June 2002

Cordon Line Highway Traffic Survey for the Delaware Valley Region

US 1 and NJ 70 Cordon Stations in Mercer and Burlington Counties

Report 1

Delaware Valley Regional Planning Commission

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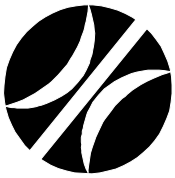
REPORT NO.1

US 1 AND NJ 70 CORDON STATIONS IN MERCER AND BURLINGTON COUNTIES

June 2002

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 which 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 request 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.



Our logo is adapted from the official DVRPC seal, 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. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. This report was primarily funded by the Pennsylvania Department of Transportation and the Federal Highway Administration (FHWA). The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

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EXECUTIVE SUMMARY

The External and Through Traffic Survey collected current information on traffic entering and exiting the DVRPC region. The traffic surveys at US 1 and NJ 70 were two of fourteen stations surveyed around the region during the summer of 2001. Information was collected in both directions through a roadside interview, using the questionnaire shown on page 6. Questions were asked about trip origin and destination, purpose, highways used, vehicle type, occupancy, truck garage location and truck commodities. Detailed findings are available individually in Section III and in the Appendices in the back of the report. The survey was conducted with the cooperation of the New Jersey Department of Transportation, and police from New Jersey. Traffic was surveyed at each of the stations in both directions during the time period from 6:45 A.M. to 7:15 P.M.

The major findings for these two survey stations are as follows:

- The 24 hour counts for US 1 and NJ 70 were 54,310 and 9,890 AADT respectively. Both stations have AM and PM peaks with about 8 percent of the 24 hour total. The mode split between automobiles and trucks was 83 percent and 16 percent for US 1 respectively, and 74 percent and 23 percent for NJ 70 respectively.

- The completed survey samples for US 1 and NJ 70 were close to the desired goals. US 1 surveyed 1,793 of 1,800 for 99 percent of the desired sample goal, and NJ 70 surveyed 1,362 of 1,400 for 97 percent of the desired sample goal.

- The US 1 automobile driver's reasons for traveling the facility were 57 percent saving time and 33 percent most direct, while truck drivers responded with 65 percent saving time and 20 percent less congested. Along NJ 70, automobile driver's reasons were 48 percent to save time and 42 percent most direct, while truck drivers responded 53 percent saving time and 39 percent most direct.

- The work trip on both US 1 and NJ 70 have a 69 percent and 48 percent share respectively. Other major trip purposes on US 1 include 9 percent for both social and shopping trips, and on NJ 70 a 34 percent share for social visits.

- The average total vehicle occupancy varied between survey stations, with US 1 and NJ 70 having 1.29 and 1.57 persons per vehicle respectively, while the occupancy for work trips was less, with 1.16 and 1.17 persons per vehicle respectively.

- Truck drivers surveyed at the US 1 station had trucks which were 29 percent empty, 22 percent other, and 17 percent building materials. Trucks on NJ 70 were 26 percent empty, 23 percent building materials, and 19 percent other.

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I. INTRODUCTION

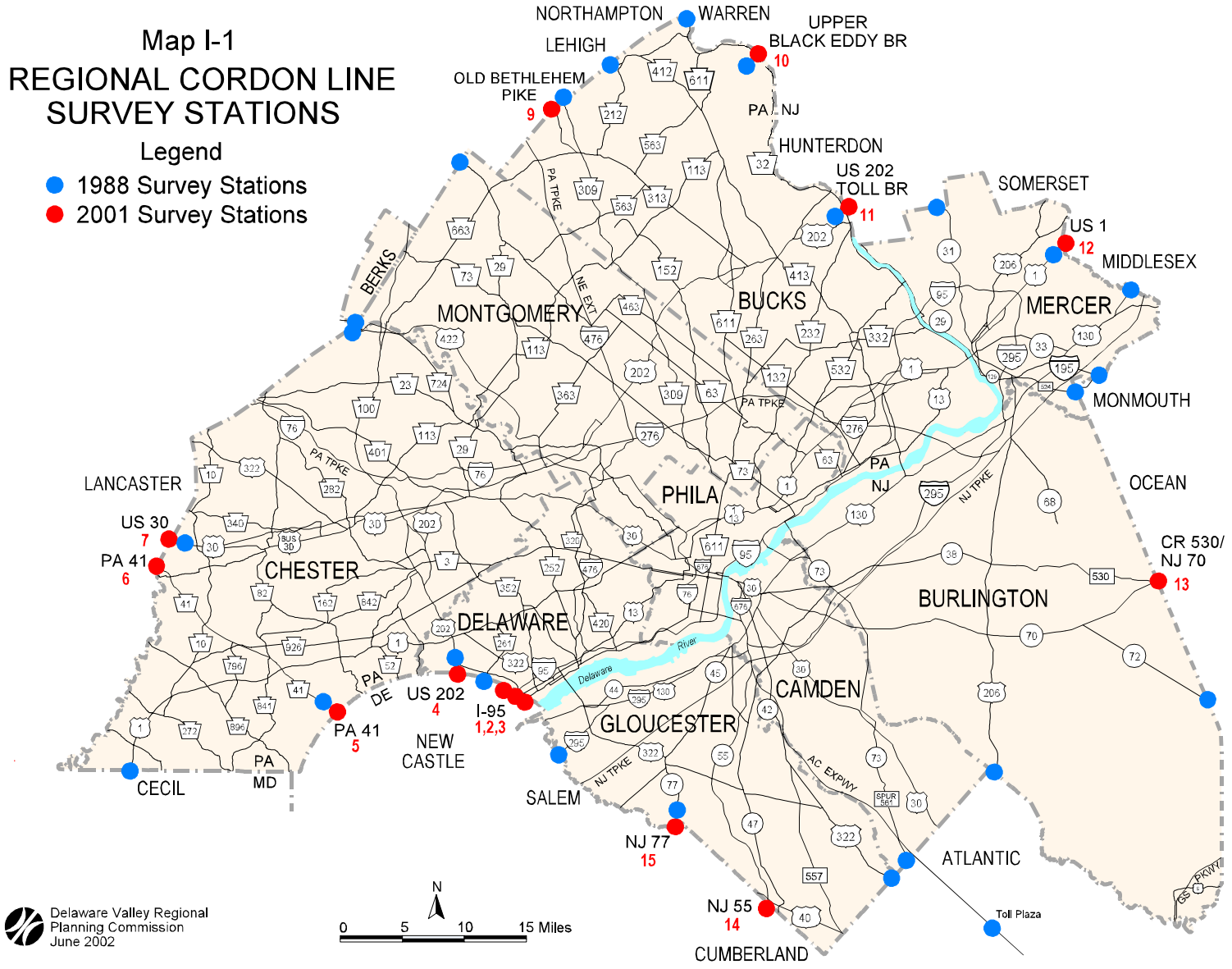
The DVRPC cordon line traffic survey was conducted to collect current information on traffic volumes, determine origin-destination travel patterns, travel activity, and travel mode of vehicles crossing the nine-county DVRPC cordon line which forms the regional boundary. The survey, conducted in the spring and summer of 2001, updated trip characteristics and patterns that were last collected in 1988. The survey data will be used in the ongoing transportation planning process, validation of travel simulation models, traffic forecasting, preliminary engineering, estimation of vehicle miles of travel (VMT), and monitoring of external and through travel patterns.

The external and through trip travel patterns are especially important for planning of transportation facilities located near the nine-county boundary, as this is an area where major new development has occurred. The toll authorities of the region, state transportation departments, neighboring metropolitan planning organizations, county planners, and interregional freight operators will benefit from this survey, which will provide useful data for the planning and programming of highway facilities improvement for the next 20 years.

Map I-1 displays the highway facilities which were surveyed in 2001 as well as the locations of the 1988 survey. Traffic surveys in 2001 were conducted at 14 locations crossing the boundary of the nine-county region representing a broad range of highway types, from local to interstate facilities. This information was supplemented with data from two recently conducted surveys, one on the Pennsylvania Turnpike and the other on the New Jersey Turnpike. In addition, traffic counts were taken on an additional 140 highway facilities crossing the regional boundary and bus and rail ridership was collected from carriers crossing the cordon line. The survey consisted of roadside interviews at each location. Questions were asked about trip origin, destination, and purpose; highway use with information about vehicle type and vehicle occupancy gathered by direct observation. The questionnaire also asked the reasons for travel, how people make their travel decisions, and how they plan their daily trips. Truck type, garaging and commodity information were also included in the survey questionnaire.

The survey results are presented in a series of reports. This report briefly presents the two surveys conducted at US 1 near the Mercer / Middlesex county line and NJ 70 at the Burlington / Ocean county line. Section II of the report describes the design and conduct of the survey. Included are a description of the questionnaire, the sample size, and the data collection method. A map and description of the survey sites is included, as well as a summary tabulation of traffic volumes and vehicle classification information. Also included is a review of the processes employed to enter the survey data, geocode origin/destination information, and tabulate the answers to survey questions.

The survey results are presented in Section III. The major findings of the survey and traffic characteristics are presented; the findings for each question are offered in graphic and written form. Detailed survey information is provided in the appendices in the back, including tabulations of survey responses in a series of fifteen tables for each survey station.


Map I-1
REGIONAL CORDON LINE SURVEY STATIONS
Legend
1988 Survey Stations
2001 Survey Stations
NORTHAMPTON
WARREN
LEHIGH
UPPER BLACK EDDY BR
10
OLD BETHLEHEM PIKE
9
PA
NJ
HUNTERDON
US 202 TOLL BR
11
SOMERSET
US 1
12
MIDDLESEX
MERCER
MONMOUTH
OCEAN
BERKS
MONTGOMERY
BUCKS
PHILA
LANCASTER
US 30
7
PA 41
6
CHESTER
DELAWARE
BURLINGTON
CR 530/ NJ 70
13
CAMDEN
GLOUCESTER
US 202
4
I-95
1,2,3
PA 41
5
NEW CASTLE
CECIL
PA
MD
PA
DE
SALEM
NJ 77
15
NJ 55
14
CUMBERLAND
ATLANTIC
Toll Plaza
Delaware River
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Delaware Valley Regional Planning Commission
June 2002
N
0 5 10 15 Miles

II. DESIGN AND CONDUCT OF THE SURVEY

The cordon line survey was designed to gather information from a sample of drivers crossing the boundary of the DVRPC region. At each station, two types of traffic information was collected; total number of passing vehicles and driver trip-making characteristics. The 24 hour recording of traffic at the specific cordon line location, by vehicle type and by the hour, was collected using DVRPC's Automatic Traffic Recorder units (referred to as ATRs). The hourly counts help determine the sample size necessary for roadside interviews. The survey questionnaire shown on the following page consists of 13 questions. Some information, like time of trip, vehicle type and vehicle occupancy, were compiled via direct observation by the surveyor. The remaining questions such as origin and destination of the trip, major highways used, trip purpose, and stops before final destination were asked by the surveyor. For commercial vehicles, additional questions ascertained the county where the vehicle is garaged or parked when not in service and the type of commodity carried.

A. Survey Locations

The results for the two survey locations are included in this report: US 1, Brunswick Pike in Plainsboro Township; and NJ 70 in Manchester Township. These facilities were chosen due to their importance for travel to and from the Delaware Valley region. Both are major arterials carrying traffic into and out of the DVRPC region, US 1 from the north and NJ 70 from the east.

1. US 1, Brunswick Pike

Prior to the opening of the New Jersey Turnpike and the emergence of the interstate system, US 1 was the major route for traffic along the eastern seaboard of the United States. In designing the route, the Bureau of Public Roads utilized existing facilities, where possible, to connect strategic cities. In the Delaware Valley region, the US 1 designation was bestowed on Brunswick Pike, connecting New Brunswick, NJ with Trenton, NJ; thence Lincoln Highway to the Philadelphia City Line. Today, US 1 continues through Philadelphia as Roosevelt Boulevard to City Ave and continues south as Baltimore Pike. Although much of the intercity traffic has shifted to the newer high type facilities, US 1 still carries a significant share of interstate, interregional and local traffic. Partly due to proximity to Princeton University, the US 1 corridor has become a major location for high technology and corporate office campuses. Employment along the corridor has spurred the development of major retail centers. The resulting heavy traffic has kept US 1 under almost constant reconstruction, as the New Jersey Department of Transportation has widened the facility and grade separated interchanges to facilitate the movement of through traffic.

Figure II-1. External and Through Survey Field Form

Delaware Valley Regional Planning Commission **Nº** 10000
EXTERNAL AND THROUGH TRIP SURVEY **Time :** : 1[ ] AM 2[ ] PM

1. Where did you start this trip? (Origin) **2. Is this home?** 1[ ] Yes 2[ ] No

_____
Street address or nearest intersection

_____
Town or City County State Zip Code

3. Where will this trip end? (Destination) **4. Is this home?** 1[ ] Yes 2[ ] No

_____
Street address or nearest intersection

_____
Town or City County State Zip Code

5. Will you stop before arriving at your destination? **6. Is this home?** 1[ ] Yes 2[ ] No

1[ ] No 2[ ] Yes, If yes, where?

_____
Street address or nearest intersection

_____
Town or City County State Zip Code

7. Why do you use this road? (check one or more)
1[ ] Saves Time 3[ ] Less Congestion 5[ ] No Traffic Lights
2[ ] Saves Money 4[ ] Better Road Condition 6[ ] Other_____

8. What is/are the major road(s) that you will take to reach the destination after this road?

1st Highway_____ 2nd Highway _____

9. What type of vehicle is used for the trip?

Passenger Vehicles	**Light Trucks**	**Heavy Trucks (3 axles or more)**
1[ ] Auto	5[ ] Pickup	9[ ] Tractor-Trailer
2[ ] Van, Sta. Wagon	6[ ] Panel	10[ ] Double Trailer
3[ ] SUV	7[ ] Single Unit	11[ ] Other _____
4[ ] Other _____	8[ ] Other _____	

10. What is the purpose of this trip? (Passenger Vehicles Only)
1[ ] Work 3[ ] Eat Meal 5[ ] Social/Recreation 7[ ] Visitor/Tourist
2[ ] School 4[ ] Shopping 6[ ] Medical 8[ ] Other _____

11. How many people are in the vehicle? (Passenger Vehicles Only)
1[ ] One 2[ ] Two 3[ ] Three 4[ ] Four 5[ ] Five 6[ ] More than Five

12. Where is this truck garaged or parked when not in service? (Trucks Only)
1[ ] Bucks County 4[ ] Montgomery County 7[ ] Burlington County 10[ ] Mercer County
2[ ] Chester County 5[ ] Philadelphia County 8[ ] Camden County 11[ ] Other NJ County
3[ ] Delaware County 6[ ] Other PA County 9[ ] Gloucester County 12[ ] Other State

13. What type of commodities are you carrying? (Trucks Only)
1[ ] Empty 4[ ] Agricultural Products 7[ ] Retail Store Merchandise
2[ ] Manufactured Products 5[ ] Building Materials 8[ ] Parcels
3[ ] Petroleum Products 6[ ] Refrigerated Products 9[ ] Other _____

US 1 at the cordon line is three lanes by direction with narrow shoulders making it difficult to stop traffic. Due to this road profile at the regional boundary, the survey site was established approximately one mile north of the cordon at the College Rd interchange in Plainsboro Township, Middlesex County (see Map II-1). This location is a two lane by direction cross section, with a traffic signal at Independence Way, which tended to slow traffic in the vicinity of the survey site. Local police from Plainsboro Township assisted with traffic control.

2. NJ 70

NJ 70 is the major east-west thoroughfare between the DVRPC region and northern New Jersey shore communities. It also provides major access for military installations in the area, including Fort Dix, McGuire Air Force Base and Lakehurst Naval Air Engineering Station. In this area, the Delaware Valley regional boundary between Burlington and Ocean counties is relatively undeveloped, with the survey site itself lying within the boundaries of the Lebanon State Forest. Although there is a posted 50 m.p.h. speed limit on this two lane road travel speeds tend to be higher, due to few curb cuts (those being dirt roads into the state forest), an almost tangent alignment, wide shoulders and good sight distance.

The survey site was on the Ocean County side of the border, straddling a forest access road on the south side of the alignment (see Map II-2). Just west of the county boundary CR 530, Lakehurst Road, diverges from NJ 70 providing access to Browns Mills and housing serving all three military installations. The location was ideal for survey, as the results yielded information about both facilities. NJ State Police were on site to assure the safety of the survey crew and the motoring public. Traffic flow was normal during the survey.

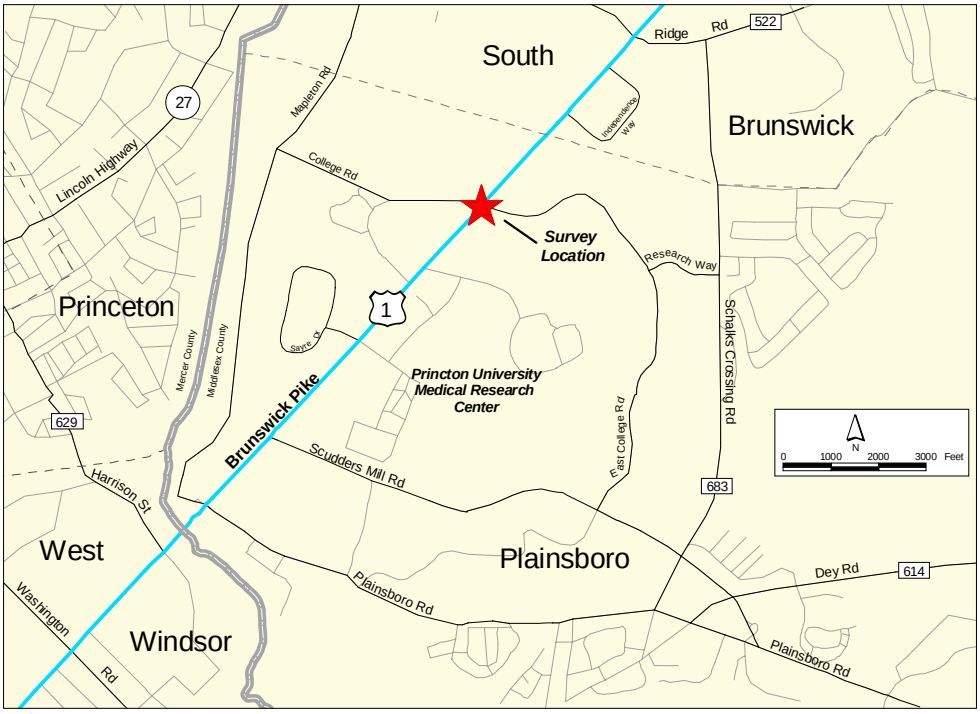
B. Sample Methodology

Twenty four hour traffic and vehicle classification counts were taken at each site prior to the field surveys. The hourly vehicle classification counts are presented in the appendices in the back of this report. Based on the 24 hour volumes, standard statistical methods were applied to determined a sample size for each location. The sample was then disaggregated into an appropriate number of surveys for passenger and commercial vehicles for each survey period as discussed below.

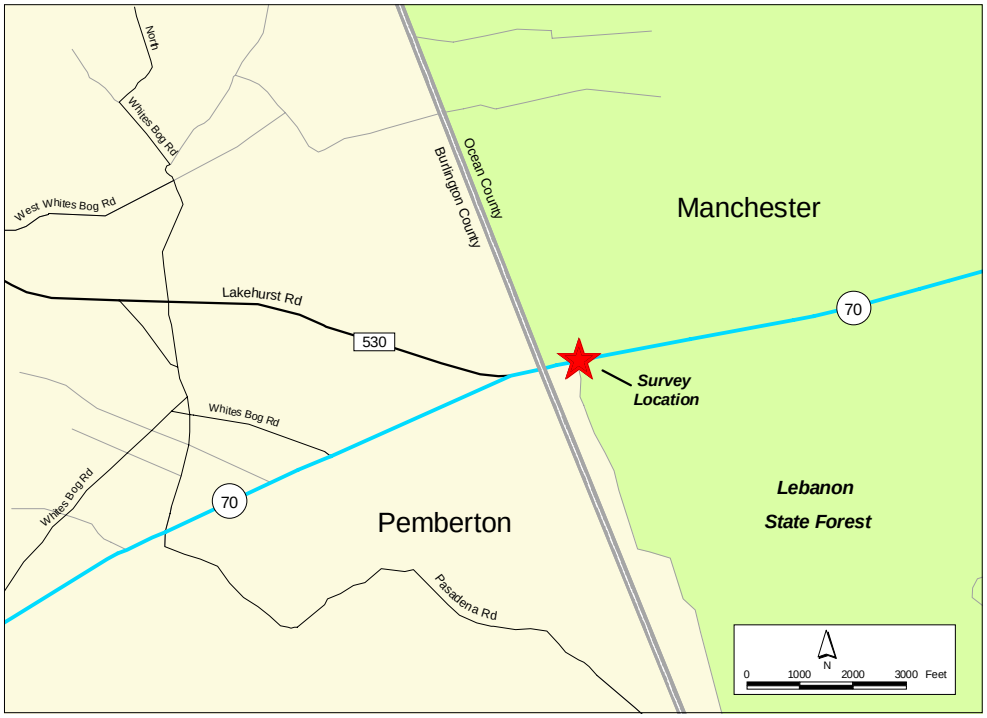
1. Traffic Counts

Traffic volume at the US 1 survey site is approximately 54,000 vehicles per day. The survey station was located about a mile north of where the vehicular counts were taken, consequently there is some variance from the volume at the boundary of the region. Interchanges at Plainsboro Rd, Scudders Mill Rd and some ramps from the College Rd interchange affect this volume, as do two developments with access to US 1 located between Scudders Mill Rd and College Rd. Traffic is oriented toward the Princeton / Trenton area and heavily peaked (9.8 K factor inbound in the morning / 9.6 K factor outbound in the afternoon). Trucks (commercial vehicles) comprise approximately 7 percent of the traffic mix.

Map II-1. US 1, Brunswick Pike Survey Location



Map II-2. NJ 70 Survey Location



The 24 hour traffic volume at the NJ 70 survey site is approximately 9,900 vehicles per day. Peak hour factors are roughly 8 percent, with the afternoon K factor higher than in the morning for both directions. Trucks (commercial vehicles) account for about 6.6 percent of total traffic.

2. Sample Size

Based on the hourly traffic and vehicle classification counts, a sample size was determined for both passenger and commercial vehicles. This number of surveys by morning and afternoon period is presented in Section III. For US 1, a total of 1,800 surveys (3.3% of the total Annual Average Daily Traffic (AADT) were scheduled for collection. This amounted to approximately 900 surveys to be completed in each direction, representing inbound and outbound trips. Of this total, 720 forms were to be interviews of passenger vehicles, with the remaining 180 reserved for commercial vehicles.

On NJ 70, the total number of interviews was set at 1,400 surveys (14.1% of the total AADT). This amounts to 700 surveys to be filled out for traffic in each direction, representing inbound and outbound trips. Passenger vehicles accounted for about 590 surveys, with the balance of 110 surveys consisting of trucks.

C. Survey Conduct

A manual was prepared to guide the conduct of the survey. It contained information on the distribution of surveys by survey period; partnering agency information; number of police officers needed for traffic control and staffing requirements for each site; a preliminary schedule of survey sites and shifts, as well as a listing of equipment requirements and diagram of a hypothetical site as it would be set up for survey operations. Before the survey work could be initiated, a crew of temporary workers was hired and trained. General orientation sessions included role playing by the survey crew, so the surveyor became familiar with the questions and possible problematic situations. It also allowed the surveyors to become comfortable with the survey process, so that once in the field, survey process would be safe and efficient, and the traffic delay would be minimal. As the surveyors became experienced with the process, per survey time dropped to the range of 35 to 45 seconds.

While in the office prior to initiating field work, surveyors allocated the proper number of forms for passenger and commercial vehicles by time period. Four different colored forms were used to designate the traffic direction (inbound or outbound) and interview time (morning or afternoon). Forms were allocated to the following survey times:

Morning Survey	**Afternoon Survey**
6:45 - 8:30 a.m.	1:00 - 2:30 p.m.
8:30 - 9:30 a.m.	2:30 - 3:30 p.m.
9:30 - 10:30 a.m. (meal break)	*3:30 - 4:30 p.m. (meal break)*
10:30 - 12:00 noon	4:30 - 6:00 p.m.
12:00 - 1:00 p.m.	6:00 - 7:15 p.m.

Although in general the conduct was the same for each survey station, the geography of the site dictated a measure of innovation. Safety, both of the survey crew and the driving public, was the primary operating directive. For a four lane facility, the right lane and shoulder were used for the survey. This provided the left lane for traffic to bypass the survey. Two lane facilities required the survey to be offset by direction. Multiple signs were placed in advance of the site in accordance with state guidelines and distance standards. These warned motorists of the traffic survey, to be prepared to stop, and that police control was in effect. Police vehicles were prominently displayed ahead of the site, with lights flashing, as this tended to slow traffic entering the vicinity of the survey. Police and traffic cones helped direct traffic through the site, and a sign announced the end of the survey site. All survey personnel were outfitted with safety vests. Although each site was visited before the survey date and preliminary sketches of the setup were prepared, police officers on site had the final say on site design.

Since only a sample of the drivers were interviewed, the platoon method was used in selecting vehicles to be surveyed. A crew chief was designated for each direction and assumed the last position in the survey line. The crew chief was responsible for communicating with the other surveyors and with the police officer. The crew chief would signal the officer when the crew was ready for a platoon of vehicles. Interviews would be conducted, and the appropriate information recorded. The lead surveyor would then assure the safe re-entry of the surveyed vehicles to the traffic stream and the crew chief would signal the police officer for another platoon of vehicles.

Coordinating the survey was the responsibility of the survey chief. This person was responsible for scheduling the appropriate number of survey staff, coordinating with the police, and assuring that the survey site was properly prepared. During the survey the survey chief had the responsibility of distributing and collecting survey forms, resolving situations with the police, seeing to the physical needs of the survey crew, and speaking with motorist regarding survey questions and concerns. The survey chief would join the line of surveyors when an extra person was needed to fill the quota of surveys.

The survey at both US 1 and NJ 70 was successfully executed and the required surveys were completed on time without any incident or noticeable traffic delay.

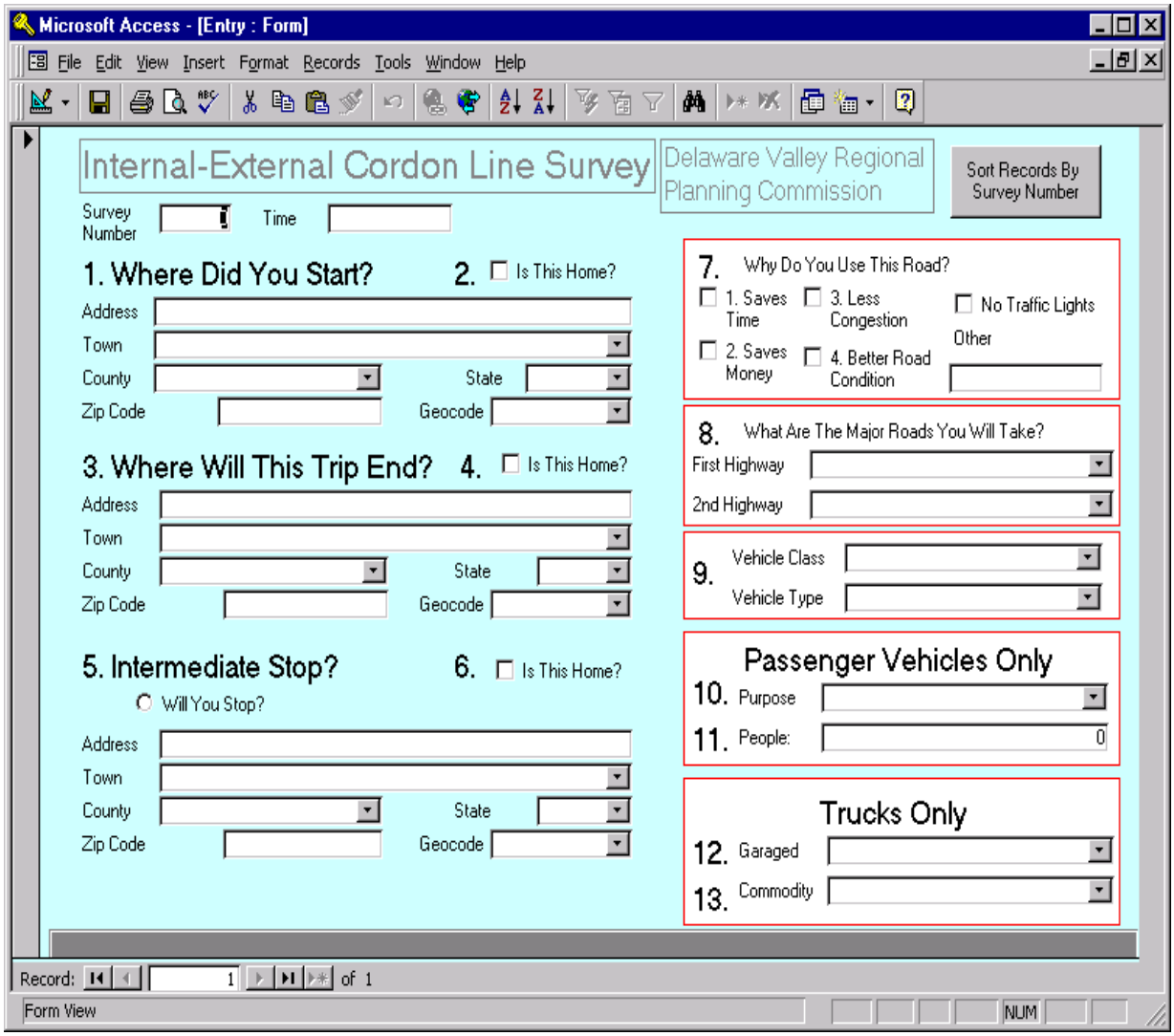
D. Data Entry, Geocoding and Processing

1. Data Entry

Paper field responses collected from survey station interviews were converted into an electronic form suitable for spatial and statistical analysis. A Microsoft Access database resembling the paper field survey form was used so the data entry approximated the entry of information in the field. Data entry goals included replicating the survey form to allow logical flow from paper to digital format; to standardize spelling of responses; to ensure that entries were within acceptable geographic bounds; and to avoid duplicate entries.

Several methods to this end were employed. First, extensive lists of common names for the key variables were built into the Access entry form. These include common names for places, municipalities, counties, and roads. Second, responses on the field survey form for purpose, vehicle class, vehicle type, and commodity were all made part of menu choices. Third, where possible, allowable entries were limited by either forcing a binary yes/no response or use of a validation rule to limit the range of acceptable numbers. To ease review of entries, the database remained flat with all responses recorded in one data table. An example of this screen is shown in Figure II-2 on the next page and can be compared with the survey form shown in Figure II-1.

Figure II-2. Survey Entry Form as Displayed on Computer Screen



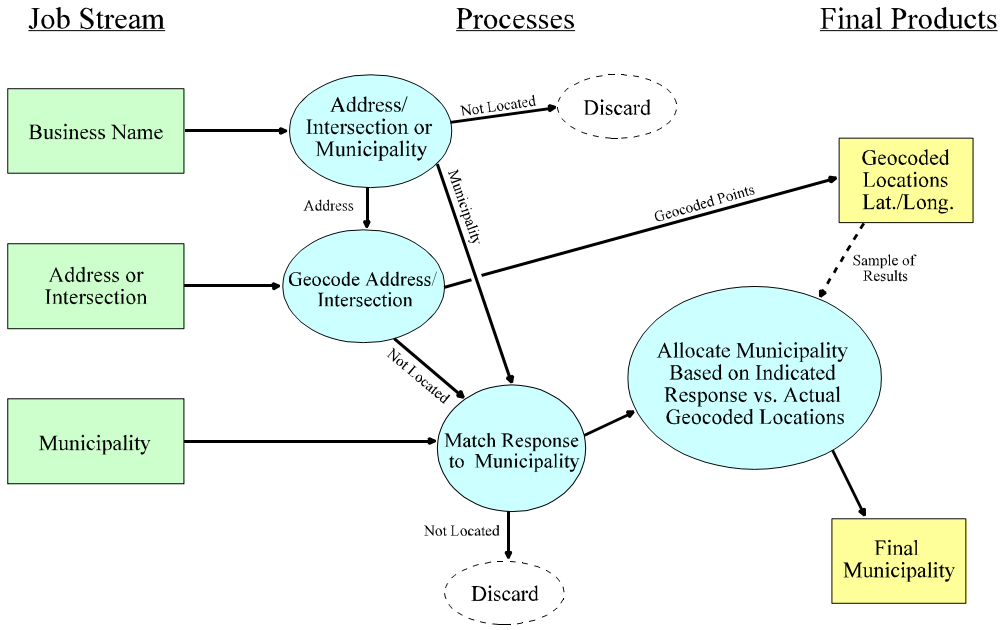
Finally, the survey number was used as both a unique identifier and a means to prevent duplication of data entry. The survey number also served to identify cordon station and direction. The database and entries were designed to allow further analysis and processing. One example is the geocode field that was used to specify a likely method

of assigning geographic data, such as via municipality, business address, personal address, or intersection.

2. Geocoding

Geocoding refers to the assignment of geographic attributes based on entered survey data (See Figure II-3 for DVRPC Geocoding Process). Another term for this process is data conflation. The conflation process allows for spatial analysis of survey responses and separates the data into several job streams based upon likely geocoding method, and assigns unique identifiers to each address. To assign a unique identifier, full survey entries were separated into singular addresses using the survey ID number and either origin or destination. Note that stopover points were not assigned a geographic location. After separation of origin and destination, three categories were used to assign a method for data conflation: 1) where the address is a street address, intersection of named roads, or a partial combination of the two, 2) where the address is a business name with full or partial street and place information, and 3) where the address is a town, place, state, or other such designated area without a street address or road name. Those entries where the address was invalid, unreadable, or in any other way unable to be determined or placed into one of the three categories, were discarded.

Figure II-3. DVRPC Geocoding Process

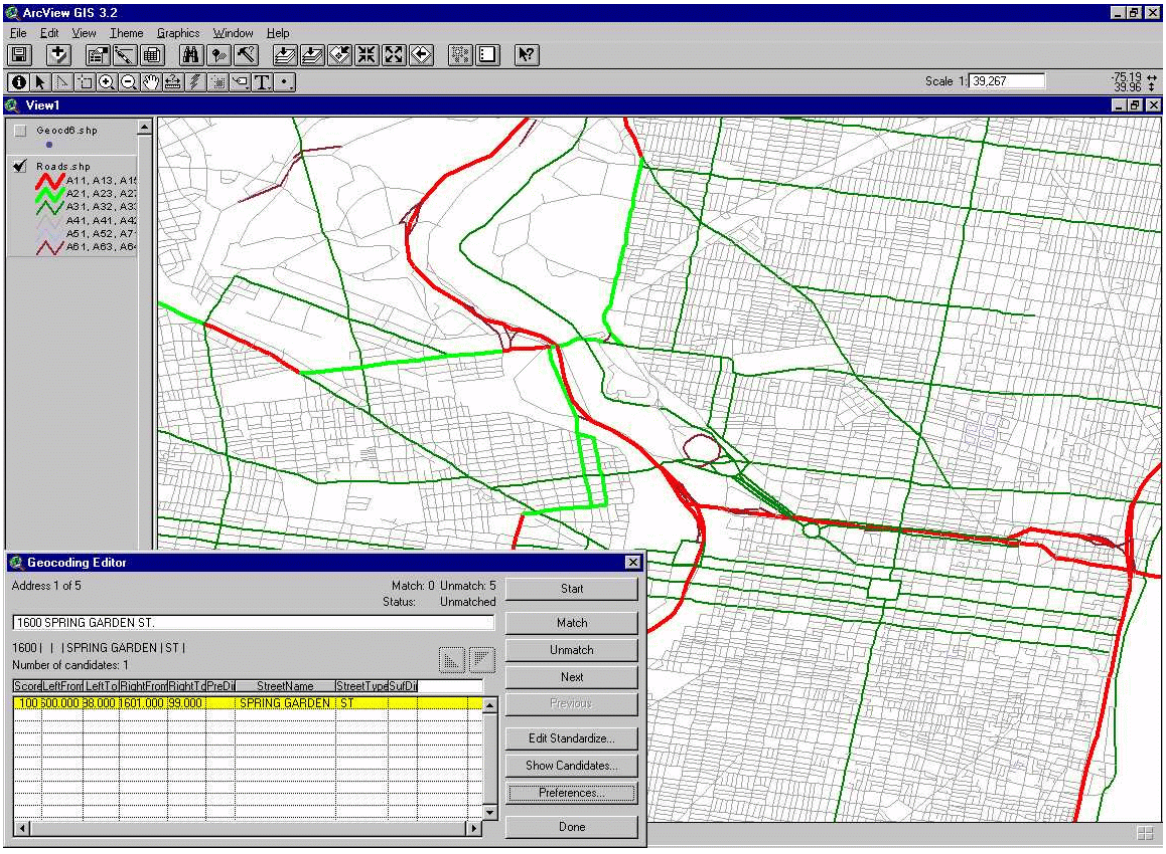


3. Street Addresses and Businesses

The first category of origins and destinations to be assigned geographic locations (latitude and longitude) was the group containing a street address, intersection, or road name. The ArcView 3.2 program was able to geocode many of the recognizable data entries. The underlying address and road name data to which it was matched was the U.S. Census TIGER files for the DVRPC region and adjacent counties. This group was first processed using the Geocoding interface in ArcView 3.2, automatically comparing entered address or intersection versus TIGER data. After the initial run, many of the addresses remained unmatched due to spelling errors in road names. To fix this, those addresses not found initially were again put through the geocoding program and checked against atlases of streets and roads in the chosen areas. This second attempt was done manually, and while very time consuming, yielded the vast majority of the remaining entries thought likely to be geocoded. Those few entries that could not be geocoded were grouped with entries where only municipality was known, or discarded.

Figure II-4 shows the ArcView Geocoding interface used to process those data items not found automatically. Entries that had a business address or name were assigned to an address using either the internet yellow pages or local phone books. After assigning the addresses to be geocoded they were "run" through the Arcview geocoding process as above. Any entries that still had not been assigned a geographic location were placed into the town/place entry file.

Figure II-4. Interface for ArcView Geocoding



4. Town / Place Addresses

All entries not processed using the prior two techniques were assigned geographic location via town/place name. The first part of this process was to standardize spellings and ancillary data such as county for each response. A process was developed to assign geography using surveyed town/place response, and appropriate latitude and longitude measurements. The process began with place names. Entries corresponding to places completely inside an MCD (Minor Civil Division) were assigned to either the geographic center of the place as defined by the Census Bureau, or the focal intersection for the named place. This was most effective for small villages.

The entries consisting of MCD names were allocated by comparing reported MCDs versus actual MCDs based upon the geocoding process. This process corrects for the variation between respondents conception of geographic bounds and actual political borders. Respondents indicating a specific MCD as a destination were equally likely to be traveling to the adjacent townships based upon given intersection or address. The responses were scattered across several MCDs based upon the ratio established from geocoded results, rather than assign all trips to the centroid of the MCD.

This process ensures that the geographic location for the entries assigned to municipalities near the reported MCD are representative of the actual sample. A similar procedure allocates responses when boroughs are surrounded by townships with the same name. Finally, state centroids were used to assign geographic location to states and provinces beyond 200 miles. This allows for reasonable distance calculations for longer trips.

The geocoding process yielded results allowing a full range of spatial analysis. To allow for differing geographic resolutions, survey data was grouped by accuracy. Consequently, 65.3 percent of survey responses could be assigned using address or intersection data, and 28.9 percent of responses could be assigned by municipality. Only 5.9 percent of all surveyed points were not assigned a geographic location.

III. SUMMARY SURVEY RESULT FOR US 1, BRUNSWICK PIKE AND NJ 70 SURVEY LOCATIONS PARTS 1 AND 2

The summary survey results for US 1 and NJ 70 are shown in this section. Part 1 of this section consists of US 1, Brunswick Pike survey results while Part 2 consists of NJ 70 survey results. Information was collected in both inbound and outbound directions on both facilities through a roadside interview, using the questionnaire shown on page 6. Questions were asked about trip origin and destination, purpose, highways used, vehicle type, occupancy, truck garage location and commodities transported. Simple and cross tabulations of survey responses for each of the two stations are summarized in Parts 1 and 2.

The major findings of the survey and traffic characteristics are presented with the findings for each question are offered in graphic and written form. Included with each table or figure is text summarizing the highlights of the survey responses. The text summarizes the findings and describes points of interest not shown in the graphics. Detailed survey information is provided in the Appendices.

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PART 1
US 1, Brunswick Pike Survey Summary Results

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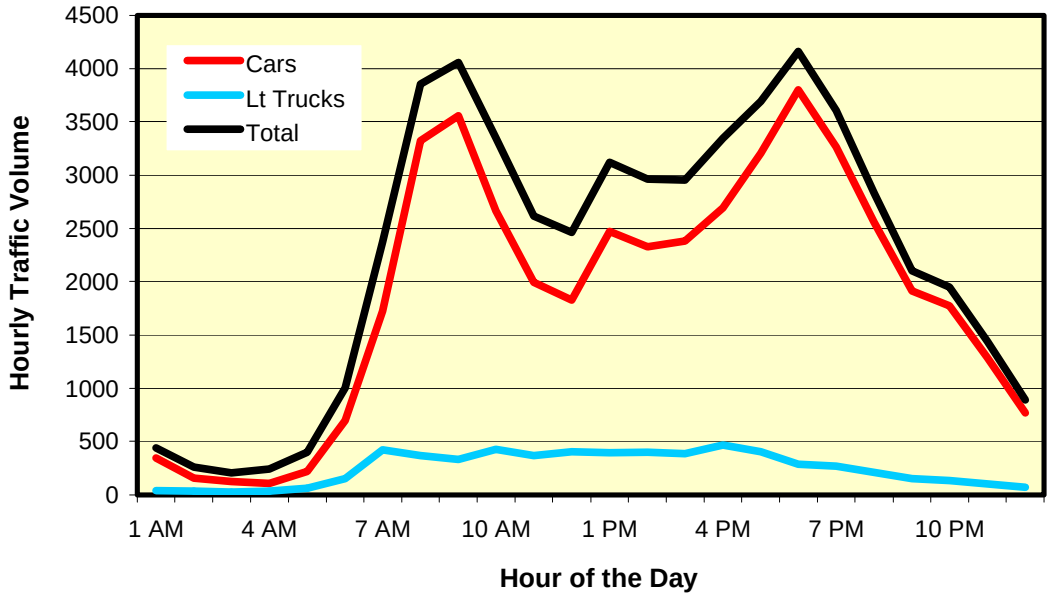
Daily Traffic Counts by Hour of the Day



- Vehicle classification traffic counts were collected during 24 hours preceding the survey. The US 1 traffic counts were taken about a mile north of the Mercer / Middlesex County boundary where the field survey was conducted. The daily traffic volume at that point was very high with 54,310 vehicles classified by vehicle type. The full statistical portrait of the classification counts for US 1 is shown in Table A-1 in the Appendix A in the back of the report.

- The AM peak hour traffic occurred between the hours of 8:00 and 9:00 a.m. The count for that hour was 4,056 vehicles. This count was 7.5 percent of the 24 hour traffic volume. The PM peak occurred between the hours of 5:00 and 6:00 p.m. The count for that hour was 4,159 vehicles. This constitutes 7.7 percent of the 24 hour traffic volume.

- The vehicular counts were dominated by 45,171 automobiles. This is 83 percent of the 24 hour vehicular count. Light trucks were 11 percent of the vehicles.

- Heavy trucks, those with more than two axles, make up 5 percent of the vehicular traffic. Buses and Motorcycles were only a 1 percent share of the vehicle counts.

Total Interviews by Survey Period

Survey Period	Total Surveys	Inbound Surveys	Inbound % of Total	Outbound Surveys	Outbound % of Total
Morning Shift					
6:30 a.m. - 10:30 a.m.	479	240	27%	239	27%
10:30 a.m. - 1:00 p.m.	408	204	23%	204	23%
Evening Shift					
1:00 p.m. - 4:30 p.m.	382	190	21%	192	21%
4:30 p.m. - 8:00 p.m.	524	263	29%	261	29%
TOTAL	**1,793**	**897**	**100%**	**896**	**100%**

- The surveyors interviewed 1,793 drivers, One question they asked was "Where did you start this trip? This sample is 99 percent of the desired goal of 1,800 surveys. The hourly shift totals have been added together to create the table above. The disaggregated numbers are shown in greater detail in Table A-2 in the Appendix.

- There was an equal number of surveys in each direction with 897 inbound and 896 outbound vehicles surveyed at the cordon station The 12:00 to 1:00 p.m. lunch hour constitutes about 10 percent the total surveys.

- The mid-day off-peak survey volumes, both inbound and outbound, have the lowest share of the surveys. The surveys between 1:00 and 4:30 p.m. are about 21 percent of the traffic volume. The number of interviews increased during the afternoon/evening shift, when nearly 30 percent of both the inbound and outbound surveys were completed.

Place of Trip Origin by Municipality

Inbound Trip Origins		Outbound Trip Origins	
Municipality	**% of Total**	**Municipality**	**% of Total**
1. South Brunswick	28%	1. West Windsor	22%
2. Plainsboro	10%	2. Princeton	10%
3. New Brunswick	6%	3. Plainsboro	9%
4. North Brunswick	6%	4. Lawrence	7%
5. Edison	6%	5. Trenton	7%
6. Franklin	5%	6. Hamilton	7%
7. New York City	4%	7. Philadelphia	5%
8. Piscataway	3%	8. Ewing	5%
9. Newark	3%	9. Hopewell	3%
10. East Brunswick	2%	10. Falls	3%

- There were 1,587 drivers responding to the question, "Where did you start this trip?" The numbers in the table above show only the trips originating in the top ten municipalities. The disaggregated numbers are shown in detail in Table A-3 in the Appendix.

- About 28 percent of the inbound trips originate in South Brunswick with the next five trip origins adding up to about 30 percent. The smallest shares continue with East Brunswick's 2 percent and decline from there. A 22 percent share of the outbound trips originates in West Windsor. The next two municipalities, Princeton and Plainsboro, combine for about a 19 percent share

- About half the surveyed trips have trips originating at home or home-based trip origins. South Brunswick and West Windsor both have the largest share of home-based trip origins with 30 and 20 percent, respectively. The share of inbound New York City home-based trip origins is greater than either the total share or the truck share crossing the cordon (4.7%, 3.8%, and 3.9% respectively).

- Truck trips constitute a 20 percent share of the drivers surveyed. About 28 percent of the inbound trucks may be attributed to two origins: South Brunswick (18%), and Edison (10%). The remaining origins have 5 percent or less shares, with the "other" category, not shown in the table and composed of miscellaneous responses, with 33 percent share. Similarly, the top two outbound truck origins equal 22 percent: Philadelphia (12%), and Hopewell (10%) with "other" having a 33 percent share.

Place of Trip Destination by Municipality

Inbound Trip Destinations		Outbound Trip Destinations	
Municpality	**% of Total**	**Municpality**	**% of Total**
1. West Windsor	22%	1. South Brunswick	33%
2. Princeton	20%	2. North Brunswick	8%
3. Trenton	9%	3. Edison	5%
4. Plainsboro	8%	4. Plainsboro	5%
5. Lawrence	6%	5. Franklin	6%
6. Philadelphia	4%	6. New Brunswick	5%
7. Hamilton	3%	7. New York City	4%
8. Hopewell	3%	8. East Brunswick	4%
9. Ewing	2%	9. Newark	3%
10. Middletown	2%	10. Piscataway	2%

- There were 1,640 drivers responding to the question, "Where will this trip end?" The numbers in the table above show only the trip destinations aggregated for the top ten municipalities in each direction. The disaggregated numbers appear in detail in Table A-4 in the Appendix.

- The largest share of inbound trip destinations are to West Windsor and Princeton with a combined 42 percent share. South and North Brunswick combined constitute a 41 percent share of the outbound destinations. The remaining municipalities have relatively small shares of the trip destinations.

- Home-based trip destinations constitute about 47 percent of all trips. About 43 percent of home-based inbound trips have West Windsor and Princeton as their destinations. About 37 percent of the home-based outbound trips are destined for South Brunswick.

- Truck trips are a 19 percent share of the surveyed vehicles with an equal number of inbound and outbound responses. One third of inbound truck destinations are the urban centers of Princeton (10%), Trenton (13%), and Philadelphia (10%). These destination shares reflect the differences in commercial traffic travel patterns from passenger vehicle travel. Trucks also have the largest "other" destination response, reflecting the multitude of delivery destinations made by commercial vehicles.

Trip Stops by Vehicle Type

Survey Period	Passenger Vehicle Stopping	Commercial Vehicle Stopping	Total Stopping
Inbound Trips			
6:30 a.m. - 10:30 a.m.	0.0%	0.0%	0.0%
10:30 a.m. - 1:00 p.m.	1.3%	2.0%	1.5%
1:00 p.m. - 4:30 p.m.	0.0%	2.7%	0.5%
4:30 p.m. - 8:00 p.m.	0.5%	0.0%	0.4%
Outbound Trips			
6:30 a.m. - 10:00 a.m.	0.0%	0.0%	0.0%
10:30 a.m. - 1:00 p.m.	1.3%	0.0%	1.0%
1:00 p.m. - 4:30 p.m.	0.0%	0.0%	0.0%
4:30 p.m. - 8:00 p.m.	3.8%	0.0%	3.1%

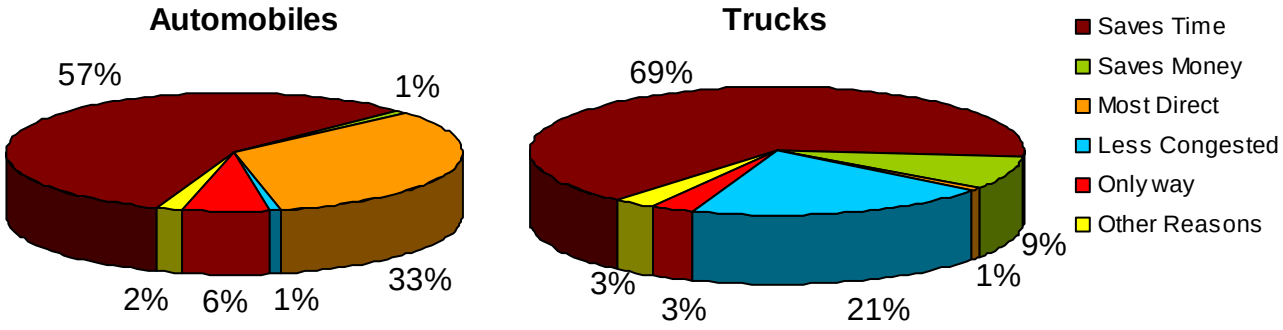
- There were 1,793 drivers responding to the question: "Will you stop before arriving at your destination?" The numbers in the table above were aggregated from the complete data set shown in Table A-5 in the Appendix.

- Only a few drivers responded that they were going to stop before arriving at their destination. Only 13 automobiles and 2 trucks responded affirmatively, meaning that less than 1 percent of total drivers planned to stop before arriving at their destination.

- Over half of all the "stop" responses (8) were from passenger vehicles heading outbound between 6:00 and 8:00 p.m. Only one-half of 1 percent of trucks (2 of 357 trucks) responded that they were stopping prior to their final destination.

- There are three survey periods where no drivers responded as stopping. The period from 6:30 to 10:30 a.m. both inbound and outbound as well as the outbound survey times between 1:00 and 4:30 p.m. had no affirmative responses to the question.

Reason for Using US 1 by Automobile and Truck Drivers



*Totals may exceed 100% due to multiple answers

- There were 1,426 passenger and 351 commercial vehicles responding to the question, "Why do you use this road?" The drivers were permitted to provide more than one answer. The complete data sets are in Tables A-6 and A-7 in the Appendix.

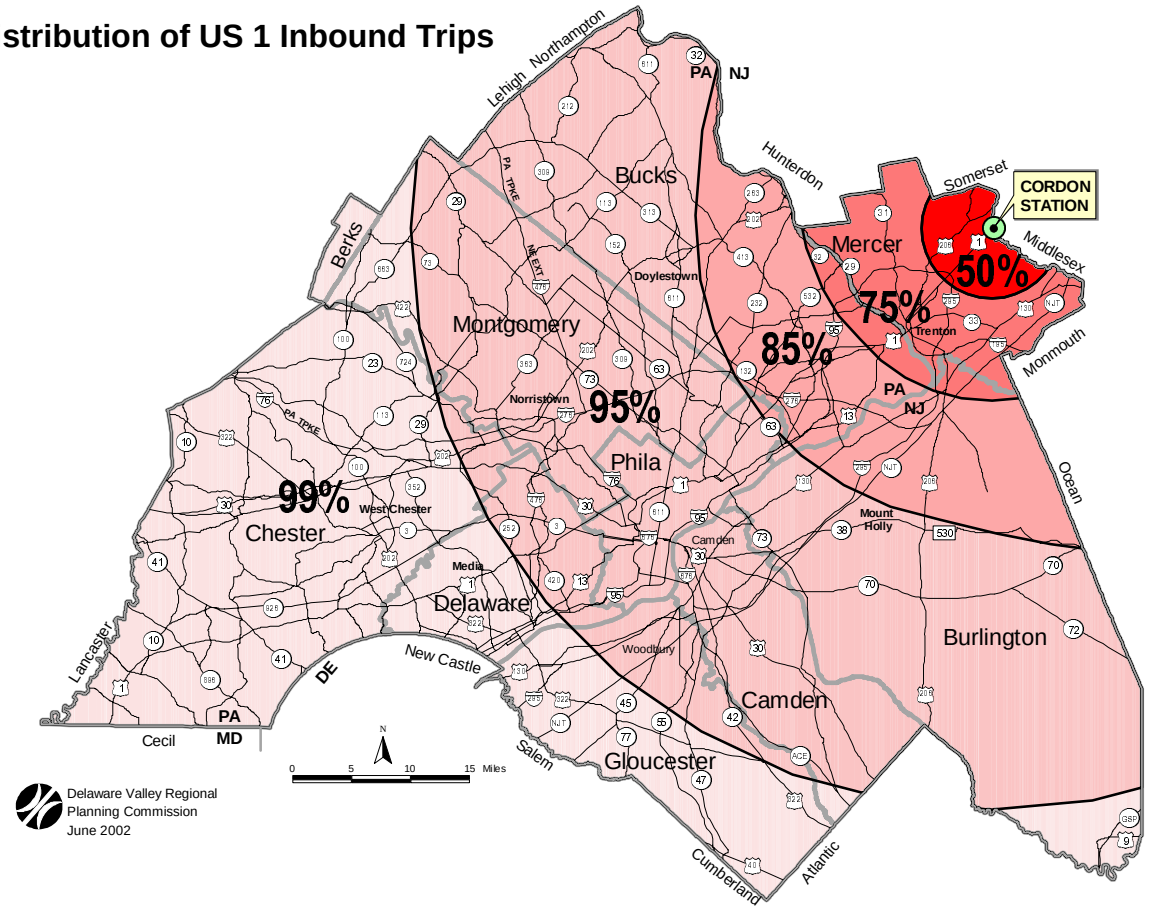
- "Saves time" was the dominant response for both vehicle types with 57 percent for automobiles and 69 percent for trucks. The larger truck share reflects the importance of time for commercial delivery. Only a combined 2 percent of automobile and 30 percent of truck drivers responded with "saves money" and "less congested".

- The responses of "most direct" and "only way" for automobile drivers (33% and 6% respectively) acknowledges that a driver may take a road because it suits their need or because it is the only way they know to reach their destination. Truck responses totaled about 5 percent on these questions.

- Over 50 percent of inbound automobile drivers responded "most direct" during the lunch hours (10:30 a.m. to 1:00 p.m.) (see Table A-6). Conversely, "most direct" merited a 2 percent share for truck traffic during the same time.

- Between 4:30 and 6:00 p.m. 84 percent of automobile drivers proceeding inbound responded with "saves time", and between 12:00 and 1:00 p.m. 95 percent of inbound trucks responded with "saves time". The large PM peak share for automobiles may be explained as commuter traffic, while the "saves time" truck responses are high for each survey period.

Distribution of US 1 Inbound Trips



- The map shows the distribution of inbound trips within the DVRPC region, though the percentages also include values outside the region but within the isochrone lines. About 93 percent of the trips end within the region.

- Only 6.9 percent of the surveyed vehicles were through trips with destination outside the region.

- About one-half of the through trips (3.8%) went to the state of Delaware and states to the south.

- About 1.5 percent of the through trips went west

- About 1.6 percent had destinations in the southern New Jersey (Ocean, Atlantic, Cape May, Cumberland, and Salem counties).

Major Roads Taken by all Vehicles

Inbound Traffic		Outbound Traffic	
Roads Used	**% of Total**	**Roads Used**	**% of Total**
1. I-95	47%	1. NJ Turnpike	18%
2. I-295	19%	2. NJ 27	14%
3. US 206	4%	3. I-287	13%
4. NJ 27	4%	4. NJ 18	10%
5. US 130	3%	5. US 130	6%
6. US 13	3%	6. NJ 522	5%

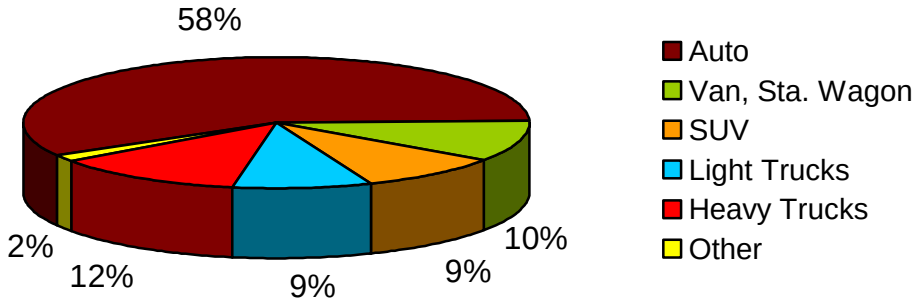
- There were 573 driver responses, other than US 1, to the question "What is/are the major roads that you will take to reach your destination after this road?" The complete data set is in Table A-8 in the Appendix.

- About 66 percent of the total inbound drivers responded that I-95 or I-295 would be the road they would use. This response is not surprising given that these two facilities are major through roads within the region.

- Conversely, outbound traffic had no dominant route responses, though the New Jersey Turnpike with 18 percent, NJ 27 with 14 percent and I-287 with 13 percent constitutes about 45 percent of the total responses. The "other" category had a 32 percent share, with the remaining facilities having small shares of the total outbound volume.

- Truck responses clustered around major facilities with over 70 percent inbound taking either I-95 or I-295, and "other" roads holding a 19 percent share. The remaining shares are small, though US 13 is the biggest of the small with 4 percent share of responses. Outbound trucks adhered to large facilities and interstate highways with the New Jersey Turnpike (24%) and I-287 (19%) possessing large shares. Again, "other", a catch-all for miscellaneous responses, was the dominant response in the outbound direction affirming the dispersed nature of the routes and destinations outside the region.

Type of Vehicles Surveyed



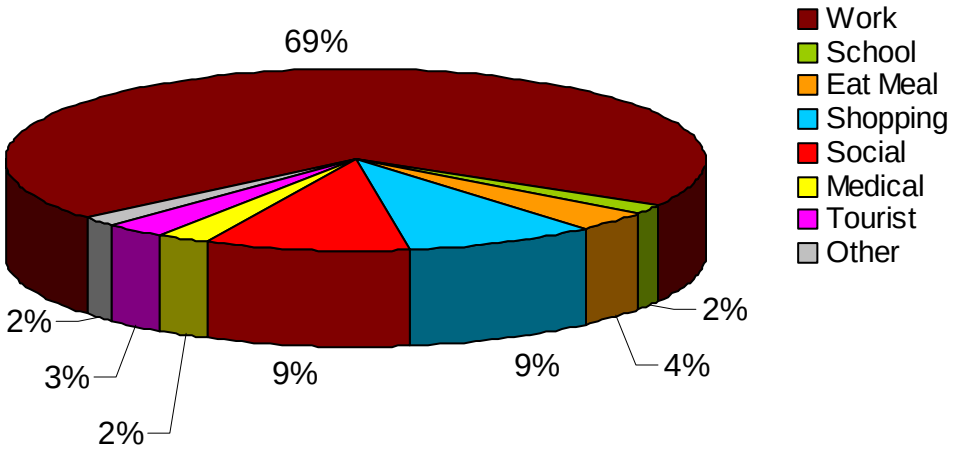
- The response to this question was obtained from observation rather than questioning the 1,793 drivers in the survey sample. While the grouped categories are not the same as the 24 hour vehicle classification count, some categories have been broken out and some combined in order to help with the analysis. The complete data set is in Table A-9 in the Appendix.

- The composition of the surveyed vehicles differ from the 24 hour vehicle classification counts. Passenger vehicles (autos, vans, SUVs) were a smaller share in the survey than the 24 hour count (77% versus 83%). Light trucks (pickup, panel, and single unit) were similar (9% versus 11%).

- Automobiles make up about 58 percent of the vehicle mix, while vans with 10 percent and SUVs with about 9 percent constitute the rest of the passenger vehicles.

- Light trucks and pick-up trucks are about a 9 percent share. This equals the SUV share and the van/station wagon share of the vehicle mix. These three combined make up about 30 percent of the vehicle mix. Surveyed heavy trucks had a 12 percent share which is double the 24 hour count.

Trip Purpose of Passenger Vehicles



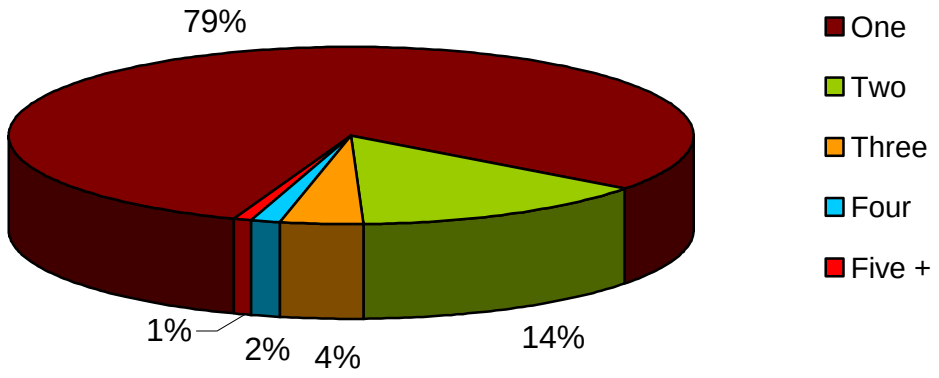
- Drivers in passenger vehicles were asked "What is the purpose of this trip?" Truck and commercial vehicle drivers were not asked this question as their purpose was evident. The complete data set is in Table A-10 in the Appendix.

- The work trip is the greatest trip purpose with 69 percent of the total trips. Work trips are 95 percent and 92 percent during the morning inbound and outbound peak hours between 6:30 a.m. and 8:30 a.m. The PM peak between 4:30 and 6:00 p.m. had inbound and outbound shares (69% and 72%) which are not as dominant as the AM peak inbound and outbound shares (95% and 92%).

- Shopping and social trips are the secondary reasons for making a trip, each with about 9 percent of total trips. Most retail stores do not open until 10:00 a.m., so there is little shopping traffic before then, which pulls down the averages. The afternoon inbound off-peak period from 1:00 to 4:30 p.m. has a 21 percent share of shopping trips. The social trips are fairly evenly dispersed across survey periods inbound, but peak outbound between 10:30 a.m. and 1:00 p.m. (20%).

- The remaining 13 percent of trip purposes are split evenly among the other five categories. There is a 19 percent inbound share between 12:00 and 1:00 p.m. for "eat meal", which fits lunch time. Inbound "school" trips hav e a 3 percent share between 10:30 a.m. and 1:00 p.m. "School" responses are greatest from 4:30 to 6:00 p.m., presumably for night school or professional development classes.

Vehicle Occupancy



- This question, "How many people are in the vehicle?" was obtained by observation rather than questioning the 1,793 drivers in the survey sample. This question was used for passenger vehicles only. The complete data set is in Table A-11 in the Appendix.

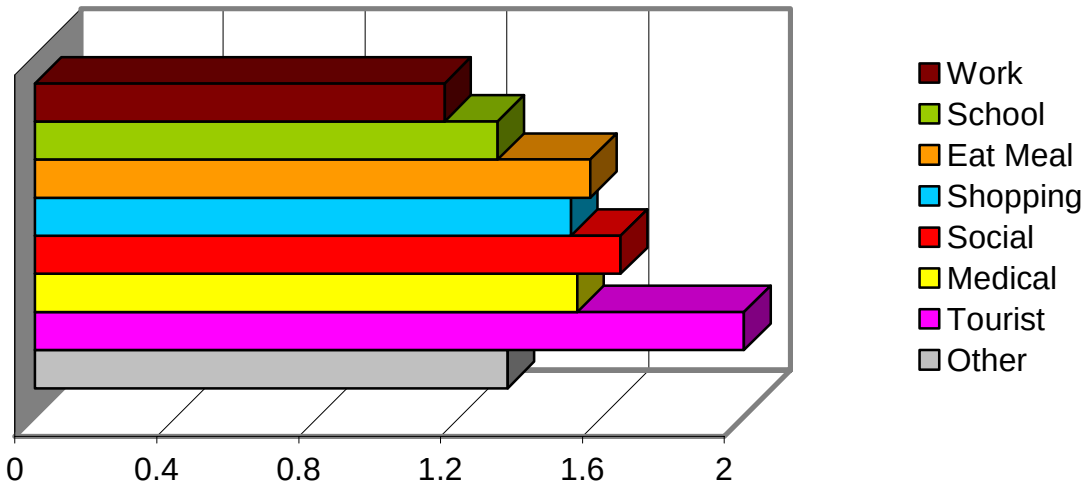
- One occupant vehicles were 79 percent of total vehicles surveyed. The greatest share were distributed inbound between 10:30 a.m. and 1:00 p.m. (88%) and outbound between 6:30 and 8:30 a.m.(91%).

- Two occupant vehicles are a 14 percent share of the vehicles surveyed and they exhibit a double digit share in each survey period. The greatest inbound share is 25 percent share of the 2:30 to 4:30 p.m. period, while the greatest outbound share is 27 percent during the 10:30 a.m. and 1:00 p.m. time period.

- Three and four occupant vehicles combine for a 6 percent share of the total vehicles with little variation between survey periods. The exception to this occurs outbound during 10:30 a.m. and 1:00 p.m. period when an 8 percent share occurs for three occupant vehicles.

- Only ten vehicles had 5+ occupants, giving it the smallest share with less than 1 percent of the total. Four of those ten vehicles were surveyed between 4:30 and 8:00 p.m. in the outbound direction.

Average Vehicle Occupancy by Trip Purpose



- Average vehicle occupancy by trip purpose was obtained by cross tabulating the observed vehicle occupancy with the survey question regarding trip purpose. The complete data set is in Table A-12 in the Appendix.

- Average occupancy for the van/station wagon category has the largest occupancy (1.45), exceeding the average SUV occupancy (1.34) and auto occupancy (1.25). It is intuitive that the vehicle with the greatest seating capacity would be carrying the greatest number of people.

- Work trips have the lowest vehicle occupancy rates for all vehicle types. Automobiles have the lowest occupancy rate (1.12 average persons), while vans and SUVs (1.26 and 1.21 average persons respectively), with their larger interiors tend to carry more people.

- The trip purpose with the greatest occupancy rate is the visitor/tourist category with over 2 persons per vehicle. Within the visitor/tourist category, rates for vans (2.71) were the highest of any category, reflecting the nature of sightseeing and van's ability to carry multiple people.

- The second lowest total occupancy rate is for school trips with 1.3 occupants per vehicle, though SUVs average 2.0 occupants and vans average 1.0 occupant per vehicle.

Vehicle Trip Length Distribution within the DVRPC Region

Trip Length	Work Trips	Auto Trips	Truck Trips
0-5 miles	28%	31%	15%
5-10 miles	16%	17%	9%
10-20 miles	32%	30%	36%
20-50 miles	24%	20%	37%
>50 miles	1%	1%	3%
Average Trip Length	**14.0**	**13.4**	**20.1**

- The results for this query were obtained by using the GIS to compute distances between the cordon station and origins/destinations within the region gathered with the first two questions in the survey. This data is broken out by home-based work trips, passenger vehicle trips and truck trips. The complete data set is in Table A-13 in the Appendix.

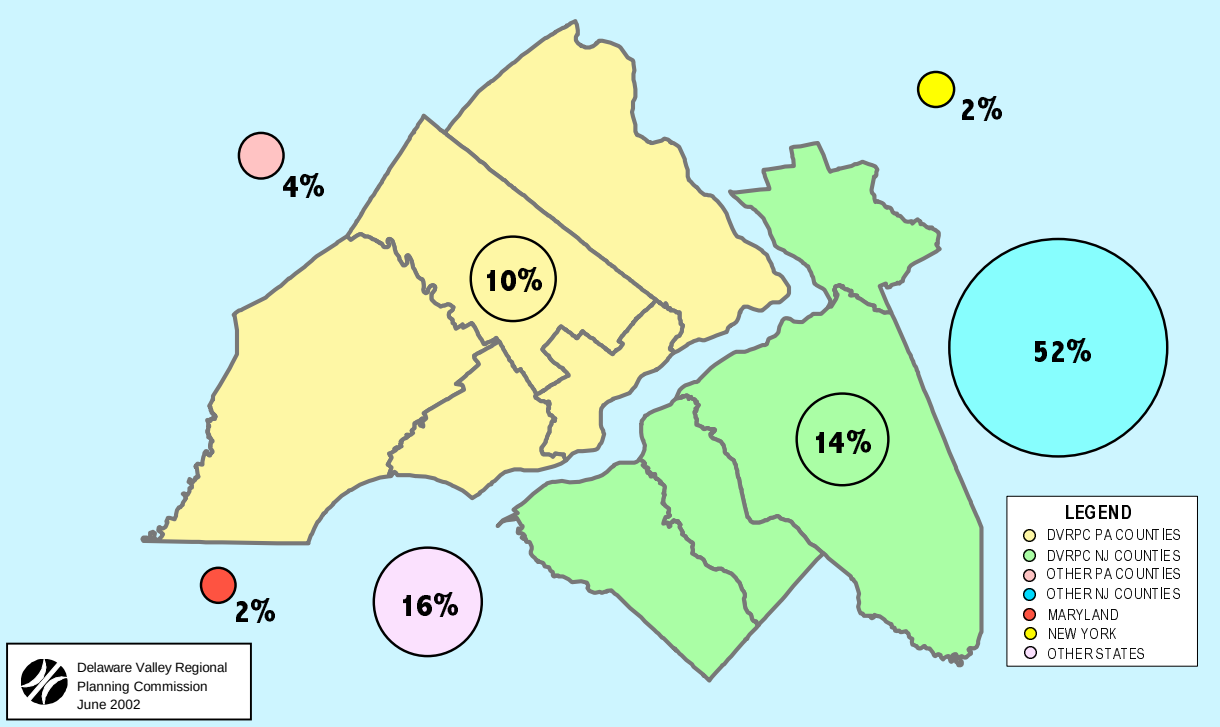
- The range of average trip lengths is from 13 to 20 miles, with commercial trucks possessing the longest trip length (20 miles). The data has been put into five general groupings by the distance traveled: 0-5 miles, 5-10 miles, 10-20 miles, 20-50 miles and above 50 miles. There were few trips beyond 50 miles. The distances for each group varies by the vehicle class.

- The 0-5 mile trip length is weakest for commercial vehicles (trucks) with half the share of either passenger vehicles and work trips. There is a mini-peak in the 2 to 3 mile range for home-based work and automobile trips with 9 and 10 percent shares, respectively. Trucks only exhibit a 6 percent share in that trip length range.

- The largest data cluster for all three categories is the 22 percent share falling into the 10 to 14 mile distance range. This is the core of the 10-20 mile range which has the largest share of trips taken.

- Trucks have a 37 percent share between 20-50 miles. Truck trip lengths are generally longer than automobile trip lengths.

Trucks Garaged by State and County

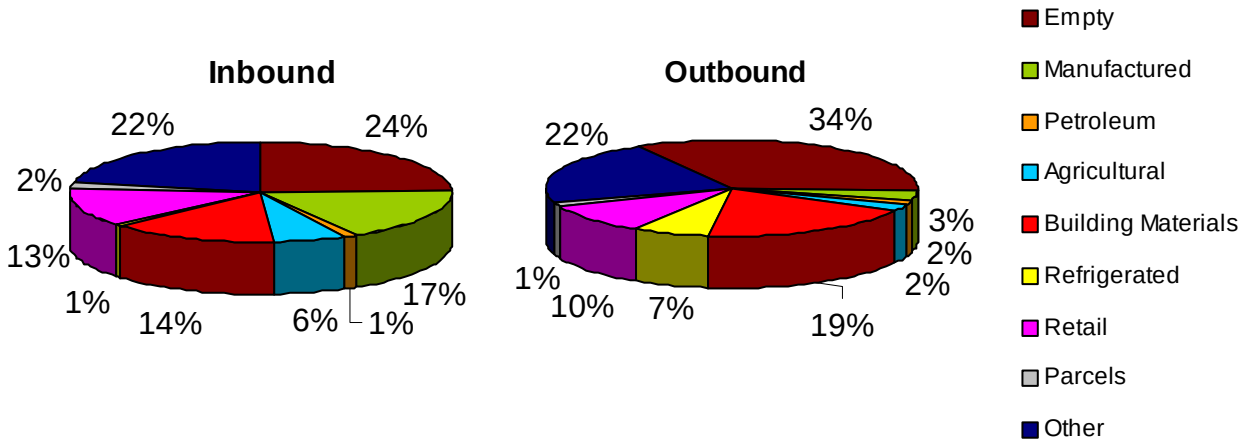


- There were 357 truck drivers asked "In what county is your truck garaged or parked when not in service?" Passenger vehicles were not asked this question. The complete data set is in Table A-14 in the Appendix.

- About one quarter of surveyed trucks are garaged within the DVRPC region (14% in New Jersey and 10% in Pennsylvania) while the majority of truck drivers house their trucks outside the DVRPC region in New Jersey (52%).

- Maryland and New York each make up 2% of the garage locations. The remaining 16 percent of the responses are singular locations distributed throughout the United States.

Type of Commodities Carried by Trucks



- Truck drivers were asked "What type of commodities are you carrying?" Passenger vehicles were not asked this question. The complete data set is in Table A-15 in the Appendix.

- The number of inbound and outbound trucks surveyed were nearly equal. The inbound and outbound results generally mirror each other, though there are some exceptions.

- Trucks are more likely to be traveling empty outbound than inbound (34% versus 24%). The second largest response is " Other " with a 22 percent share in each direction. Manufactured products had directional differences with about 17 percent of the inbound traffic, but only 3 percent of the outbound flow. Agricultural products similarly were a 6 percent share in the inbound direction, but only a 2 percent share outbound. In both of these cases, products generated outside the region are flowing into the region, such as the flow of agricultural goods from the outlying farm areas into the region.

- Building materials and refrigerated product have a net outbound flow. This reflects the trend with items built or packaged in the urban/industrial areas and then exported to areas outside or at the fringes of the region.

- Parcels and petroleum products are a small share of the commodity flow each with about 1 percent in each direction. Retail products are similar inbound and outbound with about 13 percent inbound and 10 percent outbound.

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PART 2
NJ 70 Survey Summary Results

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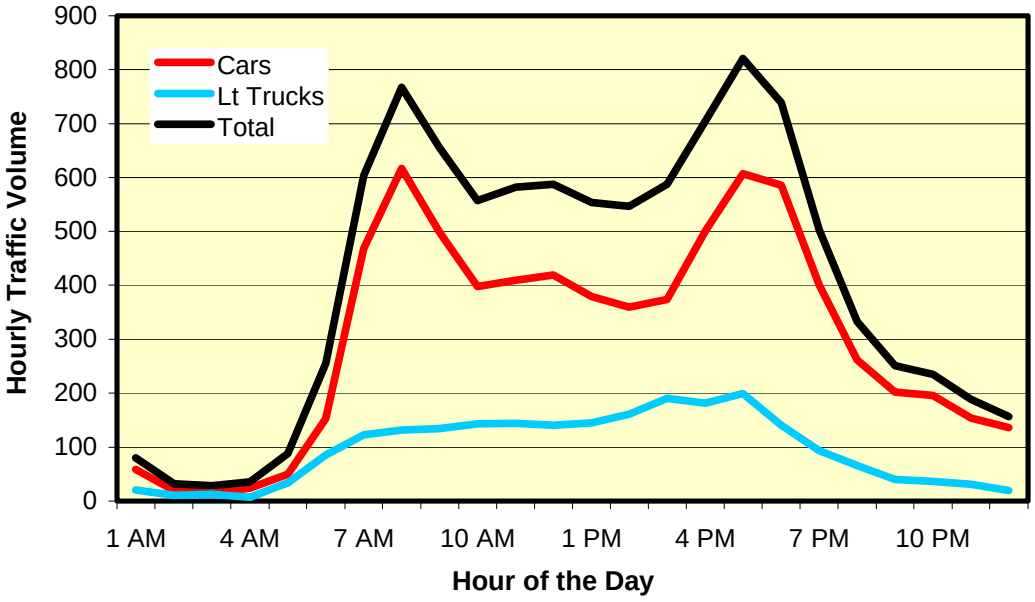
Daily Traffic Counts by Hour of the Day



- Vehicle classification traffic counts were collected during 24 hours preceding the survey. The NJ 70 traffic counts were taken near the Burlington / Ocean county boundary, just on the Ocean county side where the field survey was conducted. The daily traffic volume at that point was 9,890 vehicles. The full statistical portrait of the classification counts for NJ 70 is shown in Appendix B, Table B-1 in the back of the report.

- The AM peak hour occurred between the hours of 7:00 a.m. to 8:00 a.m. The count for that hour was 767 vehicles. This count was 7.8 percent of the 24 hour traffic volume. The PM peak occurred between the hours of 4:00 p.m. to 5:00 p.m. The count for that hour was 821 vehicles. This constitutes 8.3 percent of the 24 hour traffic volume.

- The vehicular counts were dominated by 7,284 automobiles. This is 74 percent of total daily vehicular count.

- Light trucks (two axles) constitute 2,285 or 23 percent of total traffic volume, while heavy trucks (three or more axles) constitute 2 percent of the total volume. Buses and motorcycles make up less than 1 percent of the total traffic volume

Total Interviews by Survey Period

Survey Period	Total Surveys	Inbound Surveys	Inbound % of Total	Outbound Surveys	Outbound % of Total
Morning Shift					
6:30 a.m. - 10:30 a.m.	374	188	28%	186	27%
10:30 a.m. - 1:00 p.m.	310	152	23%	158	23%
Evening Shift					
1:00 p.m. - 4:30 p.m.	308	151	23%	157	23%
4:30 p.m. - 8:00 p.m.	370	179	27%	191	28%
TOTAL	**1362**	**670**	**100%**	**692**	**100%**

- The survey interviewed 1,362 drivers asking the question" Where did you start this trip?" This sample is 97 percent of the desired goal of 1,400 responses. The hourly shift totals have been aggregated to create the table above. The reader may examine the disaggregated numbers in greater detail in Table B-2 in the Appendix.

- The difference in directional survey movement is small, but there are slightly more inbound than outbound in the morning peak shift from 6:30 a.m. to 10:30 a.m. (28% versus 27%). These percentages are reversed in the evening peak shift between 4:30 p.m. and 8:00 p.m. when the outbound surveys (28%) edge out the inbound surveys (27%).

- The mid-day off-peak survey period had the smallest share of surveys inbound and outbound (23%). The evening share of surveys are a little larger than the morning, but in nearly every survey period, peaks or off-peaks, inbound or outbound, survey shares are nearly identical.

Place of Trip Origin by Municipality

Inbound Trip Origins		Outbound Trip Origins	
Municipality	**% of Total**	**Municipality**	**% of Total**
1. Dover	28%	1. Pemberton	19%
2. Manchester	19%	2. Philadelphia	9%
3. Berkeley	7%	3. Southampton	7%
4. Lacey	7%	4. Evesham	7%
5. Brick	6%	5. Cherry Hill	4%
6. Lakewood	5%	6. Medford	4%
7. Seaside Heights	4%	7. Mount Laurel	3%
8. Lakehurst	3%	8. Lawrence	2%
9. Jackson	2%	9. Moorestown	2%
10. South Toms River	1%	10. New Hanover	1%

- There were 627 drivers responding to the question, "Where did you start this trip?" The table above only shows the top ten trip origin municipalities. The readers may examine the disaggregated numbers in detail in table B-3 in the Appendix.

- Almost half (47%) of inbound trip origins are in either Dover or Manchester, while the remaining eight municipalities add up to about 36 percent. Outbound trip origins have 28 percent share for their top two municipalities Pemberton and Philadelphia, while the remaining eight municipalities are a 30 percent share.

- About two-thirds of the surveyed trips have home-based trip origins. The inbound ranking of municipal origins is the same, though the trip shares of Dover and Manchester increase slightly to over 50 percent of the home-based trip origins. The outbound rankings are also the same, though the next five after Pemberton and Philadelphia equal about 29 percent versus 26 percent for the total trip origins.

- Truck trips make up about 15 percent of the total surveyed drivers. Truck trips do not fall in the same rank order as total or home-based trips. Dover, Lacey, Lakewood and Manchester are a 63 percent share of the inbound truck origins. Conversely, outbound origins mimic the rank order of the total trips, except the "other" category with about a 51 percent share. The "other" outbound origins represent smaller shares, many with less than 1 percent of the truck total.

Place of Trip Destination by Municipality

Inbound Trip Destination		Outbound Destination	
Municipality	**% of Total**	**Municipality**	**% of Total**
1. Pemberton	16%	1. Dover	28%
2. Philadelphia	10%	2. Manchester	21%
3. Cherry Hill	8%	3. Berkeley	8%
4. Southampton	5%	4. Lakewood	7%
5. Evesham	5%	5. Seaside Heights	6%
6. Mount Laurel	2%	6. Brick	5%
7. Burlington	2%	7. Lacey	4%
8. Medford	2%	8. Lakehurst	3%
9. Moorestown	2%	9. Jackson	3%
10. Pennsauken	2%	10. Seaside Park	1%

- There were 1,280 drivers responding to the question, "Where will this trip end?" The readers may examine the disaggregated numbers in detail in Table B-4 in the Appendix.

- Pemberton, Philadelphia and Cherry Hill are 40 percent of the home-based inbound destinations, while "other", which includes miscellaneous destinations, constitutes 34 percent of the inbound destinations. This leaves about 26 percent of the surveyed divided among 11 home-based trips, each with less than a 3 percent share of the inbound destinations.

- The municipalities of Dover and Manchester have the largest shares of outbound destinations with about 50 percent of the home-based, truck, and total trips. The "other" category make up about 10 percent of the destinations, while the remaining 12 identified destinations make up a 40 percent share.

- Trucks constitute about 17 percent of the total inbound and outbound traffic, but 57 percent of the inbound truck destinations are to "other" locations, while only 8 percent of outbound truck are destined for "other" locations. This difference reflects the multiple destinations within the region and the relatively small number of origins from which the goods are shipped.

- There were no outbound truck trips to Seaside Park, Lavellette, Point Pleasant, Beachwood, and Long Beach, while 72 percent of outbound trucks were destined for four municipalities: Dover, Manchester, Lakewood, and Jackson.

Trip Stops by Vehicle Type

Survey Period	Passenger Vehicle Stopping	Commercial Vehicle Stopping	Total Stopping
Inbound Trips			
6:30 a.m. - 10:30 a.m.	4%	8%	4%
10:30 a.m. - 1:00 p.m.	5%	18%	7%
1:00 p.m. - 4:30 p.m.	13%	19%	14%
4:30 p.m. - 8:00 p.m.	15%	0%	13%
Outbound Trips			
6:30 a.m. - 10:30 a.m.	1%	0%	1%
10:30 a.m. - 1:00 p.m.	0%	0%	0%
1:00 p.m. - 4:30 p.m.	0%	0%	0%
4:30 p.m. - 8:00 p.m.	0%	0%	0%

- There were 1,359 drivers responding to the question, "Will you stop before arriving at your destination?" The numbers in the above table were aggregated from the complete data set shown in Table B-5 in the Appendix.

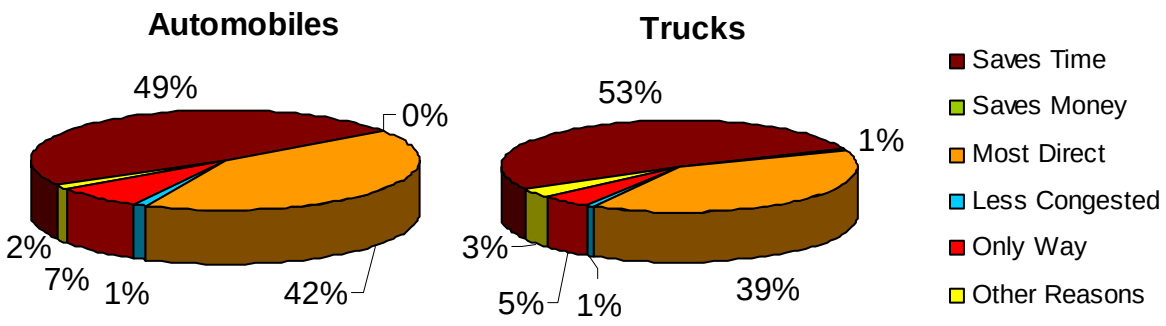
- Only a few vehicles on NJ 70 stop before arriving at their destinations. Less than 5 percent of all vehicles surveyed stop before reaching their destination, with automobiles slightly less likely to stop than trucks (5% versus 6% respectively).

- Inbound and outbound vehicles exhibit difference in stopping rates, with 2 of 690 outbound vehicles stopping before reaching the final destination. The inbound direction, however, had 63 of 669 total trips stopping. The difference may lie with inbound travelers trip chaining, planning multiple stops as they approach the denser, more urban parts of the region.

- The greatest percentage of inbound automobiles (15%) stop between 6:00 p.m. and 8:00 p.m., while 30 percent of inbound truck drivers state they will be stopping between 12:00 p.m. and 1:00 p.m. The largest percentage of inbound vehicles stopping before reaching their destination (15%) occurs between 2:30 p.m. and 4:30 p.m.

- The were only two outbound stops reported for passenger vehicles between 6:30 a.m. and 8:30 a.m. The rest of the surveys reported no outbound stops.

Reasons for Using NJ 70 by Automobile and Truck Drivers



*Totals may exceed 100% due to multiple answers

- There were 1,121 passenger and 206 commercial vehicles responding to the question, "Why do you use this road?" The drivers were permitted to provide more than one answer. The complete data set is in Tables B-6 and B-7 in the Appendix.

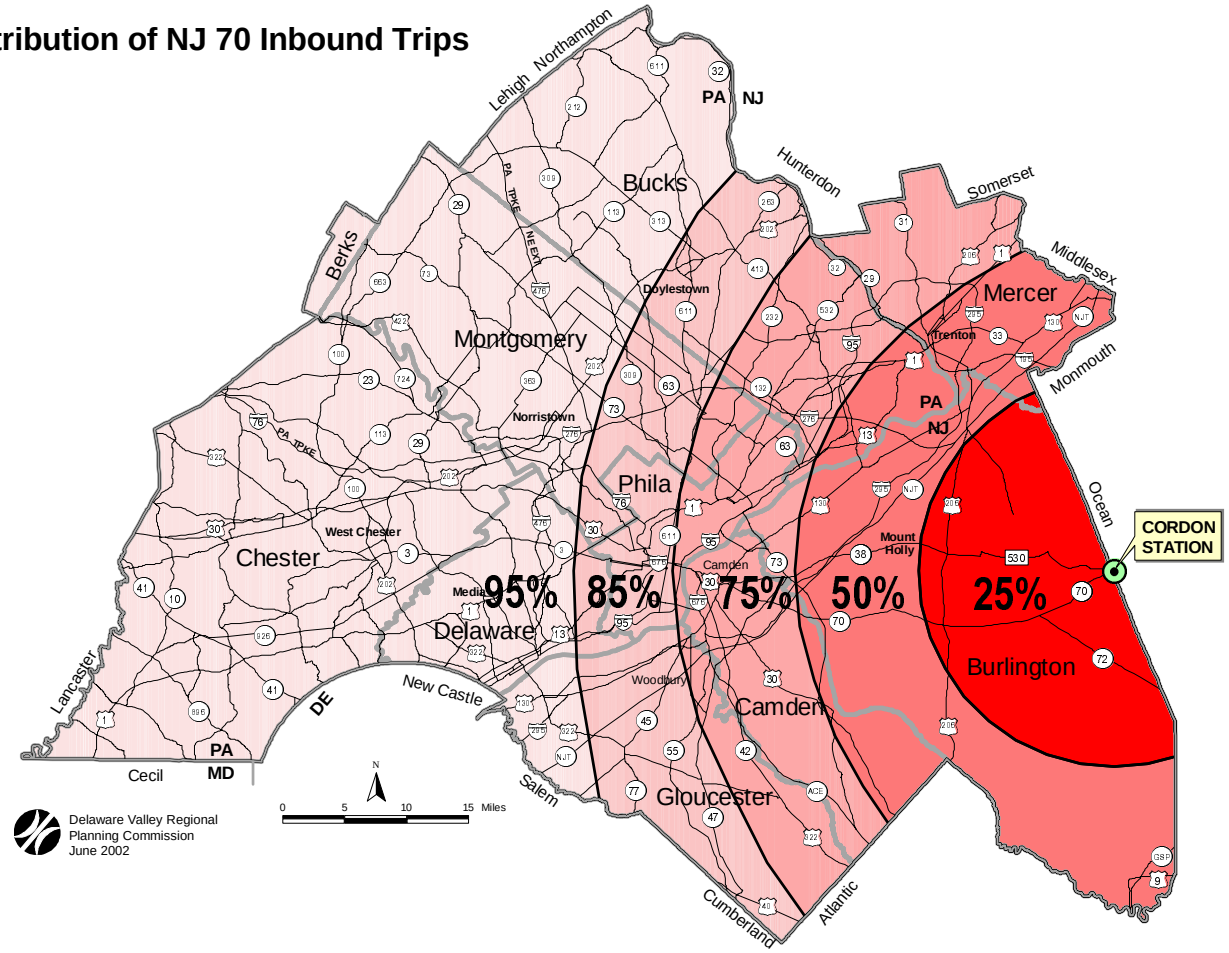
- "Save time" and "most direct" were the most reported reasons for both passenger vehicles and trucks (totaling 91% and 92% respectively). There were similar shares of automobiles (42%) and trucks (39%) finding NJ 70 "most direct". The "only way" was third with 7 and 5 percent shares for both passenger vehicles and trucks. "Saves money", "less congested" and "other" reasons total less than 4 percent of the responses for both automobiles and trucks, respectively.

- "Saves time" was the dominant answer for inbound automobiles (67%) between 2:30 p.m. and 4:30 p.m. and outbound between 1:00 p.m. and 2:30 p.m. "Saves time" was also the dominant answer for trucks with 70 percent of the responses inbound between 6:00 p.m. and 8:00 p.m. and outbound between 4:30 p.m. and 6:00 p.m. More trucks (57%) than automobiles (49%) use NJ 70 to "save time".

- One quarter of outbound truck drivers between 10:30 a.m. and 1:00 p.m. responded that NJ 70 provided the "only way" , though inbound only one driver responded with that answer. Automobile drivers responded positively to that question in nearly every survey period. Outbound automobile surveys in particular had response rates in the "teens" for that question between 6:30 a.m. and 1:00 p.m.

- Only 12 vehicles of the 1,327 survey respondents (less than 1%) used the facility because it was less congested.

Distribution of NJ 70 Inbound Trips



- The map shows the distribution of inbound trips within the DVRPC region, though the percentages also include values outside the region but within the isochrone lines. About 87 percent of the trips end within the region.

- Only 12.9 percent of the trips were through trips with destinations outside the DVRPC region

- The largest share of the through trips (7.3%) went to the state of Delaware and other Southern states.

- Only 1.8 percent went west of the region.

- Only 1.4 percent had destinations in northern New Jersey and 2.4 percent went to southern New Jersey counties.

Major Roads Taken by all Vehicles

Inbound Traffic		Outbound Traffic	
Roads Used	**% of Total**	**Roads Used**	**% of Total**
1. I-295	17%	1. NJ 37	39%
2. CR 530	13%	2. CR 530	12%
3. I-95	11%	3. NJ 9	8%
4. NJ 38	11%	4. CR 539	6%
5. NJ 73	11%	5. G St Pkwy	5%
6. US 206	9%	6. NJ 35	3%

- There were 809 driver responses, other than NJ 70, to the question, What is/are the major roads that you will take to reach your destination after this road?" The complete data set is in Table B-8 in the appendix.

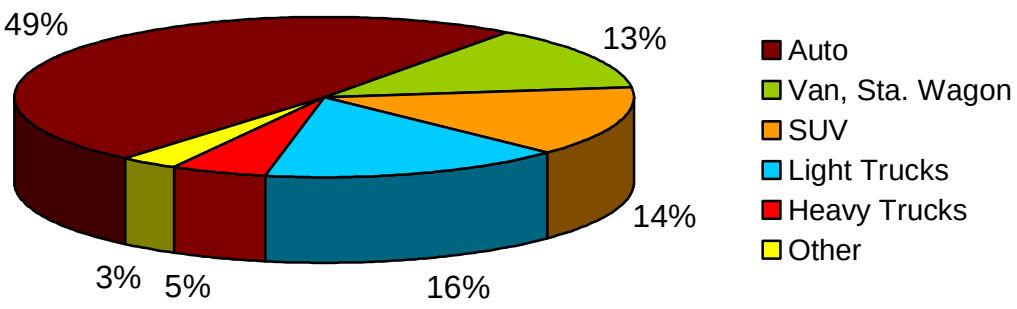
- Inbound passenger vehicle traffic was closely grouped among the top six responses: I-295, CR 530, I-95, NJ 38, NJ 73, and US 206. These six constitute 72 percent of responses and with "other's" 25 percent share, constitute 97 percent. In contrast, 71 percent of inbound trucks had three answers: I-295, NJ 38, and "other", which consists of miscellaneous and singular survey answers.

- Outbound traffic for passenger (76%) and commercial (73%) vehicles had two responses: NJ 73 and "other". Half of all truck responses were "other", reflecting the multiplicity of ways to reach their destinations once they leave the region.

- State and local roads were the dominant response for both in and outbound vehicles. In part this reflects the rural nature of the survey site and the distance from major highway facilities west and north, as well as the local nature of traffic at this survey site.

- The "other" category had 40 percent of both inbound and outbound vehicle responses, including 35 percent and 49 percent of in/outbound trucks respectively. The prominence of "other" may indicate no knowledge of the route one is going or the multitude of local routes taken to reach destinations.

Type of Vehicles Surveyed



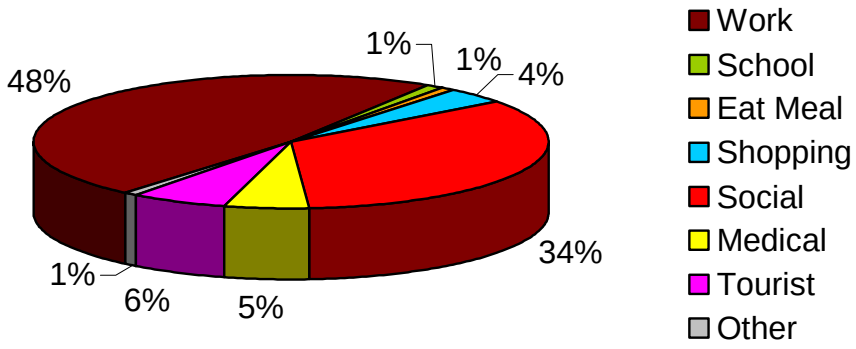
- The response to this question was obtained by observation rather than directly questioning the drivers of 9,890 vehicles in the survey sample. While the grouped categories are not the same as the 24 hour vehicle classification count, some categories have been broken out and some combined in order to help with the analysis. The complete data set is in Table B-9 in the Appendix.

- The composition of the surveyed vehicles differ from the 24 hour vehicle classification counts. Surveyed passenger vehicles (auto, van, SUV) were an almost equal share to the 24 hour count (76% versus 77% respectively), light trucks (pickup, panel, and single unit) were underrepresented at this station with about 23% of 24 hour sample and 16% of survey, and heavy trucks are 2% of 24 hour sample and 5% of survey.

- The automobile share is greatest during the inbound and outbound AM off-peak (52%). This reflects the heavily local traffic at this station. Likewise, tractor-trailer heavy trucks also peak during the inbound and outbound AM off-peak (about 9%). The SUV has the second greatest share (after automobiles) with 14 percent of the surveyed passenger vehicles.

- Inbound and outbound surveys have similar vehicle profiles. One difference is a slightly greater percent of heavy trucks inbound (8%) versus outbound (6%). Double-trailer heavy trucks had zero share of the traffic reflecting the rural setting for this survey and their need for larger facilities.

Trip Purpose of Passenger Vehicles



- Drivers in passenger vehicles were asked "What is the purpose of this trip?" Truck and commercial vehicle drivers were not asked this question as their trip purpose was evident. The complete data set is in Table B-10 in the Appendix.

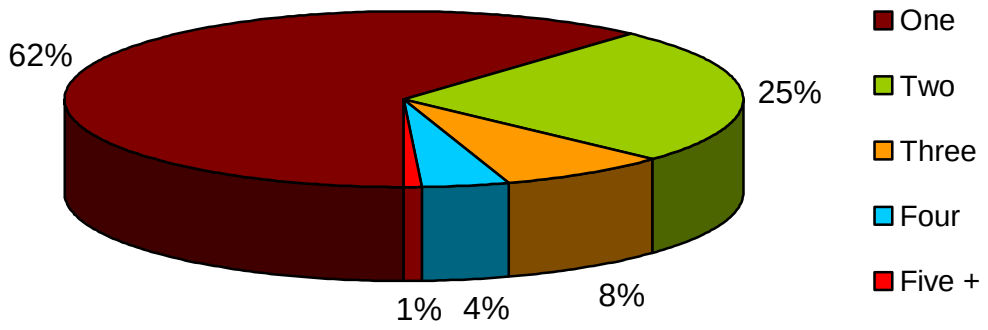
- Work related trips account for about half the total trips. Work trips are greatest between 6:30 a.m. and 8:30 a.m. with 71 percent inbound and 95 percent outbound. This corresponds with morning peak commute times. These percentages do not repeat themselves in the opposite direction during the afternoon peak. Coming home from work the traffic volume is spread out from 2:30 p.m. to 6:00 p.m.

- Combined social and tourist trips make up about 40 percent of the surveys. Closer examination reveals that social trips define about 54 percent of the inbound trips between 6:00 p.m. and 8:00 p.m. and about 51 percent of the outbound trips between 12:00 p.m. and 1:00 p.m.

- Medical visits are a 5 percent share of the surveys, but they are greatest inbound at a 16 percent share between 10:30 a.m. and 12:00 p.m. Outbound they are greatest at 13 percent between 12:00 p.m. and 1:00 p.m. These numbers may reflect late morning appointments at a local hospital and trips back home.

- The greatest survey volumes for three trip purposes occur between 12:00 p.m. to 1:00 p.m.: social (51%), medical (13%), and shopping (7%).

Vehicle Occupancy



- The question, "How many people are in the vehicle?" was obtained by observation rather than questioning 1,147 drivers in the survey sample. Only passenger vehicles were asked this question. The complete data set is in Table B-11 in the Appendix.

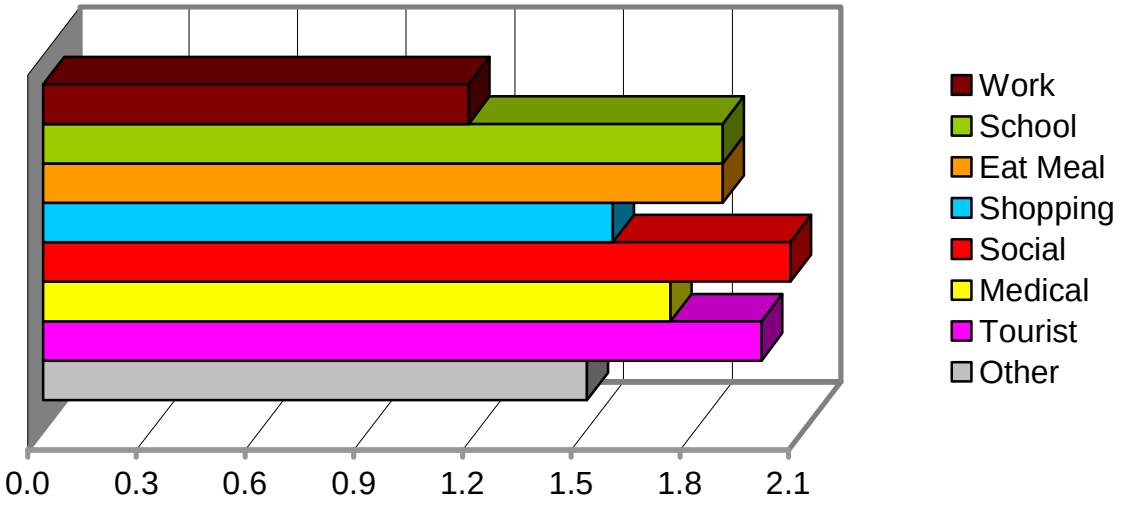
- One occupant vehicles are about a 62 percent share of the total, but are greatest between 6:30 p.m. and 8:30 p.m., with 82 percent inbound and 83 percent outbound. This is the peak morning commute time and the dominance of single occupant automobiles is no surprise.

- Two occupant vehicles have a 25 percent share of the total vehicles. They are greatest between 10:30 a.m. and 12:00 p.m. inbound (34%) and between 12:00 p.m. and 1:00 p.m. outbound (40%). This is the second largest occupancy share and more than double other vehicle occupancy rates at any other time.

- Three and four occupant vehicle shares are 8 percent and 4 percent, respectively. The three occupant vehicles are greatest inbound between 8:30 a.m. and 10:30 a.m. (13%) and outbound between 10:30 a.m. and 12:00 p.m. (19%). Four occupant vehicles are greatest inbound between 6:00 p.m. and 8:00 p.m. (11%), and outbound between 12:00 p.m. and 1:00 p.m. (15%)

- Five plus occupant vehicles make up about 1 percent of the total traffic. Twice as many 5+ occupant vehicles were surveyed traveling outbound versus inbound.

Average Vehicle Occupancy by Trip Purpose



- Average Vehicle Occupancy by Trip Purpose was obtained by cross tabulating the observed vehicle occupancy with the survey question regarding trip purpose. The complete data set broken out by trip purpose and occupancy is in Table B-12 in the Appendix.

- Average occupancy (1.87) is largest for van/station wagon category, exceeding the average SUV occupancy (1.68) and auto occupancy (1.54). It is intuitive that the vehicle with the greatest seating capacity carries the greatest number of people.

- Work trips have the lowest vehicle occupancy of any trip purpose for all the vehicle types. Automobile and SUVs have nearly identical work related occupancy rates (1.15 and 1.18).

- The trip purposes with greatest occupancy rate are school and medical related trips taken in vans/station wagons, averaging 3 persons per vehicle. Car pooling is the logical explanation, taking the kids to school or a family member to the doctor.

- SUV occupancy is greatest for going to eat a meal (2.5 persons per vehicle), reflecting both its similar characteristics to an automobile and its larger size.

Vehicle Trip Length Distribution within the DVRPC Region

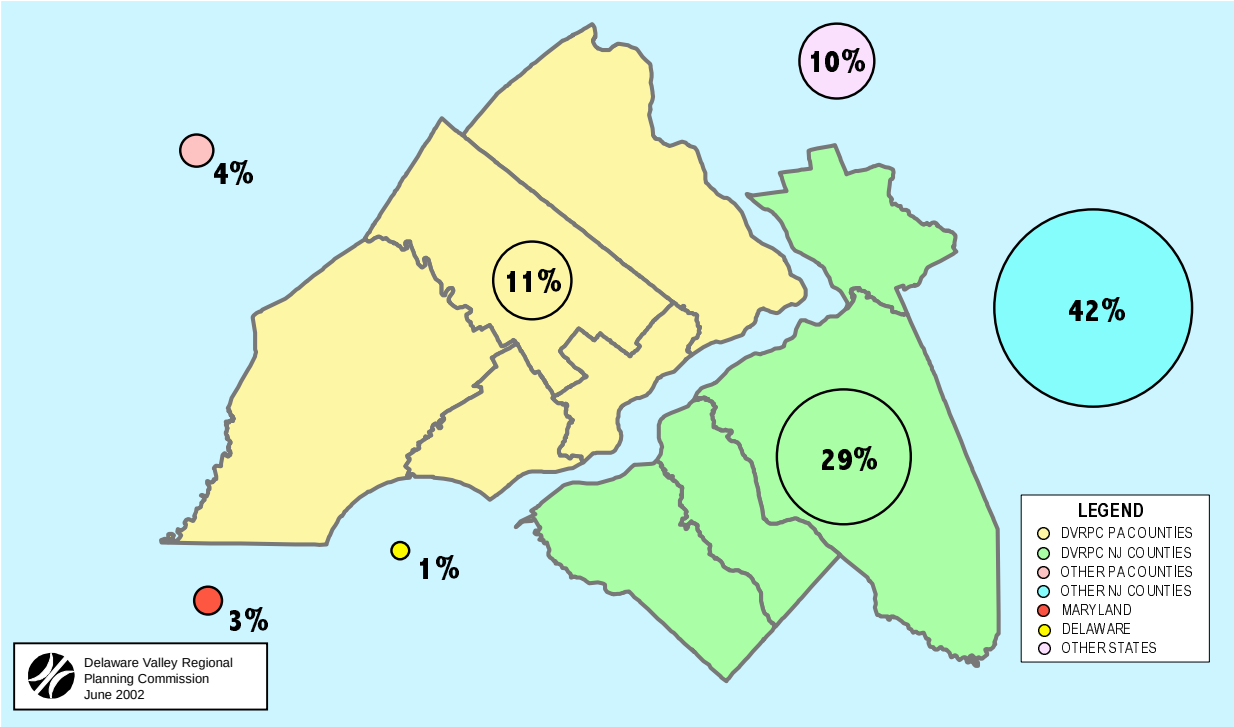
Trip Length	Work Trips	Auto Trips	Truck Trips
0-5 miles	8%	6%	2%
5-10 miles	15%	16%	9%
10-20 miles	22%	19%	30%
20-50 miles	54%	57%	54%
>50 miles	1%	2%	5%
Average Trip Length	**20.3**	**22.1**	**25.0**

- The data for this query was obtained by using the GIS to compute distances between the cordon station and origins/destinations within the region gathered with the first two questions in the survey. This data is broken out by home-based work trips, passenger vehicle trips and truck trips. The complete data set is in Table B-13 in the Appendix.

- The range of average trip lengths is between 20 and 25 miles, with trucks possessing the longest average trip length (25 miles). The data has been put into five groupings by distance: 0-5 miles, 5-10 miles, 10-20 miles, 20-50 miles and above 50 miles range. There are no trips for distances less than 1 mile, reflecting the isolation to any land use from the survey station.

- Two distances had the greatest grouping of data for all three modes: between 23-26 and between 5-6 miles. The largest share of trips for work (22%), passenger (17%), and truck trips (13%) fall in the 23-26 mile range. The second grouping for home-based and passenger vehicle trips (10%) is at the 5-6 mile distance. Truck trip lengths are longer with their second grouping occurring at 16-18 miles.

Trucks Garaged by State and County

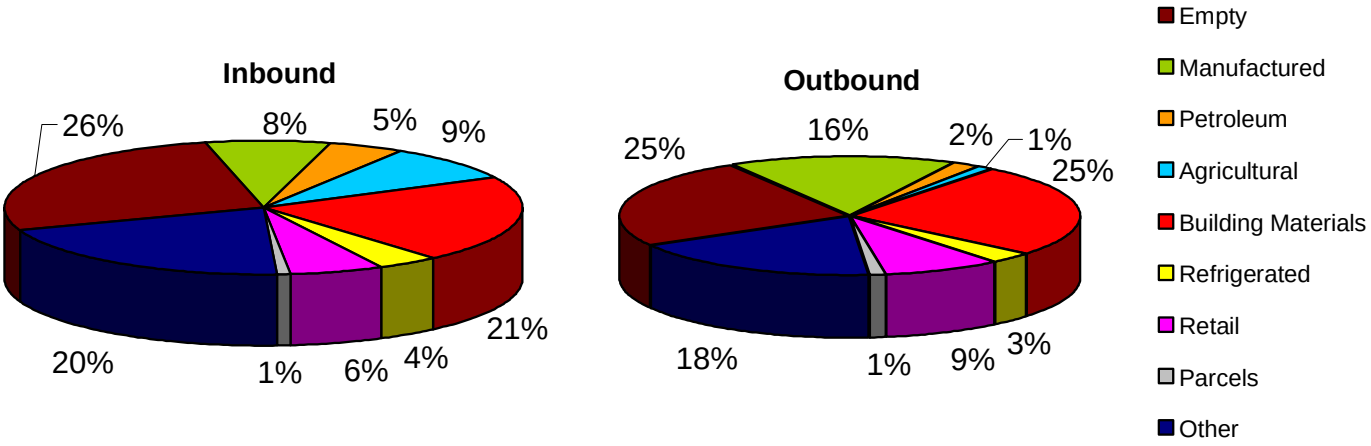


- There were 209 truck drivers asked "In what county is your truck garaged or parked when not in service?" Passenger vehicle drivers were not asked this question. The complete data set is in Table B-14 in the Appendix.

- About 40 percent of the trucks surveyed are garaged within the two state DVRPC region, but he largest share of trucks (42%) are garaged outside the region in New Jersey. Only about 4 percent of the trucks were garaged outside the region in Pennsylvania.

- The remaining 14 percent of the surveyed trucks are garaged in Maryland (3%), Delaware (1%), and the largest share is the "Other State" category with about a 10 percent share.

Type of Commodities Carried by Trucks



- Truck Drivers were asked "What type of commodities are you carrying?" Passenger vehicles were not asked this question. The complete data set is in Table B-15 in the Appendix.

- The volume of inbound and outbound truck traffic sample was nearly equal (104 versus 105 respectively). The categories of empty, other, and building materials make up about two-thirds (67%) of the surveyed trucks in each direction.

- The most frequent answer was "empty" with about 26 percent of the total trucks, and close behind were building materials with about 23 percent of the total truck replies. At the other extreme, only two surveyed trucks were carrying parcels.

- Agricultural products are 9 percent (inbound) and 1 percent (outbound) of trucked commodities. This disparity, however minor, may reflect the flow of agricultural goods into the denser urbanized region from the outlying farmlands. Another disparity is with retail/manufactured products which are 13 percent (inbound) and 25 percent (outbound) of trucked commodities.

- Petroleum, refrigerated and retail products constitute about a 13 percent share of the commodities in roughly equal inbound (15%) and outbound (14%) of the commodities surveyed at this station.

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APPENDIX A

Survey Responses for US 1, Brunswick Pike Cordon Station at College Road in Plainsboro Township, Middlesex County, New Jersey

Table A-1. Daily Vehicle Classification Traffic Counts

(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

	Vehicle Type													Hourly	% of
Hour of Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**Counts**	**Total**
12 am - 1 am	3	345	22	4	17	4	0	10	32	0	2	0	0	**439**	**0.8%**
1 am - 2 am	2	157	26	4	7	9	0	12	40	0	0	0	0	**257**	**0.5%**
2 am - 3 am	0	123	16	1	8	0	0	9	48	0	1	0	0	**206**	**0.4%**
3 am - 4 am	4	106	22	9	15	5	0	20	61	0	0	0	0	**242**	**0.4%**
4 am - 5 am	5	218	39	8	20	7	0	17	84	1	0	0	0	**399**	**0.7%**
5 am - 6 am	6	697	119	11	31	22	2	18	98	0	2	0	0	**1006**	**1.9%**
6 am - 7 am	9	1723	352	39	68	33	3	30	107	1	4	0	2	**2371**	**4.4%**
7 am - 8 am	4	3320	308	22	58	36	9	20	73	2	0	0	0	**3852**	**7.1%**
8 am - 9 am	6	3554	276	26	53	25	11	18	80	6	0	0	1	**4056**	**7.5%**
9 am -10 am	5	2666	341	35	84	36	14	25	137	4	1	0	1	**3349**	**6.2%**
10 am -11 am	7	1995	284	39	83	25	5	43	132	3	1	0	0	**2617**	**4.8%**
11 am -12 pm	11	1826	312	37	90	31	2	26	121	6	0	0	2	**2464**	**4.5%**
12 pm - 1 pm	11	2470	309	41	85	30	5	27	136	2	0	1	2	**3119**	**5.7%**
1 pm - 2 pm	6	2328	298	27	102	36	7	25	126	4	0	0	2	**2961**	**5.5%**
2 pm - 3 pm	13	2383	309	20	74	29	5	33	85	1	0	0	1	**2953**	**5.4%**
3 pm - 4 pm	7	2694	393	31	74	22	2	27	92	3	0	0	0	**3345**	**6.2%**
4 pm - 5 pm	3	3203	341	11	60	8	0	12	49	3	0	0	1	**3691**	**6.8%**
5 pm - 6 pm	6	3799	252	10	32	2	0	6	48	1	0	1	2	**4159**	**7.7%**
6 pm - 7 pm	4	3263	225	9	44	2	0	16	39	2	0	1	1	**3606**	**6.6%**
7 pm - 8 pm	3	2557	177	10	32	3	0	12	36	1	0	0	0	**2831**	**5.2%**
8 pm - 9 pm	3	1914	121	2	28	1	0	3	30	0	2	0	0	**2104**	**3.9%**
9 pm -10 pm	2	1774	112	3	23	2	0	7	28	0	0	0	0	**1951**	**3.6%**
10 pm -11 pm	2	1287	76	8	26	4	0	5	32	0	1	0	0	**1441**	**2.7%**
11 pm -12 am	2	769	52	6	16	3	0	5	36	0	1	0	1	**891**	**1.6%**
TOTAL	**124**	**45171**	**4782**	**413**	**1130**	**375**	**65**	**426**	**1750**	**40**	**15**	**3**	**16**	**54310**	**100%**
% Of Total	**0.2%**	**83.2%**	**8.8%**	**0.8%**	**2.1%**	**0.7%**	**0.1%**	**0.8%**	**3.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**100%**	

Legend

1. Motorcycle, Bicycle
2. Cars Trailers
3. Two Axle Long
4. Buses
5. Two Axle, Six Tire
6. Three Axle Single
7. Four Axle Single
8. Less Than Five Axle Double
9. Five Axle Double
10. Greater Than Five Axle Double
11. Less Than Six Axle Multi
12. Six Axle Multi
13. Greater Than Six Axle Multi

Table A-2. Survey Interviews at US 1 by Survey Period
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Survey Period	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Surveys	% of Total	No. of Surveys	% of Total	No. of Surveys	% of Total
Morning Shift						
6:30 a.m. - 8:30 a.m.	143	15.9%	139	15.5%	282	15.7%
8:30 a.m. - 10:30 a.m.	97	10.8%	100	11.2%	197	11.0%
Subtotal	**240**	**26.8%**	**239**	**26.7%**	**479**	**26.7%**
10:30 a.m. - 12:00 p.m.	117	13.0%	115	12.8%	232	12.9%
12:00 p.m. - 1:00 p.m.	87	9.7%	89	9.9%	176	9.8%
Subtotal	**204**	**22.7%**	**204**	**22.8%**	**408**	**22.8%**
Evening Shift						
1:00 p.m. - 2:30 p.m.	111	12.4%	118	13.2%	229	12.8%
2:30 p.m. - 4:30 p.m.	79	8.8%	74	8.3%	153	8.5%
Subtotal	**190**	**21.2%**	**192**	**21.4%**	**382**	**21.3%**
4:30 p.m. - 6:00 p.m.	156	17.4%	151	16.9%	307	17.1%
6:00 p.m. - 8:00 p.m.	107	11.9%	110	12.3%	217	12.1%
Subtotal	**263**	**29.3%**	**261**	**29.1%**	**524**	**29.2%**
TOTAL	**897**	**100.0%**	**896**	**100.0%**	**1793**	**100.0%**

Table A-3. Place of Vehicle Trip Origin by Municipality
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Municipality of Trip Origin	Home-Based Trips No. of Trips	Home-Based Trips % of Total	Total Trips No. of Trips	Total Trips % of Total	Truck Trips No. of Trips	Truck Trips % of Total
Inbound Trips						
1. South Brunswick	108	29.6%	215	28.4%	27	17.6%
2. Plainsboro	31	8.5%	76	10.1%	5	3.3%
3. New Brunswick	21	5.8%	48	6.3%	12	7.8%
4. North Brunswick	21	5.8%	47	6.2%	7	4.6%
5. Edison	18	4.9%	42	5.6%	16	10.5%
6. Franklin	16	4.4%	35	4.6%	7	4.6%
7. New York City	17	4.7%	29	3.8%	6	3.9%
8. Piscataway	14	3.8%	26	3.4%	5	3.3%
9. Newark	7	1.9%	22	2.9%	7	4.6%
10. East Brunswick	9	2.5%	18	2.4%	2	1.3%
11. Highland Park	6	1.6%	13	1.7%	3	2.0%
12. Woodbridge	3	0.8%	13	1.7%	3	2.0%
13. Montgomery	11	3.0%	11	1.5%	0	0.0%
14. Jersey City	7	1.9%	8	1.1%	2	1.3%
15. Other	76	20.8%	153	20.2%	51	33.3%
TOTAL	**365**	**100.0%**	**756**	**100.0%**	**153**	**100%**
Outbound Trips						
1. West Windsor	78	20.0%	183	22.0%	13	8.3%
2. Princeton	37	9.5%	85	10.2%	6	3.8%
3. Plainsboro	38	9.7%	76	9.1%	5	3.2%
4. Lawrence	27	6.9%	57	6.9%	12	7.7%
5. Trenton	23	5.9%	56	6.7%	8	5.1%
6. Hamilton	30	7.7%	56	6.7%	9	5.8%
7. Philadelphia	16	4.1%	42	5.1%	19	12.2%
8. Ewing	23	5.9%	38	4.6%	6	3.8%
9. Hopewell	12	3.1%	23	2.8%	1	0.6%
10. Falls	5	1.3%	21	2.5%	16	10.3%
11. Bensalem	6	1.5%	12	1.4%	4	2.6%
12. Lower Makefield	9	2.3%	10	1.2%	1	0.6%
13. Middletown	8	2.1%	10	1.2%	2	1.3%
14. Morrisville	4	1.0%	8	1.0%	3	1.9%
15. Other	74	19.0%	154	18.5%	51	32.7%
TOTAL	**390**	**100.0%**	**831**	**100.0%**	**156**	**100%**

Table A-4. Place of Vehicle Trip Destination by Municipality
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Municipality of Trip Destination	Home-Based Trips No. of Trips	Home-Based Trips % of Total	Total Trips No. of Trips	Total Trips % of Total	Truck Trips No. of Trips	Truck Trips % of Total
Inbound Trips						
1. West Windsor	84	21.8%	183	22.1%	12	7.7%
2. Princeton	81	21.0%	162	19.5%	16	10.3%
3. Trenton	33	8.5%	72	8.7%	20	12.9%
4. Plainsboro	44	11.4%	67	8.1%	4	2.6%
5. Lawrence	20	5.2%	50	6.0%	1	0.6%
6. Philadelphia	13	3.4%	33	4.0%	16	10.3%
7. Hamilton	9	2.3%	23	2.8%	9	5.8%
8. Hopewell	15	3.9%	21	2.5%	2	1.3%
9. Ewing	6	1.6%	15	1.8%	2	1.3%
10. Middletown	7	1.8%	15	1.8%	3	1.9%
11. Bensalem	5	1.3%	14	1.7%	6	3.9%
12. Falls	4	1.0%	12	1.4%	5	3.2%
13. Baltimore	4	1.0%	10	1.2%	8	5.2%
14. Lower Makefield	2	0.5%	10	1.2%	3	1.9%
15. Other	59	15.3%	142	17.1%	48	31.0%
TOTAL	**386**	**100.0%**	**829**	**100.0%**	**155**	**100 %**
Outbound Trips						
1. South Brunswick	141	37.2%	264	32.6%	32	20.9%
2. North Brunswick	31	8.2%	65	8.0%	11	7.2%
3. Franklin	22	5.8%	51	6.3%	10	6.5%
4. Edison	21	5.5%	42	5.2%	13	8.5%
5. Plainsboro	20	5.3%	42	5.2%	2	1.3%
6. New Brunswick	11	2.9%	38	4.7%	11	7.2%
7. New York City	17	4.5%	35	4.3%	7	4.6%
8. East Brunswick	15	4.0%	30	3.7%	3	2.0%
9. Newark	6	1.6%	26	3.2%	15	9.8%
10. Piscataway	9	2.4%	18	2.2%	5	3.3%
11. Woodbridge	7	1.8%	16	2.0%	4	2.6%
12. Elizabeth	5	1.3%	14	1.7%	5	3.3%
13. Highland Park	3	0.8%	9	1.1%	1	0.7%
14. Montgomery	4	1.1%	7	0.9%	1	0.7%
15. Other	67	17.7%	154	19.0%	33	21.6%
TOTAL	**379**	**100.0%**	**811**	**100.0%**	**153**	**100%**

Table A-5. Stopping Before Arriving at Final Destination
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

	Passenger Vehicles			Trucks			Total Vehicles		
Survey Period	No. of Vehicles Surveyed	Stopping	% Stopping	No. of Vehicles Surveyed	Stopping	% Stopping	No. of Vehicles Surveyed	Stopping	% Stopping
Inbound									
6:30 a.m. - 8:30 a.m.	120	0	0.0%	23	0	0.0%	143	0	0.0%
8:30 a.m. - 10:30 a.m.	82	0	0.0%	15	0	0.0%	97	0	0.0%
Subtotal	**202**	**0**	**0.0%**	**38**	**0**	**0.0%**	**240**	**0**	**0.0%**
10:30 a.m. - 12:00 p.m.	88	1	1.1%	29	1	3.4%	117	2	1.7%
12:00 p.m. - 1:00 p.m.	66	1	1.5%	21	0	0.0%	87	1	1.1%
Subtotal	**154**	**2**	**1.3%**	**50**	**1**	**2.0%**	**204**	**3**	**1.5%**
1:00 p.m. - 2:30 p.m.	88	0	0.0%	23	0	0.0%	111	0	0.0%
2:30 p.m. - 4:30 p.m.	65	0	0.0%	14	1	7.1%	79	1	1.3%
Subtotal	**153**	**0**	**0.0%**	**37**	**1**	**2.7%**	**190**	**1**	**0.5%**
4:30 p.m. - 6:00 p.m.	126	0	0.0%	30	0	0.0%	156	0	0.0%
6:00 p.m. - 8:00 p.m.	84	1	1.2%	23	0	0.0%	107	1	0.9%
Subtotal	**210**	**1**	**0.5%**	**53**	**0**	**0.0%**	**263**	**1**	**0.4%**
Outbound									
6:30 a.m. - 8:30 a.m.	114	0	0.0%	25	0	0.0%	139	0	0.0%
8:30 a.m. - 10:30 a.m.	82	0	0.0%	18	0	0.0%	100	0	0.0%
Subtotal	**196**	**0**	**0.0%**	**43**	**0**	**0.0%**	**239**	**0**	**0.0%**
10:30 a.m. - 12:00 p.m.	88	2	2.3%	27	0	0.0%	115	2	1.7%
12:00 p.m. - 1:00 p.m.	68	0	0.0%	21	0	0.0%	89	0	0.0%
Subtotal	**156**	**2**	**1.3%**	**48**	**0**	**0.0%**	**204**	**2**	**1.0%**
1:00 p.m. - 2:30 p.m.	93	0	0.0%	25	0	0.0%	118	0	0.0%
2:30 p.m. - 4:30 p.m.	60	0	0.0%	14	0	0.0%	74	0	0.0%
Subtotal	**153**	**0**	**0.0%**	**39**	**0**	**0.0%**	**192**	**0**	**0.0%**
4:30 p.m. - 6:00 p.m.	122	0	0.0%	29	0	0.0%	151	0	0.0%
6:00 p.m. - 8:00 p.m.	90	8	8.9%	20	0	0.0%	110	8	7.3%
Subtotal	**212**	**8**	**3.8%**	**49**	**0**	**0.0%**	**261**	**8**	**3.1%**
TOTAL	**1436**	**13**	**0.9%**	**357**	**2**	**0.6%**	**1793**	**15**	**0.8%**

Table A-6. Reasons for Using US 1 by Drivers of Passenger Vehicles
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Survey Period	Total Drivers	Saves Time		Saves Money		Most Direct		Less Congested		Only Way		Other Reasons	
		No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound													
6:30 a.m. - 8:30 a.m.	129	55	42.6%	0	0.0%	50	38.8%	1	0.8%	12	9.3%	2	1.6%
8:30 a.m. - 10:30 a.m.	81	38	46.9%	2	2.5%	33	40.7%	0	0.0%	7	8.6%	1	1.2%
Subtotal	**210**	**93**	**44.3%**	**2**	**1.0%**	**83**	**39.5%**	**1**	**0.5%**	**19**	**9.0%**	**3**	**1.4%**
10:30 a.m. - 12:00 p.m.	87	39	44.8%	0	0.0%	45	51.7%	0	0.0%	2	2.3%	1	1.1%
12:00 p.m. - 1:00 p.m.	60	32	53.3%	0	0.0%	32	53.3%	1	1.7%	2	3.3%	1	1.7%
Subtotal	**147**	**71**	**48.3%**	**0**	**0.0%**	**77**	**52.4%**	**1**	**0.7%**	**4**	**2.7%**	**2**	**1.4%**
1:00 p.m. - 2:30 p.m.	88	68	77.3%	0	0.0%	14	15.9%	1	1.1%	2	2.3%	3	3.4%
2:30 p.m. - 4:30 p.m.	63	51	81.0%	0	0.0%	10	15.9%	2	3.2%	1	1.6%	0	0.0%
Subtotal	**151**	**119**	**78.8%**	**0**	**0.0%**	**24**	**15.9%**	**3**	**2.0%**	**3**	**2.0%**	**3**	**2.0%**
4:30 p.m. - 6:00 p.m.	123	103	83.7%	1	0.8%	16	13.0%	0	0.0%	6	4.9%	0	0.0%
6:00 p.m. - 8:00 p.m.	83	60	72.3%	2	2.4%	17	20.5%	1	1.2%	4	4.8%	1	1.2%
Subtotal	**206**	**163**	**79.1%**	**3**	**1.5%**	**33**	**16.0%**	**1**	**0.5%**	**10**	**4.9%**	**1**	**0.5%**
Outbound													
6:30 a.m. - 8:30 a.m.	119	65	54.6%	1	0.8%	39	32.8%	1	0.8%	6	5.0%	3	2.5%
8:30 a.m. - 10:30 a.m.	82	53	64.6%	1	1.2%	25	30.5%	1	1.2%	1	1.2%	1	1.2%
Subtotal	**201**	**118**	**58.7%**	**2**	**1.0%**	**64**	**31.8%**	**2**	**1.0%**	**7**	**3.5%**	**4**	**2.0%**
10:30 a.m. - 12:00 p.m.	84	43	51.2%	1	1.2%	31	36.9%	5	6.0%	3	3.6%	2	2.4%
12:00 p.m. - 1:00 p.m.	68	41	60.3%	0	0.0%	21	30.9%	1	1.5%	4	5.9%	1	1.5%
Subtotal	**152**	**84**	**55.3%**	**1**	**0.7%**	**52**	**34.2%**	**6**	**3.9%**	**7**	**4.6%**	**3**	**2.0%**
1:00 p.m. - 2:30 p.m.	93	40	43.0%	2	2.2%	35	37.6%	2	2.2%	12	12.9%	3	3.2%
2:30 p.m. - 4:30 p.m.	56	29	51.8%	1	1.8%	26	46.4%	0	0.0%	2	3.6%	1	1.8%
Subtotal	**149**	**69**	**46.3%**	**3**	**2.0%**	**61**	**40.9%**	**2**	**1.3%**	**14**	**9.4%**	**4**	**2.7%**
4:30 p.m. - 6:00 p.m.	121	48	39.7%	0	0.0%	50	41.3%	0	0.0%	18	14.9%	6	5.0%
6:00 p.m. - 8:00 p.m.	89	47	52.8%	2	2.2%	27	30.3%	1	1.1%	11	12.4%	7	7.9%
Subtotal	**210**	**95**	**45.2%**	**2**	**1.0%**	**77**	**36.7%**	**1**	**0.5%**	**29**	**13.8%**	**13**	**6.2%**
TOTAL	**1426**	**812**	**56.9%**	**13**	**0.9%**	**471**	**33.0%**	**17**	**1.2%**	**93**	**6.5%**	**33**	**2.3%**

Table A-7. Reasons for Using US 1 by Truck Drivers
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Survey Period	Total Drivers	Saves Time		Saves Money		Most Direct		Less Congested		Only Way		Other Reasons	
		No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound													
6:30 a.m. - 8:30 a.m.	23	21	91.3%	1	4.3%	0	0.0%	1	4.3%	0	0.0%	0	0.0%
8:30 a.m. - 10:30 a.m.	15	11	73.3%	1	6.7%	0	0.0%	2	13.3%	1	6.7%	0	0.0%
Subtotal	**38**	**32**	**84.2%**	**2**	**5.3%**	**0**	**0.0%**	**3**	**7.9%**	**1**	**2.6%**	**0**	**0.0%**
10:30 a.m. - 12:00 p.m.	29	17	58.6%	1	3.4%	0	0.0%	12	41.4%	0	0.0%	0	0.0%
12:00 p.m. - 1:00 p.m.	21	20	95.2%	0	0.0%	1	4.8%	0	0.0%	0	0.0%	0	0.0%
Subtotal	**50**	**37**	**74.0%**	**1**	**2.0%**	**1**	**2.0%**	**12**	**24.0%**	**0**	**0.0%**	**0**	**0.0%**
1:00 p.m. - 2:30 p.m.	22	20	90.9%	1	4.5%	0	0.0%	0	0.0%	0	0.0%	1	4.5%
2:30 p.m. - 4:30 p.m.	14	11	78.6%	1	7.1%	0	0.0%	2	14.3%	0	0.0%	0	0.0%
Subtotal	**36**	**31**	**86.1%**	**2**	**5.6%**	**0**	**0.0%**	**2**	**5.6%**	**0**	**0.0%**	**1**	**2.8%**
4:30 p.m. - 6:00 p.m.	30	20	66.7%	5	16.7%	0	0.0%	4	13.3%	3	10.0%	1	3.3%
6:00 p.m. - 8:00 p.m.	23	17	73.9%	2	8.7%	0	0.0%	4	17.4%	0	0.0%	0	0.0%
Subtotal	**53**	**37**	**69.8%**	**7**	**13.2%**	**0**	**0.0%**	**8**	**15.1%**	**3**	**5.7%**	**1**	**1.9%**
Outbound													
6:30 a.m. - 8:30 a.m.	23	15	65.2%	1	4.3%	0	0.0%	7	30.4%	1	4.3%	0	0.0%
8:30 a.m. - 10:30 a.m.	18	9	50.0%	2	11.1%	1	5.6%	8	44.4%	0	0.0%	0	0.0%
Subtotal	**41**	**24**	**58.5%**	**3**	**7.3%**	**1**	**2.4%**	**15**	**36.6%**	**1**	**2.4%**	**0**	**0.0%**
10:30 a.m. - 12:00 p.m.	27	24	88.9%	2	7.4%	0	0.0%	1	3.7%	0	0.0%	0	0.0%
12:00 p.m. - 1:00 p.m.	19	12	63.2%	1	5.3%	0	0.0%	6	31.6%	0	0.0%	1	5.3%
Subtotal	**46**	**36**	**78.3%**	**3**	**6.5%**	**0**	**0.0%**	**7**	**15.2%**	**0**	**0.0%**	**1**	**2.2%**
1:00 p.m. - 2:30 p.m.	25	9	36.0%	3	12.0%	2	8.0%	10	40.0%	1	4.0%	3	12.0%
2:30 p.m. - 4:30 p.m.	14	13	92.9%	0	0.0%	0	0.0%	1	7.1%	0	0.0%	0	0.0%
Subtotal	**39**	**22**	**56.4%**	**3**	**7.7%**	**2**	**5.1%**	**11**	**28.2%**	**1**	**2.6%**	**3**	**7.7%**
4:30 p.m. - 6:00 p.m.	29	14	48.3%	5	17.2%	1	3.4%	8	27.6%	4	13.8%	2	6.9%
6:00 p.m. - 8:00 p.m.	19	8	42.1%	4	21.1%	0	0.0%	7	36.8%	1	5.3%	1	5.3%
Subtotal	**48**	**22**	**45.8%**	**9**	**18.8%**	**1**	**2.1%**	**15**	**31.3%**	**5**	**10.4%**	**3**	**6.3%**
TOTAL	**351**	**241**	**68.7%**	**30**	**8.5%**	**5**	**1.4%**	**73**	**20.8%**	**11**	**3.1%**	**9**	**2.6%**

Table A-8. Major Roads Taken by Drivers to Reach Their Destinations
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Roads Used	Passenger Vehicles		Trucks		All Vehicles	
	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound Traffic						
1. I-95	81	43.5%	61	52.1%	142	46.9%
2. I-295	35	18.8%	23	19.7%	58	19.1%
3. US 206	10	5.4%	2	1.7%	12	4.0%
4. NJ 27	10	5.4%	1	0.9%	11	3.6%
5. US 130	8	4.3%	1	0.9%	9	3.0%
6. US 13	3	1.6%	5	4.3%	8	2.6%
7. NJ 33	3	1.6%	2	1.7%	5	1.7%
8. Other Roads	36	19.4%	22	18.8%	58	19.1%
TOTAL	**186**	**100.0%**	**117**	**100.0%**	**303**	**100.0%**
Outbound Traffic						
1. NJ 27	31	17.0%	7	8.0%	38	14.1%
2. New Jersey Tpk	27	14.8%	21	23.9%	48	17.8%
3. I-287	19	10.4%	17	19.3%	36	13.3%
4. NJ 18	22	12.1%	5	5.7%	27	10.0%
5. US 130	13	7.1%	3	3.4%	16	5.9%
6. NJ 522	11	6.0%	2	2.3%	13	4.8%
7. US 206	6	3.3%	0	0.0%	6	2.2%
8. Other Roads	53	29.1%	33	37.5%	86	31.9%
TOTAL	**182**	**100.0%**	**88**	**100.0%**	**270**	**100.0%**

Table A-9. Type of Vehicles Used for the Trip
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

	Inbound Traffic					Outbound Traffic					
Vehicle Type	AM Peak (% of Total)	AM Off-Peak (%. of Total)	PM Off-Peak (% of Total)	PM Peak (% of Total)	Inbound Traffic (% of Total)	AM Peak (% of Total)	AM Off-Peak (% of Total)	PM Off-Peak (% of Total)	PM Peak (% of Total)	Outbound Traffic (% of Total)	TOTAL Traffic (% of Total)
Passenger Vehicles											
Auto	59.2%	45.9%	59.8%	58.1%	56.1%	62.7%	55.7%	50.3%	65.3%	59.2%	57.7%
Van, Sta. Wagon	10.4%	10.7%	7.4%	8.9%	9.4%	7.8%	11.8%	15.0%	10.4%	11.0%	10.2%
SUV	12.0%	12.2%	7.9%	8.5%	10.2%	7.4%	7.9%	9.6%	4.6%	7.2%	8.7%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.2%	0.1%
Subtotal	**81.6%**	**68.9%**	**75.1%**	**75.6%**	**75.7%**	**78.7%**	**75.4%**	**74.9%**	**80.3%**	**77.6%**	**76.7%**
Light Trucks											
Pickup	2.8%	6.1%	5.3%	3.9%	4.4%	4.9%	2.5%	5.9%	1.5%	3.6%	4.0%
Panel	1.2%	4.1%	0.5%	0.8%	1.6%	2.9%	3.0%	5.9%	1.9%	3.2%	2.4%
Single Unit	2.8%	6.1%	5.8%	2.7%	4.1%	2.0%	3.4%	1.6%	1.2%	2.0%	3.1%
Other	0.4%	1.0%	0.5%	0.0%	0.4%	0.4%	0.0%	0.0%	0.4%	0.2%	0.3%
Subtotal	**7.2%**	**17.3%**	**12.2%**	**7.4%**	**10.5%**	**10.2%**	**8.9%**	**13.4%**	**5.0%**	**9.1%**	**9.8%**
Heavy Trucks											
Tractor-Trailer	9.6%	12.8%	12.7%	15.9%	12.8%	9.0%	13.8%	10.2%	13.1%	11.5%	12.2%
Double-Trailer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.1%
Other	1.6%	1.0%	0.0%	1.2%	1.0%	2.0%	2.0%	1.6%	1.2%	1.7%	1.3%
Subtotal	**11.2%**	**13.8%**	**12.7%**	**17.1%**	**13.8%**	**11.1%**	**15.8%**	**11.8%**	**14.7%**	**13.3%**	**13.5%**
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table A-10. Trip Purpose by Direction
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Survey Period	Work (% of Total)	School (% of Total)	Eat Meal (% of Total	Shopping (% of Total)	Social Recreation (% of Total)	Medical (% of Total)	Visitor/ Tourist (% of Total)	Other (% of Total)	All Purposes
Inbound									
6:30 a.m. - 8:30 a.m.	95.0%	0.8%	0.0%	0.0%	3.3%	0.0%	0.0%	0.8%	100%
8:30 a.m. - 10:30 a.m.	84.0%	0.0%	0.0%	0.0%	11.1%	2.5%	1.2%	1.2%	100%
Subtotal	**90.5%**	**0.5%**	**0.0%**	**0.0%**	**6.5%**	**1.0%**	**0.5%**	**1.0%**	**100%**
10:30 a.m. - 12:00 p.m.	56.5%	3.5%	9.4%	14.1%	5.9%	3.5%	5.9%	1.2%	100%
12:00 p.m. - 1:00 p.m.	46.0%	1.6%	19.0%	14.3%	11.1%	3.2%	4.8%	0.0%	100%
Subtotal	**52.0%**	**2.7%**	**13.5%**	**14.2%**	**8.1%**	**3.4%**	**5.4%**	**0.7%**	**100%**
1:00 p.m. - 2:30 p.m.	56.3%	0.0%	3.4%	23.0%	8.0%	0.0%	2.3%	6.9%	100%
2:30 p.m. - 4:30 p.m.	54.8%	0.0%	3.2%	17.7%	6.5%	4.8%	9.7%	3.2%	100%
Subtotal	**55.7%**	**0.0%**	**3.4%**	**20.8%**	**7.4%**	**2.0%**	**5.4%**	**5.4%**	**100%**
4:30 p.m. - 6:00 p.m.	69.4%	0.0%	1.6%	11.3%	8.9%	1.6%	4.0%	3.2%	100%
6:00 p.m. - 8:00 p.m.	67.1%	0.0%	4.9%	15.9%	8.5%	2.4%	0.0%	1.2%	100%
Subtotal	**68.4%**	**0.0%**	**2.9%**	**13.1%**	**8.7%**	**1.9%**	**2.4%**	**2.4%**	**100%**
Outbound									
6:30 a.m. - 8:30 a.m.	92.0%	1.8%	0.0%	0.9%	4.5%	0.0%	0.9%	0.0%	100%
8:30 a.m. - 10:30 a.m.	86.6%	1.2%	0.0%	0.0%	7.3%	3.7%	1.2%	0.0%	100%
Subtotal	**89.7%**	**1.5%**	**0.0%**	**0.5%**	**5.7%**	**1.5%**	**1.0%**	**0.0%**	**100%**
10:30 a.m. - 12:00 p.m.	50.0%	1.2%	4.7%	15.1%	19.8%	4.7%	3.5%	1.2%	100%
12:00 p.m. - 1:00 p.m.	50.8%	4.8%	4.8%	12.7%	20.6%	0.0%	6.3%	0.0%	100%
Subtotal	**50.3%**	**2.7%**	**4.7%**	**14.1%**	**20.1%**	**2.7%**	**4.7%**	**0.7%**	**100%**
1:00 p.m. - 2:30 p.m.	54.8%	2.2%	9.7%	12.9%	9.7%	5.4%	4.3%	1.1%	100%
2:30 p.m. - 4:30 p.m.	64.4%	3.4%	0.0%	5.1%	11.9%	8.5%	1.7%	5.1%	100%
Subtotal	**58.6%**	**2.6%**	**5.9%**	**9.9%**	**10.5%**	**6.6%**	**3.3%**	**2.6%**	**100%**
4:30 p.m. - 6:00 p.m.	71.9%	4.1%	4.1%	5.0%	9.9%	2.5%	2.5%	0.0%	100%
6:00 p.m. - 8:00 p.m.	78.9%	2.2%	1.1%	3.3%	11.1%	1.1%	1.1%	1.1%	100%
Subtotal	**74.9%**	**3.3%**	**2.8%**	**4.3%**	**10.4%**	**1.9%**	**1.9%**	**0.5%**	**100%**
TOTAL	**69.4%**	**1.6%**	**3.8%**	**8.9%**	**9.4%**	**2.5%**	**2.8%**	**1.6%**	**100%**

Table A-11. Vehicle Occupancy by Traffic Direction and Time Period
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Survey Period	One Occupant	% of Total	Two Occupants	% of Total	Three Occupants	% of Total	Four Occupants	% of Total	Five+ Occupants	% of Total	Total Passenger Vehicles	Average Vehicle Occupancy
Inbound												
6:30 a.m. - 8:30 a.m.	102	85.0%	14	11.7%	4	3.3%	0	0.0%	0	0.0%	120	1.18
8:30 a.m. - 10:30 a.m.	58	71.6%	16	19.8%	3	3.7%	2	2.5%	2	2.5%	81	1.44
Subtotal	**160**	**79.6%**	**30**	**14.9%**	**7**	**3.5%**	**2**	**1.0%**	**2**	**1.0%**	**201**	**1.29**
10:30 a.m. - 12:00 p.m.	79	90.8%	4	4.6%	2	2.3%	2	2.3%	0	0.0%	87	1.16
12:00 p.m. - 1:00 p.m.	55	84.6%	6	9.2%	2	3.1%	2	3.1%	0	0.0%	65	1.25
Subtotal	**134**	**88.2%**	**10**	**6.6%**	**4**	**2.6%**	**4**	**2.6%**	**0**	**0.0%**	**152**	**1.20**
1:00 p.m. - 2:30 p.m.	74	84.1%	12	13.6%	0	0.0%	1	1.1%	1	1.1%	88	1.22
2:30 p.m. - 4:30 p.m.	42	65.6%	16	25.0%	4	6.3%	1	1.6%	1	1.6%	64	1.48
Subtotal	**116**	**76.3%**	**28**	**18.4%**	**4**	**2.6%**	**2**	**1.3%**	**2**	**1.3%**	**152**	**1.33**
4:30 p.m. - 6:00 p.m.	104	83.9%	13	10.5%	5	4.0%	1	0.8%	1	0.8%	124	1.24
6:00 p.m. - 8:00 p.m.	64	77.1%	17	20.5%	2	2.4%	0	0.0%	0	0.0%	83	1.25
Subtotal	**168**	**81.2%**	**30**	**14.5%**	**7**	**3.4%**	**1**	**0.5%**	**1**	**0.5%**	**207**	**1.25**
Outbound												
6:30 a.m. - 8:30 a.m.	104	91.2%	7	6.1%	3	2.6%	0	0.0%	0	0.0%	114	1.11
8:30 a.m. - 10:30 a.m.	74	90.2%	3	3.7%	3	3.7%	2	2.4%	0	0.0%	82	1.18
Subtotal	**178**	**90.8%**	**10**	**5.1%**	**6**	**3.1%**	**2**	**1.0%**	**0**	**0.0%**	**196**	**1.14**
10:30 a.m. - 12:00 p.m.	55	62.5%	24	27.3%	7	8.0%	2	2.3%	0	0.0%	88	1.50
12:00 p.m. - 1:00 p.m.	46	67.6%	15	22.1%	6	8.8%	1	1.5%	0	0.0%	68	1.44
Subtotal	**101**	**64.7%**	**39**	**25.0%**	**13**	**8.3%**	**3**	**1.9%**	**0**	**0.0%**	**156**	**1.47**
1:00 p.m. - 2:30 p.m.	64	68.8%	18	19.4%	6	6.5%	4	4.3%	1	1.1%	93	1.49
2:30 p.m. - 4:30 p.m.	45	76.3%	10	16.9%	3	5.1%	1	1.7%	0	0.0%	59	1.32
Subtotal	**109**	**71.7%**	**28**	**18.4%**	**9**	**5.9%**	**5**	**3.3%**	**1**	**0.7%**	**152**	**1.43**
4:30 p.m. - 6:00 p.m.	97	79.5%	18	14.8%	3	2.5%	2	1.6%	2	1.6%	122	1.31
6:00 p.m. - 8:00 p.m.	75	84.3%	10	11.2%	1	1.1%	1	1.1%	2	2.2%	89	1.26
Subtotal	**172**	**81.5%**	**28**	**13.3%**	**4**	**1.9%**	**3**	**1.4%**	**4**	**1.9%**	**211**	**1.29**
TOTAL	**1138**	**79.7%**	**203**	**14.2%**	**54**	**3.8%**	**22**	**1.5%**	**10**	**0.7%**	**1427**	**1.29**

Table A-12. Average Vehicle Occupancy by Trip Purpose
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Trip Purpose	Auto (Persons Per Vehicle)	Van/ Station Wagon (Persons Per Vehicle)	SUV (Persons Per Vehicle)	Total (Persons Per Vehicle)
Work	1.12	1.26	1.21	1.16
School	1.16	1.00	2.00	1.30
Eat Meal	1.55	2.50	1.30	1.57
Shopping	1.52	1.74	1.36	1.51
Social/Recreation	1.65	1.67	1.76	1.65
Medical	1.55	1.33	--	1.53
Visitor/Tourist	1.79	2.71	1.86	2.03
Other	1.37	1.50	1.00	1.33
All Purposes	**1.25**	**1.45**	**1.34**	**1.29**

Table A-13. External-Internal and Internal-External Trip Length Frequency Distribution Within The DVRPC Region

(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Trip Length (Miles)	Home-Based Work Trips		Passenger Vehicle Trips		Truck Trips	
	No. of Trips	% of Total	No. of Trips	% of Total	No. of Trips	% of Total
<1	8	2.8%	17	2.9%	2	1.1%
1-2	18	6.3%	40	6.7%	6	3.2%
2-3	25	8.8%	61	10.2%	11	5.9%
3-4	19	6.7%	45	7.6%	5	2.7%
4-5	10	3.5%	23	3.9%	4	2.1%
5-6	7	2.5%	20	3.4%	3	1.6%
6-7	8	2.8%	13	2.2%	2	1.1%
7-8	6	2.1%	20	3.4%	4	2.1%
8-10	23	8.1%	48	8.1%	8	4.3%
10-12	32	11.2%	57	9.6%	20	10.7%
12-14	31	10.9%	70	11.7%	24	12.8%
14-16	9	3.2%	22	3.7%	9	4.8%
16-18	10	3.5%	16	2.7%	5	2.7%
18-20	9	3.2%	15	2.5%	9	4.8%
20-23	7	2.5%	16	2.7%	6	3.2%
23-26	14	4.9%	18	3.0%	8	4.3%
26-29	14	4.9%	18	3.0%	13	7.0%
29-32	4	1.4%	13	2.2%	3	1.6%
32-36	8	2.8%	14	2.3%	10	5.3%
36-40	10	3.5%	22	3.7%	13	7.0%
40-45	7	2.5%	14	2.3%	8	4.3%
45-50	4	1.4%	6	1.0%	8	4.3%
50-60	2	0.7%	8	1.3%	5	2.7%
60-70	0	0.0%	0	0.0%	1	0.5%
70-80	0	0.0%	0	0.0%	0	0.0%
> 80	0	0.0%	0	0.0%	0	0.0%
Average Trip Length	**14.04**	**100%**	**13.37**	**100%**	**20.09**	**100%**

Table A-14. County Where Trucks Are Garaged or Parked When Not in Service
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

County	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Trucks	% of Total	No. of Trucks	% of Total	No. of Trucks	% of Total
Bucks	8	4.5%	11	6.1%	19	5.3%
Chester	1	0.6%	1	0.6%	2	0.6%
Delaware	1	0.6%	0	0.0%	1	0.3%
Montgomery	0	0.0%	0	0.0%	0	0.0%
Philadelphia	7	3.9%	6	3.4%	13	3.6%
Other PA	9	5.1%	7	3.9%	16	4.5%
Subtotal	**26**	**14.6%**	**25**	**14.0%**	**51**	**14.3%**
Burlington	7	3.9%	8	4.5%	15	4.2%
Camden	1	0.6%	2	1.1%	3	0.8%
Gloucester	1	0.6%	3	1.7%	4	1.1%
Mercer	17	9.6%	10	5.6%	27	7.6%
Other NJ	81	45.5%	105	58.7%	186	52.1%
Subtotal	**107**	**60.1%**	**128**	**71.5%**	**235**	**65.8%**
Maryland	4	2.2%	2	1.1%	6	1.7%
New York	6	3.4%	3	1.7%	9	2.5%
Other States	35	19.7%	21	11.7%	56	15.7%
Subtotal	**45**	**25.3%**	**26**	**14.5%**	**71**	**19.9%**
TOTAL	**178**	**100.0%**	**179**	**100.0%**	**357**	**100.0%**

Table A-15. Type of Commodities Carried by Trucks
(US 1, Brunswick Pike Cordon Station at College Road, Plainsboro Township)

Commodity Carried	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Trucks	% of Total	No. of Trucks	% of Total	No. of Trucks	% of Total
Empty	44	24.7%	61	34.1%	105	29.4%
Manufactured Products	30	16.9%	6	3.4%	36	10.1%
Petroleum Products	2	1.1%	3	1.7%	5	1.4%
Agricultural Products	11	6.2%	4	2.2%	15	4.2%
Building Materials	25	14.0%	34	19.0%	59	16.5%
Refrigerated Products	1	0.6%	12	6.7%	13	3.6%
Retail Store Merchandise	23	12.9%	18	10.1%	41	11.5%
Parcels	3	1.7%	2	1.1%	5	1.4%
Other	39	21.9%	39	21.8%	78	21.8%
TOTAL	**178**	**100%**	**179**	**100%**	**357**	**100%**

APPENDIX B

Survey Responses for NJ 70 Cordon Station East of CR 530, Manchester Township, Ocean County, New Jersey

Table B-1. Daily Vehicle Classification Traffic Counts
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Hour of Day	Vehicle Type 1	2	3	4	5	6	7	8	9	10	11	12	13	Hourly Counts	% of Total
12 am - 1 am	0	59	18	0	2	0	0	0	1	0	0	0	0	**80**	**0.8%**
1 am - 2 am	0	19	5	0	5	2	0	0	1	0	0	0	0	**32**	**0.3%**
2 am - 3 am	0	14	5	1	7	0	0	0	1	0	0	0	0	**28**	**0.3%**
3 am - 4 am	0	24	3	1	4	1	0	1	1	0	0	0	0	**35**	**0.4%**
4 am - 5 am	0	49	27	0	7	1	0	1	3	0	0	0	0	**88**	**0.9%**
5 am - 6 am	1	153	69	3	16	7	3	1	2	0	0	0	0	**255**	**2.6%**
6 am - 7 am	1	468	102	3	21	4	0	1	3	0	0	0	0	**603**	**6.1%**
7 am - 8 am	0	617	115	3	17	2	1	3	9	0	0	0	0	**767**	**7.8%**
8 am - 9 am	2	498	111	3	23	6	1	3	7	0	0	0	1	**655**	**6.6%**
9 am -10 am	0	398	115	3	28	1	0	5	6	1	0	0	0	**557**	**5.6%**
10 am -11 am	3	409	112	7	32	4	1	8	6	0	0	0	0	**582**	**5.9%**
11 am -12 pm	3	419	109	5	31	10	1	3	5	2	0	0	0	**588**	**5.9%**
12 pm - 1 pm	3	379	120	7	25	9	0	4	6	1	0	0	0	**554**	**5.6%**
1 pm - 2 pm	3	360	132	7	29	4	1	4	7	0	0	0	0	**547**	**5.5%**
2 pm - 3 pm	1	374	153	4	37	9	1	4	4	1	0	0	0	**588**	**5.9%**
3 pm - 4 pm	3	501	145	4	36	3	0	3	7	0	0	2	1	**705**	**7.1%**
4 pm - 5 pm	3	607	165	2	34	3	0	1	3	1	2	0	0	**821**	**8.3%**
5 pm - 6 pm	3	586	114	2	26	2	0	3	3	0	0	0	0	**739**	**7.5%**
6 pm - 7 pm	0	400	79	4	14	0	0	3	3	0	0	0	0	**503**	**5.1%**
7 pm - 8 pm	1	262	55	1	11	1	0	1	1	0	0	0	0	**333**	**3.4%**
8 pm - 9 pm	0	202	33	1	7	1	0	3	4	0	0	0	0	**251**	**2.5%**
9 pm -10 pm	0	196	33	0	3	0	0	2	1	0	0	0	0	**235**	**2.4%**
10 pm -11 pm	1	154	25	0	6	0	0	0	2	0	0	0	0	**188**	**1.9%**
11 pm -12 am	0	136	19	1	0	0	0	0	0	0	0	0	0	**156**	**1.6%**
TOTAL	**28**	**7284**	**1864**	**62**	**421**	**70**	**9**	**54**	**86**	**6**	**2**	**2**	**2**	**9890**	**100%**
% Of Total	**0.3%**	**73.7%**	**18.8%**	**0.6%**	**4.3%**	**0.7%**	**0.1%**	**0.5%**	**0.9%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**100%**	

Legend

1. Motorcycle, Bicycle
2. Cars Trailers
3. Two Axle Long
4. Buses
5. Two Axle, Six Tire
6. Three Axle Single
7. Four Axle Single
8. Less Than Five Axle Double
9. Five Axle Double
10. Greater Than Five Axle Double
11. Less Than Six Axle Multi
12. Six Axle Multi
13. Greater Than Six Axle Multi

Table B-2. Survey Interviews at NJ 70 by Survey Period
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Survey Period	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Surveys	% of Total	No. of Surveys	% of Total	No. of Surveys	% of Total
Morning Shift						
6:30 a.m. - 8:30 a.m.	114	17.0%	107	15.5%	221	16.2%
8:30 a.m. - 10:30 a.m.	74	11.0%	79	11.4%	153	11.2%
Subtotal	**188**	**28.1%**	**186**	**26.9%**	**374**	**27.5%**
10:30 a.m. - 12:00 p.m.	87	13.0%	93	13.4%	180	13.2%
12:00 p.m. - 1:00 p.m.	65	9.7%	65	9.4%	130	9.5%
Subtotal	**152**	**22.7%**	**158**	**22.8%**	**310**	**22.8%**
Evening Shift						
1:00 p.m. - 2:30 p.m.	84	12.5%	91	13.2%	175	12.8%
2:30 p.m. - 4:30 p.m.	67	10.0%	66	9.5%	133	9.8%
Subtotal	**151**	**22.5%**	**157**	**22.7%**	**308**	**22.6%**
4:30 p.m. - 6:00 p.m.	104	15.5%	115	16.6%	219	16.1%
6:00 p.m. - 8:00 p.m.	75	11.2%	76	11.0%	151	11.1%
Subtotal	**179**	**26.7%**	**191**	**27.6%**	**370**	**27.2%**
TOTAL	**670**	**100%**	**692**	**100%**	**1362**	**100%**

Table B-3. Place of Vehicle Trip Origin by Municipality
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Municipality of Trip Origin	Home-Based Trips		Total Trips		Truck Trips	
	No. of Trips	% of Total	No. of Trips	% of Total	No. of Trips	% of Total
Inbound Trips						
1. Dover	118	29.1%	174	27.8%	31	31.3%
2. Manchester	86	21.2%	116	18.5%	10	10.1%
3. Berkeley	34	8.4%	47	7.5%	5	5.1%
4. Lacey	31	7.7%	44	7.0%	11	11.1%
5. Brick	23	5.7%	40	6.4%	6	6.1%
6. Lakewood	10	2.5%	29	4.6%	11	11.1%
7. Seaside Heights	15	3.7%	26	4.1%	1	1.0%
8. Lakehurst	7	1.7%	18	2.9%	3	3.0%
9. Jackson	4	1.0%	12	1.9%	5	5.1%
10. South Toms River	5	1.2%	9	1.4%	1	1.0%
11. Beachwood	6	1.5%	7	1.1%	0	0.0%
12. Seaside Park	5	1.2%	6	1.0%	0	0.0%
13. Wall	3	0.7%	6	1.0%	0	0.0%
14. Lavallette	5	1.2%	6	1.0%	1	1.0%
15. Other	53	13.1%	87	13.9%	14	14.1%
TOTAL	**405**	**100%**	**627**	**100%**	**99**	**100%**
Outbound Trips						
1. Pemberton	86	19.7%	127	19.3%	18	18.2%
2. Philadelphia	40	9.2%	57	8.7%	5	5.1%
3. Southampton	30	6.9%	49	7.4%	9	9.1%
4. Evesham	38	8.7%	48	7.3%	3	3.0%
5. Cherry Hill	23	5.3%	28	4.3%	3	3.0%
6. Medford	17	3.9%	24	3.6%	3	3.0%
7. Mount Laurel	17	3.9%	19	2.9%	1	1.0%
8. Lawrence	8	1.8%	12	1.8%	1	1.0%
9. Moorestown	8	1.8%	11	1.7%	2	2.0%
10. New Hanover	6	1.4%	9	1.4%	0	0.0%
11. Mount Holly	4	0.9%	8	1.2%	2	2.0%
12. Bensalem	3	0.7%	8	1.2%	2	2.0%
13. Camden	6	1.4%	8	1.2%	0	0.0%
14. Voorhees	7	1.6%	8	1.2%	0	0.0%
15. Other	144	33.0%	242	36.8%	50	50.5%
TOTAL	**437**	**100%**	**658**	**100%**	**99**	**100%**

Table B-4. Place of Vehicle Trip Destination by Municipality
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Municipality of Trip Destination	Home-Based Trips		Total Trips		Truck Trips	
	No. of Trips	% of Total	No. of Trips	% of Total	No. of Trips	% of Total
Inbound Trips						
1. Pemberton	76	19.4%	100	16.4%	6	5.9%
2. Philadelphia	48	12.3%	63	10.3%	5	4.9%
3. Cherry Hill	34	8.7%	48	7.9%	5	4.9%
4. Southampton	18	4.6%	30	4.9%	6	5.9%
5. Evesham	22	5.6%	29	4.7%	1	1.0%
6. Mount Laurel	10	2.6%	15	2.5%	2	2.0%
7. Burlington	7	1.8%	14	2.3%	2	2.0%
8. Medford	10	2.6%	13	2.1%	3	2.9%
9. Moorestown	9	2.3%	12	2.0%	0	0.0%
10. Pennsauken	5	1.3%	10	1.6%	3	2.9%
11. Cinnaminson	7	1.8%	9	1.5%	3	2.9%
12. Mount Holly	4	1.0%	9	1.5%	6	5.9%
13. New Hanover	3	0.8%	8	1.3%	1	1.0%
14. Hainesport	5	1.3%	7	1.1%	1	1.0%
15. Other	133	34.0%	244	39.9%	58	56.9%
TOTAL	**391**	**100%**	**611**	**100%**	**102**	**100%**
Outbound Trips						
1. Dover	119	26.8%	188	28.1%	34	33.7%
2. Manchester	92	20.7%	142	21.2%	15	14.9%
3. Berkeley	36	8.1%	54	8.1%	8	7.9%
4. Lakewood	30	6.8%	49	7.3%	16	15.8%
5. Seaside Heights	31	7.0%	40	6.0%	2	2.0%
6. Brick	27	6.1%	35	5.2%	2	2.0%
7. Lacey	21	4.7%	29	4.3%	7	6.9%
8. Lakehurst	14	3.2%	18	2.7%	1	1.0%
9. Jackson	7	1.6%	18	2.7%	8	7.9%
10. Seaside Park	6	1.4%	9	1.3%	0	0.0%
11. Lavallette	5	1.1%	7	1.0%	0	0.0%
12. Point Pleasant	5	1.1%	5	0.7%	0	0.0%
13. Beachwood	4	0.9%	5	0.7%	0	0.0%
14. Long Beach	4	0.9%	4	0.6%	0	0.0%
15. Other	43	9.7%	66	9.9%	8	7.9%
TOTAL	**444**	**100%**	**669**	**100%**	**101**	**100%**

Table B-5. Stopping Before Arriving at Final Destination
(NJ 70 Cordon Station east of CR 530, Manchester Township)

	Passenger Vehicles			Trucks			Total Vehicles		
Survey Period	No. of Vehicles Surveyed	Stopping	% Stopping	No. of Vehicles Surveyed	Stopping	% Stopping	No. of Vehicles Surveyed	Stopping	% Stopping
Inbound									
6:30 a.m. - 8:30 a.m.	99	2	2.0%	9	0	0.0%	108	2	1.9%
8:30 a.m. - 10:30 a.m.	65	4	6.2%	16	2	12.5%	81	6	7.4%
Subtotal	**164**	**6**	**3.7%**	**25**	**2**	**8.0%**	**189**	**8**	**4.2%**
10:30 a.m. - 12:00 p.m.	71	4	5.6%	11	0	0.0%	82	4	4.9%
12:00 p.m. - 1:00 p.m.	54	2	3.7%	17	5	29.4%	71	7	9.9%
Subtotal	**125**	**6**	**4.8%**	**28**	**5**	**17.9%**	**153**	**11**	**7.2%**
1:00 p.m. - 2:30 p.m.	67	9	13.4%	9	1	11.1%	76	10	13.2%
2:30 p.m. - 4:30 p.m.	58	7	12.1%	17	4	23.5%	75	11	14.7%
Subtotal	**125**	**16**	**12.8%**	**26**	**5**	**19.2%**	**151**	**21**	**13.9%**
4:30 p.m. - 6:00 p.m.	87	13	14.9%	10	0	0.0%	97	13	13.4%
6:00 p.m. - 8:00 p.m.	65	10	15.4%	14	0	0.0%	79	10	12.7%
Subtotal	**152**	**23**	**15.1%**	**24**	**0**	**0.0%**	**176**	**23**	**13.1%**
Outbound									
6:30 a.m. - 8:30 a.m.	93	2	2.2%	10	0	0.0%	103	2	1.9%
8:30 a.m. - 10:30 a.m.	69	0	0.0%	19	0	0.0%	88	0	0.0%
Subtotal	**162**	**2**	**1.2%**	**29**	**0**	**0.0%**	**191**	**2**	**1.0%**
10:30 a.m. - 12:00 p.m.	74	0	0.0%	10	0	0.0%	84	0	0.0%
12:00 p.m. - 1:00 p.m.	55	0	0.0%	16	0	0.0%	71	0	0.0%
Subtotal	**129**	**0**	**0.0%**	**26**	**0**	**0.0%**	**155**	**0**	**0.0%**
1:00 p.m. - 2:30 p.m.	75	0	0.0%	10	0	0.0%	85	0	0.0%
2:30 p.m. - 4:30 p.m.	56	0	0.0%	17	0	0.0%	73	0	0.0%
Subtotal	**131**	**0**	**0.0%**	**27**	**0**	**0.0%**	**158**	**0**	**0.0%**
4:30 p.m. - 6:00 p.m.	98	0	0.0%	9	0	0.0%	107	0	0.0%
6:00 p.m. - 8:00 p.m.	67	0	0.0%	12	0	0.0%	79	0	0.0%
Subtotal	**165**	**0**	**0.0%**	**21**	**0**	**0.0%**	**186**	**0**	**0.0%**
TOTAL	**1153**	**53**	**4.6%**	**206**	**12**	**5.8%**	**1359**	**65**	**4.8%**

Table B-6. Reasons for Using NJ 70 by Drivers of Passenger Vehicles
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Survey Period	Total Drivers	Saves Time		Saves Money		Most Direct		Less Congested		Only Way		Other Reasons	
		No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound													
6:30 a.m. - 8:30 a.m.	98	40	40.8%	0	0.0%	48	49.0%	1	1.0%	7	7.1%	2	2.0%
8:30 a.m. - 10:30 a.m.	64	25	39.1%	0	0.0%	31	48.4%	0	0.0%	7	10.9%	1	1.6%
Subtotal	**162**	**65**	**40.1%**	**0**	**0.0%**	**79**	**48.8%**	**1**	**0.6%**	**14**	**8.6%**	**3**	**1.9%**
10:30 a.m. - 12:00 p.m.	71	40	56.3%	0	0.0%	23	32.4%	0	0.0%	3	4.2%	5	7.0%
12:00 p.m. - 1:00 p.m.	53	16	30.2%	0	0.0%	34	64.2%	1	1.9%	2	3.8%	2	3.8%
Subtotal	**124**	**56**	**45.2%**	**0**	**0.0%**	**57**	**46.0%**	**1**	**0.8%**	**5**	**4.0%**	**7**	**5.6%**
1:00 p.m. - 2:30 p.m.	56	26	46.4%	0	0.0%	19	33.9%	2	3.6%	8	14.3%	1	1.8%
2:30 p.m. - 4:30 p.m.	55	37	67.3%	0	0.0%	19	34.5%	1	1.8%	0	0.0%	0	0.0%
Subtotal	**111**	**63**	**56.8%**	**0**	**0.0%**	**38**	**34.2%**	**3**	**2.7%**	**8**	**7.2%**	**1**	**0.9%**
4:30 p.m. - 6:00 p.m.	84	54	64.3%	0	0.0%	31	36.9%	1	1.2%	0	0.0%	0	0.0%
6:00 p.m. - 8:00 p.m.	63	33	52.4%	0	0.0%	32	50.8%	0	0.0%	0	0.0%	1	1.6%
Subtotal	**147**	**87**	**59.2%**	**0**	**0.0%**	**63**	**42.9%**	**1**	**0.7%**	**0**	**0.0%**	**1**	**0.7%**
Outbound													
6:30 a.m. - 8:30 a.m.	93	44	47.3%	0	0.0%	37	39.8%	1	1.1%	11	11.8%	0	0.0%
8:30 a.m. - 10:30 a.m.	69	21	30.4%	0	0.0%	36	52.2%	0	0.0%	12	17.4%	0	0.0%
Subtotal	**162**	**65**	**40.1%**	**0**	**0.0%**	**73**	**45.1%**	**1**	**0.6%**	**23**	**14.2%**	**0**	**0.0%**
10:30 a.m. - 12:00 p.m.	74	30	40.5%	0	0.0%	36	48.6%	0	0.0%	7	9.5%	1	1.4%
12:00 p.m. - 1:00 p.m.	55	19	34.5%	0	0.0%	24	43.6%	1	1.8%	9	16.4%	2	3.6%
Subtotal	**129**	**49**	**38.0%**	**0**	**0.0%**	**60**	**46.5%**	**1**	**0.8%**	**16**	**12.4%**	**3**	**2.3%**
1:00 p.m. - 2:30 p.m.	73	49	67.1%	0	0.0%	25	34.2%	1	1.4%	0	0.0%	0	0.0%
2:30 p.m. - 4:30 p.m.	54	33	61.1%	0	0.0%	21	38.9%	0	0.0%	0	0.0%	1	1.9%
Subtotal	**127**	**82**	**64.6%**	**0**	**0.0%**	**46**	**36.2%**	**1**	**0.8%**	**0**	**0.0%**	**1**	**0.8%**
4:30 p.m. - 6:00 p.m.	92	48	52.2%	0	0.0%	26	28.3%	1	1.1%	15	16.3%	2	2.2%
6:00 p.m. - 8:00 p.m.	67	37	55.2%	0	0.0%	29	43.3%	1	1.5%	0	0.0%	2	3.0%
Subtotal	**159**	**85**	**53.5%**	**0**	**0.0%**	**55**	**34.6%**	**2**	**1.3%**	**15**	**9.4%**	**4**	**2.5%**
TOTAL	**1121**	**552**	**49.2%**	**0**	**0.0%**	**471**	**42.0%**	**11**	**1.0%**	**81**	**7.2%**	**20**	**1.8%**

Table B-7. Reasons for Using NJ 70 by Truck Drivers
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Survey Period	Total Drivers	Saves Time		Saves Money		Most Direct		Less Congested		Only Way		Other Reasons	
		No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound													
6:30 a.m. - 8:30 a.m.	15	6	40.0%	0	0.0%	7	46.7%	0	0.0%	0	0.0%	2	13.3%
8:30 a.m. - 10:30 a.m.	9	5	55.6%	0	0.0%	4	44.4%	0	0.0%	0	0.0%	0	0.0%
Subtotal	**24**	**11**	**45.8%**	**0**	**0.0%**	**11**	**45.8%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**8.3%**
10:30 a.m. - 12:00 p.m.	16	3	18.8%	0	0.0%	12	75.0%	0	0.0%	0	0.0%	1	6.3%
12:00 p.m. - 1:00 p.m.	11	6	54.5%	0	0.0%	5	45.5%	0	0.0%	0	0.0%	0	0.0%
Subtotal	**27**	**9**	**33.3%**	**0**	**0.0%**	**17**	**63.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**	**3.7%**
1:00 p.m. - 2:30 p.m.	15	9	60.0%	0	0.0%	7	46.7%	0	0.0%	0	0.0%	0	0.0%
2:30 p.m. - 4:30 p.m.	9	3	33.3%	0	0.0%	4	44.4%	0	0.0%	0	0.0%	2	22.2%
Subtotal	**24**	**12**	**50.0%**	**0**	**0.0%**	**11**	**45.8%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**8.3%**
4:30 p.m. - 6:00 p.m.	17	11	64.7%	0	0.0%	7	41.2%	0	0.0%	0	0.0%	0	0.0%
6:00 p.m. - 8:00 p.m.	10	7	70.0%	0	0.0%	2	20.0%	0	0.0%	1	10.0%	0	0.0%
Subtotal	**27**	**18**	**66.7%**	**0**	**0.0%**	**9**	**33.3%**	**0**	**0.0%**	**1**	**3.7%**	**0**	**0.0%**
Outbound													
6:30 a.m. - 8:30 a.m.	14	6	42.9%	1	7.1%	6	42.9%	0	0.0%	0	0.0%	1	7.1%
8:30 a.m. - 10:30 a.m.	10	4	40.0%	0	0.0%	3	30.0%	0	0.0%	2	20.0%	1	10.0%
Subtotal	**24**	**10**	**41.7%**	**1**	**4.2%**	**9**	**37.5%**	**0**	**0.0%**	**2**	**8.3%**	**2**	**8.3%**
10:30 a.m. - 12:00 p.m.	18	10	55.6%	0	0.0%	5	27.8%	0	0.0%	4	22.2%	0	0.0%
12:00 p.m. - 1:00 p.m.	10	6	60.0%	0	0.0%	1	10.0%	0	0.0%	3	30.0%	0	0.0%
Subtotal	**28**	**16**	**57.1%**	**0**	**0.0%**	**6**	**21.4%**	**0**	**0.0%**	**7**	**25.0%**	**0**	**0.0%**
1:00 p.m. - 2:30 p.m.	16	11	68.8%	0	0.0%	5	31.3%	0	0.0%	0	0.0%	0	0.0%
2:30 p.m. - 4:30 p.m.	10	6	60.0%	0	0.0%	5	50.0%	0	0.0%	0	0.0%	0	0.0%
Subtotal	**26**	**17**	**65.4%**	**0**	**0.0%**	**10**	**38.5%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
4:30 p.m. - 6:00 p.m.	17	12	70.6%	0	0.0%	5	29.4%	0	0.0%	0	0.0%	0	0.0%
6:00 p.m. - 8:00 p.m.	9	5	55.6%	0	0.0%	3	33.3%	1	11.1%	0	0.0%	0	0.0%
Subtotal	**26**	**17**	**65.4%**	**0**	**0.0%**	**8**	**30.8%**	**1**	**3.8%**	**0**	**0.0%**	**0**	**0.0%**
TOTAL	**206**	**110**	**53.4%**	**1**	**0.5%**	**81**	**39.3%**	**1**	**0.5%**	**10**	**4.9%**	**7**	**3.4%**

Table B-8. Major Roads Taken by Drivers to Reach Their Destinations
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Roads Used	Passenger Vehicles		Trucks		All Vehicles	
	No. of Drivers	% of Total	No. of Drivers	% of Total	No. of Drivers	% of Total
Inbound Traffic						
1. I-295	54	14.2%	27	26.0%	81	16.7%
2. CR 530	56	14.7%	7	6.7%	63	13.0%
3. I-95	49	12.9%	6	5.8%	55	11.4%
4. NJ 38	41	10.8%	12	11.5%	53	11.0%
5. NJ 73	45	11.8%	7	6.7%	52	10.7%
6. US 206	32	8.4%	10	9.6%	42	8.7%
7. New Jersey Tpk	12	3.2%	5	4.8%	17	3.5%
8. Other	91	23.9%	30	28.8%	121	25.0%
TOTAL	**380**	**100.0%**	**104**	**100.0%**	**484**	**100.0%**
Outbound Traffic						
1. NJ 37	112	42.3%	15	25.0%	127	39.1%
2. CR 530	31	11.7%	7	11.7%	38	11.7%
3. NJ 9	19	7.2%	6	10.0%	25	7.7%
4. CR 539	17	6.4%	3	5.0%	20	6.2%
5. Garden St Pkwy	13	4.9%	3	5.0%	16	4.9%
6. NJ 35	8	3.0%	1	1.7%	9	2.8%
7. NJ 18	3	1.1%	2	3.3%	5	1.5%
8. Other	62	23.4%	23	38.3%	85	26.2%
TOTAL	**265**	**100.0%**	**60**	**100.0%**	**325**	**100.0%**

Table B-9. Type of Vehicles Used for the Trip
(NJ 70 Cordon Station east of CR 530, Manchester Township)

	Inbound Traffic					Outbound Traffic					
Vehicle Type	AM Peak (% of Total)	AM Off-Peak (%. of Total)	PM Off-Peak (% of Total)	PM Peak (% of Total)	Inbound Traffic (% of Total)	AM Peak (% of Total)	AM Off-Peak (% of Total)	PM Off-Peak (% of Total)	PM Peak (% of Total)	Outbound Traffic (% of Total)	Total Traffic (% of Total)
Passenger Vehicles											
Auto	44.6%	50.7%	43.4%	52.0%	48.1%	49.2%	52.6%	52.2%	44.7%	50.2%	49.1%
Van, Sta. Wagon	12.3%	13.5%	13.3%	14.0%	13.2%	13.9%	10.3%	14.6%	12.8%	13.0%	13.1%
SUV	16.9%	11.5%	7.2%	13.4%	13.2%	15.0%	14.7%	14.6%	11.7%	14.3%	13.8%
Other	1.0%	1.4%	0.0%	1.1%	1.0%	0.0%	1.9%	0.0%	0.0%	0.5%	0.8%
Subtotal	**74.9%**	**77.0%**	**63.9%**	**80.4%**	**75.5%**	**78.1%**	**79.5%**	**81.5%**	**69.1%**	**77.9%**	**76.7%**
Light Trucks											
Pickup	15.9%	6.8%	13.3%	9.5%	11.4%	9.1%	3.8%	4.5%	12.8%	7.1%	9.3%
Panel	1.5%	3.4%	2.4%	2.2%	2.3%	5.3%	3.2%	5.1%	5.3%	4.7%	3.5%
Single Unit	1.0%	1.4%	6.0%	2.8%	2.3%	2.1%	3.8%	3.8%	7.4%	3.9%	3.1%
Other	0.0%	0.7%	1.2%	0.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Subtotal	**18.5%**	**12.2%**	**22.9%**	**15.1%**	**16.5%**	**16.6%**	**10.9%**	**13.4%**	**25.5%**	**15.7%**	**16.1%**
Heavy Trucks											
Tractor-Trailer	3.6%	8.8%	8.4%	3.9%	5.6%	4.8%	8.3%	3.8%	4.3%	5.4%	5.5%
Double-Trailer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	3.1%	2.0%	4.8%	0.6%	2.3%	0.5%	1.3%	1.3%	1.1%	1.0%	1.7%
Subtotal	**6.7%**	**10.8%**	**13.3%**	**4.5%**	**7.9%**	**5.3%**	**9.6%**	**5.1%**	**5.3%**	**6.4%**	**7.2%**
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table B-10. Trip Purpose by Direction
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Survey Period	Work (% of Total)	School (% of Total)	Eat Meal (% of Total	Shopping (% of Total)	Social Recreation (% of Total)	Medical (% of Total)	Visitor/ Tourist (% of Total)	Other (% of Total)	All Purposes
Inbound									
6:30 a.m. - 8:30 a.m.	71.1%	2.1%	0.0%	0.0%	13.4%	7.2%	5.2%	1.0%	100%
8:30 a.m. - 10:30 a.m.	53.1%	0.0%	0.0%	3.1%	32.8%	7.8%	3.1%	0.0%	100%
Subtotal	**64.0%**	**1.2%**	**0.0%**	**1.2%**	**21.1%**	**7.5%**	**4.3%**	**0.6%**	**100%**
10:30 a.m. - 12:00 p.m.	34.3%	1.4%	0.0%	1.4%	37.1%	15.7%	5.7%	4.3%	100%
12:00 p.m. - 1:00 p.m.	42.6%	1.9%	1.9%	3.7%	35.2%	13.0%	1.9%	0.0%	100%
Subtotal	**37.9%**	**1.6%**	**0.8%**	**2.4%**	**36.3%**	**14.5%**	**4.0%**	**2.4%**	**100%**
1:00 p.m. - 2:30 p.m.	43.9%	1.5%	0.0%	6.1%	37.9%	6.1%	4.5%	0.0%	100%
2:30 p.m. - 4:30 p.m.	50.0%	0.0%	0.0%	3.4%	36.2%	5.2%	3.4%	1.7%	100%
Subtotal	**46.8%**	**0.8%**	**0.0%**	**4.8%**	**37.1%**	**5.6%**	**4.0%**	**0.8%**	**100%**
4:30 p.m. - 6:00 p.m.	39.1%	0.0%	1.1%	8.0%	49.4%	0.0%	2.3%	0.0%	100%
6:00 p.m. - 8:00 p.m.	38.5%	0.0%	0.0%	3.1%	53.8%	0.0%	0.0%	4.6%	100%
Subtotal	**38.8%**	**0.0%**	**0.7%**	**5.9%**	**51.3%**	**0.0%**	**1.3%**	**2.0%**	**100%**
Outbound									
6:30 a.m. - 8:30 a.m.	94.6%	1.1%	0.0%	0.0%	3.3%	1.1%	0.0%	0.0%	100%
8:30 a.m. - 10:30 a.m.	75.4%	0.0%	0.0%	1.4%	11.6%	0.0%	11.6%	0.0%	100%
Subtotal	**86.3%**	**0.6%**	**0.0%**	**0.6%**	**6.8%**	**0.6%**	**5.0%**	**0.0%**	**100%**
10:30 a.m. - 12:00 p.m.	27.4%	0.0%	0.0%	5.5%	47.9%	5.5%	13.7%	0.0%	100%
12:00 p.m. - 1:00 p.m.	20.0%	1.8%	1.8%	7.3%	50.9%	12.7%	5.5%	0.0%	100%
Subtotal	**24.2%**	**0.8%**	**0.8%**	**6.3%**	**49.2%**	**8.6%**	**10.2%**	**0.0%**	**100%**
1:00 p.m. - 2:30 p.m.	29.3%	0.0%	1.3%	6.7%	49.3%	5.3%	8.0%	0.0%	100%
2:30 p.m. - 4:30 p.m.	42.9%	1.8%	5.4%	3.6%	35.7%	3.6%	5.4%	1.8%	100%
Subtotal	**35.1%**	**0.8%**	**3.1%**	**5.3%**	**43.5%**	**4.6%**	**6.9%**	**0.8%**	**100%**
4:30 p.m. - 6:00 p.m.	46.9%	1.0%	4.2%	5.2%	27.1%	6.3%	9.4%	0.0%	100%
6:00 p.m. - 8:00 p.m.	29.9%	1.5%	1.5%	3.0%	46.3%	1.5%	14.9%	1.5%	100%
Subtotal	**39.9%**	**1.2%**	**3.1%**	**4.3%**	**35.0%**	**4.3%**	**11.7%**	**0.6%**	**100%**
TOTAL	**47.9%**	**0.9%**	**1.0%**	**3.8%**	**34.2%**	**5.4%**	**5.9%**	**0.9%**	**100%**

Table B-11. Vehicle Occupancy by Traffic Direction and Time Period
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Survey Period	One Occupant	% of Total	Two Occupants	% of Total	Three Occupants	% of Total	Four Occupants	% of Total	Five+ Occupants	% of Total	Total Passenger Vehicles	Average Vehicle Occupancy
Inbound												
6:30 a.m. - 8:30 a.m.	81	81.8%	14	14.1%	3	3.0%	1	1.0%	0	0.0%	99	1.23
8:30 a.m. - 10:30 a.m.	43	67.2%	11	17.2%	8	12.5%	2	3.1%	0	0.0%	64	1.52
Subtotal	**124**	**76.1%**	**25**	**15.3%**	**11**	**6.7%**	**3**	**1.8%**	**0**	**0.0%**	**163**	**1.34**
10:30 a.m. - 12:00 p.m.	36	50.7%	24	33.8%	6	8.5%	5	7.0%	0	0.0%	71	1.72
12:00 p.m. - 1:00 p.m.	34	63.0%	17	31.5%	2	3.7%	1	1.9%	0	0.0%	54	1.44
Subtotal	**70**	**56.0%**	**41**	**32.8%**	**8**	**6.4%**	**6**	**4.8%**	**0**	**0.0%**	**125**	**1.60**
1:00 p.m. - 2:30 p.m.	44	66.7%	15	22.7%	5	7.6%	2	3.0%	0	0.0%	66	1.47
2:30 p.m. - 4:30 p.m.	42	72.4%	11	19.0%	2	3.4%	2	3.4%	1	1.7%	58	1.46
Subtotal	**86**	**69.4%**	**26**	**21.0%**	**7**	**5.6%**	**4**	**3.2%**	**1**	**0.8%**	**124**	**1.41**
4:30 p.m. - 6:00 p.m.	48	55.2%	25	28.7%	9	10.3%	5	5.7%	0	0.0%	87	1.67
6:00 p.m. - 8:00 p.m.	34	52.3%	15	23.1%	7	10.8%	7	10.8%	2	3.1%	65	1.89
Subtotal	**82**	**53.9%**	**40**	**26.3%**	**16**	**10.5%**	**12**	**7.9%**	**2**	**1.3%**	**152**	**1.70**
Outbound												
6:30 a.m. - 8:30 a.m.	75	82.4%	13	14.3%	3	3.3%	0	0.0%	0	0.0%	91	1.21
8:30 a.m. - 10:30 a.m.	53	76.8%	12	17.4%	3	4.3%	0	0.0%	1	1.4%	69	1.32
Subtotal	**128**	**80.0%**	**25**	**15.6%**	**6**	**3.8%**	**0**	**0.0%**	**1**	**0.6%**	**160**	**1.23**
10:30 a.m. - 12:00 p.m.	31	41.9%	26	35.1%	14	18.9%	2	2.7%	1	1.4%	74	1.86
12:00 p.m. - 1:00 p.m.	23	41.8%	22	40.0%	2	3.6%	8	14.5%	0	0.0%	55	1.91
Subtotal	**54**	**41.9%**	**48**	**37.2%**	**16**	**12.4%**	**10**	**7.8%**	**1**	**0.8%**	**129**	**1.84**
1:00 p.m. - 2:30 p.m.	32	42.7%	27	36.0%	11	14.7%	3	4.0%	2	2.7%	75	1.88
2:30 p.m. - 4:30 p.m.	34	60.7%	14	25.0%	4	7.1%	3	5.4%	1	1.8%	56	1.63
Subtotal	**66**	**50.4%**	**41**	**31.3%**	**15**	**11.5%**	**6**	**4.6%**	**3**	**2.3%**	**131**	**1.66**
4:30 p.m. - 6:00 p.m.	65	67.7%	20	20.8%	7	7.3%	3	3.1%	1	1.0%	96	1.49
6:00 p.m. - 8:00 p.m.	32	47.8%	24	35.8%	7	10.4%	2	3.0%	2	3.0%	67	1.78
Subtotal	**97**	**59.5%**	**44**	**27.0%**	**14**	**8.6%**	**5**	**3.1%**	**3**	**1.8%**	**163**	**1.52**
TOTAL	**707**	**61.6%**	**290**	**25.3%**	**93**	**8.1%**	**46**	**4.0%**	**11**	**1.0%**	**1147**	**1.57**

Table B-12. Average Vehicle Occupancy by Trip Purpose
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Trip Purpose	Auto (Persons Per Vehicle)	Van/ Station Wagon (Persons Per Vehicle)	SUV (Persons Per Vehicle)	Total (Persons Per Vehicle)
Work	1.15	1.26	1.18	1.17
School	1.60	3.00	2.00	1.88
Eat Meal	1.67	--	2.50	1.88
Shopping	1.63	1.33	1.40	1.57
Social/Recreation	1.94	2.58	2.20	2.06
Medical	1.70	3.00	1.71	1.73
Visitor/Tourist	1.96	2.38	2.07	1.98
Other	1.75	1.50	1.50	1.50
All Purposes	**1.54**	**1.87**	**1.68**	**1.57**

Table B-13. External-Internal and Internal-External Trip Length Frequency Distribution Within The DVRPC Region

(NJ 70 Cordon Station east of CR 530, Manchester Township)

Trip Length (Miles)	Home-Based Work Trips		Passenger Vehicle Trips		Truck Trips	
	No. of Trips	% of Total	No. of Trips	% of Total	No. of Trips	% of Total
<1	0	0.0%	0	0.0%	0	0.0%
1-2	4	1.2%	8	0.8%	0	0.0%
2-3	6	1.8%	18	1.9%	1	0.6%
3-4	13	3.9%	24	2.5%	2	1.1%
4-5	3	0.9%	6	0.6%	1	0.6%
5-6	31	9.3%	93	9.7%	10	5.7%
6-7	13	3.9%	23	2.4%	2	1.1%
7-8	3	0.9%	19	2.0%	0	0.0%
8-10	3	0.9%	16	1.7%	4	2.3%
10-12	14	4.2%	29	3.0%	8	4.6%
12-14	13	3.9%	29	3.0%	9	5.1%
14-16	15	4.5%	47	4.9%	9	5.1%
16-18	13	3.9%	34	3.6%	19	10.9%
18-20	20	6.0%	45	4.7%	7	4.0%
20-23	20	6.0%	53	5.5%	8	4.6%
23-26	72	21.6%	166	17.3%	22	12.6%
26-29	29	8.7%	88	9.2%	15	8.6%
29-32	13	3.9%	54	5.6%	11	6.3%
32-36	19	5.7%	90	9.4%	11	6.3%
36-40	18	5.4%	62	6.5%	13	7.4%
40-45	6	1.8%	21	2.2%	12	6.9%
45-50	4	1.2%	15	1.6%	3	1.7%
50-60	0	0.0%	10	1.0%	5	2.9%
60-70	1	0.3%	4	0.4%	1	0.6%
70-80	1	0.3%	3	0.3%	2	1.1%
> 80	0	0.0%	0	0.0%	0	0.0%
Average Trip Length	**20.31**	**100%**	**22.14**	**100%**	**24.96**	**100%**

Table B-14. County Where Trucks Are Garaged or Parked When Not in Service
(NJ 70 Cordon Station east of CR 530, Manchester Township)

County	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Trucks	% of Total	No. of Trucks	% of Total	No. of Trucks	% of Total
Bucks	4	3.9%	0	0.0%	4	1.9%
Chester	2	2.0%	2	1.9%	4	1.9%
Delaware	1	1.0%	1	1.0%	2	1.0%
Montgomery	4	3.9%	2	1.9%	6	2.9%
Philadelphia	3	2.9%	4	3.8%	7	3.4%
Other PA	4	3.9%	4	3.8%	8	3.9%
Subtotal	**18**	**17.6%**	**13**	**12.5%**	**31**	**15.0%**
Burlington	18	17.6%	13	12.5%	31	15.0%
Camden	10	9.8%	4	3.8%	14	6.8%
Gloucester	9	8.8%	7	6.7%	16	7.8%
Mercer	1	1.0%	0	0.0%	1	0.5%
Other NJ	32	31.4%	54	51.9%	86	41.7%
Subtotal	**70**	**68.6%**	**78**	**75.0%**	**148**	**71.8%**
Maryland	4	3.9%	2	1.9%	6	2.9%
Delaware	1	1.0%	0	0.0%	1	0.5%
Other States	9	8.8%	11	10.6%	20	9.7%
Subtotal	**14**	**13.7%**	**13**	**12.5%**	**27**	**13.1%**
TOTAL	**102**	**100%**	**104**	**100%**	**206**	**100%**

Table B-15. Type of Commodities Carried by Trucks
(NJ 70 Cordon Station east of CR 530, Manchester Township)

Commodity Carried	Inbound Traffic		Outbound Traffic		Total Traffic	
	No. of Trucks	% of Total	No. of Trucks	% of Total	No. of Trucks	% of Total
Empty	28	26.9%	26	24.8%	54	25.8%
Manufactured Products	8	7.7%	17	16.2%	25	12.0%
Petroleum Products	5	4.8%	2	1.9%	7	3.3%
Agricultural Products	9	8.7%	1	1.0%	10	4.8%
Building Materials	22	21.2%	27	25.7%	49	23.4%
Refrigerated Products	4	3.8%	3	2.9%	7	3.3%
Retail Store Merchandise	6	5.8%	9	8.6%	15	7.2%
Parcels	1	1.0%	1	1.0%	2	1.0%
Other	21	20.2%	19	18.1%	40	19.1%
TOTAL	**104**	**100%**	**105**	**100%**	**209**	**100%**

Cordon Line Highway Survey for the Delaware Valley Region - Report No.1
US 1 and NJ 70 Cordon Stations in Mercer and Burlington Counties

Publication No. : 02029

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Geographic Area Covered: Delaware Valley metropolitan region comprised of five counties in Pennsylvania (Bucks, Chester, Delaware, Montgomery, and Philadelphia); and four counties in New Jersey (Burlington, Camden, Gloucester and Mercer) and includes some counties adjoining the region: (Lancaster, Berks, and Lehigh in PA; Hunterdon, Middlesex, Ocean, Cumberland and Salem in NJ; and New Castle County in Delaware).

Key Words: Traffic count, geocoding, cordon line, survey station, travel trends, vehicle trips, person trips, AM and PM peak hour, origin and destination, average vehicular occupancy, commodities.

ABSTRACT
A cordon line survey of traffic entering and leaving the Delaware Valley region was conducted during the summer of 2001. This is a summary report describing the characteristics of traffic crossing the regional cordon line at 2 locations in New Jersey: US 1 and NJ 70. This includes information regarding the data collection, data summaries, and complete data tables in the Appendices.

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