2%	18.6%	100.0%
NJ Counties	**162**	**3.3%**	**25.5%**	**48.4%**	**22.8%**	**100.0%**
DVRPC Total	**871**	**4.5%**	**25.9%**	**45.8%**	**23.8%**	**100.0%**

Base: All households reporting incomes less than $25,000 or that refused to provide income, weighted.

The majority of Delaware Valley households live in a single-family detached structure (65%). Respondents in the Pennsylvania region are much more likely to live in an apartment than those in the New Jersey region (18% and 10%, respectively).

Table H-8
Distribution of Household Dwelling Types

County	N	Single family (detached)	Single family (attached)	Apartment	Other	Total
Bucks	436	72.5%	14.9%	11.4%	1.1%	100.0%
Chester	323	77.2%	9.8%	10.8%	2.2%	100.0%
Delaware	439	71.0%	17.6%	11.2%	0.2%	100.0%
Mont/Berks	570	72.1%	12.2%	15.4%	0.3%	100.0%
Philadelphia	1327	42.9%	31.5%	25.2%	0.4%	100.0%
PA Counties	**3096**	**60.1%**	**21.3%**	**17.9%**	**0.6%**	**100.0%**
Burlington	308	80.9%	9.1%	9.1%	1.0%	100.0%
Camden	384	75.3%	8.1%	14.8%	1.0%	100.0%
Gloucester	172	87.7%	4.6%	6.9%	1.2%	100.0%
Mercer	257	70.8%	13.6%	15.2%	0.0%	100.0%
NJ Counties	**1121**	**80.4%**	**8.8%**	**9.7%**	**1.1%**	**100.0%**
DVRPC Total	**4217**	**64.8%**	**18.1%**	**16.4%**	**0.7%**	**100.0%**

Base: All households, weighted.

Most Delaware Valley residents have lived at their current address for more than five years (75%). A total of 80% of New Jersey respondents reported living at their current location for more than five years, compared to 74% of the Pennsylvania residents. Newcomers to the region (arriving within the past year) were most likely to be in Philadelphia County (8%).

Table H-9
Year Moved to Current Residence

County	N	Within the past year	1 to 5 years ago	More than 5 years ago	Refused	Total
Bucks	436	2.3%	21.5%	76.3%	0.0%	100.0%
Chester	323	4.9%	16.9%	78.2%	0.0%	100.0%
Delaware	439	4.3%	19.6%	76.1%	0.0%	100.0%
Mont/Berks	570	4.4%	15.4%	79.9%	0.3%	100.0%
Philadelphia	1327	7.9%	23.7%	68.3%	0.1%	100.0%
PA Counties	**3096**	**5.7%**	**20.6%**	**73.7%**	**0.1%**	**100.0%**
Burlington	308	3.6%	14.6%	81.8%	0.0%	100.0%
Camden	384	2.9%	16.1%	80.8%	0.3%	100.0%
Gloucester	172	4.0%	11.6%	84.4%	0.0%	100.0%
Mercer	257	5.8%	19.1%	75.1%	0.0%	100.0%
NJ Counties	**1121**	**4.0%**	**15.7%**	**80.2%**	**0.1%**	**100.0%**
DVRPC Total	**4217**	**5.2%**	**19.3%**	**75.4%**	**0.1%**	**100.0%**

Base: All households, weighted.

The majority of Delaware Valley residents participating in this survey are homeowners (78%), while 22% are renters. In Gloucester County, 89% of the respondents were homeowners, compared to 67% in Philadelphia County. Philadelphia County had the highest number of renters (33%).

Table H-10
Home Ownership Status

County	N	Rent	Own/buying	Other	Total
Bucks	436	14.9%	85.1%	0.0%	100.0%
Chester	323	16.0%	83.7%	0.0%	100.0%
Delaware	439	16.2%	83.6%	0.2%	100.0%
Mont/Berks	570	19.1%	80.4%	0.3%	100.0%
Philadelphia	1327	33.0%	66.9%	0.2%	100.0%
PA Counties	**3096**	**23.7%**	**76.1%**	**0.1%**	**100.0%**
Burlington	308	13.3%	86.0%	0.3%	100.0%
Camden	384	19.5%	80.5%	0.0%	100.0%
Gloucester	172	10.9%	89.1%	0.0%	100.0%
Mercer	257	20.9%	79.1%	0.0%	100.0%
NJ Counties	**1121**	**16.8%**	**83.0%**	**0.1%**	**100.0%**
DVRPC Total	**4217**	**21.8%**	**78.0%**	**0.1%**	**100.0%**

Base: All households, weighted.

As part of the recruitment survey, respondents were asked if they owned a second home. As shown in Table H-11, 6% of the respondents in the Delaware Valley region reported they did have a second residence. Chester County residents were most likely to have a second home (10%), while Mercer County residents were least likely (4%).

Table H-11
Ownership of Second Home

County	N	Yes	No	Total
Bucks	436	6.6%	93.4%	100.0%
Chester	323	9.8%	90.2%	100.0%
Delaware	439	6.8%	93.2%	100.0%
Mont/Berks	570	6.5%	93.5%	100.0%
Philadelphia	1327	4.9%	95.1%	100.0%
PA Counties	**3096**	**6.2%**	**93.8%**	**100.0%**
Burlington	308	8.8%	91.2%	100.0%
Camden	384	6.8%	93.2%	100.0%
Gloucester	172	7.5%	92.5%	100.0%
Mercer	257	4.3%	95.7%	100.0%
NJ Counties	**1121**	**6.9%**	**93.1%**	**100.0%**
DVRPC Total	**4217**	**6.4%**	**93.8%**	**100.0%**

Base: All households, weighted.

b. Household Trip Indicators

The household file also contains summary variables that indicate the number and types of trips reported in the trip file. This includes number of places visited on diary day and number of trips. In addition, the number of trips is broken out by purpose (home-based-work, home-based-other, and non-home-based) and mode (motorized or non-motorized).

Table H-12
Household Trip Rates by Place of Trip Ends

County	N	Home-Based Work	Home-Based Other	Non-Home Based	Total Trips
Bucks	436	1.75	4.90	2.35	8.99
Chester	323	1.52	4.73	2.35	8.60
Delaware	439	1.31	4.20	2.05	7.56
Mont/Berks	570	1.65	4.42	2.34	8.40
Philadelphia	1327	1.07	3.18	1.64	5.89
PA Counties	**3096**	**1.35**	**3.96**	**2.00**	**7.32**
Burlington	308	1.51	3.91	2.19	7.62
Camden	384	1.41	4.60	2.05	8.06
Gloucester	172	1.47	4.94	2.35	8.77
Mercer	257	1.35	4.43	2.13	7.91
NJ Counties	**1121**	**1.43**	**4.42**	**2.15**	**8.01**
DVRPC Total	**4217**	**1.37**	**4.09**	**2.04**	**7.50**

Base: All households, weighted.

Table H-13
Household Trip Rates by Trip Type

County	N	Motorized	Non-motorized	Total
Bucks	436	8.58	0.41	8.99
Chester	323	8.42	0.18	8.60
Delaware	439	6.91	0.65	7.56
Mont/Berks	570	7.92	0.49	8.40
Philadelphia	1327	4.35	1.54	5.89
PA Counties	**3096**	**6.40**	**0.92**	**7.32**
Burlington	308	7.25	0.37	7.62
Camden	384	7.45	0.61	8.06
Gloucester	172	8.31	0.46	8.77
Mercer	257	7.34	0.58	7.91
NJ Counties	**1121**	**7.50**	**0.51**	**8.01**
DVRPC Total	**4217**	**6.69**	**0.81**	**7.50**

Base: All households, weighted.

Table H-14
Summary of Household Trip Rates

Classification	Households in Survey	Home-Based Work Trip Rate	Home-Based Other Trip Rate	Non-home Based Trip Rate	Total Trip Rate
1-person	1462	0.62	1.58	1.00	3.20
2-person	1479	1.35	3.24	1.98	6.57
3-person	550	2.00	5.29	2.63	9.91
4-person	467	2.40	8.98	3.95	15.33
5+ person	259	2.59	11.72	3.60	17.90
Total	**4217**	**1.37**	**4.09**	**2.04**	**7.50**
0-vehicle	772	0.53	1.95	0.83	3.31
1-vehicle	1494	0.93	3.17	1.66	5.76
2-vehicle	1455	1.81	5.63	2.76	10.20
3+ vehicle	496	2.76	6.62	2.97	11.35
Total	**4217**	**1.37**	**4.09**	**2.09**	**7.50**

Base: All households, weighted.

Table H-15
Comparison of Motorized Trip Rates to NCHRP Trip Rates

Classification	Households in Survey	Survey Total Trip Rate	NCHRP Total Trip Rate
One person households	1462	2.68	4.2
Two person households	1479	5.95	7.3
Three person households	550	9.10	9.3
Four person households	467	13.86	12.0
Five + person households	259	15.55	14.8
Total	**4217**	**6.69**	
Zero vehicle households	772	1.83	4.1
One vehicle households	1494	5.03	6.3
Two vehicle households	1455	9.56	9.7
Three + vehicle households	496	10.86	11.8
Total	**4217**	**6.69**	

Base: All households, weighted.

Table H-16
Average Household Trip Rates by Workers

County	N	0 workers	1 worker	2 workers	3+ workers	Total
Bucks	436	5.79	8.69	10.38	14.79	8.99
Chester	323	4.56	8.94	10.54	14.95	8.60
Delaware	439	4.32	6.93	11.01	16.90	7.56
Mont/Berks	570	3.66	8.58	11.18	14.76	8.40
Philadelphia	1327	3.50	5.76	10.12	12.23	5.89
PA Counties	**3096**	**3.96**	**7.20**	**10.59**	**14.24**	**7.32**
Burlington	308	4.33	6.95	11.15	14.20	7.62
Camden	384	3.77	8.23	11.47	18.95	8.06
Gloucester	172	5.10	8.34	11.81	17.17	8.77
Mercer	257	4.37	7.57	11.29	16.44	7.91
NJ Counties	**1121**	**4.28**	**7.74**	**11.40**	**16.55**	**8.01**
DVRPC Total	**4217**	**4.04**	**7.34**	**10.82**	**14.85**	**7.50**

Base: All households, weighted.

Table H-17
Average Household Trip Rates by Students

County	N	0 students	1 student	2 students	3+ students	Total
Bucks	436	5.88	11.91	14.22	20.54	8.99
Chester	323	5.59	12.13	16.07	22.15	8.60
Delaware	439	4.98	10.15	15.49	17.26	7.56
Mont/Berks	570	5.67	11.15	16.99	16.36	8.40
Philadelphia	1327	4.08	8.15	12.65	15.06	5.89
PA Counties	**3096**	**4.88**	**9.92**	**14.73**	**17.31**	**7.32**
Burlington	308	5.27	11.22	13.51	19.11	7.62
Camden	384	5.75	10.77	14.97	20.04	8.06
Gloucester	172	5.89	10.47	13.39	23.14	8.77
Mercer	257	5.25	10.57	16.64	23.78	7.91
NJ Counties	**1121**	**5.52**	**10.77**	**14.71**	**21.16**	**8.01**
DVRPC Total	**4217**	**5.05**	**10.13**	**14.72**	**18.29**	**7.50**

Base: All households, weighted.

Table H-18
Average Household Trip Rates by Household Ethnicity

County	N	Black	White	Hispanic	Other	Total
Bucks	436	11.52	8.86	13.04	11.42	8.99
Chester	323	3.29	8.73	0.00	6.99	8.60
Delaware	439	6.71	7.62	5.84	8.29	7.56
Mont/Berks	570	4.91	8.55	26.50	6.58	8.40
Philadelphia	1327	4.77	6.64	6.87	5.61	5.89
PA Counties	**3096**	**4.96**	**7.89**	**8.49**	**6.58**	**7.32**
Burlington	308	6.81	7.73	8.36	6.21	7.62
Camden	384	5.82	8.19	9.54	10.10	8.06
Gloucester	172	5.94	9.08	15.50	4.28	8.77
Mercer	257	6.09	7.97	13.03	10.98	7.91
NJ Counties	**1121**	**6.16**	**8.16**	**10.68**	**8.53**	**8.01**
DVRPC Total	**4217**	**5.18**	**7.97**	**9.37**	**7.06**	**7.50**

Base: All households, weighted.

Table H-19
Average Household Trip Rates by Household Income

County	N	< $25k	$25k-<$50k	$50k-<$100k	$100k+	Refused	Total
Bucks	436	5.20	8.17	10.45	11.76	8.44	8.99
Chester	323	4.54	6.33	11.47	10.10	7.82	8.60
Delaware	439	3.34	6.43	9.94	9.61	7.69	7.56
Mont/Berks	570	3.47	7.33	10.20	11.60	7.96	8.40
Philadelphia	1327	3.52	6.75	8.57	8.08	5.45	5.89
PA Counties	**3096**	**3.71**	**6.95**	**9.86**	**10.28**	**7.03**	**7.32**
Burlington	308	3.95	6.29	9.75	10.58	6.12	7.62
Camden	384	4.06	7.80	10.84	12.79	7.19	8.06
Gloucester	172	4.82	8.52	11.03	10.91	5.40	8.77
Mercer	257	6.60	5.95	8.56	12.44	6.72	7.91
NJ Counties	**1121**	**4.76**	**7.15**	**10.02**	**11.78**	**6.50**	**8.01**
DVRPC Total	**4217**	**3.96**	**7.00**	**9.91**	**10.73**	**6.90**	**7.50**

Base: All households, weighted.

Table H-20
Average Household Trip Rates by Income Sources

County	N	Welfare	Other Govt Benefits	None of These	Refused
PA Counties	**778**	**5.48**	**3.49**	**5.20**	**5.55**
NJ Counties	**184**	**4.10**	**3.38**	**5.61**	**5.60**
DVRPC Total	**964**	**5.28**	**3.47**	**5.28**	**5.56**

Base: All households with incomes less than $25,000 or that refused income (n=964), weighted.

Table H-21
Average Household Trip Rates for Welfare Recipients by Household Vehicles

Household Vehicles	N	Trip Rate
0 vehicles	32	4.41
1 vehicle	7	3.69
2 vehicles	3	16.07
3+ vehicles	1	8.00
Total	**43**	**5.28**

Base: All households reporting with incomes less than $25,000 or that refused income reporting welfare assistance (n=43), unweighted.

Table H-22
Average Household Trip Rates for Welfare Recipients by Household Income

Household Income	N	Trip Rate
< $15,000	30	4.41
$15,000 to < $25,000	10	8.13
Refused	2	4.00
Total	**43**	**5.28**

Base: All households reporting with incomes less than $25,000 or that refused income reporting welfare assistance (n=43), unweighted.

3.3 Person Survey Results

A total of 9,358 Delaware Valley household members participated in the Transportation for the 21st Century Household Travel Survey. The person data includes demographic information about the household members, student data, and employment data for first and second jobs.

a. Person Demographics

The following tables show the distribution of household members by gender, age, licensed driver status, relationship to head of household, and, if disabled, disability type. As shown in Table P-1, there was an almost equal distribution by gender in the survey respondent pool.

Table P-1
Gender of Household Members

County	N	Male	Female	Refused	Total
Bucks	1098	47.7%	52.2%	0.1%	100.0%
Chester	759	45.3%	54.5%	0.1%	100.0%
Delaware	980	45.2%	54.8%	0.0%	100.0%
Mont/Berks	1342	48.4%	51.6%	0.0%	100.0%
Philadelphia	2621	43.7%	56.0%	0.2%	100.0%
PA Counties	**6801**	**45.7%**	**54.2%**	**0.1%**	**100.0%**
Burlington	692	47.3%	52.5%	0.1%	100.0%
Camden	867	46.8%	53.0%	0.2%	100.0%
Gloucester	436	48.3%	51.5%	0.2%	100.0%
Mercer	562	44.6%	54.9%	0.5%	100.0%
NJ Counties	**2557**	**46.7%**	**53.0%**	**0.2%**	**100.0%**
DVRPC Total	**9358**	**45.9%**	**53.9%**	**0.1%**	**100.0%**

Base: All household members, weighted.

The majority of respondents (56%) were between the ages of 19 and 64. An additional 20% of participating household members were under the age of 16, while 20% were 65 years of age or older.

Table P-2
Respondent Age

County	N	15 or under	16 to 18	19 to 64	65+	Refused	Total
Bucks	1098	23.5%	3.0%	56.8%	15.2%	1.5%	100.0%
Chester	759	20.9%	3.0%	56.5%	17.0%	2.6%	100.0%
Delaware	980	19.9%	3.5%	53.5%	22.0%	1.1%	100.0%
Mont/Berks	1342	20.8%	3.2%	56.0%	18.1%	1.9%	100.0%
Philadelphia	2621	16.9%	3.1%	56.8%	21.9%	1.3%	100.0%
PA Counties	**6801**	**19.6%**	**3.2%**	**56.1%**	**19.5%**	**1.6%**	**100.0%**
Burlington	692	17.8%	3.6%	53.0%	23.3%	1.7%	100.0%
Camden	867	20.9%	2.8%	54.3%	20.2%	2.0%	100.0%
Gloucester	436	21.7%	4.6%	53.0%	19.2%	1.6%	100.0%
Mercer	562	18.4%	2.9%	56.7%	19.3%	2.9%	100.0%
NJ Counties	**2557**	**19.7%**	**3.3%**	**54.4%**	**20.6%**	**2.0%**	**100.0%**
DVRPC Total	**9358**	**19.6%**	**3.2%**	**55.7%**	**19.8%**	**1.7%**	**100.0%**

Base: All household members, weighted.

Driver's license status was obtained for all participating household members age 16 or older. As shown in Table P-3, 83% of respondents were licensed drivers. The proportion of Philadelphia County respondents with driver's licenses was lower than for the rest of the region; only 68% reported having licenses.

Table P-3
Licensed Driver Status

County	N	Yes	No	Refused	Total
Bucks	840	92.3%	7.5%	0.2%	100.0%
Chester	601	93.0%	6.6%	0.3%	100.0%
Delaware	785	89.2%	10.8%	0.0%	100.0%
Mont/Berks	1063	88.4%	11.3%	0.3%	100.0%
Philadelphia	2177	68.4%	31.1%	0.6%	100.0%
PA Counties	**5466**	**81.6%**	**18.0%**	**0.3%**	**100.0%**
Burlington	569	92.1%	7.9%	0.0%	100.0%
Camden	686	86.0%	14.0%	0.0%	100.0%
Gloucester	342	87.7%	11.7%	0.6%	100.0%
Mercer	458	85.8%	13.3%	0.9%	100.0%
NJ Counties	**2055**	**90.2%**	**9.6%**	**0.1%**	**100.0%**
DVRPC Total	**7521**	**83.3%**	**16.3%**	**0.3%**	**100.0%**

Base: All household members age 16+, weighted.

Relationship to the head of household was also obtained for all participating household members. As shown in Table P-4, the majority of respondents were related to the head of household (53%).

Table P-4
Relationship to Head of House

County	N	Respondent	Related	Not Related	Unknown	Total
Bucks	1098	39.9%	59.0%	0.5%	0.6%	100.0%
Chester	759	42.8%	56.1%	1.1%	0.0%	100.0%
Delaware	980	44.8%	54.2%	0.6%	0.4%	100.0%
Mont/Berks	1342	42.6%	56.1%	1.2%	0.1%	100.0%
Philadelphia	2621	50.3%	47.0%	2.4%	0.2%	100.0%
PA Counties	**6801**	**45.5%**	**52.8%**	**1.4%**	**0.2%**	**100.0%**
Burlington	692	44.7%	54.8%	0.6%	0.0%	100.0%
Camden	867	44.4%	54.0%	1.5%	0.1%	100.0%
Gloucester	436	39.7%	58.7%	1.4%	0.2%	100.0%
Mercer	562	45.8%	52.6%	1.6%	0.0%	100.0%
NJ Counties	**2557**	**43.9%**	**54.7%**	**1.3%**	**0.1%**	**100.0%**
DVRPC Total	**9358**	**45.1%**	**53.3%**	**1.4%**	**0.2%**	**100.0%**

Base: All household members, weighted.

As shown in Table P-5, most participating household members did not report any type of disability. The greatest proportion of disabled respondents was in Philadelphia County (7% as compared to 4% overall).

Table P-5
Disability Status

County	N	Disabled	Not Disabled	Refused	Total
Bucks	1098	2.5%	97.5%	0.0%	100.0%
Chester	759	3.2%	96.8%	0.0%	100.0%
Delaware	980	3.1%	96.9%	0.0%	100.0%
Mont/Berks	1342	3.0%	96.9%	0.1%	100.0%
Philadelphia	2621	7.1%	92.7%	0.2%	100.0%
PA Counties	**6801**	**4.5%**	**95.4%**	**0.1%**	**100.0%**
Burlington	692	3.6%	96.4%	0.0%	100.0%
Camden	867	4.8%	94.5%	0.7%	100.0%
Gloucester	436	3.2%	96.1%	0.7%	100.0%
Mercer	562	3.9%	95.7%	0.4%	100.0%
NJ Counties	**2557**	**4.0%**	**95.6%**	**0.4%**	**100.0%**
DVRPC Total	**9358**	**4.4%**	**95.4%**	**0.2%**	**100.0%**

Base: All household members, weighted.

b. Student Data

For those respondents identified as students, data on school level, and number of days attending school were obtained. This information is displayed in the following tables. Nearly one-fourth (24%) of participating household members reported attending school. The proportion of students was fairly consistent across the Delaware Valley region.

Table S-1
Student Status

County	N	Yes	No	Refused	Total
Bucks	1098	26.4%	73.5%	0.1%	100.0%
Chester	759	23.6%	76.4%	0.0%	100.0%
Delaware	980	24.1%	75.9%	0.0%	100.0%
Mont/Berks	1342	23.3%	76.5%	0.2%	100.0%
Philadelphia	2621	24.1%	75.8%	0.2%	100.0%
PA Counties	**6801**	**24.3%**	**75.6%**	**0.1%**	**100.0%**
Burlington	692	22.4%	77.3%	0.3%	100.0%
Camden	867	23.0%	77.0%	0.0%	100.0%
Gloucester	436	26.3%	73.7%	0.0%	100.0%
Mercer	562	22.4%	77.6%	0.0%	100.0%
NJ Counties	**2557**	**23.2%**	**76.7%**	**0.1%**	**100.0%**
DVRPC Total	**9358**	**24.0%**	**75.9%**	**0.1%**	**100.0%**

Base: All household members, weighted.

The majority of students were children in primary (Kindergarten through 6th grade) and secondary (7th through 12th grade) schools (39% and 32%, respectively). Mercer County respondents had the highest proportion of children in daycare or preschool (16%), while Philadelphia County respondents reported the highest percentage of college students (24%).

Table S-2
Level of School Attending

County	N	Daycare/ Preschool	K thru 6th	Grades 7-12	Vo-Tech/Adult	College	Refused	Total
Bucks	290	8.6%	46.2%	32.1%	0.6%	11.0%	1.3%	100.0%
Chester	179	13.4%	39.1%	32.4%	1.7%	13.4%	0.0%	100.0%
Delaware	236	8.9%	38.1%	33.9%	1.2%	17.8%	0.0%	100.0%
Mont/Berks	313	12.0%	40.3%	34.6%	1.6%	9.5%	2.0%	100.0%
Philadelphia	631	9.0%	33.5%	27.8%	4.9%	24.3%	0.5%	100.0%
PA Counties	**1650**	**10.0%**	**38.3%**	**31.2%**	**2.6%**	**17.0%**	**0.9%**	**100.0%**
Burlington	155	7.1%	41.6%	29.2%	3.2%	18.8%	0.0%	100.0%
Camden	199	8.1%	48.0%	31.3%	3.0%	9.1%	0.5%	100.0%
Gloucester	115	6.0%	34.8%	40.0%	2.6%	14.8%	1.7%	100.0%
Mercer	126	16.0%	36.8%	32.8%	1.6%	12.8%	0.0%	100.0%
NJ Counties	**594**	**9.2%**	**41.2%**	**32.6%**	**2.8%**	**13.6%**	**0.5%**	**100.0%**
DVRPC Total	**2816**	**9.8%**	**39.0%**	**31.6%**	**2.6%**	**16.1%**	**0.8%**	**100.0%**

Base: All household members that attend school, weighted.

The majority of students (84%) reported attending school five days per week. Sixteen percent of students attended school less than five days per week. Delaware County students were most likely to attend school less than five days per week (19%), while Camden County students were most likely to attend school five days per week (88%).

Table S-3
Number of Days Attend School

County	N	Less than 5	5 days	More than 5	Refused	Total
Bucks	290	14.8%	85.2%	0.0%	0.0%	100.0%
Chester	179	18.4%	81.6%	0.0%	0.0%	100.0%
Delaware	236	19.1%	80.5%	0.4%	0.0%	100.0%
Mont/Berks	313	14.4%	85.3%	0.3%	0.0%	100.0%
Philadelphia	631	17.9%	81.5%	0.5%	0.2%	100.0%
PA Counties	**1650**	**16.9%**	**82.7%**	**0.3%**	**0.1%**	**100.0%**
Burlington	155	14.8%	84.5%	0.0%	0.6%	100.0%
Camden	199	10.1%	88.4%	0.1%	0.5%	100.0%
Gloucester	115	14.8%	83.5%	0.9%	0.9%	100.0%
Mercer	126	11.9%	87.3%	0.8%	0.0%	100.0%
NJ Counties	**594**	**12.6%**	**86.2%**	**0.7%**	**0.5%**	**100.0%**
DVRPC Total	**2816**	**15.8%**	**83.6%**	**0.4%**	**0.2%**	**100.0%**

Base: All household members that attend school, weighted.

c. Employment Data

All respondents age 16 or older were asked about employment. Those respondents that indicated they were not employed were asked about their non-work status. All employed respondents were asked whether they worked one job or more than one job. The employment information is shown in the following tables. As shown in Table E-1, 47% of all respondents were employed full-time, 11% employed part-time, and 42% were not employed.

Table E-1
Employment Status

County	N	Full-Time	Part-Time	Not Employed	Total
Bucks	840	54.5%	10.7%	34.8%	100.0%
Chester	601	51.6%	11.0%	37.4%	100.0%
Delaware	785	46.8%	10.8%	42.4%	100.0%
Mont/Berks	1063	50.7%	11.8%	37.5%	100.0%
Philadelphia	2177	41.8%	10.3%	47.9%	100.0%
PA Counties	**5466**	**47.2%**	**10.8%**	**41.9%**	**100.0%**
Burlington	569	47.2%	10.9%	41.9%	100.0%
Camden	686	46.2%	11.2%	42.6%	100.0%
Gloucester	342	43.9%	11.1%	45.0%	100.0%
Mercer	458	48.8%	9.6%	41.6%	100.0%
NJ Counties	**2055**	**46.6%**	**10.8%**	**42.6%**	**100.0%**
DVRPC Total	**7521**	**47.1%**	**10.8%**	**42.1%**	**100.0%**

Base: All household members age 16+, weighted.

Those respondents who were not employed were asked about their status. The majority of unemployed respondents (60%) were retired, while 16% were homemakers. Most retirees were from Burlington County (68%), while the highest proportion of homemakers were in Montgomery and Berks Counties (23%).

Table E-2
Status if Not Employed

County	N	Retired	Homemaker	Unemployed (seeking)	Unemployed (not seeking)	Student	Unknown	Total
Bucks	292	58.6%	18.2%	6.5%	4.1%	7.9%	4.8%	100.0%
Chester	225	62.2%	19.6%	4.0%	4.4%	6.2%	3.5%	100.0%
Delaware	333	63.7%	18.6%	4.2%	3.0%	8.1%	2.4%	100.0%
Mont/Berks	399	57.9%	23.4%	3.8%	3.0%	8.6%	3.3%	100.0%
Philadelphia	1042	59.6%	9.9%	9.5%	5.8%	10.6%	4.7%	100.0%
PA Counties	**2291**	**59.9%**	**15.5%**	**6.9%**	**4.6%**	**9.1%**	**4.0%**	**100.0%**
Burlington	238	68.4%	13.9%	5.1%	1.7%	8.4%	2.6%	100.0%
Camden	292	59.8%	21.6%	4.8%	4.1%	5.5%	4.1%	100.0%
Gloucester	154	55.8%	16.9%	3.9%	7.1%	9.7%	6.4%	100.0%
Mercer	191	61.1%	15.3%	5.3%	5.3%	8.4%	4.8%	100.0%
NJ Counties	**875**	**61.6%**	**17.4%**	**4.9%**	**4.2%**	**7.7%**	**4.2%**	**100.0%**
DVRPC Total	**3165**	**60.4%**	**16.0%**	**6.3%**	**4.5%**	**8.7%**	**4.1%**	**100.0%**

Base: All unemployed household members age 16+, weighted.

Those respondents who indicated they were employed either full-time or part-time were asked whether they worked one job or more than one job. As shown in Table E-3, 94% of employed respondents worked one job.

Table E-3
Number of Jobs Held

County	N	More Than One Job	One Job	Unknown	Total
Bucks	548	5.3%	94.7%	0.0%	100.0%
Chester	376	5.1%	94.7%	0.3%	100.0%
Delaware	452	4.9%	94.9%	0.2%	100.0%
Mont/Berks	664	6.0%	94.0%	0.0%	100.0%
Philadelphia	1135	6.9%	93.0%	0.2%	100.0%
PA Counties	**3175**	**6.0%**	**93.9%**	**0.1%**	**100.0%**
Burlington	331	3.9%	95.5%	0.6%	100.0%
Camden	394	6.1%	93.9%	0.0%	100.0%
Gloucester	188	3.2%	95.7%	1.1%	100.0%
Mercer	267	6.0%	93.6%	0.4%	100.0%
NJ Counties	**1180**	**5.0%**	**94.6%**	**0.4%**	**100.0%**
DVRPC Total	**4356**	**5.7%**	**94.1%**	**0.2%**	**100.0%**

Base: All employed household members age 16+, weighted.

Table E-4
Household Workers by Industry

Industry	N	Household Workers 1	2	3+	Total
Agriculture / forestry / fishing	27	0.4%	0.7%	1.0%	0.6%
Mining	9	0.3%	0.2%	0.0%	0.2%
Utilities	61	1.1%	1.7%	1.1%	1.4%
Construction	175	3.9%	4.0%	4.6%	4.0%
Manufacturing (non-durable)	74	1.6%	1.7%	2.1%	1.7%
Manufacturing (durable)	94	2.5%	2.2%	1.1%	2.2%
Wholesale trade	67	1.7%	1.5%	1.1%	1.5%
Retail trade	270	5.3%	5.8%	9.9%	6.2%
Transportation and warehousing	166	3.5%	3.6%	5.4%	3.8%
Information	186	4.6%	4.6%	2.4%	4.3%
Finance or insurance	269	6.3%	6.1%	6.1%	6.2%
Real estate	45	1.5%	0.9%	0.5%	1.0%
Professional, scientific, technical	674	17.5%	15.8%	9.4%	15.5%
Management	189	4.4%	4.5%	3.7%	4.3%
Administrative/support	320	5.8%	7.8%	9.6%	7.4%
Educational services	428	9.6%	10.0%	9.7%	9.8%
Healthcare/social services	423	10.1%	10.2%	7.0%	9.7%
Arts, recreation, entertainment	136	3.0%	3.2%	3.4%	3.1%
Accommodations /food svcs	198	3.8%	4.0%	8.3%	4.5%
Other services	284	7.4%	5.8%	6.7%	6.5%
Public administration	112	2.7%	2.6%	2.2%	2.6%
Other	7	0.3%	0.1%	0.0%	0.2%
Don't know	61	1.3%	1.4%	1.8%	1.4%
Refused	77	1.4%	1.7%	2.9%	1.8%
Total	**4352**	**100%**	**100%**	**100%**	**100%**

Base: All employed household members age 16+, weighted.

d. Data on Primary Job

All respondents age 16 or older that were employed were asked a series of questions about their job. This included type of employer, tenure at current job site, number of days worked and number of days telecommute instead of work, schedule worked, and whether vehicle was needed for work. In addition, questions about employer benefits for parking and transit usage were asked. As shown in Table W-1, 62% of employed respondents worked for private companies, while 15% worked for the government. The greatest proportion of self-employed respondents was those from Chester County (14% compared to 9% overall).

Table W-1
Employer Type

County	N	Private Co.	Government	Self-employed	Non-Profit	Refused	Total
Bucks	548	69.1%	10.2%	9.9%	9.0%	1.8%	100.0%
Chester	376	62.2%	11.4%	13.6%	9.6%	3.2%	100.0%
Delaware	452	62.7%	14.3%	9.9%	12.1%	0.9%	100.0%
Mont/Berks	664	63.9%	11.7%	9.0%	13.1%	2.3%	100.0%
Philadelphia	1135	56.7%	17.5%	9.5%	14.1%	2.2%	100.0%
PA Counties	**3175**	**61.8%**	**13.9%**	**10.0%**	**12.2%**	**2.0%**	**100.0%**
Burlington	331	62.3%	16.9%	9.6%	8.1%	3.0%	100.0%
Camden	394	64.5%	15.0%	7.4%	10.7%	2.5%	100.0%
Gloucester	188	64.2%	16.0%	7.0%	9.6%	3.2%	100.0%
Mercer	267	52.1%	26.2%	6.4%	11.2%	4.1%	100.0%
NJ Counties	**1180**	**61.0%**	**18.2%**	**7.7%**	**9.9%**	**3.1%**	**100.0%**
DVRPC Total	**4356**	**61.6%**	**15.1%**	**9.4%**	**11.6%**	**2.4%**	**100.0%**

Base: All employed household members age 16+, weighted.

Most employed respondents had worked at the same work locations for more than five years (52%). An additional 32% reported they had worked at the same work locations for between one and five years.

Table W-2
Tenure at Current Job Site

County	N	Less than a year	1 to 5 years	More than 5 years	Refused	Total
Bucks	548	13.2%	30.5%	54.8%	1.4%	100.0%
Chester	376	13.6%	27.4%	55.9%	3.2%	100.0%
Delaware	452	14.4%	29.2%	54.9%	1.5%	100.0%
Mont/Berks	664	13.2%	30.2%	54.0%	2.6%	100.0%
Philadelphia	1135	16.2%	35.2%	45.7%	2.9%	100.0%
PA Counties	**3175**	**14.5%**	**31.6%**	**51.5%**	**2.4%**	**100.0%**
Burlington	331	12.7%	28.2%	57.3%	1.8%	100.0%
Camden	394	11.6%	33.4%	52.4%	2.6%	100.0%
Gloucester	188	13.8%	31.7%	52.4%	2.1%	100.0%
Mercer	267	10.4%	32.5%	55.2%	1.9%	100.0%
NJ Counties	**1180**	**12.0%**	**31.4%**	**54.4%**	**2.1%**	**100.0%**
DVRPC Total	**4356**	**13.8%**	**31.5%**	**52.3%**	**2.3%**	**100.0%**

Base: All employed household members age 16+, weighted.

Most employed respondents reported that they worked five days per week (79%). Respondents from Gloucester County had a higher percentage of respondents that worked less than five days per week (24% as compared to 18% overall).

Table W-3
Number of Days Worked

County	N	Less than 5 days	5 days	Refused	Total
Bucks	548	16.6%	81.8%	1.6%	100.0%
Chester	376	18.1%	78.5%	3.5%	100.0%
Delaware	452	17.7%	81.0%	1.3%	100.0%
Mont/Berks	664	19.5%	77.9%	2.6%	100.0%
Philadelphia	1135	18.8%	78.5%	2.7%	100.0%
PA Counties	**3175**	**18.3%**	**79.3%**	**2.4%**	**100.0%**
Burlington	331	18.4%	79.8%	1.8%	100.0%
Camden	394	18.5%	79.2%	2.3%	100.0%
Gloucester	188	23.9%	73.4%	2.7%	100.0%
Mercer	267	14.2%	83.6%	2.2%	100.0%
NJ Counties	**1180**	**18.4%**	**79.4%**	**2.2%**	**100.0%**
DVRPC Total	**4356**	**18.3%**	**79.4%**	**2.3%**	**100.0%**

Base: All employed household members age 16+, weighted.

Ninety-four percent of all respondents reported they telecommuted less than five days per week, if at all. Of those that telecommuted five or more days per week, the higher proportion was respondents in Bucks County (5% compared to 3% overall).

Table W-4
Number of Days Telecommute

County	N	Less than 5 days	5 days	More than 5 days	Refused	Total
Bucks	548	92.3%	4.7%	2.2%	0.7%	100.0%
Chester	376	88.8%	4.3%	3.7%	3.2%	100.0%
Delaware	452	94.0%	3.5%	1.1%	1.3%	100.0%
Mont/Berks	664	94.7%	2.9%	1.2%	1.2%	100.0%
Philadelphia	1135	94.4%	2.0%	2.2%	1.3%	100.0%
PA Counties	**3175**	**93.5%**	**3.1%**	**2.0%**	**1.4%**	**100.0%**
Burlington	331	94.0%	3.3%	1.8%	0.9%	100.0%
Camden	394	94.7%	2.3%	1.3%	1.8%	100.0%
Gloucester	188	95.2%	1.6%	2.1%	1.1%	100.0%
Mercer	267	93.7%	3.0%	1.9%	1.5%	100.0%
NJ Counties	**1180**	**94.4%**	**2.6%**	**1.7%**	**1.3%**	**100.0%**
DVRPC Total	**4356**	**93.7%**	**3.0%**	**1.9%**	**1.4%**	**100.0%**

Base: All employed household members age 16+, weighted.

Employed respondents were also asked if they worked a regular work schedule (i.e., 40 hours in 5 days) or a compressed work schedule. As shown in Table W-5, 91% of respondents worked a regular work schedule. Philadelphia respondents were most likely to work a compressed schedule (11% as compared to 8% overall).

Table W-5
Compressed Work Week

County	N	Work Compressed Schedule	Work Regular Schedule	Unknown	Total
Bucks	548	5.9%	93.2%	0.8%	100.0%
Chester	376	8.7%	88.7%	2.6%	100.0%
Delaware	452	5.4%	94.3%	0.3%	100.0%
Mont/Berks	664	5.0%	94.0%	0.9%	100.0%
Philadelphia	1135	10.7%	86.9%	2.4%	100.0%
PA Counties	**3175**	**7.7%**	**90.7%**	**1.6%**	**100.0%**
Burlington	331	5.6%	94.0%	0.4%	100.0%
Camden	394	6.9%	92.7%	0.3%	100.0%
Gloucester	188	11.3%	86.1%	2.6%	100.0%
Mercer	267	10.3%	89.3%	0.4%	100.0%
NJ Counties	**1180**	**8.0%**	**91.2%**	**0.7%**	**100.0%**
DVRPC Total	**4356**	**7.7%**	**90.9%**	**1.3%**	**100.0%**

Base: All employed household members age 16+, weighted.

As shown in Table W-6, most respondents (67%) did not work on the weekend. However, 23% of employed Chester County respondents worked at least one weekend day, while 12% of Philadelphia respondents reported they worked both Saturday and Sundays.

Table W-6
Work on Saturday or Sunday

County	N	No Weekend Work	Work 1 Weekend Day	Work 2 Weekend Days	Unknown	Total
Bucks	548	66.7%	21.3%	11.5%	0.6%	100.0%
Chester	376	64.4%	22.9%	10.4%	2.4%	100.0%
Delaware	452	65.9%	21.7%	11.7%	0.6%	100.0%
Mont/Berks	664	71.3%	20.2%	7.7%	0.9%	100.0%
Philadelphia	1135	64.9%	21.8%	12.3%	1.0%	100.0%
PA Counties	**3175**	**66.6%**	**21.5%**	**10.9%**	**1.0%**	**100.0%**
Burlington	331	65.0%	22.7%	10.6%	1.8%	100.0%
Camden	394	70.8%	18.3%	9.6%	1.3%	100.0%
Gloucester	188	65.4%	23.4%	11.2%	0.0%	100.0%
Mercer	267	74.3%	18.7%	6.3%	0.7%	100.0%
NJ Counties	**1180**	**69.2%**	**20.4%**	**9.3%**	**1.0%**	**100.0%**
DVRPC Total	**4356**	**67.3%**	**21.2%**	**10.4%**	**1.0%**	**100.0%**

Base: All employed household members age 16+, weighted.

Almost three-fourths (73%) of employed respondents indicated they did not need their personal vehicles for work purposes. Of those that reported they did need their personal vehicles for work purposes, the highest percentage (30% each) was respondents from Delaware and Chester counties.

Table W-7
Vehicle Needed for Work

County	N	Need Vehicle for Work	Don't Need Vehicle	Unknown	Total
Bucks	548	28.8%	69.7%	1.4%	100.0%
Chester	376	29.8%	67.0%	3.2%	100.0%
Delaware	452	29.6%	69.2%	1.1%	100.0%
Mont/Berks	664	27.0%	70.5%	2.6%	100.0%
Philadelphia	1135	17.8%	79.6%	2.5%	100.0%
PA Counties	**3175**	**24.7%**	**73.0%**	**2.2%**	**100.0%**
Burlington	331	27.8%	69.8%	2.4%	100.0%
Camden	394	24.9%	72.8%	2.3%	100.0%
Gloucester	188	25.5%	72.9%	1.6%	100.0%
Mercer	267	20.2%	77.9%	1.8%	100.0%
NJ Counties	**1180**	**24.7%**	**73.1%**	**2.1%**	**100.0%**
DVRPC Total	**4356**	**24.7%**	**73.0%**	**2.2%**	**100.0%**

Base: All employed household members age 16+, weighted.

All employed respondents were asked if their employers provided parking subsidies. Most respondents (78%) indicated that their employers did not subsidize parking. Of the 15% who answered affirmatively, the highest proportion was of Mercer County residents.

Table W-8
Employer Subsidies for Parking

County	N	Yes	No	Unknown	Total
Bucks	548	15.4%	76.8%	7.8%	100.0%
Chester	376	12.9%	79.0%	8.1%	100.0%
Delaware	452	18.5%	72.3%	9.2%	100.0%
Mont/Berks	664	17.6%	74.9%	7.5%	100.0%
Philadelphia	1135	113%	82.4%	6.4%	100.0%
PA Counties	**3175**	**14.5%**	**78.0%**	**7.4%**	**100.0%**
Burlington	331	15.3%	79.0%	5.7%	100.0%
Camden	394	16.0%	78.7%	5.3%	100.0%
Gloucester	188	15.1%	80.8%	4.0%	100.0%
Mercer	267	22.4%	72.4%	5.3%	100.0%
NJ Counties	**1180**	**17.1%**	**77.8%**	**5.1%**	**100.0%**
DVRPC Total	**4356**	**15.2%**	**77.9%**	**6.9%**	**100.0%**

Base: All employed household members age 16+, weighted.

All employed respondents were also asked where they parked (or would park if they drove) when they drove to work. As indicated in Table W-9, most respondents (77%) parked on-site at their work locations. The remainder either parked off-site, on the street, or at some other location. Philadelphia respondents were most likely to park off-site (11%) or on the street (15%). Chester County respondents were most likely to park on-site (87%).

Table W-9
Parking Location at Work

County	N	On-Site	Off-Site	Street	Other	Total
Bucks	548	84.8%	7.6%	3.6%	4.0%	100.0%
Chester	376	86.6%	5.7%	3.0%	4.8%	100.0%
Delaware	452	78.6%	10.2%	5.7%	5.4%	100.0%
Mont/Berks	664	84.1%	7.7%	3.8%	4.3%	100.0%
Philadelphia	1135	60.1%	11.2%	14.6%	14.2%	100.0%
PA Counties	**3175**	**75.1%**	**9.0%**	**7.8%**	**8.0%**	**100.0%**
Burlington	331	84.0%	7.0%	5.7%	3.3%	100.0%
Camden	394	76.9%	8.0%	9.9%	5.3%	100.0%
Gloucester	188	86.0%	5.2%	6.4%	2.4%	100.0%
Mercer	267	81.6%	6.9%	6.5%	4.9%	100.0%
NJ Counties	**1180**	**81.5%**	**7.0%**	**7.3%**	**4.3%**	**100.0%**
DVRPC Total	**4356**	**76.8%**	**8.5%**	**7.7%**	**7.0%**	**100.0%**

Base: All employed household members age 16+, weighted.

The majority of employed respondents (83%) indicated their employers did not provide transit subsidies. Of those whose employers did provide transit subsidies, the highest proportion was of Philadelphia respondents (11% compared to 8% overall).

Table W-10
Employer Subsidies for Transit

County	N	Yes	No	Unknown	Total
Bucks	548	7.0%	85.2%	7.8%	100.0%
Chester	376	5.8%	81.4%	12.7%	100.0%
Delaware	452	9.3%	83.1%	7.6%	100.0%
Mont/Berks	664	7.1%	83.5%	9.4%	100.0%
Philadelphia	1135	11.6%	80.2%	8.2%	100.0%
PA Counties	**3175**	**8.9%**	**82.3%**	**8.8%**	**100.0%**
Burlington	331	7.7%	81.3%	11.0%	100.0%
Camden	394	7.2%	85.8%	6.9%	100.0%
Gloucester	188	6.2%	84.8%	9.0%	100.0%
Mercer	267	5.9%	81.8%	12.3%	100.0%
NJ Counties	**1180**	**6.9%**	**83.5%**	**9.6%**	**100.0%**
DVRPC Total	**4356**	**8.4%**	**82.6%**	**9.0%**	**100.0%**

Base: All employed household members age 16+, weighted.

Most employed respondents reported their work schedule could vary by at least 15 minutes, if not longer. This was most likely the case for Gloucester County and Bucks respondents and least likely for Philadelphia respondents.

Table W-11
Schedule Type

County	N	Constant	Varies	Unknown	Total
Bucks	548	29.9%	68.6%	1.4%	100.0%
Chester	376	31.9%	63.8%	4.3%	100.0%
Delaware	452	32.5%	65.9%	1.6%	100.0%
Mont/Berks	664	32.5%	65.1%	2.4%	100.0%
Philadelphia	1135	35.6%	60.4%	4.0%	100.0%
PA Counties	**3175**	**33.1%**	**64.0%**	**2.9%**	**100.0%**
Burlington	331	35.3%	63.1%	1.5%	100.0%
Camden	394	31.2%	65.7%	3.0%	100.0%
Gloucester	188	28.2%	68.6%	3.2%	100.0%
Mercer	267	29.5%	66.8%	3.7%	100.0%
NJ Counties	**1180**	**31.5%**	**65.7%**	**2.8%**	**100.0%**
DVRPC Total	**4356**	**32.7%**	**64.5%**	**2.8%**	**100.0%**

Base: All employed household members age 16+, weighted.

The most frequent work start times were between the hours of 6 a.m. and 9 a.m., with 73% of all employed respondents starting work during that period. The start times were fairly consistent across the region.

Table W-12
Work Start Times

County	N	Before 6 am	6 am - 9 am	9 am - 3 pm	3 pm - 6 pm	After 6 pm	Refused	Total
Bucks	548	7.3%	74.1%	8.6%	3.8%	2.7%	3.5%	100.0%
Chester	376	7.2%	74.4%	9.1%	2.1%	2.7%	4.5%	100.0%
Delaware	452	6.9%	74.6%	8.6%	3.1%	3.1%	3.8%	100.0%
Mont/Berks	664	6.0%	75.2%	9.8%	2.7%	2.7%	3.6%	100.0%
Philadelphia	1135	5.8%	69.2%	13.8%	4.1%	3.1%	4.0%	100.0%
PA Counties	**3175**	**6.4%**	**72.7%**	**10.8%**	**3.4%**	**2.9%**	**3.8%**	**100.0%**
Burlington	331	8.5%	70.4%	9.7%	3.0%	3.0%	5.4%	100.0%
Camden	394	8.4%	70.9%	11.4%	3.3%	2.8%	3.3%	100.0%
Gloucester	188	6.9%	69.8%	10.1%	5.8%	2.6%	4.8%	100.0%
Mercer	267	6.0%	78.3%	9.4%	1.5%	2.2%	2.6%	100.0%
NJ Counties	**1180**	**7.7%**	**72.3%**	**10.2%**	**3.2%**	**2.6%**	**4.0%**	**100.0%**
DVRPC Total	**4356**	**6.8%**	**72.6%**	**10.6%**	**3.4%**	**2.8%**	**3.9%**	**100.0%**

Base: All employed household members age 16+, weighted.

Sixty-one percent of all employed respondents reported ending work between 3 p.m. and 6 p.m. As shown in Table W-13, an additional 16% each ended work after 6 p.m.

Table W-13
Work End Times

County	N	Before 6 am	6 am - 9 am	9 am - 3 pm	3 pm - 6 pm	After 6 pm	Refused	Total
Bucks	548	2.4%	1.1%	14.6%	64.0%	14.6%	3.3%	100.0%
Chester	376	1.1%	1.1%	14.9%	636%	14.6%	4.8%	100.0%
Delaware	452	1.3%	1.3%	13.7%	65.5%	13.7%	4.4%	100.0%
Mont/Berks	664	1.1%	1.4%	13.7%	64.8%	15.3%	3.8%	100.0%
Philadelphia	1135	2.0%	2.2%	16.3%	56.3%	18.7%	4.5%	100.0%
PA Counties	**3175**	**1.7%**	**1.5%**	**14.9%**	**61.6%**	**16.1%**	**4.2%**	**100.0%**
Burlington	331	0.9%	0.9%	16.3%	58.9%	17.5%	5.4%	100.0%
Camden	394	2.5%	1.5%	15.5%	61.3%	15.5%	3.6%	100.0%
Gloucester	188	2.6%	1.1%	17.5%	55.0%	19.0%	4.8%	100.0%
Mercer	267	04%	1.5%	16.8%	66.4%	11.9%	3.0%	100.0%
NJ Counties	**1180**	**1.6%**	**1.4%**	**16.3%**	**60.8%**	**15.7%**	**4.1%**	**100.0%**
DVRPC Total	**4356**	**1.6%**	**1.5%**	**15.3%**	**61.4%**	**16.0%**	**4.2%**	**100.0%**

Base: All employed household members age 16+, weighted.

e. Data on Secondary Job

All respondents who indicated they worked more than one job were asked to provide some details on their second job. Five data elements were collected for secondary job: employer type, number of days worked, number of days telecommuted, and typical start and end times. The data are displayed in the tables that follow. As with the primary jobs, most respondents with a secondary job worked for private companies. Burlington County respondents were more likely to work for themselves at their secondary jobs (39% as compared to 18% overall).

Table W-14
Secondary Job: Employer Type

County	N	Private Co.	Government	Self-employed	Non-Profit	Unknown	Total
Bucks	29	69.0%	6.9%	13.8%	10.3%	0.0%	100.0%
Chester	19	63.2%	15.8%	10.5%	10.5%	0.0%	100.0%
Delaware	22	72.7%	4.5%	9.1%	4.5%	9.1%	100.0%
Mont/Berks	40	50.0%	225%	22.5%	5.0%	0.0%	100.0%
Philadelphia	78	55.1%	14.1%	15.4%	15.4%	0.0%	100.0%
PA Counties	**189**	**59.3%**	**14.3%**	**14.8%**	**10.6%**	**1.1%**	**100.0%**
Burlington	13	46.2%	7.7%	38.5%	7.7%	0.0%	100.0%
Camden	24	54.2%	16.7%	25.0%	4.2%	0.0%	100.0%
Gloucester	6	66.7%	0.0%	16.7%	16.7%	0.0%	100.0%
Mercer	16	43.8%	25.0%	31.3%	0.0%	0.0%	100.0%
NJ Counties	**59**	**50.8%**	**15.3%**	**30.5%**	**3.4%**	**0.0%**	**100.0%**
DVRPC Total	**248**	**57.3%**	**14.5%**	**18.5%**	**8.9%**	**0.8%**	**100.0%**

Base: All employed household members age 16+ that reported having more than one job, weighted.

Seventy-eight percent of respondents with more than one job work less than five days per week at this second job. There were a higher proportion of Camden and Delaware county respondents working five days (25% and 22%, respectively). Fifteen percent of Burlington County respondents worked more than five days at their second job.

Table W-15
Secondary Job: Number of Days Worked

County	N	Less than 5 days	5 days	More than 5 days	Unknown	Total
Bucks	29	75.9%	13.8%	3.4%	6.9%	100.0%
Chester	19	89.5%	10.5%	0.0%	0.0%	100.0%
Delaware	22	65.2%	21.7%	8.7%	4.3%	100.0%
Mont/Berks	40	82.9%	14.6%	2.4%	0.0%	100.0%
Philadelphia	78	80.8%	14.1%	0.0%	5.1%	100.0%
PA Counties	**189**	**79.5%**	**14.7%**	**2.1%**	**3.7%**	**100.0%**
Burlington	13	84.6%	0.0%	15.4%	0.0%	100.0%
Camden	24	62.5%	25.0%	4.2%	8.3%	100.0%
Gloucester	6	83.3%	16.7%	0.0%	0.0%	100.0%
Mercer	16	81.3%	18.8%	0.0%	0.0%	100.0%
NJ Counties	**59**	**74.6%**	**16.9%**	**5.1%**	**3.4%**	**100.0%**
DVRPC Total	**248**	**78.2%**	**15.3%**	**2.8%**	**3.6%**	**100.0%**

Base: All employed household members age 16+ that reported having more than one job, weighted.

The majority of employed respondents with more than one job were likely to telecommute less than five days per week, if at all (95%). Of those that telecommuted five days, 9% were from Camden County (5 days). For those that telecommuted more than five days per week, 9% were from Delaware County and 8% from Burlington County.

Table W-16
Secondary Job: Number of Days Telecommuted

County	N	Less than 5 days	5 days	More than 5 days	Total
Bucks	29	96.3%	0.0%	3.7%	100.0%
Chester	19	100.0%	0.0%	0.0%	100.0%
Delaware	22	86.4%	4.5%	9.1%	100.0%
Mont/Berks	40	92.7%	0.0%	7.3%	100.0%
Philadelphia	78	98.7%	0.0%	1.3%	100.0%
PA Counties	**189**	**95.7%**	**0.5%**	**3.8%**	**100.0%**
Burlington	13	92.3%	0.0%	7.7%	100.0%
Camden	24	90.9%	9.1%	0.0%	100.0%
Gloucester	6	100.0%	0.0%	0.0%	100.0%
Mercer	16	93.8%	0.0%	6.3%	100.0%
NJ Counties	**59**	**92.9%**	**3.6%**	**3.6%**	**100.0%**
DVRPC Total	**248**	**95.0%**	**1.3%**	**3.8%**	**100.0%**

Base: All employed household members age 16+ that reported having more than one job, weighted.

Of employed respondents with more than one job, 24% reported starting their second jobs between 3 p.m. and 6 p.m.

Table W-17
Secondary Job: Typical Start Time

County	N	Before 6 am	6 - 9 am	9-3 pm	3 - 6 pm	After 6 pm	Refused	Total
Bucks	29	6.7%	20.0%	6.7%	33.3%	16.7%	16.7%	100.0%
Chester	19	11.1%	11.1%	16.7%	22.2%	27.8%	11.1%	100.0%
Delaware	22	9.5%	33.3%	4.8%	33.3%	9.5%	9.5%	100.0%
Mont/Berks	40	7.5%	17.5%	17.5%	25.0%	25.0%	7.5%	100.0%
Philadelphia	78	7.8%	23.4%	18.2%	19.5%	19.5%	11.7%	100.0%
PA Counties	**189**	**8.5%**	**21.2%**	**15.3%**	**24.3%**	**19.6%**	**11.1%**	**100.0%**
Burlington	13	14.3%	28.6%	14.3%	14.3%	21.4%	7.1%	100.0%
Camden	24	8.0%	29.2%	8.3%	29.2%	0.0%	25.0%	100.0%
Gloucester	6	0.0%	50.0%	0.0%	16.7%	33.3%	0.0%	100.0%
Mercer	16	12.5%	18.8%	12.5%	25.0%	25.0%	6.3%	100.0%
NJ Counties	**59**	**8.3%**	**28.3%**	**10.0%**	**23.3%**	**16.7%**	**13.3%**	**100.0%**
DVRPC Total	**248**	**8.4%**	**22.9%**	**14.1%**	**24.1%**	**18.9%**	**11.6%**	**100.0%**

Base: All employed household members age 16+ that reported having more than one job, weighted.

Almost half of employed respondents working more than one job reported their end times for the second job to be after 6 p.m. (43%).

Table W-18
Secondary Job: Typical End Time

County	N	Before 6 am	6 - 9 am	9 - 3 pm	3 - 6 pm	After 6 pm	Refused	Total
Bucks	29	10.34%	3.4%	6.9%	17.2%	44.8%	17.2%	100.0%
Chester	19	0.0%	5.0%	20.0%	15.0%	50.0%	10.0%	100.0%
Delaware	22	9.1%	9.1%	22.7%	18.2%	31.8%	9.1%	100.0%
Mont/Berks	40	2.5%	2.5%	10.0%	25.0%	52.5%	7.5%	100.0%
Philadelphia	78	1.3%	14.1%	12.8%	20.5%	39.7%	11.5%	100.0%
PA Region	**189**	**4.2%**	**8.4%**	**13.2%**	**20.0%**	**43.2%**	**11.1%**	**100.0%**
Burlington	13	7.7%	7.7%	30.8%	23.1%	23.1%	7.7%	100.0%
Camden	24	0.0%	4.2%	8.3%	25.0%	37.5%	25.0%	100.0%
Gloucester	6	0.0%	0.0%	16.7%	16.7%	50.0%	16.7%	100.0%
Mercer	16	0.0%	0.0%	12.5%	18.8%	62.5%	6.3%	100.0%
NJ Region	**59**	**1.7%**	**1.7%**	**15.5%**	**24.1%**	**43.1%**	**13.8%**	**100.0%**
DVRPC Total	**248**	**3.6%**	**6.8%**	**14.1%**	**20.9%**	**43.0%**	**11.6%**	**100.0%**

Base: All employed household members age 16+ that reported having more than one job, weighted.

f. Person Trip Indicators

Table P-6
Average Person Trip Rates by Gender

Gender	N	Trip Rate
Male	4300	3.29
Female	5058	3.46
Total	**9358**	**3.38**

Base: All household members (n=9358), unweighted.

Table P-7
Average Person Trip Rates by Respondent Age

Respondent Age	N	Trip Rate
Less than 16	1837	3.00
16 to 18	300	3.29
19 to 24	402	3.20
25 to 34	808	3.49
35 to 44	1510	4.06
45 to 54	1432	3.98
55 to 64	1057	3.53
65 or more	1853	2.70
Refused	160	2.96
Total	**9358**	**3.38**

Base: All household members (n=9358), unweighted.

3.4 Vehicle Availability Results

The 4,217 Delaware Valley households reported having a total of 6,926 household vehicles available. The vehicle data collected for those vehicles is shown in the following tables, and includes: vehicle year, body type and ownership status. Thirty-seven percent of all household vehicles were built between 1990 and 1995. An additional 24% were built between 1996 and 1998, while 22% were built prior to 1990. The older (pre-1990) vehicles were less likely to be found in Montgomery or Berks County households (18% as compared to 22% overall). The newer vehicles (1999 or later) were more likely to be found in Bucks or Chester counties.

Table V-1
Distribution of Vehicle Age

County	N	Pre-1990	1990-1995	1996-1998	1999+	Unknown	Total
Bucks	929	19.4%	35.1%	25.7%	19.0%	0.7%	100.0%
Chester	682	21.3%	34.1%	25.5%	18.9%	0.2%	100.0%
Delaware	781	20.4%	35.5%	26.9%	16.8%	0.4%	100.0%
Mont/Berks	1139	18.3%	36.4%	26.1%	18.5%	0.6%	100.0%
Philadelphia	1312	24.8%	39.3%	22.3%	12.6%	1.1%	100.0%
PA Region	**4844**	**21.0%**	**36.5%**	**25.1%**	**16.8%**	**0.7%**	**100.0%**
Burlington	624	21.6%	38.6%	24.7%	14.3%	.7%	100.0%
Camden	674	26.6%	37.2%	21.5%	13.5%	1.2%	100.0%
Gloucester	328	23.4%	37.8%	23.0%	14.8%	1.0%	100.0%
Mercer	458	26.9%	37.5%	21.2%	13.3%	1.0%	100.0%
NJ Region	**2082**	**24.7%**	**37.8%**	**22.7%**	**13.9%**	**.9%**	**100.0%**
DVRPC Total	**6926**	**22.1%**	**36.9%**	**24.3%**	**15.9%**	**0.7%**	**100.0%**

Base: All household vehicles, weighted.

Most household vehicles were automobiles (72%), while 26% were trucks or vans. Chester County households were most likely to have trucks or vans (33% as compared to 26% overall).

Table V-2
Distribution of Vehicle Type

County	N	Auto	Truck/Van/ SUV	Motorcycle Moped	Other	Total
Bucks	929	66.2%	31.3%	1.7%	.9%	100.0%
Chester	682	64.3%	33.3%	1.7%	0.8%	100.0%
Delaware	781	75.4%	23.2%	1.0%	0.4%	100.0%
Mont/Berks	1139	72.6%	25.9%	1.2%	0.3%	100.0%
Philadelphia	1312	78.4%	20.2%	0.7%	0.6%	100.0%
PA Region	**4844**	**72.1%**	**26.2%**	**1.1%**	**0.5%**	**100.0%**
Burlington	624	71.4%	27.0%	1.1%	0.5%	100.0%
Camden	674	74.1%	24.1%	1.0%	0.8%	100.0%
Gloucester	328	66.0%	32.0%	1.3%	0.7%	100.0%
Mercer	458	75.5%	23.9%	0.5%	0.0%	100.0%
NJ Region	**2082**	**72.2%**	**26.2%**	**1.0%**	**0.6%**	**100.0%**
DVRPC Total	**6926**	**72.1%**	**26.3%**	**1.1%**	**0.5%**	**100.0%**

Base: All household vehicles, weighted.

The majority of household vehicles were owned (97%) rather than employer-provided (2%) or available to the household under other arrangements (1%). Bucks County households were most likely to have employer-provided vehicles (3%).

Table V-3
Vehicle Ownership

County	N	Owned	Employer Provided	Other	Total
Bucks	929	96.0%	2.5%	1.4%	100.0%
Chester	682	97.4%	2.0%	0.7%	100.0%
Delaware	781	98.4%	1.5%	0.1%	100.0%
Mont/Berks	1139	97.5%	1.2%	1.3%	100.0%
Philadelphia	1312	97.5%	1.3%	1.3%	100.0%
PA Region	**4844**	**97.3%**	**1.7%**	**1.1%**	**100.0%**
Burlington	624	98.2%	1.1%	0.8%	100.0%
Camden	674	97.0%	1.9%	1.2%	100.0%
Gloucester	328	96.7%	2.3%	1.0%	100.0%
Mercer	458	98.0%	1.2%	0.7%	100.0%
NJ Region	**2082**	**97.5%**	**1.6%**	**0.9%**	**100.0%**
DVRPC Total	**6926**	**97.4%**	**1.6%**	**1.0%**	**100.0%**

Table V-4
Distribution of Vehicle Make

Vehicle Make	N	Percent
Ford	1135	18.7%
Chevrolet	738	12.2%
Toyota	455	7.5%
Dodge	424	7.0%
Honda	397	6.5%
Buick	311	5.1%
Nissan	247	4.1%
Mercury	200	3.3%
Plymouth	198	3.3%
Oldsmobile	196	3.2%
Pontiac	193	3.2%
Chrysler	170	2.8%
Mazda	129	2.1%
Subaru	123	2.0%
Jeep	123	2.0%
Volkswagon	115	1.9%
Saturn	111	1.8%
Cadillac	80	1.3%
Lincoln	74	1.2%
GMC	67	1.1%
Acura	67	1.1%
Volvo	65	1.1%
Other	450	7.5%
Total	**6069**	**100.0%**

3.5 Travel Behavior Results

For the Delaware Valley Region, the 4,217 participating households reported data for 31,631 trips. The trip data includes type of place visited, activities at each place, travel modes, and number of people traveling together. For auto trips, data includes whether a household vehicle was used, parking locations, and whether tolls were paid. For trips made by transit, access and egress modes were recorded, as well as the number of transfers. The travel data is summarized in the following tables. As shown in Table T-1, half of all reported places visited were at the home residence, while 9% were to work locations and 5% were to school locations. One-third (35%) were non-home, non-work, non-school locations.

Table T-1
Place of Activities by County

County	N	Home	Work	School	Other	Out of Area	Total
Bucks	5033	50.2%	9.2%	4.9%	33.7%	2.2%	100.0%
Chester	3556	49.3%	8.4%	4.0%	33.7%	4.6%	100.0%
Delaware	4297	50.3%	8.9%	4.4%	34.6%	1.7%	100.0%
Mont/Berks	6149	49.5%	9.9%	4.4%	34.8%	1.4%	100.0%
Philadelphia	10389	51.1%	9.1%	4.7%	34.3%	0.8%	100.0%
PA Region	**29425**	**50.3%**	**9.1%**	**4.5%**	**34.3%**	**1.8%**	**100.0%**
Burlington	3042	49.4%	10.2%	4.1%	34.8%	1.5%	100.0%
Camden	3970	50.3%	8.5%	4.4%	36.0%	0.9%	100.0%
Gloucester	1958	49.9%	8.3%	4.5%	35.8%	1.5%	100.0%
Mercer	2595	49.7%	7.4%	4.1%	34.5%	4.3%	100.0%
NJ Region	**11565**	**49.9%**	**8.6%**	**4.2%**	**35.3%**	**1.9%**	**100.0%**
DVRPC Total	**40989**	**50.1%**	**9.0%**	**4.5%**	**34.6%**	**1.8%**	**100.0%**

Base: All places visited, weighted.

One in five activities reported (19%) were for family or personal business. Work activities comprised 11% of the records, sleeping was 18%, and eating was 11%.

Table T-2
Major Activities Reported by County

County	N	Work	School	Family/ Personal	Eat	Sleep	Other	Total
Bucks	5033	11.1%	5.3%	18.5%	13.1%	17.7%	34.1%	100.0%
Chester	3556	11.1%	4.3%	19.3%	13.3%	15.7%	36.4%	100.0%
Delaware	4297	10.5%	5.1%	19.2%	13.2%	17.8%	34.2%	100.0%
Mont/Berks	6149	12.4%	4.8%	18.8%	12.5%	16.8%	34.8%	100.0%
Philadelphia	10389	10.9%	4.9%	18.7%	14.0%	20.3%	31.2%	100.0%
PA Region	**29425**	**11.2%**	**4.9%**	**18.8%**	**13.3%**	**18.2%**	**33.5%**	**100.0%**
Burlington	3042	12.3%	4.3%	20.9%	13.2%	16.4%	32.8%	100.0%
Camden	3970	10.6%	4.4%	20.7%	10.1%	17.5%	36.8%	100.0%
Gloucester	1958	10.9%	5.1%	19.1%	11.2%	18.3%	35.4%	100.0%
Mercer	2595	10.4%	4.4%	18.5%	11.1%	16.8%	38.8%	100.0%
NJ Region	**11565**	**11.0%**	**4.5%**	**20.0%**	**11.4%**	**17.2%**	**36.0%**	**100.0%**
DVRPC Total	**40989**	**11.2%**	**4.8%**	**19.1%**	**11.3%**	**17.9%**	**34.2%**	**100.0%**

Base: All places visited, weighted.

All reported activities at all places visited (including the anchor Place 1) are shown in Table T-3. The most frequently reported activity was eating meals, followed by sleeping. These two activities are also the most frequently reported when only those reported activities associated with travel are considered.

Table T-3
Reported Activities at All Places Visited

Activity	Frequency	Percent
Eat meals	17488	23.0%
Sleep	14807	19.5%
Social/recreation	4956	6.5%
Other personal/family business	4290	5.7%
All other shopping	3917	5.2%
Work at regular jobsite	3823	5.0%
Drop-off / pick-up someone	2749	3.6%
School at regular place	1826	2.4%
Visit	1762	2.3%
Work at other place	710	0.9%
Doctor/dentist	635	0.8%
Religious / civic	571	0.8%
School at other place	422	0.6%
Work at home	320	0.4%
Internet shopping	52	0.1%
Other in-home activities	17170	22.6%
Other out-of-home activities	406	0.5%

Base: All reported activities (n=75,904– multiple response allowed).
(Includes all activities reported at all places, including Place 1), weighted.

Table T-4
Distribution of Trip Purposes

Activity	Frequency	Percent
Eat meals	10947	21.1%
Sleep	9593	12.1%
Social/recreation	4239	8.2%
All other shopping	3913	7.5%
Other personal/family business	3779	7.3%
Work at regular jobsite	3751	7.2%
Drop-off / pick-up someone	2747	5.3%
School at regular place	1808	3.5%
Visit	1637	3.2%
Work at other place	689	1.3%
Doctor/dentist	627	1.2%
Religious / civic	557	1.1%
School at other place	403	0.8%
Activities at home (work, shop, other)	16411	31.6%
Other	406	0.8%

Base: All trip-related activities (n=51911– multiple response allowed).
(Excludes all activities reported at Place 1).

Seventy-eight percent of all reported trips were made by auto (driver, passenger or motorcycle) while 5% were transit trips. The majority of transit and walk/bike trips were made in Philadelphia.

Table T-5
Major Travel Modes by County

County	N	Auto	Transit	Walk	Bike	Other	Total
Bucks	3970	86.8%	1.1%	4.6%	0.5%	7.0%	100.0%
Chester	2811	91.6%	0.7%	2.4%	0.0%	5.3%	100.0%
Delaware	3395	81.9%	3.7%	9.3%	0.6%	4.5%	100.0%
Mont/Berks	4870	86.5%	1.8%	6.0%	0.4%	5.2%	100.0%
Philadelphia	8122	53.7%	15.7%	25.8%	2.1%	2.7%	100.0%
PA Region	**23169**	**75.0%**	**6.7%**	**12.8%**	**1.0%**	**4.5%**	**100.0%**
Burlington	2376	87.9%	1.2%	4.4%	0.9%	5.6%	100.0%
Camden	3175	84.9%	2.5%	8.3%	0.5%	3.7%	100.0%
Gloucester	1537	87.3%	1.3%	5.2%	0.5%	5.6%	100.0%
Mercer	2072	84.7%	2.3%	7.3%	0.6%	5.2%	100.0%
NJ Region	**9159**	**86.1%**	**1.9%**	**6.5%**	**0.6%**	**4.9%**	**100.0%**
DVRPC Total	**32328**	**78.1%**	**5.4%**	**11.0%**	**0.9%**	**4.6%**	**100.0%**

Base: All trips, weighted.

Table T-6
Detailed Mode Usage by County of Residence

	Walk	Bike	Auto-D	Auto-P	Bus	School bus	Intercity Bus	Other
Bucks	4.6%	0.5%	65.2%	21.6%	1.1%	6.5%		0.5%
Chester	2.4%	0.0%	68.3%	23.4%	0.7%	5.1%		0.2%
Delaware	9.3%	0.6%	62.8%	19.0%	3.7%	4.0%		0.5%
Mont/Berk	6.0%	0.4%	67.2%	19.3%	1.8%	4.6%	0.1%	0.5%
Philadelphia	25.8%	2.1%	38.7%	15.0%	15.7%	1.4%	0.1%	1.3%
PA Counties	**12.8%**	**1.0%**	**56.3%**	**18.7%**	**6.7%**	**3.8%**	**0.1%**	**0.7%**
Burlington	4.4%	0.9%	68.1%	19.8%	1.2%	5.0%	0.1%	0.6%
Camden	8.3%	0.5%	63.4%	21.6%	2.5%	3.0%	0.1%	0.7%
Gloucester	5.2%	0.5%	64.6%	22.8%	1.3%	5.2%		0.4%
Mercer	7.3%	0.6%	65.3%	19.4%	2.3%	3.6%		1.5%
NJ Counties	**6.5%**	**0.6%**	**65.2%**	**20.8%**	**1.9%**	**4.0%**	**0.1%**	**0.8%**
DVRPC Region	**11.0%**	**0.9%**	**58.9%**	**19.3%**	**5.4%**	**3.8%**	**0.1%**	**0.8%**

*Blank cells indicate no observations.
*Percentages reflect all modes reported for any given trip.

Table T-7
Distribution of Travel Modes

Travel Mode	Frequency	Percent	Duration (minutes)
Auto driver	19029	58.9%	20.46
Auto passenger	6229	19.3%	18.26
Walk	3555	11.0%	16.23
School Bus	1243	3.8%	25.29
Bus	1142	3.5%	45.99
Bicycle	285	0.9%	15.94
Subway/elevated rail	238	0.7%	41.71
Commuter rail	159	0.5%	58.43
Shared ride	118	0.4%	25.19
Trolley	69	0.2%	43.49
Amtrak, other railroad	66	0.2%	78.17
Commuter van/shuttle	41	0.1%	28.61
Charter bus	23	0.1%	103.38
Other	168	0.3%	47.09
Total	**32328**	**100.0%**	

Base: All reported travel modes (multiple response allowed), weighted.

Table T-8
Reported Trip Durations

Trip Duration	Frequency	Percent
5 minutes or less	6720	21.2%
6 to 10 minutes	6500	20.5%
11 to 15 minutes	5758	18.2%
16 to 20 minutes	2935	9.3%
21 to 25 minutes	1575	5.0%
26 to 30 minutes	3094	9.8%
31 to 35 minutes	912	2.9%
36 to 40 minutes	692	2.2%
41 to 45 minutes	982	3.1%
46 to 50 minutes	366	1.2%
51 to 55 minutes	218	0.7%
56 to 60 minutes	739	2.3%
61 to 65 minutes	111	0.4%
66 to 70 minutes	115	0.4%
71 to 75 minutes	188	0.6%
76 to 80 minutes	59	0.2%
81 to 85 minutes	44	0.1%
More than 85 minutes	624	2.0%

Base: All trips.

All respondents who reported making a trip by auto (driver, passenger, or motorcycle) were asked how many traveled in their party. Most respondents (56%) reported making their trips alone. However, 27% of trips were made with 2 people.

Table T-9
Number Traveling Together on Auto Trips

County	N	1	2	3	4+	Total
Bucks	3443	55.0%	29.8%	11.3%	4.0%	100.0%
Chester	2574	55.5%	27.0%	10.8%	6.6%	100.0%
Delaware	2780	58.4%	26.7%	10.3%	4.6%	100.0%
Mont/Berks	4213	59.8%	24.9%	8.9%	6.5%	100.0%
Philadelphia	4361	52.6%	31.1%	9.6%	6.7%	100.0%
PA Region	**17372**	**56.2%**	**28.0%**	**10.1%**	**5.8%**	**100.0%**
Burlington	2086	60.3%	24.4%	9.8%	5.5%	100.0%
Camden	2696	54.7%	26.7%	11.4%	7.2%	100.0%
Gloucester	1341	54.0%	27.0%	11.6%	7.5%	100.0%
Mercer	1754	59.0%	25.9%	7.8%	7.4%	100.0%
NJ Region	**7878**	**57.0%**	**26.0%**	**10.2%**	**6.8%**	**100.0%**
DVRPC Total	**25250**	**56.4%**	**27.4%**	**10.1%**	**6.1%**	**100.0%**

Base: All auto trips, weighted.

Most respondents (94%) responded affirmatively. However, 13% of reported automobile trips by Philadelphia respondents were in non-household automobiles.

Table T-10
Household Vehicle Used

County	N	Yes	No	Total
Bucks	3443	96.2%	3.8%	100.0%
Chester	2574	94.9%	5.1%	100.0%
Delaware	2780	93.9%	6.1%	100.0%
Mont/Berks	4213	95.8%	4.2%	100.0%
Philadelphia	4361	87.3%	12.7%	100.0%
PA Region	**17372**	**93.3%**	**6.7%**	**100.0%**
Burlington	2086	95.2%	4.8%	100.0%
Camden	2696	93.2%	6.8%	100.0%
Gloucester	1341	94.6%	5.4%	100.0%
Mercer	1754	95.1%	4.9%	100.0%
NJ Region	**7878**	**94.4%**	**5.6%**	**100.0%**
DVRPC Total	**25250**	**93.7%**	**6.3%**	**100.0%**

Base: All auto trips, weighted.

Whenever a respondent reported making a trip by automobile, the parking location at the destination was also asked. As shown in Table T-11, most respondents parked in a parking lot (50%) or in a driveway (34%). Street parking was most likely to take place in Philadelphia (18%).

Table T-11
Parking Type

County	N	Street	Garage	Parking lot	Driveway	Didn't Park	Other	Total
Bucks	3443	4.2%	2.4%	51.3%	36.3%	5.5%	0.3%	100.0%
Chester	2574	3.0%	2.9%	53.7%	35.4%	4.9%	0.3%	100.0%
Delaware	2780	6.4%	2.8%	49.2%	35.2%	6.3%	0.0%	100.0%
Mont/Berks	4213	5.9%	3.0%	51.3%	33.6%	6.1%	0.2%	100.0%
Philadelphia	4361	18.4%	1.4%	45.2%	27.2%	7.8%	0.0%	100.0%
PA Region	**17372**	**8.2%**	**2.5%**	**49.8%**	**33.1%**	**6.3%**	**0.1%**	**100.0%**
Burlington	2086	4.6%	1.6%	53.2%	35.3%	5.1%	0.2%	100.0%
Camden	2696	6.7%	1.8%	49.8%	35.5%	6.3%	0.0%	100.0%
Gloucester	1341	5.7%	2.6%	47.8%	36.9%	6.9%	0.1%	100.0%
Mercer	1754	7.9%	2.9%	49.9%	32.1%	7.1%	0.1%	100.0%
NJ Region	**7878**	**6.2%**	**2.1%**	**50.4%**	**34.9%**	**6.3%**	**0.1%**	**100.0%**
DVRPC Total	**25250**	**7.5%**	**2.3%**	**50.0%**	**33.7%**	**6.3%**	**0.1%**	**100.0%**

Base: All auto trips, weighted.

Each reported automobile trip also contained information about whether tolls were paid as part of those trips. Only two percent of all auto trips involved toll payment, the greatest percentage of which were paid by Camden and Gloucester respondents.

Table T-12
Tolls Paid by Auto Drivers

County	N	Yes	No	Total
Bucks	3443	2.0%	98.0%	100.0%
Chester	2574	1.4%	98.6%	100.0%
Delaware	2780	1.0%	99.0%	100.0%
Mont/Berks	4213	2.4%	97.6%	100.0%
Philadelphia	4361	2.1%	97.9%	100.0%
PA Region	**17372**	**1.9%**	**98.1%**	**100.0%**
Burlington	2086	2.8%	97.2%	100.0%
Camden	2696	3.7%	96.3%	100.0%
Gloucester	1341	3.5%	96.5%	100.0%
Mercer	1754	1.2%	98.8%	100.0%
NJ Region	**7878**	**2.8%**	**97.2%**	**100.0%**
DVRPC Total	**25250**	**2.2%**	**97.8%**	**100.0%**

Base: All auto trips, weighted.

All respondents who reported using transit were asked for access and egress modes, as well as the number of transfers. As shown in Table T-13, most transit trips began with walking (91%). Respondents in Burlington were the most likely to drive and park to access transit (32%).

Table T-13
Access Mode of Transit Riders

County	N	Walk	Drove & parked	Dropped off	Rode bike	Other	Total
Bucks	43	83.7%	9.3%	7.0%	0.0%	0.0%	100.0%
Chester	19	68.4%	26.3%	0.0%	0.0%	5.3%	100.0%
Delaware	125	84.8%	13.6%	1.6%	0.0%	0.0%	100.0%
Mont/Berks	87	74.7%	18.4%	4.6%	0.0%	2.3%	100.0%
Philadelphia	1203	96.5%	0.6%	1.4%	1.0%	0.5%	100.0%
PA Region	**1477**	**93.4%**	**3.4%**	**1.8%**	**0.8%**	**0.6%**	**100.0%**
Burlington	28	60.7%	32.1%	0.0%	7.1%	0.0%	100.0%
Camden	81	68.3%	24.4%	7.3%	0.0%	0.0%	100.0%
Gloucester	18	84.2%	10.5%	5.3%	0.0%	0.0%	100.0%
Mercer	43	76.7%	14.0%	7.0%	0.0%	2.3%	100.0%
NJ Region	**171**	**70.8%**	**21.6%**	**5.8%**	**1.2%**	**0.6%**	**100.0%**
DVRPC Total	**1648**	**91.1%**	**5.2%**	**2.2%**	**0.8%**	**0.7%**	**100.0%**

Base: All transit trips, weighted.

As with the access mode, the overwhelming majority of transit riders walked from the transit stop to their ultimate destination (93%). This was particularly the case in Philadelphia, where 97% of transit users reported walk to be the egress mode.

Table T-14
Egress Mode of Transit Riders

County	N	Walk	Drove Parked Car	Picked Up	Rode bike	Other	Total
Bucks	43	86.0%	9.3%	4.7%	0.0%	0.0%	100.0%
Chester	19	73.7%	21.1%	0.0%	0.0%	5.3%	100.0%
Delaware	125	91.3%	7.9%	0.8%	0.0%	0.0%	100.0%
Mont/Berks	87	77.0%	20.7%	2.3%	0.0%	0.0%	100.0%
Philadelphia	1203	97.2%	0.3%	1.2%	0.6%	0.7%	100.0%
PA Region	**1477**	**94.8%**	**2.8%**	**1.3%**	**0.5%**	**0.7%**	**100.0%**
Burlington	28	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%
Camden	81	76.5%	17.3%	6.2%	0.0%	0.0%	100.0%
Gloucester	18	94.4%	0.0%	5.6%	0.0%	0.0%	100.0%
Mercer	43	74.4%	16.3%	7.0%	2.3%	0.0%	100.0%
NJ Region	**171**	**77.8%**	**16.4%**	**5.3%**	**0.6%**	**0.0%**	**100.0%**
DVRPC Total	**1648**	**93.0%**	**4.2%**	**1.7%**	**0.5%**	**0.6%**	**100.0%**

Base: All transit trips, weighted.

Three-fourths (75%) of transit trips did not involve any transfers. As shown in Table T-15, Mercer County and Philadelphia respondents were most likely to have transit trips with one transfer (37% and 23%, respectively).

Table T-15
Number of Transfers Made by Transit Riders

County	N	None	1	2	3+	Total
Bucks	43	86.0%	14.0%	0.0%	0.0%	100.0%
Chester	19	100.0%	0.0%	0.0%	0.0%	100.0%
Delaware	125	75.2%	15.2%	9.6%	0.0%	100.0%
Mont/Berks	87	81.6%	12.6%	0.0%	5.7%	100.0%
Philadelphia	1203	73.0%	22.7%	3.3%	1.0%	100.0%
PA Region	**1477**	**74.4%**	**21.0%**	**3.5%**	**1.2%**	**100.0%**
Burlington	28	89.3%	10.7%	0.0%	0.0%	100.0%
Camden	81	85.0%	13.8%	1.3%	0.0%	100.0%
Gloucester	18	100.0%	0.0%	0.0%	0.0%	100.0%
Mercer	43	62.8%	37.2%	0.0%	0.0%	100.0%
NJ Region	**171**	**80.7%**	**18.1%**	**1.2%**	**0.0%**	**100.0%**
DVRPC Total	**1648**	**75.1%**	**20.6%**	**3.3%**	**1.0%**	**100.0%**

Base: All transit trips, weighted.

4. SURVEY EXPANSION AND TRAVEL RESULTS

The survey results in the previous section show the depth and breadth of information collected as part of the Transportation for the 21st Century Household Travel Survey. The results were a straightforward presentation of data based on the 4,217 households in the Delaware Valley region. These households were randomly selected to represent the 1,964,507 households that comprise the survey universe for the Delaware Valley region. The purpose of this section is to expand the results of the 4,217 households so that they can be used to approximate the 1,964,507 regional households, then to report the expanded data.

4.1 Expansion Calculations

The creation of an expansion factor for the Delaware Valley households is comprised of two elements that aim to expand the survey data from the 4,217 households to the 1,964,507 regional households that they represent. This is accomplished through two straightforward calculations.

Specifically, the weighted distribution of the 4,217 households takes into account the probability of selection. As detailed in Chapter 3, the weights also adjust the distribution of households by county and household availability so that the distribution is proportionate to the universe. Therefore, the calculation of expansion factors is a two-step process.

a. Calculation of Expansion Number

There are 1,964,507 households in the survey universe. Of these, 4,217 were surveyed as part of this project. Therefore, each surveyed household represents 465.8542 universe households. This was determined by dividing the number of universe households by the number of households in the sample. This number becomes FACTOR6 and is attached to each household record.

b. Calculation of Expansion Eactor

FACTOR6 is then multiplied by the unique weight created for each household, as detailed in Chapter 3. The multiplication is necessary to keep the households in relative proportion with each other. The result of this multiplication is the expansion factor, EXPFACT. The results of the expansion factor are shown in the following tables. Specifically, the distribution of households by county and household vehicle availability is shown in Table 4-1, while the corresponding distribution of universe households is shown in Table 4-2. The expanded survey data are shown in Table 4-3.

Table 4-1
Distribution of Surveyed Households by County

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles	Total
Burlington (NJ)	9	96	195	103	403
Camden (NJ)	35	122	187	84	428
Gloucester (NJ)	10	98	150	88	346
Mercer (NJ)	23	109	165	77	374
Bucks (PA)	14	107	207	157	485
Chester (PA)	9	73	201	117	400
Delaware (PA)	27	150	224	96	497
Montgomery/Berks (PA)	19	118	285	130	552
Philadelphia (PA)	222	310	164	36	732
Total	**368**	**1183**	**1778**	**888**	**4217**

Table 4-2
Distribution of Universe Households by County

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles	Total
Burlington (NJ)	7017	44763	65942	28555	146277
Camden (NJ)	22876	62377	70374	26638	182265
Gloucester (NJ)	5457	24693	38708	15931	84789
Mercer (NJ)	14159	39832	48546	18706	121243
Bucks (PA)	10359	55589	98221	44204	208373
Chester (PA)	7977	37925	72323	31728	149953
Delaware (PA)	23537	72804	78068	28485	202894
Montgomery/Berks (PA)	18616	85882	121395	48726	274619
Philadelphia (PA)	228451	240166	103184	22293	594094
Total	**338449**	**664031**	**696761**	**265266**	**1964507**

Table 4-3
Expanded Survey Data Set

County	0-vehicles	1-vehicle	2-vehicles	3+-vehicles	Total
Burlington (NJ)	7567	47511	63304	25352	143734
Camden (NJ)	24258	65518	66946	22636	179358
Gloucester (NJ)	5885	24884	37892	12150	80811
Mercer (NJ)	14356	43262	46515	15620	119753
Bucks (PA)	10239	57809	97584	38287	203919
Chester (PA)	8603	42378	71882	28600	151463
Delaware (PA)	25383	75458	77745	25838	204424
Montgomery/Berks (PA)	20076	88192	115144	43096	266508
Philadelphia (PA)	243117	250964	101003	19266	614350
Total	**359484**	**695976**	**678015**	**230845**	**1964320**

The expansion factors in Table 4-3 are applied to the data by multiplying them against the weight factors developed and documented in Section 3.1 of this report. A slight adjustment is required to have the expanded households equal the actual number in the universe

4.2 Survey Data Expanded

The expansion factors created in the previous section were applied to the survey data. The results are shown in the following tables. Specifically, the expanded household results are compared to 1997 DVRPC estimates for the number of households, vehicles available, and employed residents.

Table 4-4 shows the distribution of surveyed households, expanded to reflect the universe, and the 1997 DVRPC household estimates. Since the DVRPC estimates were used to create the expansion factors, the distributions are almost exactly the same.

Table 4-4
Household Estimates by County

County	Expanded Survey Results	DVRPC Estimates
Bucks	203,919	208,373
Chester	151,463	149,949
Delaware	204,424	202,894
Mont/Berks	266,508	274,619
Philadelphia	614,350	594,094
PA Region	**1,440,664**	**1,429,929**
Burlington	143,734	146,278
Camden	179,358	182,264
Gloucester	80,811	84,788
Mercer	119,753	121,243
NJ Region	**523,656**	**534,573**
DVRPC Total	**1,964,320**	**1,964,502**

DVRPC prepared estimates of vehicle availability by county. These estimates were compared to the expanded household data. As shown in Table 4-5, the number of zero vehicle households in the expanded survey data is approximately 106% of the DVPRC estimates, ranging from 98% of the DVRPC estimates in Bucks County to 108% of the estimates in Chester County. The one- and two-vehicle households track the DVRPC estimates fairly closely, while the 3+-vehicle households are lower than the DVRPC estimates.

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Table 4-5
Total Vehicle Availability Estimates by County

County	Survey Total	DVRPC Total	% difference	Survey 0-vehicle Hhlds	DVRPC 0-Vehicle Hhlds	% difference	Survey 1-vehicle Hhlds	DVRPC 1-vehicle Hhlds	% difference	Survey 2-vehicle Hhlds	DVRPC 2-vehicle Hhlds	% difference	Survey 3+-vehicle Hhlds	DVRPC 3+-vehicle Hhlds	% difference
Bucks	203,919	208,373	97.86%	10,239	10,359	98.84%	57,809	55,589	103.99%	97,584	98,221	99.35%	38,287	44,204	86.61%
Chester	151463	149,953	101.01%	8,603	7,977	107.85%	42,378	37,925	111.74%	71,882	72,323	99.39%	28,600	31,728	90.14%
Delaware	204424	202,894	100.75%	25,383	23,537	107.84%	75,458	72,804	103.65%	77,745	78,068	99.59%	25,838	28,485	90.71%
Mont/Berks	266508	274,619	97.05%	20,076	18,616	107.84%	88,192	85,882	102.69%	115,144	121,395	94.85%	43,096	48,726	88.45%
Philadelphia	614350	594,094	103.41%	243,117	228,451	106.42%	250,964	240,166	104.50%	101,003	103,184	97.89%	19,266	22,293	86.42%
PA Region	**1,440,664**	**1,429,933**	**100.75%**	**307,418**	**288,940**	**106.40%**	**514,801**	**492,366**	**104.56%**	**463,358**	**473,191**	**97.92%**	**155,087**	**175,436**	**88.40%**
Burlington	143734	146,277	98.26%	7,567	7,017	107.84%	47,511	44,763	106.14%	63,304	65,942	96.00%	25,352	28,555	88.78%
Camden	179358	182,265	98.41%	24,258	22,876	106.04%	65,518	62,377	105.04%	66,946	70,374	95.13%	22,636	26,638	84.98%
Gloucester	80811	84,789	95.31%	5,885	5,457	107.84%	24,884	24,693	100.77%	37,892	38,708	97.89%	12,150	15,931	76.27%
Mercer	119753	121,243	98.77%	14,356	14,159	101.39%	43,262	39,832	108.61%	46,515	48,546	95.82%	15,620	18,706	83.50%
NJ Region	**523,656**	**534,574**	**97.96%**	**52,066**	**49,509**	**105.16%**	**181,175**	**171,665**	**105.54%**	**214,657**	**223,570**	**96.01%**	**75,758**	**89,830**	**84.33%**
DVRPC Total	**1,964,320**	**1,964,507**	**99.99%**	**359,484**	**338,449**	**106.22%**	**695,976**	**664,031**	**104.81%**	**678,015**	**696,761**	**97.31%**	**230,845**	**265,266**	**87.02%**

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The expansion factors were applied to the vehicle data and the results are shown in Table 4-6. Also shown in that table are the 1997 DVRPC estimates of total vehicles by county. A comparison of the expanded survey data and the DVRPC estimates show the same information as in Table 4-4: about 5% fewer vehicles in the expanded survey data.

Table 4-6
Estimates of Total Number of Vehicles

County	Survey Vehicles	DVRPC Vehicles	% Represented
Bucks	385,832	400,560	96.32%
Chester	282,670	289,176	97.75%
Delaware	313,307	324,653	96.51%
Mont/Berks	465,122	492,395	94.46%
Philadelphia	513,693	521,451	98.51%
PA Region	**1,960,624**	**2,028,235**	**96.67%**
Burlington	260,592	272,595	95.60%
Camden	276,507	292,624	94.49%
Gloucester	141,073	155,639	90.64%
Mercer	188,694	199,777	94.45%
NJ Region	**866,866**	**920,635**	**94.16%**
DVRPC Total	**2,827,490**	**2,948,870**	**95.88%**

It is also possible to compare the expanded survey data to DVRPC estimates of employed residents. As shown in Table 4-7, the number of employed residents in the expanded survey data is about 10% lower than the DVRPC estimates.

Table 4-7
Estimates of Total Number of Employed Residents

County	Survey Employed Residents	DVRPC Employed Residents	% Represented
Bucks	255,264	306,375	83.3%
Chester	175,105	219,093	79.9%
Delaware	210,716	268,409	78.5%
Mont/Berks	309,553	383,362	80.7%
Philadelphia	528,540	628,925	84.0%
PA Region	**1,479,178**	**1,806,164**	**81.9%**
Burlington	154,078	219,111	70.3%
Camden	183,625	242,417	75.7%
Gloucester	87,666	121,649	72.1%
Mercer	124,519	170,839	72.9%
NJ Region	**549,888**	**754,016**	**72.9%**
DVRPC Total	**2,029,066**	**2,560,180**	**79.3%**

The 4,217 Delaware Valley region households reported 31,631 trips. When expanded, these 31,631 trips become 14,735,586 regional trips. This includes 2,699,722 home-based work trips, 8,024,423 home-based other trips, and 4,011,442 non-home based trips.

Table 4-8
Total Trips by Trip Purpose

County	Number of Household Trips	Home-based Work Trips	Home-based other Trips	Non-home based Trips
Bucks	1,833,450	355,961	998,823	478667
Chester	1,302,712	230,176	716,596	355939
Delaware	1,545,202	267,428	858,601	419173
Mont/Berks	2,239,459	439,212	1,177,375	622872
Philadelphia	3,618,658	656,075	1,956,100	1006483
PA Region	**10,539,481**	**1,948,852**	**5,707,495**	**2,883,134**
Burlington	1,094,903	217,331	562,182	315389
Camden	1,445,146	252,617	824,707	367823
Gloucester	708,624	118,831	399,595	190199
Mercer	947,432	162,091	530,444	254897
NJ Region	**4,196,105**	**750,870**	**2,316,928**	**1,128,308**
DVRPC Total	**14,735,586**	**2,699,722**	**8,024,423**	**4,011,442**

As shown in Table 4-9, the 14,735,586 regional trips represent 13,145,943 motorized trips and 1,589,642 non-motorized trips.

Table 4-9
Total Trips by Mode

County	Number of Household Trips	Motorized Trips	Non-motorized Trips
Bucks	1,833,450	1,750,178	83,271
Chester	1,302,712	1,274,921	27,790
Delaware	1,545,202	1,411,884	133,318
Mont/Berks	2,239,459	2,109,581	129,878
Philadelphia	3,618,658	2,671,879	946,779
PA Region	**10,539,481**	**9,218,443**	**1,321,036**
Burlington	1,094,903	1,041,746	53,157
Camden	1,445,146	1,335,930	109,216
Gloucester	708,624	671,265	37,358
Mercer	947,432	878,559	68,874
NJ Region	**4,196,105**	**3,927,500**	**268,605**
DVRPC Total	**14,735,586**	**13,145,943**	**1,589,642**

5. EVALUATION OF SURVEY RESULTS

The purpose of the Transportation for the 21st Century Household Travel Survey was to provide data for continuing development and refinement of the Regional Travel Demand Forecasting Model, as well as to provide a better understanding of travel behavior in the Delaware Valley and South Jersey regions. The study area consisted of the Pennsylvania counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia (along with a small portion of Berks County); the New Jersey Delaware Valley counties of Burlington, Camden, Gloucester, and Mercer; and the South Jersey counties of Atlantic, Cape May, Cumberland, and Salem.

A total of 7,540 households were recruited to participate in the study. Of these, 5,677 households (75%) completed travel diaries (the information was gathered from all household members regardless of age). The 5,677 households represent 13,830 persons, 10,570 vehicles, and 48,646 trips across all counties surveyed.

For the Delaware Valley region, there were 5,579 recruited households, of which 4,217 completed the study (76%). These 4,217 households included data for 10,391 persons, 7,750 vehicles, and 36,680 trips. In South Jersey, 1,961 households were recruited and 1,460 completed the study (74%). This included data on 3,439 persons, 2,820 vehicles and 11,966 trips. The purpose of this report is to document the methods used to conduct the Transportation for the 21st Century Household Travel Survey, as well as to present survey results.

The overall response rate for the study was 32% - this was comprised of a 43% recruitment rates and a 75% retrieval rate. This means that 32% of all eligible households that were contacted actually completed the study. The overall response rate for the Delaware Valley region was 34% (45% recruitment rate and 76% retrieval rate). In South Jersey, the overall response rate was 30% (recruitment rate of 41% and 72% retrieval rate). The response rates achieved in this study compare favorably with those of other recent household travel surveys conducted using similar methodology.

Data at the person, vehicle, and trip levels were also summarized and presented as part of this report. Data tables were run for all study variables and categorized by county. The resultant data set provides a rich source of information about travel in the Delaware Valley region and will serve as a solid foundation for regional model update efforts.

The following is an evaluation of the final data set performed by Cambridge Systematics:

As previously stated, the Transportation for the 21st Century Household Travel Survey was conducted to help understand the travel behavior of the region and to provide input information for future travel demand model development. As part of this effort, Cambridge Systematics reviewed the final survey data sets to ensure their usefulness for future model development. The primary conclusion was that the databases and documentation provided to DVRPC and SJTPO will be extremely useful in future model development efforts. It is clear that:

a. The databases were very clean compared to other household data sets and the code books accurate and understandable;

b. The percentage of geocoded trip ends was very high and a visual review of the geocoded addresses by Cambridge Systematics found no problems;

c. The collected data includes the variables and geographic breadth to allow analysts to compare and combine it with 2000 Census data as that becomes available, using several alternative strategies;

d. The analysis of survey data and the comparison results with national estimates of trip-making behavior indicate that the survey results appear to be very reasonable. These analyses are described below, along with the associated tables.

Table 5-1 shows trip weights derived from weighted survey data. The relative magnitudes of the rates appear to be quite reasonable and consistent with other high quality data sets.

Table 5-1
Household Survey Daily Trip Rates by Trip Purpose (All Modes)

Household Classification	Households in Survey	Home-Based Work Trip Rate	Home-Based Other Trip Rate	Non-home Based Trip Rate	Total Trip Rate
Total	**4217**	**1.34**	**4.71**	**2.53**	**8.58**
1-person	1462	0.62	1.58	1.00	3.20
2-person	1479	1.35	3.24	1.98	6.57
3-person	550	2.00	5.29	2.63	9.91
4-person	467	2.40	8.98	3.95	15.33
5+ person	259	2.59	11.72	3.60	17.90
0-vehicle	772	0.53	1.95	0.83	3.31
1-vehicle	1494	0.93	3.17	1.66	5.76
2-vehicles	1455	1.81	5.63	2.76	10.20
3+ vehicles	496	2.76	6.62	2.97	11.35
0-worker	1379	0.00	2.85	1.15	4.04
1-worker	1560	1.36	3.92	2.06	7.34
2+-workers	1278	2.82	5.63	2.98	11.43

Base: All households, weighted.

Table 5-2 shows the trip rates for motorized trips (auto and transit). As one would expect, the biggest differences among all the trip rates are for the zero vehicle households. The rates for motorized trips appear to have reasonable relative magnitudes.

Table 5-2
Household Survey Daily Trip Rates by Trip Purpose (Motorized Modes)

Household Classification	Households in Survey	Home-Based Work Trip Rate	Home-Based Other Trip Rate	Non-home Based Trip Rate	Total Trip Rate
Total	**4217**	**1.07**	**3.79**	**1.83**	**6.69**
1-person	1462	0.45	1.42	0.81	2.68
2-person	1479	1.04	3.13	1.78	5.95
3-person	550	1.62	5.06	2.42	9.10
4-person	726	1.95	8.97	3.54	14.46
0-vehicle	772	0.33	1.04	0.46	1.83
1-vehicle	1494	0.70	2.89	1.44	5.03
2-vehicles	1455	1.44	5.51	2.62	9.56
3+ vehicles	496	2.22	5.80	2.84	10.86
0-worker	1379	0.00	2.52	1.02	3.54
1-worker	1560	1.04	3.59	1.82	6.46
2+-workers	1278	2.25	5.42	2.72	10.38

Base: All households, weighted.

Table 5-3 compares the household survey results to information provided in NCHRP Report #365, a source of national "rules-of-thumb" for modeling analyses.

Table 5-3
Comparison of Household Survey Daily Motorized Trip Rates to NCHRP 365

	Home-Based Work Trip Rate	Home-Based Other Trip Rate	Non-home Based Trip Rate	Total Trip Rate
DVRPC				
Daily Rate	1.07	3.79	1.83	6.69
Percent of Trips	16%	57%	27%	100%
NCHRP 365				
Daily Rate	1.80	4.80	2.00	8.50
Percent of Trips	21%	56%	23%	100%

Base: All households, weighted.

As Table 5-4 shows, the DVRPC trip rates are slightly lower than the NCHRP rates, with the biggest difference occurring for smaller households and zero vehicle households. Since some rates are higher, and others lower, there does not appear to be any systematic problem with the DVRPC rates.

Table 5-4
Comparison of Household Survey Daily Trip Rates to NCHRP Trip Rates

Classification	**Households in Survey**	**Survey Total Trip Rate**	**NCHRP Total Trip Rate**
One person households	1431	3.1	4.2
Two person households	2143	6.4	7.3
Three person households	888	10.0	9.3
Four person households	783	14.4	12.0
Total	**4217**	**8.6**	**8.5**
Zero vehicle households	772	3.31	4.1
One vehicle households	1494	5.76	6.3
Two vehicle households	1455	10.20	9.7
Three + vehicle households	496	11.35	11.8
Total	**4217**	**8.6**	**8.5**

Base: All households, weighted.

Table 5-5 shows the mode shares of the reported trips from the household survey. The shares are in general agreement with similar measures from elsewhere. The walk share of 11% is slightly higher than the NPTS average of about 10% for large metropolitan areas.

Table 5-5
Travel Modes

Travel Mode	Frequency	Percent
Auto driver	19029	58.9%
Auto passenger	6229	19.3%
Walk	3555	11.0%
School Bus	1243	3.8%
Bus	1142	3.5%
Bicycle	285	0.9%
Subway/elevated rail	238	0.7%
Commuter rail	159	0.5%
Shared ride	118	0.4%
Amtrak, other railroad	66	0.2%
Trolley	69	0.2%
Commuter van/shuttle	41	0.1%
Charter bus	23	0.1%
Other	131	0.4%
Total	**32328**	**100.0%**

Base: All reported travel modes, weighted.

Table 5-6 shows the distribution of reported trip times. It is likely that network trip times will be assigned to the database for modeling purposes, but the general shape of the reported travel time distribution does show that a significant number of shorter trips were captured in the survey. Underreporting of shorter trips is common for diary surveys.

Table 5-6
Reported Trip Durations

Trip Duration	Frequency	Percent
5 minutes or less	6720	21.2%
6 to 10 minutes	6500	20.5%
11 to 15 minutes	5758	18.2%
16 to 20 minutes	2935	9.3%
21 to 25 minutes	1575	5.0%
26 to 30 minutes	3094	9.8%
31 to 35 minutes	912	2.9%
36 to 40 minutes	692	2.2%
41 to 45 minutes	982	3.1%
46 to 50 minutes	366	1.2%
51 to 55 minutes	218	0.7%
56 to 60 minutes	739	2.3%
61 to 65 minutes	111	0.4%
66 to 70 minutes	115	0.4%
71 to 75 minutes	188	0.6%
76 to 80 minutes	59	0.2%
81 to 85 minutes	44	0.1%
More than 85 minutes	624	2.0%
Total	**31631**	**100%**

Base: All trips.

CONCLUSION

The data set produced as a result of the Transportation for the 21st Century Household Travel Survey represents an excellent source of regional travel behavior information for the transportation planning community. The project scope along with careful survey design and execution, have provided a high quality data set for use in regional transportation planning and future modeling and travel forecasting efforts. As indicated by Cambridge Systematics review of the final data set, as well as the tables and summaries presented throughout this report, the Transportation for the 21st Century data set will serve as a solid foundation for regional model update efforts.

Appendix A: Recruitment Interview

Section 1: Introductory Script

A "Hello, this is [NAME] and I'm calling for the [LAST NAME] household on behalf of the [Delaware Valley Regional Planning Commission] / [South Jersey Transportation Planning Organization]. Last week we spoke with [First name] about an important transportation study in your area.

IF RESPONDENT NOT AT HOME, ASK FOR ANYONE 18 OR OLDER WHO LIVES IN THE HOUSEHOLD, OTHERWISE SCHEDULE CALLBACK.

1 YES, CONTINUE
REFUSAL
2 HARD REFUSAL ⇒ **THANK AND TERMINATE**
3 SOFT REFUSAL ⇒ **TERMINATE**, **AUTOMATIC CALLBACK SCHEDULED**
4 SPECIFIC CALLBACK TIME ARRANGED ⇒ **FILL OUT CALLBACK APPT SCREEN**
5 LANGUAGE BARRIER ⇒ **CALLED BACK BY SPECIAL LANGUAGE INTERVIEWER**

B A few days ago we sent a letter to your home to tell you about this very important project. It is sponsored by [DVRPC / SJTPO] which is the agency responsible for planning and improving transportation in the region. Did you receive the letter?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

C As the letter (would have - *if answer to Q.B is anything other than 1*) indicated, we are doing a survey about people's travel patterns and needs. This type of study is done only once every 15 or 20 years; the information I am gathering to make decisions about how to improve the highway and transit systems over the next 20 years.

I'd like to ask you a few questions. Your answers will remain completely confidential. This will take about 10 minutes. All households that participate in this study have an opportunity to win a pair of airline tickets to any continental U.S. destination. These tickets, contributed by a private company, are offered as a token of our appreciation for your time.

1 OK, CONTINUE
REFUSAL:
2 HARD REFUSAL ⇒ **THANK AND TERMINATE**
3 SOFT REFUSAL ⇒ **TERMINATE**, **AUTOMATIC CALLBACK SCHEDULED**
4 SPECIFIC CALLBACK TIME ARRANGED ⇒ **FILL OUT CALLBACK APPT SCREEN**
5 LANGUAGE BARRIER ⇒ **CALLED BACK BY SPECIFIC INTERVIEWER**

V1 Including all cars, trucks, vans, motorcycles and recreational vehicles, whether owned or leased or provided by an employer, how many vehicles are presently available to the members of your household?

00 ZERO ⇒ **SKIP TO Q1**
01 ONE
02 TWO
03 THREE
04 FOUR
05 FIVE
06 SIX
07 SEVEN
08 EIGHT
09 NINE OR MORE, SPECIFY. (_____)
98 DON'T KNOW ⇒ **THANK AND TERMINATE**
99 REFUSED ⇒ **THANK AND TERMINATE**

Now I need to get some information about your vehicle(s).

V2 What's the year of your vehicle? IF TWO OR MORE: "What's the year of vehicle number one, that is, the one used the most", "vehicle number two" and so on.
ENTER YEAR OF VEHICLE: _____
9998DON'T KNOW
9999REFUSED

V3 And what make and model is that? (List of 40 makes in alphabetical order)

V4 Model: _____-

V5 What's the body type?

01 AUTO SEDAN
02 AUTO 2-SEAT
03 VAN
04 SPORT UTILITY VEHICLE
05 UTILITY VEHICLE (i.e., WORK VAN OR TRUCK)
06 STATION WAGON
07 PICK-UP TRUCK
08 MOTORCYCLE
09 MOPED
10 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

V6 Is it owned or leased by a household member, an employer, or is it a rental car?

1 HOUSEHOLD OWNED/LEASED
2 EMPLOYER PROVIDED
3 RENTAL CAR
4 BORROWED FROM FRIEND OR RELATIVE
5 OTHER (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

V2 to V6 to be repeated for each vehicle, up to eight vehicles

V7 How many bikes does your household have that are presently available for travel or recreation?
NUMBER: _____
00 ZERO
01 ONE
02 TWO
03 THREE
04 FOUR
05 FIVE
06 SIX
07 SEVEN
08 EIGHT
09 NINE OR MORE, SPECIFY. (_____)
98 DON'T KNOW
99 REFUSED

Q1 What kind of home do you live in? (IF RESPONSE = 6, TERMINATE)
1 SINGLE-FAMILY HOUSE – DETACHED
2 SINGLE-FAMILY HOUSE ATTACHED TO ONE OR MORE HOUSES (TOWNHOUSE)
3 BUILDING WITH AT LEAST 2 APARTMENTS (SPECIFY HOW MANY UNITS ARE IN THE BUILDING _____)
4 HOTEL/MOTEL
5 MOBILE HOME OR TRAILER
6 DORMITORY/GROUP QUARTERS/BARRACKS
97 OTHER (SPECIFY) _____
98 DON'T KNOW
99 REFUSED

Q2 When did you move into this home?
1 WITHIN THE PAST YEAR
2 1 TO 5 YEARS AGO
3 MORE THAN 5 YEARS AGO
8 DON'T KNOW
9 REFUSED

Q3 Do you own or rent your home?
1 RENT
2 OWN/BUYING (PAYING OFF MORTGAGE)
3 OTHER (SPECIFY) _____
8 DON'T KNOW
9 REFUSED

Q4 For this household travel survey, we need everyone in your household to write down what they do and where they go for a 24-hour period. We'll send a diary for each person. After the assigned recording time, we'll call again to collect the information.

Q4a To send the diaries, I need to verify your address {*Computer shows the address*}. I have it as:

{St. Number}
{St. Direction}
{St. Name}
{St. Type}

{Apt. Number}
{Municipality/City}
{State}
{County}
{Zip}

Q4b Is this correct?
1 YES
2 NO ⇒ **GO BACK TO Q4a**

Q4c Where would you like to receive your diaries?
1 AT HOME ⇒ **SKIP TO Q5**
2 P.O. BOX
3 ANOTHER ADDRESS ⇒ **SKIP TO Q4e**
8 DON'T KNOW ⇒ **THANK AND TERMINATE**
9 REFUSED ⇒ **THANK AND TERMINATE**

Q4d P.O. Box Number _____
Municipality/City _____
State _____
Zip _____ ⇒ **SKIP TO Q5**

Q4e ST. NUMBER _____
ST. DIRECTION _____
ST. NAME _____
ST. SUFFIX _____
APT. NUMBER _____
MUNICIPALITY/CITY _____
STATE _____
ZIP _____

Q5 Is there anyone in your household who does not understand English?
1 YES
2 NO ⇒ **SKIP TO Q9**
8 DON'T KNOW ⇒ **SKIP TO Q9**
9 REFUSED ⇒ **SKIP TO Q9**

Q6 What is the language they understand?
01 SPANISH
02 FRENCH
03 GERMAN
04 CHINESE
05 ITALIAN
06 TAGALOG
07 POLISH
08 KOREAN
09 INDIC
10 VIETNAMESE
11 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q7 Will you or anyone else in your household be able to help them fill out the diaries?
1 YES ⇒ **SKIP TO Q9**
2 NO
8 DON'T KNOW
9 REFUSED

Q8 Is there anyone else, a friend or a neighbor, who can help this person fill out the diary?
1 YES
2 NO ⇒ **THANK AND TERMINATE IF Q6 <> 1**
8 DON'T KNOW ⇒ **THANK AND TERMINATE IF Q6 <> 1**
9 REFUSED ⇒ **THANK AND TERMINATE IF Q6 <> 1**

Q9 How many household members, including yourself, all infants and live-in domestic help live in your household?
ENTER THE NUMBER OF MEMBERS: _____
98 DON'T KNOW ⇒ **THANK AND TERMINATE**
99 REFUSED ⇒ **THANK AND TERMINATE**

Q10 We need some information about each person in your household, so we can prepare individual diaries. Again, I want to assure you that this information is for research purposes only and will be kept strictly confidential. Earlier, you indicated there were { # } persons in your household.

What is your first name? _____
IF TWO PERSONS LIVING IN HOUSEHOLD, ASK:
What is the first name of the other person living in your home? _____
IF 3 OR MORE PERSONS IN HOUSEHOLD, ASK:
Excluding yourself, what is the first name of youngest person in the household?
THEN ASK: What's the first name of the next person in your home, from oldest to youngest?
REPEAT THIS QUESTION UNTIL YOU HAVE NAMES FOR ALL THE OTHER HOUSEHOLD MEMBERS.

Q10A. What is [your/their] last name? [ASKED ONLY IF NAME NOT KNOWN]
ENTER THE LAST NAME:_____

Q11 to Q65 are asked for each household member. Respondent's information is retrieved first.

Q11 And what is {NAME }'s gender? ASK THIS QUESTION ONLY FOR OTHER HOUSEHOLD MEMBERS
1 MALE
2 FEMALE
8 DON'T KNOW
9 REFUSED

Q12 What is {his/her/your} age in years?
ENTER AGE: _____
97 97+ (specify)
98 DON'T KNOW
99 REFUSED

Q13 {Does/Do} {he/she/you} have a valid driver's license? ASK ONLY IF Q12>15
1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Q14 What is {his/her} relationship to you? SKIP FOR RESPONDENT

01 SELF
02 SPOUSE / PARTNER
03 SON/DAUGHTER
04 FATHER/MOTHER
05 BROTHER/SISTER
06 GRANDPARENT
07 GRANDCHILD
08 LIVE-IN HELP
09 ROOM MATE/OTHER NON-RELATED
10 OTHER RELATED
99 DON'T KNOW/ REFUSED

Q15 {Does/Do} {he/she/you} have a disability that limits the type of transportation {he/she/you} can use?

1 YES
2 NO ⇒ **SKIP TO Q17**
8 DON'T KNOW ⇒ **SKIP TO Q17**
9 REFUSED ⇒ **SKIP TO Q17**

Q16 What type of disability? MAXIMUM OF THREE RESPONSES ALLOWED

1 BLIND/VISUAL IMPAIRED
2 HEARING IMPAIRED OR DEAF
3 CANE OR WALKER
4 WHEELCHAIR NON-TRANSFERABLE
5 WHEELCHAIR TRANSFERABLE
6 COGNITIVELY CHALLENGED
7 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q16A [IF V7>0 AND Q12>5 AND Q15=2] How many days a week does [NAME] typically ride a bike, for any reason?

00 ZERO
01 ONE
02 TWO
03 THREE
04 FOUR
05 FIVE
06 SIX
07 SEVEN
98 DON'T KNOW
99 REFUSED

Q16B [IF Q16A>0] What is the most common reason for bike riding?

1 Work
2 School
3 Shopping
4 Social / Recreational
5 Exercise
7 OTHER (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

Q17 {Is/Are} {he/she/you} enrolled in any level of school {or daycare}? ASK "OR DAYCARE" ONLY IF AGE<6.

1 YES

2 NO ⇒ **SKIP TO Q24 IF AGE >15 ELSE TO NEXT HHLD MEMBER**
8 DON'T KNOW ⇒ **SKIP TO Q24 IF AGE >15 ELSE TO NEXT HHLD MEMBER**
9 REFUSED ⇒ **SKIP TO Q24 IF AGE >15 ELSE TO NEXT HHLD MEMBER**

Q18 What type of school {is/are} {he/she/you} enrolled in?
1 DAYCARE
2 PRE-SCHOOL
3 KINDERGARTEN TO ELEMENTARY (GRADES K-6)
4 SECONDARY SCHOOL (GRADES 7-12)
5 VOCATIONAL/TECHNICAL SCHOOL
6 COLLEGE OR UNIVERSITY
7 ADULT SCHOOL
8 DON'T KNOW
9 REFUSED

Q19 What is the name of the school {he/she/you} {is/are} enrolled in?
1 ENTER RESPONSE: _____
98 DON'T KNOW
99 REFUSED

Q20 Do {he/she/you} go to school at home or somewhere else?
1 HOME
2 ADDRESS KNOWN/GIVEN
9 DON'T KNOW / REFUSED

If complete address:
- ST NUMBER
- ST DIRECTION
- ST NAME
- ST TYPE
- APT/STE
- CITY, MUNICIPALITY, STATE, ZIP
- STATE

If cross streets
- ST#1 DIRECTION
- ST#1 NAME
- ST#1 TYPE
- ST#2 DIRECTION
- ST#2 NAME
- ST#2 TYPE
- CITY, MUNICIPALITY, STATE, ZIP

Q21 How many days a week {does/do} {he/she/you} go to school?
1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 DON'T KNOW
9 REFUSED

Q22 On one typical day how {does/do} {he/she/you} go to school? MULTIPLE RESPONSES (UP TO FIVE) ALLOWED BUT NOT EXPLICITLY REQUESTED

11 WALK
12 WHEELCHAIR
14 BICYCLE
21 AUTO/VAN/PICKUP/SUV DRIVER
22 AUTO/VAN/PICKUP/SUV PASSENGER
23 MOTORCYCLE/MOPED
31 SHARED RIDE (CARPOOL, VANPOOL, ETC.)
41 BUS (SEPTA, NJ TRANSIT)
42 SCHOOL BUS
43 COMMUTER VAN/SHUTTLE BUS: FROM EMPLOYER OR GROUP CONTRACT
44 PARATRANSIT/DEMAND RESPONSIVE/ELDERLY/HANDICAPPED
45 INTERCITY BUS (GREYHOUND, TRAILWAYS, BIEBER, ETC.)
46 CHARTER BUS, JITNEY, ETC
47 TROLLEY/TROLLEY BUS
51 SUBWAY/ELEVATED (MARKET-FRANKFORD, BROAD ST., PATCO)
52 COMMUTER RAILROAD (SEPTA, NJ TRANSIT
53 AMTRAK OR OTHER RAILROAD
54 TAXI/LIMOUSINE
55 BOAT/FERRY
56 AIRPLANE/HELICOPTER
97 OTHER
98 DON'T KNOW
99 REFUSED

Q23 How much does it cost to park at or near the school?
ENTER THE AMOUNT AND THEN THE UNIT OF PAYMENT. ENTER $0.00 IF FREE
AMOUNT:
$ ___ ___ . ___ ____
999998 Don't know
999999 Refused

SELECT UNIT OF PAYMENT: [SKIP IF PAYMENT WAS ZERO]

0 FREE
1 PER HOUR
2 PER DAY
3 PER WEEK
4 PER MONTH
5 PER QUARTER
6 PER SEMESTER
7 PER SCHOOL YEAR
8 DON'T KNOW
9 REFUSED

If age is 15 or under SKIP TO NEXT HHLD MEMBER

Q24 {Is/Are} {he/she/you} employed?

1 YES - FULL-TIME (40 HRS +) ⇒ **SKIP TO Q26**
2 YES - PART-TIME (LESS THAN 40 HRS) ⇒ **SKIP TO Q26**
3 NO
8 DON'T KNOW
9 REFUSED

Q25 What is {his/her/your} current situation? Are you...

1 RETIRED ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
2 HOMEMAKER ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
3 UNEMPLOYED BUT LOOKING FOR WORK ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
4 UNEMPLOYED AND NOT SEEKING EMPLOYMENT ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
5 STUDENT (PART TIME OR FULL TIME) ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
8 DON'T KNOW ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**
9 REFUSED ⇒ **SKIP TO NEXT HOUSEHOLD MEMBER**

Q26 {Does/Do} {he/she/you} have more than one job?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Q27 Is {his/her/your} employer a . . .

1 PRIVATE COMPANY,
2 GOVERNMENT,
3 SELF-EMPLOYED
4 INSTITUTION & NON-PROFIT ORGANIZATIONS
97 OR, SOMETHING ELSE (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q28 What activity best describes {his/her/your} job?

11 AGRICULTURE, FORESTRY, FISHERIES
21 MINING
22 UTILITIES
23 CONSTRUCTION
31 MANUFACTURING - NONDURABLE GOODS
32 MANUFACTURING - DURABLE GOODS
42 WHOLESALE TRADE
44 RETAIL TRADE
48 TRANSPORTATION AND WAREHOUSING
51 INFORMATION
52 FINANCE AND INSURANCE
53 REAL ESTATE
54 PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES
55 MANAGEMENT OF COMPANIES AND ENTERPRISES
56 ADMINISTRATIVE AND SUPPORT SERVICES
61 EDUCATIONAL SERVICES
62 HEALTH CARE AND SOCIAL ASSISTANCE
71 ARTS, ENTERTAINMENT, AND RECREATION
72 ACCOMMODATION AND FOOD SERVICES
81 OTHER SERVICES (EXCL. PUBLIC ADMINISTRATION)
92 PUBLIC ADMINISTRATION
97 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q29 How would you describe {his/her/your} occupation?
- 01 EXECUTIVE, ADMINISTRATIVE, OR MANAGERIAL
- 02 PROFESSIONAL SPECIALTY
- 03 TECHNICIAN AND RELATED SUPPORT
- 04 SALES
- 05 ADMINISTRATIVE SUPPORT, CLERICAL
- 06 PRIVATE HOUSEHOLD
- 07 PROTECTIVE SERVICE
- 08 SERVICE, EXCEPT PROTECTIVE AND HOUSEHOLD
- 09 FARMING, FORESTRY, OR FISHING
- 10 PRECISION, PRODUCTION, CRAFT, OR REPAIR
- 11 MACHINE OPERATOR, ASSEMBLER, OR INSPECTOR
- 12 TRANSPORTATION, OR MATERIAL MOVING
- 13 HANDLER, EQUIPMENT CLEANER, HELPER, OR LABORER
- 97 OTHER (SPECIFY _____)
- 98 DON'T KNOW
- 99 REFUSED

Q30 How long {has/have} {he/she/you} been working at {his/her/your} current workplace?
- 1 LESS THAN A YEAR
- 2 1 TO 5 YEARS
- 3 MORE THAN 5 YEARS
- 8 DON'T KNOW
- 9 REFUSED

Q31 On average, how many weekdays{does/do}{he/she/you} work at {his/her/your} job, regardless of location?
- 0 NONE
- 1-5
- 8 DON'T KNOW
- 9 REFUSED

Q32 On average, how many weekend days {does/do} {he/she/you} work at {his/her/your} job, regardless of location?
- 0 NONE
- 1-2
- 8 DON'T KNOW
- 9 REFUSED

IF Q32=1 OR 2, ASK Q33. ELSE SKIP TO Q34

Q33 When in the weekend {does/do} {he/she/you} work? MULTIPLE RESPONSES ALLOWED
- 1 SATURDAY AM
- 2 SATURDAY PM
- 3 SUNDAY AM
- 4 SUNDAY PM
- 7 OTHER (SPECIFY _____)
- 8 DON'T KNOW
- 9 REFUSED

Q34 On average, how many days per week {does/do} {he/she/you} work at home for {his/her/your} job instead of going to {his/her/your} workplace? Sometimes this is called telecommuting.
- 00 NONE/NEVER
- 1-7
- 97 Other (specify)
- 98 DON'T KNOW
- 99 REFUSED

COMPUTER SUMS NUMBER OF DAYS WORKED AS ANSWERED TO Q31, Q32, AND Q34. IF Q24=1 AND SUM<5, ASK Q35 AND Q36. ELSE SKIP TO Q37

Q35 Does {his/her/your} work have a compressed workweek, such as 80 hours in 9 days, or 40 hours in 4 days?

1 YES
2 NO ⇒ **SKIP TO Q36**
8 DON'T KNOW ⇒ **SKIP TO Q36**
9 REFUSED ⇒ **SKIP TO Q36**

Q36 {Does/Do} {he/she/you} work four days per week (4/40) or nine days per two weeks (9/80)?

1 9/80
2 4/40
7 OTHER (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

Q37 What is the name of {his/her/your} employer?

1 MAIN JOB NAME: _____
98 DON'T KNOW
99 REFUSED

Q38 {Does/Do} you work from home or somewhere else?

1 HOME ⇒ **SKIP TO Q40**
2 SOMEWHERE ELSE
9 DON'T KNOW / REFUSED

If complete address:

ST NUMBER
ST DIRECTION
ST NAME
ST TYPE
APT/STE
MUNCIPALITY/CITY
STATE
COUNTY
ZIP

If cross streets:

ST#1 DIRECTION
ST#1 NAME
ST#1 TYPE
ST#2 DIRECTION
ST#2 NAME
ST#2 TYPE
MUNICIPALITY/CITY
STATE
ZIP

Q39 What modes of transportation {does/do} {he/she/you} use most often to get to work? MULTIPLE RESPONSES (UP TO FIVE) ALLOWED BUT NOT EXPLICITLY REQUESTED

11 WALK
12 WHEELCHAIR
14 BICYCLE
21 AUTO/VAN/PICKUP/SUV DRIVER
22 AUTO/VAN/PICKUP/SUV PASSENGER
23 MOTORCYCLE/MOPED
31 SHARED RIDE (CARPOOL, VANPOOL, ETC.)
41 BUS (SEPTA, NJ TRANSIT)
42 SCHOOL BUS
43 COMMUTER VAN/SHUTTLE BUS: FROM EMPLOYER OR GROUP CONTRACT
44 PARATRANSIT/DEMAND RESPONSIVE/ELDERLY/HANDICAPPED
45 INTERCITY BUS (GREYHOUND, TRAILWAYS, BIEBER, ETC.)
46 CHARTER BUS, JITNEY, ETC
47 TROLLEY/TROLLEY BUS
51 SUBWAY/ELEVATED (MARKET-FRANKFORD, BROAD ST., PATCO)
52 COMMUTER RAILROAD (SEPTA, NJ TRANSIT
53 AMTRAK OR OTHER RAILROAD
54 TAXI/LIMOUSINE
55 BOAT/FERRY
56 AIRPLANE/HELICOPTER
97 OTHER
98 DON'T KNOW
99 REFUSED

Q40 {Does/Do} {he/she/you} usually need a vehicle at work for business purposes? (For example, sales calls or client meetings)

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Q41 [IF Q38=1, SKIP] How much does it cost to park at work? If {he/she/you} {doesn't/don't} drive, please estimate how much parking would cost.
ENTER THE AMOUNT AND THEN THE UNIT OF PAYMENT. ENTER $0.00 IF FREE
ENTER AMOUNT:
$ ___ ___ . ___ ____
999998 DON'T KNOW
999999 REFUSED

SELECT UNIT OF PAYMENT: [SKIP IF PAYMENT WAS ZERO]

0 FREE
1 PER HOUR
2 PER DAY
3 PER WEEK
4 PER MONTH
5 PER QUARTER
6 PER SEMESTER
7 PER SCHOOL YEAR
8 DON'T KNOW
9 REFUSED

Q42 [SKIP IF Q27 = 3 OR Q38=1] Does {his/her/your} employer offer to pay for all or part of the cost of parking at work?

1 YES

2 NO
8 DON'T KNOW
9 REFUSED

Q44 [SKIP IF Q38=1] What kind of parking {does/do} {he/she/you} use at work? If {he/she/you} {doesn't/don't} drive, what kind of parking would {he/she/you} use if {he/she/you} did drive regularly?
1 IN A PARKING LOT OR GARAGE AT WORK
2 IN A PARKING LOT OR GARAGE OFF-SITE
3 ON THE STREET
4 OTHER (SPECIFY)
8 DON'T KNOW
9 REFUSED

Q45 [SKIP IF Q38=1] Approximately how long (in minutes) is the walk from this parking area to {his/her/your} work?
ENTER THE MINUTES: _____
98 REFUSED
99 DON'T KNOW

Q46 Does {his/her/your} employer offer to pay for all or part of the cost of using transit?
1 YES, ALL OR PART
2 NO ⇒ **SKIP TO Q48**
8 DON'T KNOW⇒ **SKIP TO Q48**
9 REFUSED⇒ **SKIP TO Q48**

Q47 {Does/Do} {he/she/you} take advantage of it?
1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Q48 Approximately how much does it (or would it) personally cost {him/her/you} to buy a bus/rail pass? ENTER THE AMOUNT AND THEN SELECT THE UNIT. [ENTER $0.00 IF FREE]
ENTER THE AMOUNT:
$ ___ ___ . ___ ____
999998 DON'T KNOW
999999 REFUSED

SELECT THE UNIT OF PAYMENT: [SKIP IF PAYMENT WAS ZERO]
0 FREE
1 PER DAY
2 PER WEEK
3 PER MONTH
4 PER YEAR
5 OTHER (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

Q49 At {his/her/your} regular job, does {he/she/you} work a schedule or shift that changes on a regular basis?

1 YES
2 NO ⇒ **SKIP TO Q52**
8 DON'T KNOW ⇒ **SKIP TO Q52**
9 REFUSED ⇒ **SKIP TO Q52**

Q50 What time does {he/she/you} typically start work at {his/her/your} job?

___ ___ : ___ ___ [ENTER THE TIME]

Is this A.M. or P.M.?

1 A.M.
2 P.M.
98 DON'T KNOW
99 REFUSED

Q51 What time does {he/she/you} typically end work at {his/her/your} job?

___ ___ : ___ ___ [ENTER THE TIME]

Is this A.M. or P.M.?

1 A.M.
2 P.M.
98 DON'T KNOW
99 REFUSED

Q52 Are {his/her/your} start and end times at this job about the same every day?

1 YES ⇒ **SKIP TO Q55**
2 NO
8 DON'T KNOW ⇒ **SKIP TO Q55**
9 REFUSED ⇒ **SKIP TO Q55**

Q53 How much can {his/her/your} job's start times vary from the usual start time?

1 START TIME CANNOT VARY
2 WITHIN 15 MINUTES OR LESS
3 16 TO 30 MINUTES
4 31 TO 60 MINUTES
5 MORE THAN 1 HOUR
6 OR, SOMETHING ELSE (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

Q54 How much can {his/her/your} job's end times vary from the usual end time?

1 END TIME CANNOT VARY
2 WITHIN 15 MINUTES OR LESS
3 16 TO 30 MINUTES
4 31 TO 60 MINUTES
5 MORE THAN 1 HOUR
6 OR, SOMETHING ELSE (SPECIFY _____)
8 DON'T KNOW
9 REFUSED

The following questions are asked only if Q26=1. Otherwise next household member.

Q55 What is the name of {his/her/your} second employer?
- 1 SECOND JOB NAME: _____
- 98 DON'T KNOW
- 99 REFUSED

Q56 Is {his/her/your} second employer ...
- 1 A PRIVATE COMPANY
- 2 GOVERNMENT
- 3 HIMSELF/HERSELF (SELF-EMPLOYED)
- 7 OR, SOMETHING ELSE (SPECIFY _____)
- 98 DON'T KNOW
- 99 REFUSED

Q57 Do {you/he/she} work from home or somewhere else?
- 1 HOME
- 2 ADDRESS KNOWN/GIVEN
- 9 DON'T KNOW / REFUSED

IF COMPLETE ADDRESS:
- ST NUMBER
- ST DIRECTION
- ST NAME
- ST TYPE
- APT/STE
- MUNICIPALITY/CITY
- COUNTY
- STATE
- ZIP

IF CROSS STREETS:
- ST#1 DIRECTION
- ST#1 NAME
- ST#1 TYPE
- ST#2 DIRECTION
- ST#2 NAME
- ST#2 TYPE
- MUNICIPALITY/CITY
- STATE
- ZIP

Q58 What activity best describes {his/her/your} second job?
- 11 AGRICULTURE, FORESTRY, FISHERIES
- 23 MINING
- 24 UTILITIES
- 23 CONSTRUCTION
- 31 MANUFACTURING - NONDURABLE GOODS
- 32 MANUFACTURING - DURABLE GOODS
- 42 WHOLESALE TRADE
- 44 RETAIL TRADE
- 48 TRANSPORTATION AND WAREHOUSING
- 51 INFORMATION
- 52 FINANCE AND INSURANCE
- 53 REAL ESTATE
- 54 PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES
- 55 MANAGEMENT OF COMPANIES AND ENTERPRISES
- 56 ADMINISTRATIVE AND SUPPORT SERVICES
- 61 EDUCATIONAL SERVICES
- 62 HEALTH CARE AND SOCIAL ASSISTANCE
- 71 ARTS, ENTERTAINMENT, AND RECREATION
- 72 ACCOMMODATION AND FOOD SERVICES
- 81 OTHER SERVICES (EXC. PUBLIC ADMINISTRATION)
- 92 PUBLIC ADMINISTRATION
- 97 OTHER (SPECIFY _____)
- 98 DON'T KNOW
- 99 REFUSED

Q59 How would you describe {his/her/your} occupation at {his/her/your} second job?

01 EXECUTIVE, ADMINISTRATIVE, OR MANAGERIAL
02 PROFESSIONAL SPECIALTY
03 TECHNICIAN AND RELATED SUPPORT
04 SALES
05 ADMINISTRATIVE SUPPORT, CLERICAL
06 PRIVATE HOUSEHOLD
07 PROTECTIVE SERVICE
08 SERVICE, EXCEPT PROTECTIVE AND HOUSEHOLD
09 FARMING, FORESTRY, OR FISHING
10 PRECISION, PRODUCTION, CRAFT, OR REPAIR
11 MACHINE OPERATOR, ASSEMBLER, OR INSPECTOR
12 TRANSPORTATION, OR MATERIAL MOVING
13 HANDLER, EQUIPMENT CLEANER, HELPER, OR LABORER
14 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q60 On average, how many days per week does {he/she/you} work at {his/her/your} second job?
1-7
8 DON'T KNOW
9 REFUSED

Q61 On average, how many days per week {does/do} {he/she/you} work at home for {his/her/your} second job instead of going to {his/her/your} workplace? Sometimes this is called telecommuting.
00 NONE/NEVER
1-7
97 OTHER (SPECIFY _____) (THIS INCLUDES ONCE A MONTH)
98 DON'T KNOW
99 REFUSED

Q62 What time does {he/she/you} typically start work at {his/her/your} second job?
___ ___ : ___ ___ [ENTER THE TIME]

Is this a.m. or p.m.?
1 A.M.
2 P.M.
8 DON'T KNOW
9 REFUSED

Q63 What time does {he/she/you} typically end work at {his/her/your} second job?
___ ___ : ___ ___ [ENTER THE TIME]

Is this a.m. or p.m.?
1 A.M.
2 P.M.
8 DON'T KNOW
9 REFUSED

Once demographics are collected for all household members, interview continues.

As I said earlier, we'll send you a diary for each household member to complete. Now I just have a few more questions about your household.

Q64 How many separate telephone numbers are there to your current home? This would exclude any cellular or wireless phone numbers
_____ (IF 1⇒ **SKIP TO Q66**)

98 DON'T KNOW
99 REFUSED

Q65 How many of these telephone numbers, if any, are used exclusively for a FAX machine or modem?

_____
98 DON'T KNOW
99 REFUSED

Q66 In the past 12 months, have there been times, even for a few days, when you did not have phone service at your home?
1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Q67 How long were you without a phone service?
1 LESS THAN 2 WEEKS
2 AT LEAST 2 WEEKS BUT LESS THAN 1 MONTH
1 AT LEAST 1 MONTH BUT LESS THAN 3 MONTHS
2 AT LEAST 3 MONTHS BUT LESS THAN 6 MONTHS
3 AT LEAST 6 MONTHS BUT LESS THAN 1 YEAR
8 DON'T KNOW
9 REFUSED

Q68 Does your household share a phone line with another household?
1 YES
2 NO ⇒ **SKIP TO Q70**
98 DON'T KNOW ⇒ **SKIP TO Q70**
99 REFUSED ⇒ **SKIP TO Q70**

Q69 How many households share a phone line with your household?
ENTER THE NUMBER OF HOUSEHOLDS: _____
98 DON'T KNOW
99 REFUSED

Q70 Do you own or share ownership in a second home or condo that your family uses as a residence at least one week per year? That includes beach or mountain homes, condos, etc. but not rental properties.
1 YES
2 NO ⇒ **SKIP TO Q73**
9 REFUSED

Q71 In what city and the state is that home located?
ENTER CITY AND THEN STATE _____

Q72 How many weeks out of the year do you stay at that second residence?
ENTER 1-52 FOR NUMBER OF WEEKS AND THEN SELECT THE UNIT OF TIME. [
ENTER THE UNIT OF TIME:

_____
8 DON'T KNOW
9 REFUSED

SELECT THE UNIT OF TIME:
1 WEEKS
2 MONTHS

Q73 Which of the following best describes your ethnicity?
01 BLACK/AFRICAN AMERICAN, NON-HISPANIC
02 WHITE, NON-HISPANIC
03 ASIAN/PACIFIC ISLANDER
04 AMERICAN INDIAN
05 HISPANIC
97 OTHER (SPECIFY _____)
98 DON'T KNOW
99 REFUSED

Q74 ASK ONLY IF INCOME WAS NOT OBTAINED DURING ADVANCE CALL. What was your total annual household income last year from all sources before taxes, for all members of your household? PAUSE. IF NO REPLY, CONTINUE. Is it above or below $50,000?

I don't need an exact amount, just a range. This is for statistical use only. I will read you a series of income ranges. Please stop me when I read the range that is closest to your household's. IF DON'T KNOW OF REFUSED, REMIND THE RESONDENT OF THE IMPORTANCE OF THE SURVEY AND THE IMPORTANCE OF THE INFORMATION TO MAKE SURE WE INCLUDE ALL TYPES OF HOUSEHOLDS.

BELOW		ABOVE	
		06	$50,000 to less than $75,000
02	less than $15,000	07	$75,000 to less than $100,000
03	$15,000 to less than $25,000	08	$100,000 to less than $125,000
04	$25,000 to less than $35,000	09	$125,000 to less than $150,000
05	$35,000 to less than $50,000	10	$150,000 or more

98 DON'T KNOW
99 REFUSED

Q75 ASK ONLY IF INCOME IS LESS THAN $25,000 OR REFUSED. In the past 12 months, have you or any household member received income from any of the following sources?

01 Welfare
02 Other Government Sources/benefits
03 None of the above
98 Don't Know
99 Refused

TRAVEL DAY DETERMINATION.

D1 Now let me give you the day on which we would like for everyone in your household to keep track of their activities.
IF NO ONE REPORTED USING TRANSIT FOR WORK OR SCHOOL:
The day is "[DAY OF THE WEEK AND DATE]." Is this day OK?

IF SOMEONE REPORTED USING TRANSIT FOR WORK OR SCHOOL
Since you told us that someone in your household uses transit for a work or school trip, we'd like to schedule you for a day where transit is being used. What day would that be?
Enter Assignment Number _____

D2 Will there be any overnight, out-of-town guests staying at your home on that date?
1 YES
2 NO
8 DON'T KNOW
9 REFUSED

D2A How many guests will you have?
ENTER THE NUMBER OF VISITORS: _____

D2B If yes, can I get their names so we can prepare diaries for them?
1 YES
2 NO ⇒ **GO TO ALTERNATE TRAVEL DATE (D1)**

D2C [FOR EACH VISITOR] What is the name of the [first] visitor?
ENTER NAME

D2D And what is {NAME }'s gender?
1 MALE
2 FEMALE
8 DON'T KNOW
9 REFUSED

D2E And how old is {he/she}?
ENTER AGE: _____
97 97+ (specify)
98 DON'T KNOW
99 REFUSED

REPEAT FOR ALL VISITORS

D3 I'd like to verify that I reached you at {PHONE NUMBER}. Is this correct?
1 NUMBER IS CORRECT
2 NUMBER IS INCORRECT (TYPE CORRECT NUMBER _____)

D4 I'll call to collect your activity information the day following your travel day. Will DATE/TIME be a good time to reach you?

D5 Is there a different phone number where you or another member of your household would prefer to be called when we collect your information?
1 YES
2 NONE ⇒ **SKIP TO D7**
8 DON'T KNOW ⇒ **SKIP TO D7**
9 REFUSED ⇒ **SKIP TO D7**

D6 What is that phone number?
ENTER THE PHONE NUMBER: _____

D7 Do you have an email account that you use daily and that you would like us to use to communicate with you?

1 YES
2 NONE ⇒ **SKIP TO D9**
8 DON'T KNOW ⇒ **SKIP TO D9**
9 REFUSED ⇒ **SKIP TO D9**

D8 What is that account?
ENTER ACCOUNT INFO CAREFULLY – READ BACK TO CONFIRM – BE CAREFUL OF UPPER/LOWER CASE REQUIREMENTS

D9 As a token of our appreciation, your household will be entered into a drawing. If you win, would you rather have a transit check voucher or a gas coupon? [AMOUNTS ARE RANDOMLY MIXED, E.G. $20 TRANSIT VOUCHER OR $25 GAS COUPON; $25 TRANSIT VOUCHER OR $30 GAS COUPON]

D10 IF NOT QUALIFIED AND NEED TO TERMINATE INTERVIEW: Although you are not qualified to continue with our survey today, we appreciate your time. Thank you and goodbye.

D11 Thank you very much for helping us. We'll call you on the evening before [DAY] to make sure you received your diaries and to answer any questions. We also want you to know that by writing down complete and accurate answers in the diaries -- including full addresses for each place you visit during the diary day -- you'll help to make the transportation system better. If you have any questions or comments about the study, you contact me at 1-888-687-8287, ext. 4055

Appendix B: Retrieval Interview

Introduction

Hi – my name is _____ and I'm calling on behalf of [DVRPC / SJTPO] about the survey your household recently completed. May I please speak with _____?

I'm calling to collect your travel information. First, I need to verify that the information we show for your household is correct.

I'd like to start by verifying the address where you live. Is it…
[IF PO BOX IS LISTED, BE SURE TO VERIFY PHYSICAL ADDRESS]

Our records show that there are [HHSIZE] people living in your household. Is this correct?

Okay – now I need to confirm the name, age, and gender we have for each household member:

	Name	Age	Gender	Employed?	Student?	Habitual Address
1						
2						
3						
4						

In terms of vehicles available to your household, we show that you have [HHVEHICLES] available:

	Year	Make	Model
1			
2			
3			
4			

Great, now I'd like to collect the trip information your household recorded for
Your TRAVEL DAY.
Let's begin with your information. Do you have the diary handy?

COLLECT EACH TRIP FOR EACH PERSON IN THE HOUSEHOLD.

Proxy Reporting Information

A1 WAS THIS DATA REPORTED IN PERSON? (Y/N). IF NO, NAME AND # REPORTING
A2 Did you/ they use the diary to record your travel? (Y/N)
A3 How many total places did you visit over the course of the travel day? _____

Place 1

P1. Okay – where were you at 3 am on your travel day?

LOCATION – HOME / WORK / SCHOOL / OTHER
IF OTHER, PLACE NAME
ADDRESS / MUNICIPALITY OR CITY / STATE/ ZIP
LANDMARK

P2-P7 And what did you do there?

1 Drop off / pick-up someone
2 Visit friends / relatives
3 Eat Meals
4 Social / recreation / entertainment
5 Shopping via Internet
6 All other shopping
7 Doctor / dentist / other professional
8 Other family or personal business
9 Religious or civic
10 Work at home (job-related)
11 Work at regular job site
12 Work activity at another place
13 School at regular place
14 School activity at another place
15 Sleep
16 Other activities at home
97 Other (specify)

P8 Did you go anywhere else that day? Yes No
If Yes – P9
If No – P9 = 2:59 AM then skip to P10

P9 What time did you leave that place and go somewhere else?
__ __:__ __ AM/PM

P10 If did not travel,
So, you made no trips, including for work or school?
Why Not? (COMMENT FIELD)

P11 If out of area on travel day, collect city and state where stayed.
P12 Duration - computer calculates activity duration as P9 - 3 a.m.

All other places

Repeat Places 2 through x until end of day. At end of day 1, have CATI automatically enter 2:59 am.

Q1. Where did you go next? [PAUSE]
Did you make any stops along the way for any reason, such as to drop someone off or to change travel modes? Remember to tell me about trips or parts of trips you made by bike or walking.

LOCATION – HOME / WORK / SCHOOL / OTHER - if home, work, or school – CATI displays address information for interviewer to confirm. If totally new information, enter address below.

IF OTHER, PLACE NAME
ADDRESS
CITY
STATE
ZIP
MUNICIPALITY
LANDMARK

Q2 What time did you get there?
__ __:__ __ AM/PM

Q3 Trip Duration - computer calculates trip duration as Q2 – P9 (for Place 2)
Trip Duration (all other places) calculated as Q2 (next place)– Q15 (last place)

Q4-Q9 What did you do there? (multiple response allowed)
1 Drop off / pick-up someone
2 Visit friends / relatives
3 Eat Meals
4 Social / Recreation / entertainment
5 Shopping via Internet
6 All other shopping
7 Doctor / dentist / other professional
8 Other family or personal business
9 Religious or civic
10 Work at home (job-related)
11 Work at regular job site
12 Work activity at another place
13 School at regular place
14 School activity at another place
15 Sleep
16 Other activities at home
17 Change travel modes
97 Other (specify)

Q10 How did you get here? Please tell me in the order of use.

11 WALK
12 WHEELCHAIR
14 BICYCLE
21 AUTO/VAN/PICKUP/SUV DRIVER
22 AUTO/VAN/PICKUP/SUV PASSENGER
23 MOTORCYCLE/MOPED
31 SHARED RIDE (CARPOOL, VANPOOL, ETC.)
41 BUS (SEPTA, NJ TRANSIT)
42 SCHOOL BUS
43 COMMUTER VAN/SHUTTLE BUS: FROM EMPLOYER OR GROUP CONTRACT
44 PARATRANSIT/DEMAND RESPONSIVE/ELDERLY/HANDICAPPED
45 INTERCITY BUS (GREYHOUND, TRAILWAYS, BIEBER, ETC.)
46 CHARTER BUS, JITNEY, ETC
47 TROLLEY/TROLLEY BUS
51 SUBWAY/ELEVATED (MARKET-FRANKFORD, BROAD ST., PATCO)
52 COMMUTER RAILROAD (SEPTA, NJ TRANSIT
53 AMTRAK OR OTHER RAILROAD
54 TAXI/LIMOUSINE
55 BOAT/FERRY
56 AIRPLANE/HELICOPTER
97 OTHER
98 DON'T KNOW
99 REFUSED

Q11 How many others traveled with you?
___ total

Q12 Of those, how many were household members?
____ household
Person #s of household members traveling with

Q13 CALCULATE # non-household from QA2 – QA3

IF (Q10=21, 22 or 23) GO TO M1 – do series of questions, then return
IF (Q10=41, 43, 44, 45, 46, 47, 51, 52, 53) GO TO N1 – do series then return

Q14 Did you go any place else that day? Are there any walk or bike trips you might have forgotten to tell me about?
Yes
No – END for that person day – enter time as 2:59 am

Q15 What time did you leave for the next place?
__ __:__ __ AM/PM

Q16 Place Duration - computer calculates activity duration as Q15 – Q2

ASK AS FINAL QUESTION (ONCE ALL TRAVEL FOR ALL HOUSEHOLD MEMBERS COLLECTED

I1 [IF INCOME REFUSED DURING RECRUITMENT] What was your total annual household income last year from all sources before taxes, for all members of your household? PAUSE. IF NO REPLY, CONTINUE. Is it above or below $50,000?

BELOW

02 less than $15,000
03 $15,000 to less than $25,000
04 $25,000 to less than $35,000
05 $35,000 to less than $50,000
98 DON'T KNOW
99 REFUSED

ABOVE

06 $50,000 to less than $75,000
07 $75,000 to less than $100,000
08 $100,000 to less than $125,000
09 $125,000 to less than $150,000
10 $150,000 or more

Mode Specific Questions

IF MODE=AUTO (IF Q10=21, 22 or 23)

M1 Did you use any of your household vehicles to get there?
1 Yes
2 No (SKIP TO M3 - ENTER 99 IN M2)

M2 Which household vehicle?
____ HH vehicle number

M3 Were you the driver or passenger?
1 Driver
2 Passenger ➔ SKIP TO M12

M4 Where did you park?
1 Street
2 Garage
3 Parking Lot
4 Driveway ➔ SKIP TO M7
5 Drop off or drive through (no park) ➔ SKIP TO M7
6 Other (specify) ➔ SKIP TO M7

M5 What did it cost to park?
Enter amount (0 for free, 999999 if unknown)

M6 Was that per …
1 hour
2 day
3 week
4 month
5 other (specify)

M7 Did you pay any tolls?
1 Yes
2 No ➔ SKIP TO M9

M8 How much in total did you pay to make this trip?
Enter amount (999.99 if unknown)

M9 Did you drop off or pick up anyone?
1 Yes
2 No ➔ SKIP TO M12

M10 Was it a household member?
1 Yes
2 No ➔ SKIP TO M12

M11 Which household member was it?
Enter person number(s)

M12 [END OF LOOP IF DRIVER] Were you dropped off or picked up?
1 Yes
2 No ➔ END OF LOOP FOR PASSENGER

M13 Was it a household member?
3 Yes
4 No ➔ END OF LOOP FOR PASSENGER

M14 Which household member was it?
Enter person number(s)

IF MODE=TRANSIT =41, 43, 44, 45, 46, 47, 51, 52, 53– do series then return

N1 Where did you board?
STATION NAME OR BUS STOP LOCATION (CROSS STREETS)
LINE OR ROUTE #

N2 How did you get to the bus/rail stop?
1-walk
2-drove and parked
3-was dropped off
4-rode bike
5-other (specify)

N3 How much did you pay?
$_____

N4 How did you pay?
1-cash
2-pass
3-transfer
7-OTHER (SPECIFY)

N5 – How many times did you transfer?
0 ➔ SKIP TO N15
1-2
3 3+

N6 What was the station or bus stop where you first transferred?

N7 What was the line # or route description to which you first transferred?

N8 – How much did you pay for that portion of your trip
$_____

N9 How did you pay?
1-cash
2-pass
3-transfer

N10 What was the station or bus stop where you transferred second?

N11 What was the line # or route description to which you transferred second?

N12 – How much did you pay for that portion of your trip?
$_____

N13 How did you pay?
1-cash
2-pass
3-transfer

N14 ENTER ANY ADDITIONAL TRANSFER INFORMATION HERE

N15 – Where did you get off the bus/light rail?
LOCATION – LANDMARK / ADDRESS / CITY /
STATION NAME OR BUS STOP LOCATION (CROSS STREETS)

N16 – How did you get from the bus/rail stop to your destination?
1-walk
2-got into parked car and drove
3-was picked up
4-rode bike
5-other (specify)