

# Travel Patterns and Characteristics of Low-Income Subpopulation in New York State: Final Technical Memorandum for Task 14



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Engineering and Transportation Science Division

**Final Technical Memorandum for Task 14**

**TRAVEL PATTERNS AND CHARACTERISTICS OF LOW-INCOME  
SUBPOPULATION IN NEW YORK STATE**

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## ACRONYMS

ACS	American Community Survey
CPI-U	Consumer Price Index for All Urban
FHWA	Federal Highway Administration
FY	Fiscal Year
GTFS	General Transit Feed Specification
HUD	United States Department of Housing and Urban Development
JTW	Journey to Work
MFI	Median Family Income
MSA	Metropolitan Statistical Areas
NCLEJ	National Center for Law and Economic Justice
NHTS	National Household Travel Survey
NYC	New York City
NYMTC	New York Metropolitan Transportation Council
NYS	New York State
PMT	Personal Miles Traveled
POV	Privately Owned Vehicle
PT	Person Trip
TFAH	Trust for America's Health
USDOT	U.S. Department of Transportation
VMT	Vehicle Miles Traveled
VT	Vehicle Trips



## **ABSTRACT**

Studies have shown that people residing in poverty face more mobility challenges in their daily travels as compared to those living in higher income households. In many cities, the lack of a public transportation systems and investments in low-income areas are making it difficult for those living in poverty to access jobs, goods, and services (schools, groceries, health cares, etc.). In this study, Oak Ridge National Laboratory was tasked by the New York State (NYS) Department of Transportation to conduct a detailed examination of the travel behaviors and identify patterns and trends of the low-income residents within NYS.

The 2009 National Household Travel Survey data was used as the primary information source to analyze subjects associated with poverty and mobility, and to address questions Such as are there differences in traveler demographics between the low-income population and those of others who live in various NYS regions (e.g., New York City, other urban areas of NYS)? How do they compare with the population at large (e.g., rest of the country) or with findings from previous years (i.e., trend)? Are there any regional differences (e.g., urban versus rural)? Do any unique travel characteristics or patterns exist within the low-income group?

Through this study, various key findings on low-income population sizes, household characteristics, travel patterns, and mobility limitations were identified and summarized in this report.





## EXECUTIVE SUMMARY

This study identifies key characteristics of very-low income households in New York State (NYS), their travel patterns, and mobility limitations based on the 2009 NHTS. The study reveals that the proportion of very-low income households is higher in New York City (NYC), especially in counties outside Manhattan. The likelihood of having no drivers or no vehicles is much higher in NYS's very-low income households, as compared to those in other income groups. As a result, the very-low income households in NYS used a personally owned vehicle (POV) less frequently than other income households on their daily trips, while the share of using public transit for daily travels is much higher among the very-low income households. Generally, a very-low income household in NYS made fewer trips than other income level households did, due to mobility limitations.

### **Great concentration of very-low income households in NYC**

Based on the 2009 NHTS, 29% of NYS residents (ages 5 years and older) lived in very-low income households, with the greatest concentration in NYC. One in four persons who lived in Manhattan came from a very-low income household, as compared to 44% for those who lived elsewhere in NYC.

Poverty rates among African-American and Hispanic populations are significantly higher than other races among NYS residents. The share of very-low income Hispanic populations in NYS went from 44% in 1995 to 63% in 2009, while the rate among African-Americans remained under 50% in this time. On the other hand, the share of very-low income for their counterpart White neighbors stayed under 20% during the same period. Nearly two in five of the very-low income NYS households were single occupant in 2009, while it was less than one in four among other income households living in NYS during the same year. The majority of the very-low income residents who lived alone in NYS were retired persons.

According to the 2009 NHTS data, 22% of very-low income households in NYS reported having no drivers in their households, as compared to only 3% among their other income neighbors. Half of all very-low income households in NYS did not own any vehicles in 2009, compared to only 16% of their other income neighbors. The likelihood of being a zero-vehicle household in NYC is significantly higher than being one in areas outside of NYC. Outside NYS, very-low income households also had a higher likelihood of owning no vehicles than their other income neighbors, with shares of 20% versus 2% respectively.

### **Limited mobility for very-low income households**

The NHTS data shows that mobility for individuals from a very-low income household was more limited than that of other income individuals. Very-low income NYS residents traveled 56% fewer miles on average, as compared to trips taken by other income level New Yorkers. Furthermore, while NYS residents with other income levels traveled an average of 3.95 trips daily during 2009, a very-low income individual from NYS took nearly 22% fewer trips on a daily basis in the same year.

NYS's very-low income residents were more likely to use public transit, with a lower likelihood of using POV, for their daily travel. In NYC, only 47% of trips made by very-low income residents were by POV, as compared to about 70% among other income groups. Mode share for person-trips made by walking was also significantly higher among very-low income New Yorkers. Furthermore, New Yorkers who lived in very-low income households were more likely to travel for family/personal business and school/church activities, but less likely to travel for work and social/recreational purposes as compared to their neighbors with other incomes.

**Transit is essential for NYS's very-low income households**

Essentially, 84% of NYS's very-low income populations lived within a one-mile radius of transit stations, while only 17% of the other-income New Yorkers lived within the same range. Nearly 35% of all persons in NYC with income under \$25,000 used public transit, as compared to 13% for those who are in the \$100,000+ income category. Moreover, children from NYC households with income under \$25,000 had the highest likelihood of taking public transit.

About 50% of the very-low income households in NYS did not own any vehicles. Most of these zero-vehicle very-low income households were located in NYC. Most trips taken by individuals from zero-vehicle households within Manhattan in 2009 were made by walking, and accounted for 62% of all daily person-trips taken regardless of income status.

NYC drivers from a very-low income elderly household traveled a significantly fewer amount of POV trips than their counterpart New Yorkers who lived outside NYC, regardless of household size. The influence of income on travel frequencies seems to be less among children. Specifically, children of very-low income households made about 19% fewer trips than children in other income level households in 2009, as compared to 28% among those over 15 years old.

**Price is the most important to very-low income New Yorkers**

In all regions, except for Manhattan and Putnam-Rockland-Westchester, New Yorkers from a very-low income household were more likely to reflect "price of travel" as a big issue than their counterpart other income neighbors. Over three in five of those very-low income New Yorkers indicated "price of travel" was the most important issue. "Aggressive/distracted drivers" was also expressed as a big issue by nearly 60% of the very-low income New Yorkers, who identified this as their most important concern. The concern for "access/availability of public transit" was only considered a big issue by half of those very-low income NYS residents that identified it as their most important issue. Outside of NYS, the "price of travel" was reflected as a big issue by 65% of the very-low income individuals who said that "price of travel" was their most important concern.



# 1. INTRODUCTION

## 1.1 BACKGROUND

Studies have shown that households in poverty face more mobility challenges in their daily travels as compared to other income households. In many cities, the lack of public transportation systems and investments in low-income areas are making it difficult for those living in poverty to access jobs, goods, and services (schools, groceries, health cares, etc.). Furthermore, race and transportation have long been known to be intertwined. In 2009, the year of the most recent National Household Travel Survey (NHTS) data, as quoted in a Federal Highway Administration (FHWA) released NHTS brief, the Census Bureau reported that nearly 26% of blacks and 25% of Hispanics in the United States lived in poverty, whereas the official overall poverty rate for all races was 14.3 percent<sup>1</sup>. As suggested in a snapshot report<sup>2</sup> released by the National Center for Law and Economic Justice (NCLEJ) in 2014, the poverty rate in the U.S. has not seen any improvements over many years. While about 15% of the total U.S. population lived in poverty in 2014, more than 26% of African-Americans and nearly 24% of Hispanics were in poverty in 2014. In comparison, only 10% of non-Hispanic White and 12% of Asian populations were in poverty during the same year.

The research documented in this report is a detailed examination of the travel behaviors and patterns of low-income populations within New York State (NYS). This study is primarily based on travel data provided by the 2009 NHTS and the associated Add-On sample households purchased by the New York State Department of Transportation (NYSDOT). Unlike many studies that concentrated on national level statistics, this research focused on examining issues associated with NYS travelers of low-income households. As the needs for comparison were raised, certain travel behaviors and characteristics associated with residents in the rest of the country (as a whole) were also analyzed under this study.

Using Census 5-year American Community Survey (ACS), 2008-2012, Figure 1-1 shows the median household income for all counties in NYS. Clearly, the median incomes of counties within the New York Metropolitan Transportation Council (NYMTC) region are much higher than all other NYS counties, except for Bronx and Kings. Note that over 60% of the NYS population resides within the NYMTC region, which includes the counties with the highest and the lowest median incomes in NYS - Nassau County and Bronx County, respectively. Interestingly, the median income level of Saratoga County in upstate NYS is more similar to those other income NYMTC counties than its neighboring counties. Outside of NYMTC, as seen in Figure 1-1, rural counties typically have lower median incomes (shaded in orange color).

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<sup>1</sup> FHWA NHTS Brief - *Mobility Challenges for Households in Poverty*, <http://nhts.ornl.gov/briefs/PovertyBrief.pdf>, released by Federal Highway Administration, U.S. Department of Transportation, 2014.

<sup>2</sup> "Poverty in the United States: A Snapshot," National Center for Law and Economic Justice, November 4, 2015. [www.Nclej.org/snapshot/poverty-in-the-united-states/](http://www.Nclej.org/snapshot/poverty-in-the-united-states/) accessed March 2017.

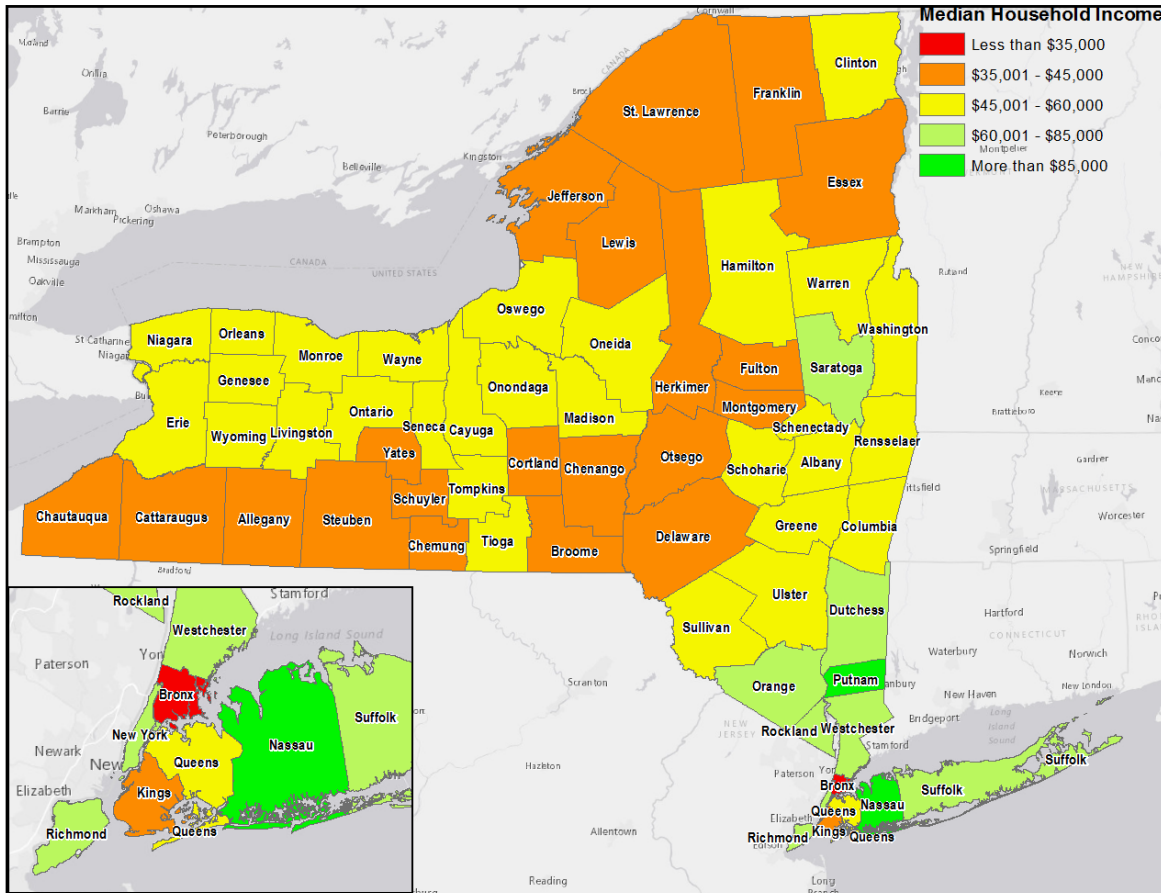


Figure 1-1. Median family income in NYS counties (ACS 2008-2012 data)

## 1.2 PURPOSE OF THIS STUDY

The purpose of this study was to answer questions such as the following:

- Are there differences in traveler demographics between the low-income population and those of other populations who lived in various NYS regions, e.g., New York City (NYC), other urban areas of NYS, or other parts of the country?
- How do they compare with the population at large?
- Are there any regional differences (e.g., urban versus rural)?
- Do any unique travel characteristics or patterns exist in the low-income households?

## 1.3 ORGANIZATION OF REPORT

This report presents data analysis results based on travel generated by NYS low-income households. Specifically, statistics on traveler demographics, mode-specific summary statistics such as frequency (i.e., trip rate), mode choice, distance (trip length), time of trip, and trip

purpose of the NYS low-income population were examined. Section 2 of this report describes characteristics of the low-income population in NYS, including the population size, their demographic profiles, household living arrangements, vehicle ownership and vehicle age. Travel characteristics for the low-income population are addressed in Section 3, followed by a discussion on associated mobility statistics in Section 4. The topic of transportation accessibility and equality, particularly on more vulnerable population groups (e.g., poor and with zero-vehicle, children in poverty) are discussed in Section 5. Influence of income on NYS residents' views regarding transportation quality was also examined and results are included in Section 6 of this report. Finally, a summary of key findings from this research is in Section 7. A glossary listing definitions of general terms used in this report is provided in Appendix A, with additional supporting statistics (summarized in several tables) listed in Appendix B.





## **2. BRIEF DESCRIPTIONS OF DATA SOURCES**

Data used to analyze low-income household characteristics and their travel behaviors were obtained from the NHTS and supplemented with data from the U.S. Census Bureau (Census), as well as other sources as appropriate. These data sources are briefly described below.

### **2.1 NHTS**

Overall, statistics discussed in this report were produced using data from the 2009 NHTS. The NHTS is a Federal Highway Administration (FHWA)-sponsored national travel survey of U.S. households; it surveyed over 150,000 households in 2009.<sup>3</sup> According to the NHTS website, “*the NHTS is the authoritative source of national data on the travel behavior of the American public.*” The NHTS includes questions about trip frequency, distance, travel time, and modes of transportation, including walking and bicycling. Survey data from previous years (i.e., 1995 and 2001) were also considered in this study, specifically when trends or changes over time were considered. Note that NHTS collected information from populations that were age 5 years old and older at the survey time only.

Note that the 2009 NHTS samples composed of a national sample set of about 25,000 households and separate samples from 20 Add-On areas, which added a combined total of 125,000 plus sample households to the national samples (i.e., adding 5 times more samples to the national sample size). Clearly, without the Add-On samples, the use of NHTS data for any detailed analyses (spatially or temporally) would be extremely limited.

As a participant of the 2009 NHTS Add-On program, the NYS Department of Transportation (NYSDOT) received travel data for nearly 16,200 of the state’s households. This allows NYSDOT analysts to have sufficient samples for examining their residents’ travel behaviors and to address transportation planning issues pertinent to geographic areas significantly smaller than what the NHTS data intended.

### **2.2 CENSUS DATA**

Additional information and data sources were also utilized, along with the NHTS data, in order to examine travel behavior and patterns associated with the NYS low-income population. Specific subjects included investigation on mobility of the low-income population and other travel limitations. The data set from the Census Bureau (i.e., ACS) was also used when appropriate, especially in examining the size of the low-income population.

The ACS is a survey conducted by the U.S. Census Bureau of about 3 million households annually (250 thousand per month), and is subject to the constraint that households should not be surveyed more than one time in any five-year period. Thus, the ACS is very intensive—about 20

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<sup>3</sup> U.S. Territories are not included in the NHTS sampling frame and excluded population under 5 years old.

times as big as the NHTS (3 million versus 150 thousand)—and it is repeated annually. The ACS is also, geographically, more uniform than the NHTS. Each year's ACS sample includes, on average, almost 50 households per Census Tract and almost 15 households per Block Group. Data on demographic, social, and economic characteristics for all ages of populations living in the U.S. is collected in the ACS. The ACS also collects data on commuting, i.e., the Journey to Work (JTW), including mode of transportation and travel time to work.

## 2.3 ADDITIONAL INFORMATION SOURCES

Information from the U. S. Department of Housing and Urban Development (HUD), particularly data relating to income limits, is used to frame the targeted population for this study. Income limits are set by HUD and used to determine the income eligibility of applicants for public housing. The limits are based on HUD estimates of median family income (MFI) for each fiscal year (FY). The most recent (FY2016) income limits for the HUD *Public Housing and Section 8 Programs* became effective on March 28, 2016<sup>4</sup>. As stated in the Notice issued by HUD on March 28, 2016, the most important statutory provisions relating to income limits are:

- *very low-income* is defined as 50 percent of the MFI for the area, subject to specified adjustments for areas with unusually high or low incomes relative to housing costs;
- *low-income* is defined as 80 percent of the MFI for the area, subject to adjustments for areas with unusually high or low incomes or housing costs;
- *extremely low-income* is defined as an income targeting standard in the 1998 Amendments to the Housing Act of 1937; to avoid inconsistencies with other income limits, it is defined as 60 percent of the four-person family very low-income limit, adjusted for family size, but under the Consolidated Appropriations Act, 2014, not allowed to fall below the poverty guidelines as determined by the Department of Health and Human Services;
- where the area income limit is less than the state nonmetropolitan MFI, income limits are based on the state nonmetropolitan median; and
- income limits are adjusted for family size so that larger families have higher income limits.

## 2.4 DEFINITIONS OF LOW-INCOME HOUSEHOLDS

To examine travel patterns of the low-income population properly, it is important to define what constitutes a low-income household. Three general approaches can be found in the literature for defining low-income households and they are briefly discussed below.

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<sup>4</sup> Transmittal of Fiscal Year (FY) 2016 Income Limits for the Public Housing and Section 8 Programs, Notice PDR-2016-02, issued March 28, 2016, <https://www.huduser.gov/portal/datasets/il/il16/HUD-sec8-FY16.pdf>.

### 2.4.1 Simple Cutoff Value or Category

The use of a simple cutoff value, which defines a low-income household as one with income below a pre-determined cutoff dollar amount, is one of the most common approaches seen in the literature. This method is straightforward, and thus easy to apply. In most cases, household incomes are categorized into several buckets (ranges of income level), with the lowest one being classified as the “low-income” group. For example, Pucher and Renne used a household income of \$20,000 as the cutoff value to define low-income households in their 2003 paper regarding urban travel based on the 2001 NHTS data<sup>5</sup>. A 2012 FHWA Profile, entitled *Travel Profile of the United States*<sup>6</sup>, used \$25,000 as its cutoff value for the lowest household income category using 2009 NHTS data. In an issue-report compiled by the Trust for America’s Health (TFAH) and released by the Robert Wood Johnson Foundation in July 2011, entitled *F as in Fat: How Obesity Threatens America’s Future*<sup>7</sup>, the authors applied \$15,000 as the cutoff for household income in the lowest category. This cutoff value was subsequently raised to \$25,000 in the TFAH-prepared issue-report for 2013.

### 2.4.2 Census Bureau Poverty Threshold

The Census Bureau reports income and poverty estimates from several major national household surveys and programs, including the ACS, Survey of Income and Program Participation, Small Area Income and Poverty Estimation Program, Census 2000 long form, and the Annual Social and Economic Supplement to the Current Population Survey. According to information posted on the Census’ “The History of the Official Poverty Measure” website<sup>8</sup>, the current official poverty measure was developed in the mid-1960s when President Lyndon Johnson declared a “war on poverty.” Census publishes the official poverty thresholds annually (in dollars), and each annual set is updated for inflation using the Consumer Price Index for All Urban Consumers (CPI-U) published by the Bureau of Labor Statistics. Although the poverty thresholds vary by family size and number of children, the same thresholds are applied throughout the U.S. The official Census poverty thresholds do not take into consideration any geographic differences in the cost of living. However, many researchers used the Census poverty thresholds to define low-income households or persons in their studies, including reports from various public and private agencies (e.g., Working Poor Families Project<sup>9</sup>, National Center for

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<sup>5</sup> John Pucher and John L. Renne, “Socioeconomics of Urban Travel: Evidence from the 2001 NHTS,” *Transportation Quarterly*, Vol. 57, No. 3, Summer 2003 (49-77).

<sup>6</sup> *Travel Profile of the United States*, 2012, [http://nhts.ornl.gov/2009/pub/profile\\_2012.pdf](http://nhts.ornl.gov/2009/pub/profile_2012.pdf).

<sup>7</sup> *F as in Fat: How Obesity Threatens America’s Future*, July 2012, <http://www.tfah.org/assets/files/TFAH2011FasInFat10.pdf>.

<sup>8</sup> The History of the Official Poverty Measure, U.S. Census Bureau, <http://www.census.gov/topics/income-poverty/poverty/about/history-of-the-poverty-measure.html>, accessed November 2016.

<sup>9</sup> Roberts, B., D. Povich, and M. Mather, “Low-Income Working Families: The Growing Economic Gap,” *Policy Brief* Winter 2012-2013, [http://www.workingpoorfamilies.org/wp-content/uploads/2013/01/Winter-2012\\_2013-WPPF-Data-Brief.pdf](http://www.workingpoorfamilies.org/wp-content/uploads/2013/01/Winter-2012_2013-WPPF-Data-Brief.pdf).

Children in Poverty<sup>10</sup>). For the official Census poverty thresholds for 2009, see Table B-2 in Appendix B.

### **2.4.3 HUD Very-Low-Income**

As discussed previously in Section 2.3 of this report, HUD's income limits were set and used to determine the income eligibility of applicants for public housing. To serve that purpose, these limits are defined by a MFI-based measure, which varies by family size and their geographical area. By using this method, differences in housing markets and costs of varying regions can be accounted for in HUD's income limits. Clearly, geographical difference is an important factor that needs to be considered, so that very-low-income households among NYS residents can be accurately identified and their travel behaviors can be properly examined.

As an example, Table B-3 in Appendix B provides a partial list of HUD's FY2009 very-low income limits for NYS which shows the very-low income limits for Metropolitan Statistical Areas (MSA) and several counties in NYS. Similarly, HUD's 2009 limits were selected in order to better align with the 2009 NHTS data used in this study. The highlighted rows in Table B-3 show two counties with the highest and the lowest very-low income limits within the NYS, e.g., Westchester County (shaded in light green) and Allegany County (highlighted in yellow), respectively. Note that, by HUD definitions, the same income limits could be applied to multiple counties/regions. Using information shown in Table B-3 as the example, several NYS counties share the same set of lowest very-low income limits, although their MFI values are slightly varied. As a reference, in NYS, the county with the highest MFI in 2009 is Westchester County (\$105,300) and the lowest MFI during the same year is St. Lawrence County (\$49,600).

## **2.5 COMPARISON OF CENSUS POVERTY THRESHOLDS AND HUD'S VERY-LOW INCOME LIMITS**

The national poverty level based on the Census definition is clearly lower than both sets of HUD-defined limits for NYS. This is certainly expected given the high cost of living and housing market in NYS, especially in the NYC area, as compared to the nation in general. For example, a family of four in 2009 would have a Census poverty threshold of \$21,954, while the HUD very-low income level for the NYS lowest-MFI county (St. Lawrence) is \$27,450–25%, which is higher than the Census amount. On the other hand, the HUD very-low income level for a family of four living in the highest-MFI county of NYS (Westchester) is \$52,650, which is about 140% higher than the Census defined poverty threshold. Certainly, many families in NYS would not be identified as very-low income if the Census definitions were applied. For an

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<sup>10</sup> United States Demographics of Low-Income Children, National Center for Children in Poverty, [http://www.nccp.org/profiles/US\\_profile\\_6.html](http://www.nccp.org/profiles/US_profile_6.html), accessed November 2016.

illustration of the differences in income level by family size using national data from the Census weighted-average poverty thresholds and the NYS-specific data for very-low income limits from HUD for the highest and the lowest counties, see Figure B-1 in Appendix B.

In conclusion, the HUD-defined very-low income limits are considered more realistic in reflecting the cost of living and housing markets in NYS. Explicitly, HUD very-low income limits were used to frame the scope of this study, which is to examine NYS low-income residents' travel behaviors and associated characteristics using the 2009 NHTS data. Similarly, HUD-defined very-low income limits are also applied to identify equivalent low-income households from outside of NYS (i.e., households from the Rest of U.S.) for all comparison purposes.

## **2.6 CURRENT STUDY AND ANALYSIS FOCUS**

### **2.6.1 Geographical Region Considerations in Data Analysis**

Typically, when sample size permits, statistics generated from analyses conducted under this study are presented by major geographical regions in the NYS. Specifically, these areas might include:

- ***New York City (NYC)*** – which includes five counties/boroughs: Manhattan/New York County, Kings County, Queens County, Richmond County, and Bronx County;
  - ***Manhattan*** – includes New York County only;
  - ***Rest of New York City*** – consists of the other four boroughs of NYC excluding Manhattan;
- ***New York Metropolitan Transportation Council (NYMTC)*** – includes the aforementioned five boroughs of NYC, plus Nassau, Suffolk, Putnam, Rockland, and Westchester counties;
- ***Rest of NYS*** – includes all areas outside the NYMTC as a whole. When possible, this could be further divided into:
  - ***Other Urban Areas (excluding NYMTC)*** – includes all urban areas in NYS other than NYMTC,
  - ***Non-Urban Areas*** – includes all non-urban areas in NYS,
- ***NYS Statewide*** – this is the same as NYS, which consists of all areas in the NYS as a whole.

The ***Rest of United States (Rest of U.S.)*** is used as a combined geographic region when comparing behaviors from those who lived elsewhere in the United States (i.e., outside the NYS).

## 2.6.2 Scope of Population and Households

To be consistent with a similar previous study conducted using 2001 NHTS data, this study focuses on travel behaviors of households that fall below the HUD-defined very-low income limits. The rationale of applying HUD's "very-low income" limits to classify the targeted low income population in NYS, instead of using HUD's "low income" limits, was mainly because the use of HUD's low income limits would classify nearly 45% of all NYS households into the "low income" group in 2009 (Figure 2-1). On the other hand, with HUD's very-low income limits, less than 30% of NYS households are categorized into the targeted study group. Consequently, using the HUD very-low income limits as the cutoff for "low income" in this study allows for a better focus on the travel behaviors and mobility limitations of the most underprivileged NYS population.

Hereafter in this report, **both terms ("low-income" and "very-low income") refer to the same study population, i.e., those with a household income below the HUD-defined, area-specific, very-low income limits.** Moreover, in this study, people from these low-income households are considered to be living in poverty. For a reference, HUD's very-low income limits used in this study are provided by region of residence and listed in Appendix Tables B-1A, B-1B, and B-1C of this report. A look at persons and households by region for very-low and other income level is found in Appendix Tables B-2A, B-2B, and B-2C.

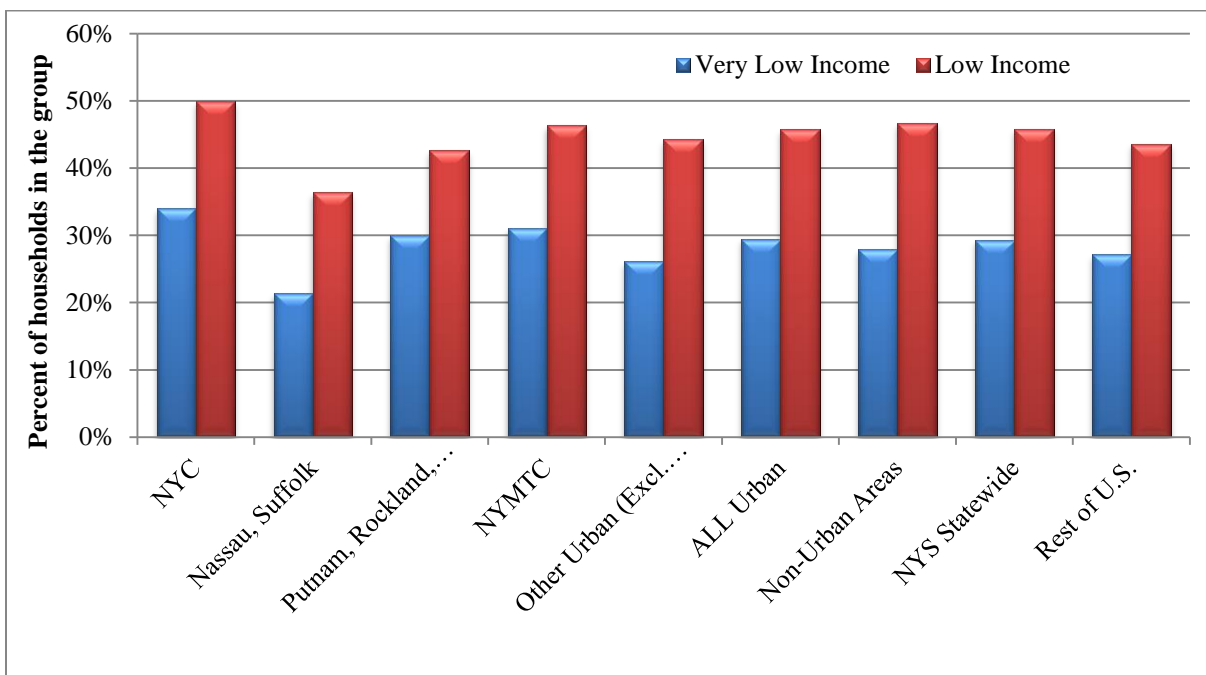


Figure 2-1. Percent of households in HUD-defined very-low income vs. low income groups (2009 NHTS)



### 3. CHARACTERISTICS OF THE NYS LOW-INCOME POPULATION

#### 3.1 OVERVIEW

Using NHTS data from the three survey years (1995, 2001, and 2009), Figure 3-1 shows that NYS residents have a higher rate of being in a very-low income household than residents outside of NYS. Specifically, more than one in four NYS residents lived in poverty, about 4-6% higher over the three NHTS years, when compared to residents from the Rest of U.S. These regional differences are all statistically significant.<sup>11</sup>

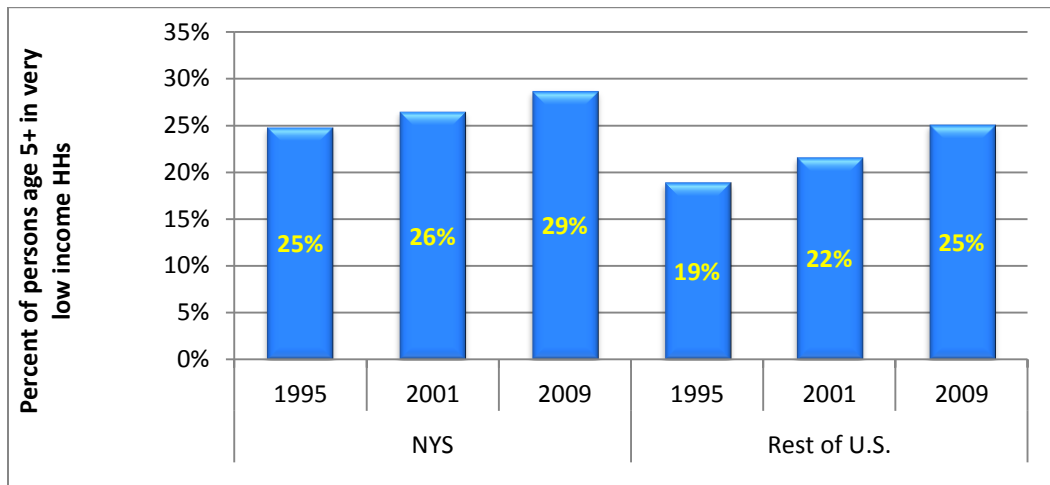


Figure 3-1. Share of population age 5 year and older in very-low income households (NHTS data).

Similarly, Figure 3-2 presents the corresponding shares of very-low income households. While 32% of NYS households fell under the very-low income limits in 2009, only about 23% of households located outside of NYS are in the same income category. This significant regional difference in shares of very-low income households can also be observed in previous NHTS years (i.e., 1995 and 2001). Both Figure 3-1 and Figure 3-2 show an increasing trend in poverty rates over the period from 2001 to 2009, regardless of where the population resided.

<sup>11</sup> The “statistical significance” referenced throughout this report were all based on a 95% significance level, unless otherwise specified.



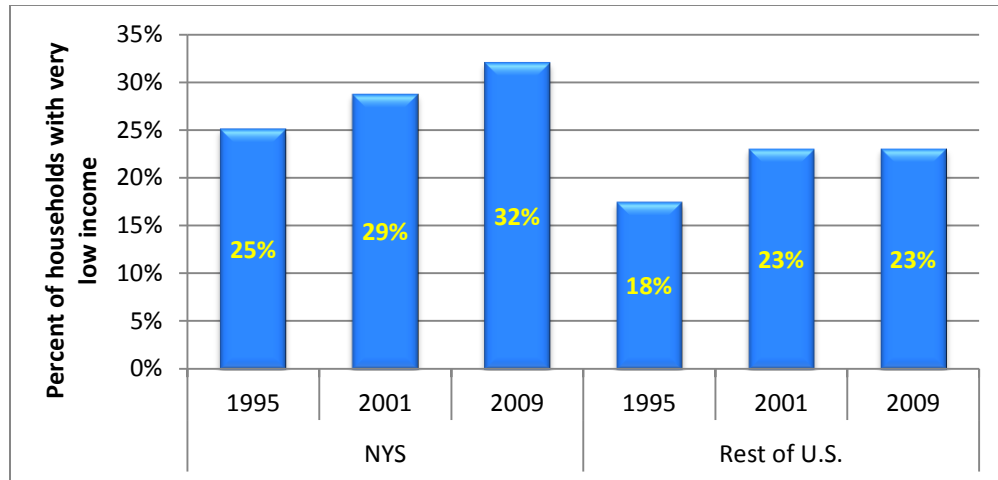


Figure 3-2. Shares of households with very-low income status (NHTS data)

### 3.2 GEOGRAPHIC DISTRIBUTION OF LOW INCOME NYS HOUSEHOLDS

Because of sampling limitations, NHTS samples were not sufficient to reflect shares of very-low income households properly for all counties. Using the 5-year ACS data for 2008-2012<sup>12</sup>, Figure 3-3 displays the percent of population that fell below the poverty level in each NYS county. For this map, counties with orange and red colors are counties with more than 20% of its population being in the poverty level. Furthermore, because poverty level was derived based on MFI, the patterns shown in Figure 3-3 and Figure 1-1 are similar. (Note that different colors were used to distinguish between MFI and poverty rate.) Typically, a higher MFI area is more likely to have a lower poverty rate. That is, Bronx and Kings are the two counties with the highest poverty rates in NYS (Figure 3-3), and in terms of MFI, they are the counties with the lowest median incomes (Figure 1-1).

<sup>12</sup> American Community Survey (ACS) 2014, U.S. Census Bureau website accessed at <http://www.census.gov/acs/www/>, accessed in November 2016.



Table 3-1 for selected NYS areas, as well as the area outside NYS (i.e., in the Rest of U.S.). Clearly, NYC (i.e., combined Manhattan and the “Rest of NYC” areas) has a higher geographical concentration of very-low income households than areas outside of NYC. Note that both Bronx and Kings mentioned above are included under the “Rest of NYC” area, which clearly contributed to the high percent share of very-low income households for that region as seen in

Table 3-1. Nearly 44% of all residents in the Rest of NYC area resided in very-low income households during 2009. Nassau and Suffolk, on the other hand, are counties with the lowest share of population in poverty (shown in Figure 3-3). Thus, only about 21% of the population from this area was classified as very-low income in 2009.

**Table 3-1. Very-low Income Households in NYS by areas (NHTS data)**

<b>Resident location</b>	<b>2009</b>		<b>2001</b>		<b>1995</b>	
	Population in very-low income households	Percent population in very-low income*	Population in very-low income households	Percent population in very-low income*	Population in very-low income households	Percent population in very-low income*
Manhattan	360,337	24.9%	335,804	26.7%	353,182	30.8%
Rest of NYC	2,548,724	43.7%	2,190,996	39.5%	1,617,951	37.3%
Nassau, Suffolk	523,147	20.9%	346,927	15.2%	334,087	17.2%
Putnam, Rockland, Westchester	333,477	28.3%	240,798	22.3%	137,695	15.6%
Other Urban (Excludes NYMTC)	1,082,988	24.1%	753,235	19.3%	588,019	16.5%
Non-Urban Areas	392,321	24.0%	375,350	19.4%	360,898	20.0%
NYS Statewide	5,200,606	30.7%	4,243,110	26.5%	3,391,832	24.8%
Rest of U.S.	66,417,900	26.4%	48,410,575	21.6%	35,499,832	18.9%

\* Excludes households that did not report income information

For an easy comparison by region and over time, the population shares for very-low income households are charted and shown in Figure 3-4. A growing pattern of very-low income population-share over the three NHTS years can be observed for all regions, with the exception of Manhattan. Due to sample variations (i.e., relatively large standard errors), however, the growth rate was not statistically significant in most disaggregated regions.

On the other hand, the growth of very-low income share over time is significant at the geographically aggregated level, such as non-NYMTC urban areas of NYS (i.e., other urban) and NYS statewide, as well as the Rest of U.S. Furthermore, the difference in poverty rates between the NYS statewide and the Rest of U.S. was clearly influenced by NYC, in which 56% of NYS's total very-low income population (ages of 5 years and older) resided in 2009 – this percentage was calculated based on  $(360,337 + 2,548,724) / 5,200,606$  (see Table 3.1).

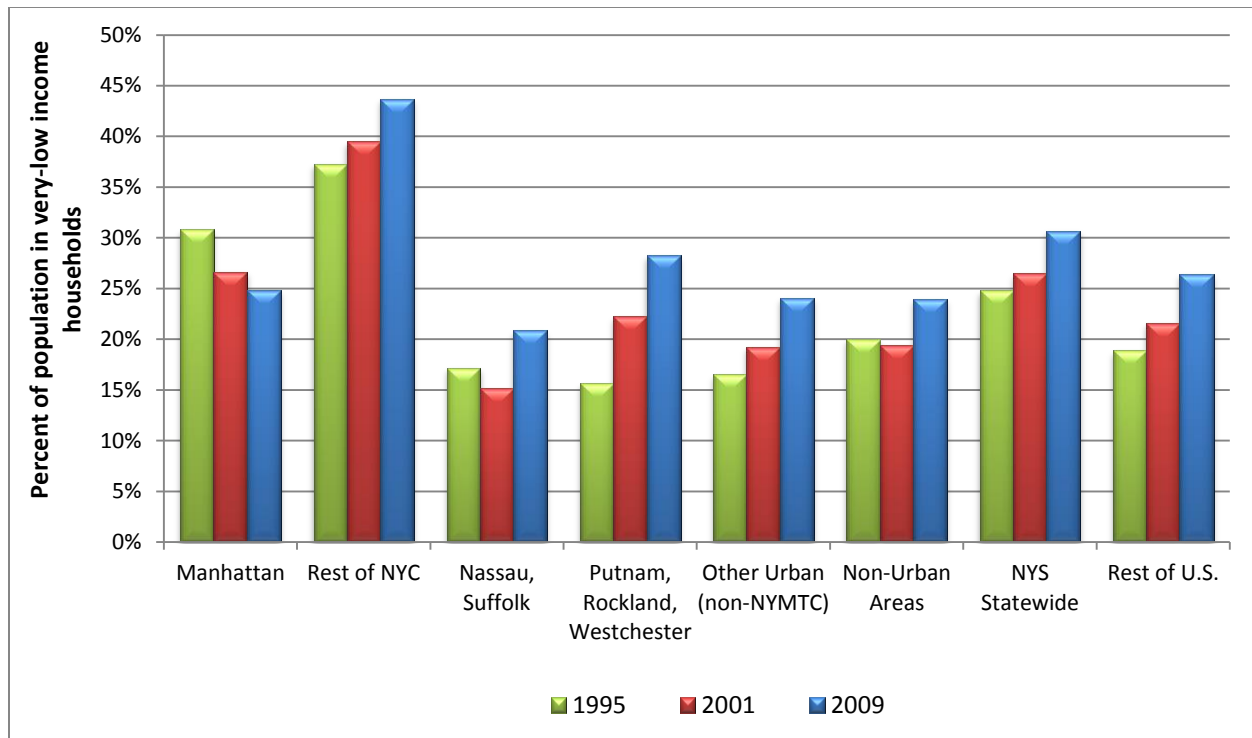


Figure 3-4. Population share of very-low income households by region (NHTS data)

### 3.3 NHTS-BASED DEMOGRAPHIC PROFILE OF NYS VERY-LOW INCOME POPULATION

#### 3.3.1 Impacts of Race

As shown in Figure 3-5, poverty rates among African-American and Hispanic populations are significantly higher than other races among NYS residents for all three NHTS years. In addition, the growth of very-low income population share is particularly visible among NYS's Hispanic populations. For NYS residents, poverty rates for Hispanics went from 44% in 1995, to 55% in 2001, then to 63% in 2009; while the poverty rates among African-American remained under 50% during the same period of time (ranging from 42%-49%) and their counterpart White residents stayed under 20%.

Outside of NYS, the Hispanic population also has a higher rate of being in a very-low income household than all other races. For instance, in 2009, the share of very-low income population was 55% among the Hispanic population residing in the Rest of U.S., while only 41% of their African-American and 19% of their White neighbors were in the same income level. Similar to NYS residents, the growth of very-low income population share is also more significant among Hispanic populations living in the Rest of U.S.

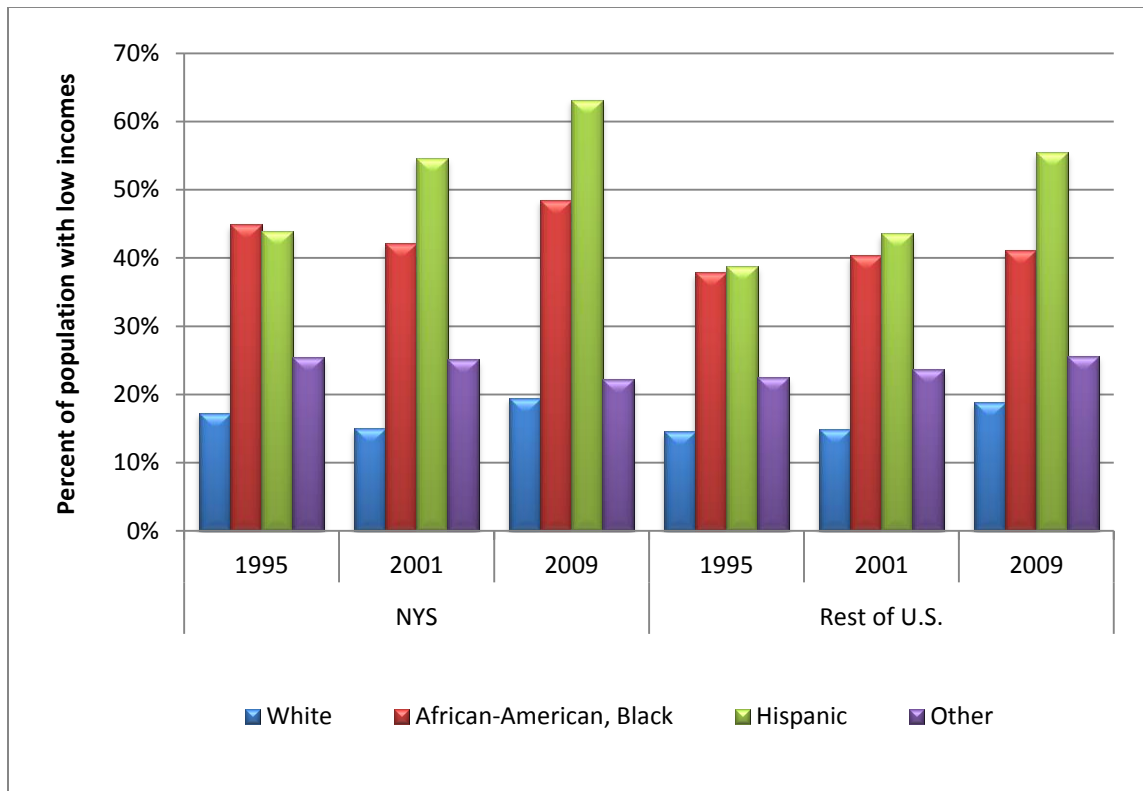
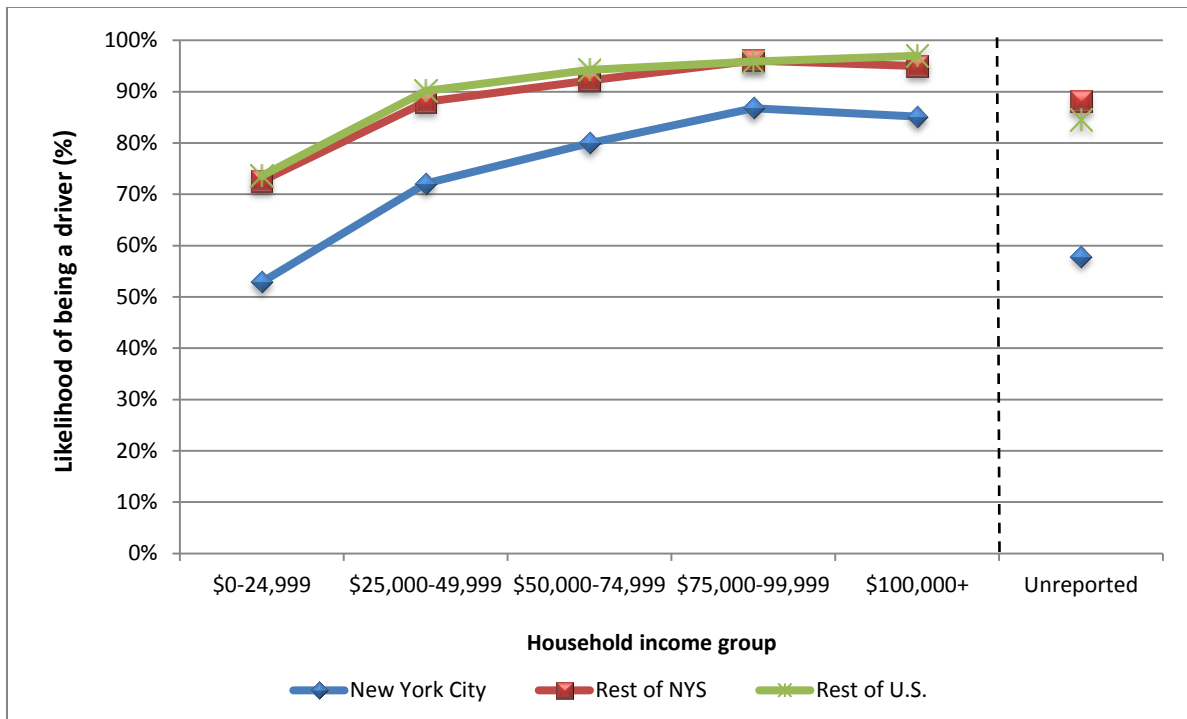


Figure 3-5. Percent of population with very-low income by race and time (NHTS)

### 3.3.2 Driver Availability

Figure 3-6 illustrates the relationship between household income level and the likelihood of being a driver by resident locations. Regardless of where a person lives, i.e., NYC, the Rest of NYS, or the Rest of U.S., the likelihood of the person being a driver increases as his/her household income level increases. Not surprisingly, the likelihood of being a driver for a NYC resident is smaller than a resident from the other two regions. This is mainly due to the intensity of public transit availability within NYC. In fact, the likelihood for residents from the Rest of NYS is very similar to those from the Rest of the U.S.

About 74% of the driving age population from the lowest income group (under \$25,000) who lived outside NYC were drivers in 2009 compared to only about 53% of their NYC counterparts. Note that the likelihood of being a driver for those who did not respond to the income question was also charted in Figure 3-6 for reference. About 58% of those non-respondent driving age persons from NYC are drivers, while nearly 85% of their counterparts living outside of NYC are drivers.

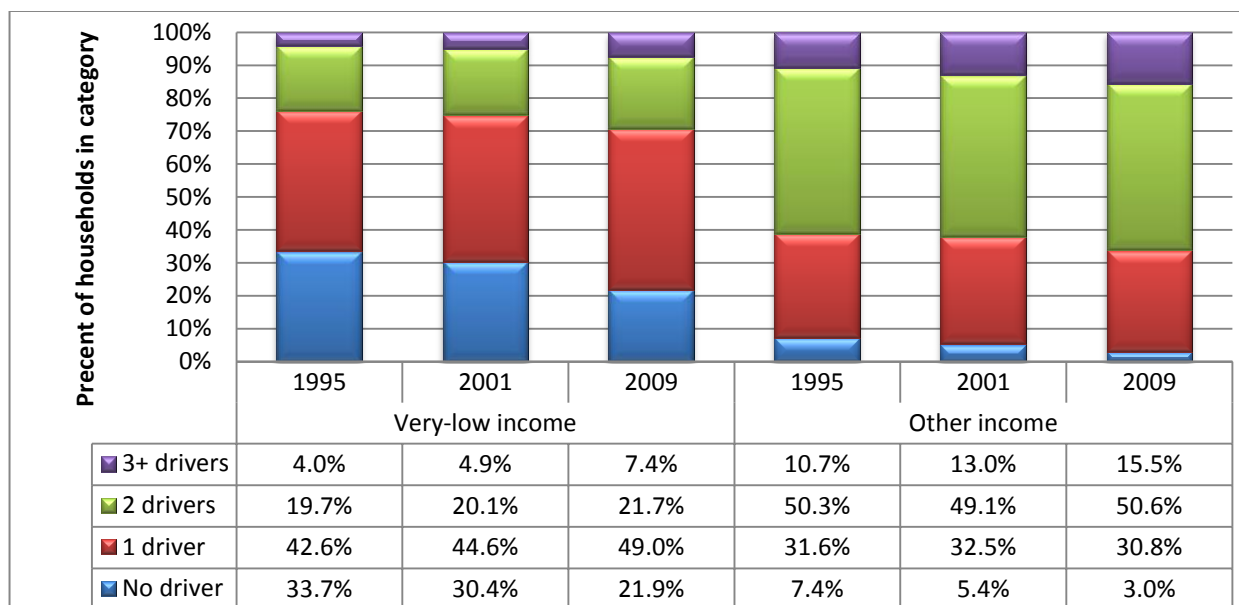


**Figure 3-6. Likelihood of being a driver by household income category (NHTS 2009 data)**

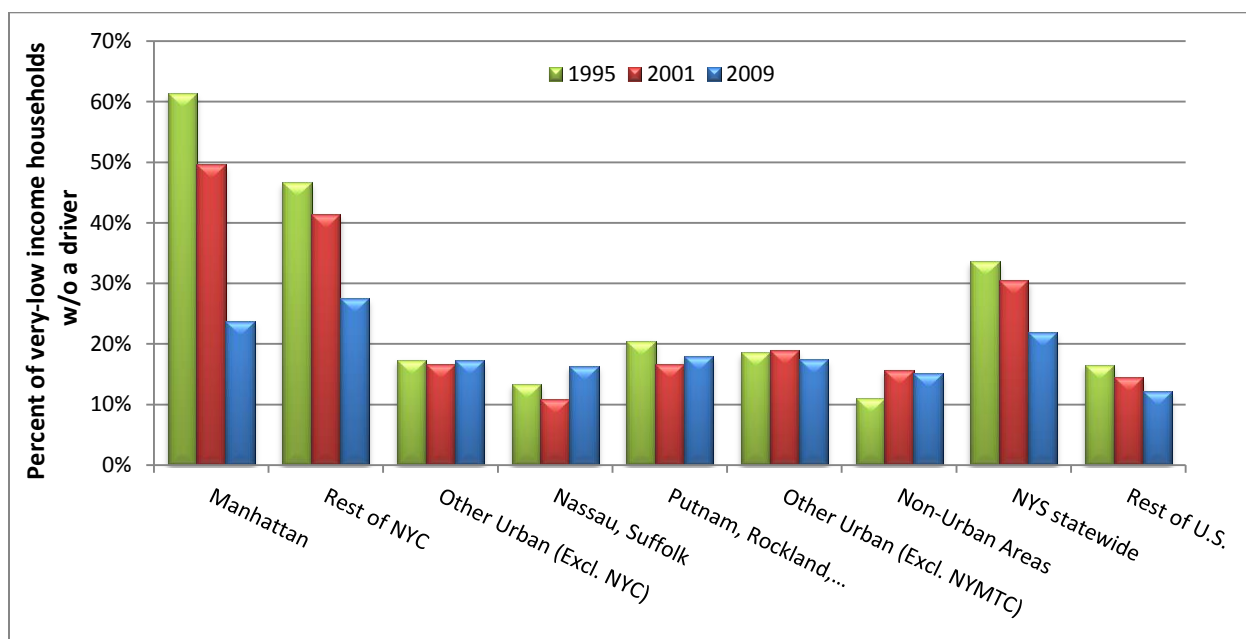
Furthermore, a very-low income household has a higher likelihood of having no drivers, as compared to other income households. As displayed in Figure 3-7, according to 2009 NHTS data, 22% of very-low income households in NYS had no drivers in their households as compared to only 3% of their counterparts from other income households. Overall, the share of zero-drivers in NYS households has seen a decrease between 2001 and 2009 – dropping from over 30% in 2001 to about 22% in 2009 (about a 28% decrease from the 2001 level) for the very-low income group. For the other income group, the zero-driver rate dropped from 5% to 3% (a 40% change) during the same period.

With respect to geographical regions, Figure 3-8 shows that the share of very-low income households without access to any drivers does vary among NYS regions. With a broad availability of public transit systems in NYC, its residents do not rely on accessibility to drivers in order to conduct daily activities. As seen in Figure 3-8, clearly the share of NYC very-low income households without a driver in the household is significantly higher, as compared to very-low income households from all other NYS regions. Figure 3-8 also shows that the share of very-low income households without a driver dramatically dropped from year 2001 (50% in Manhattan and 40% in the rest of NYC) to year 2009 (under 28%) in NYC. Outside of NYC, the shares of very-low income households without a driver in the NYS are very similar to their counterparts from the rest of U.S.



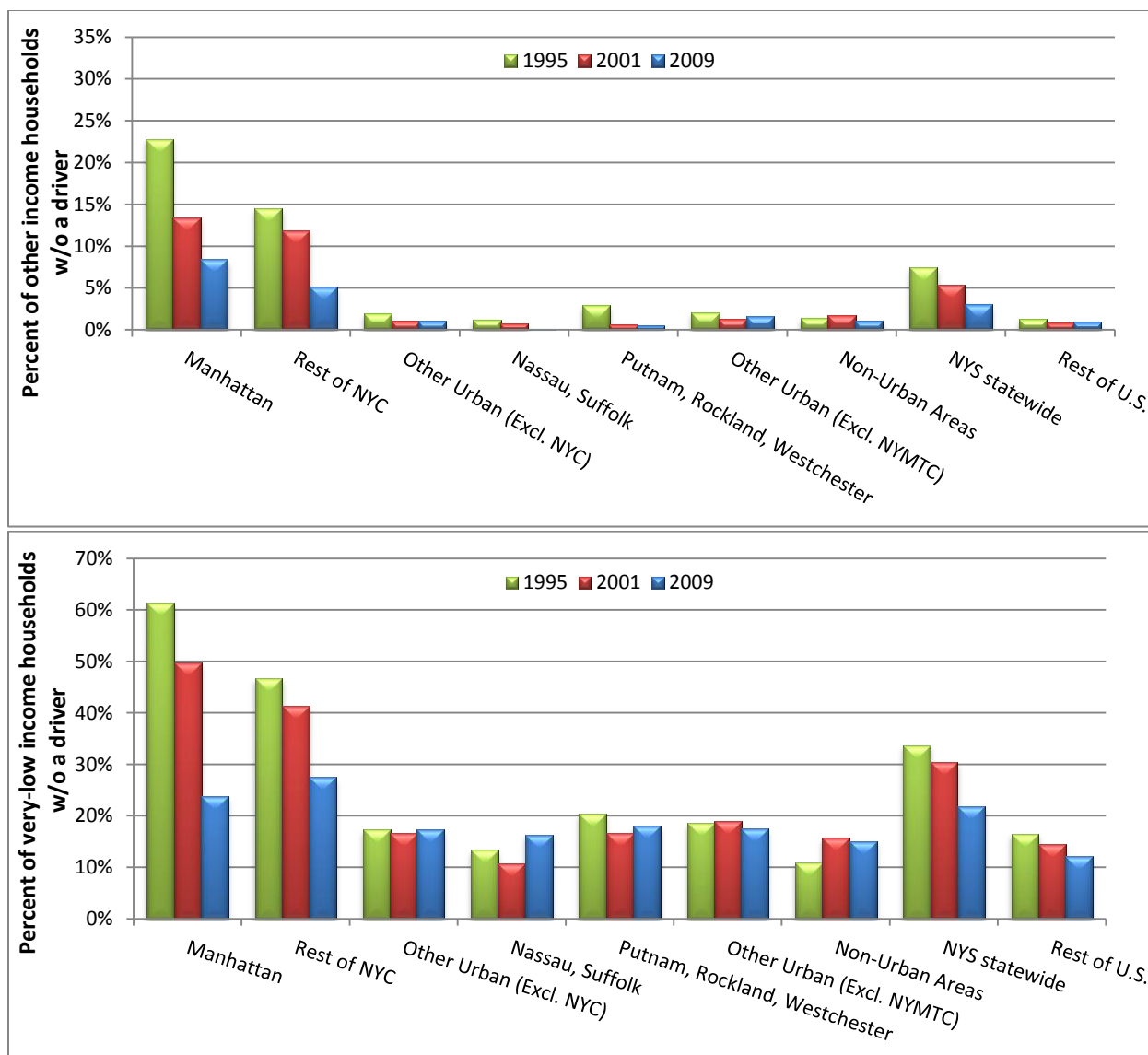


**Figure 3-7. Distribution of households by number of drivers and income status for NYS (NHTS data)**



**Figure 3-8. Percent of very-low income households without a driver by region (NHTS data)**

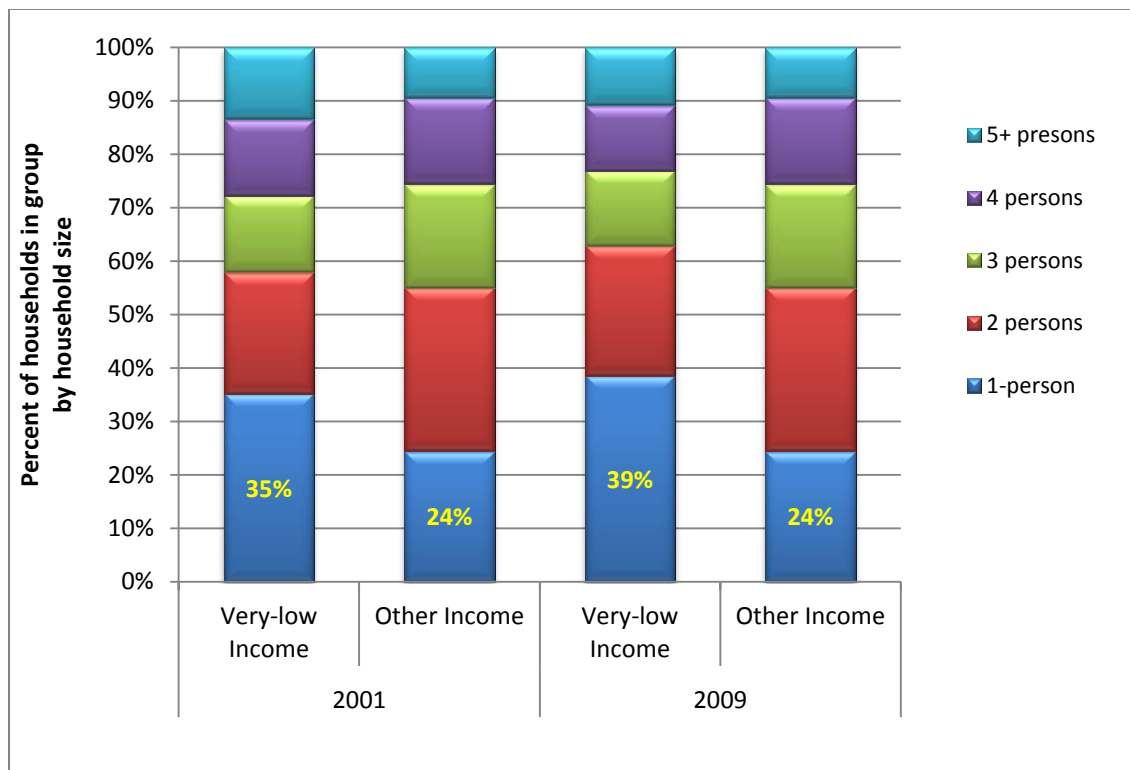
Shares of households without drivers among the other income households, on the other hand, are significantly lower in all regions, including those that lived outside of NYS. Figure 3-9 shows that in 2009 only about 5% of other income households from the rest of the NYC area have no drivers within their households (top chart), versus about 28% of their counterpart very-low income household neighbors in 2009 (bottom chart of Figure 3-9). Overall, less than 2% of the all other-income households from outside of NYC, or in the rest of the U.S., are without drivers in 2009.



**Figure 3-9. Percent of other income households (top chart) without a driver compared to very-low income households (bottom chart) by region (NHTS data)**

### 3.3.3 Household Size

Considering household size, a person from a very-low income household has a higher likelihood of living alone, when compared to his/her counterpart from a household with other levels of income. According to 2009 NHTS, nearly two in five (39%) of NYS very-low income households consist of only one person, while single-person households only account for 24% among other income households in NYS (Figure 3-10). The share of single occupant other-income households remains the same over the years from 2001 to 2009. However, there is roughly a 10% increase in the share of single occupant very-low income households, from 35% in 2001 to 39% in 2009.

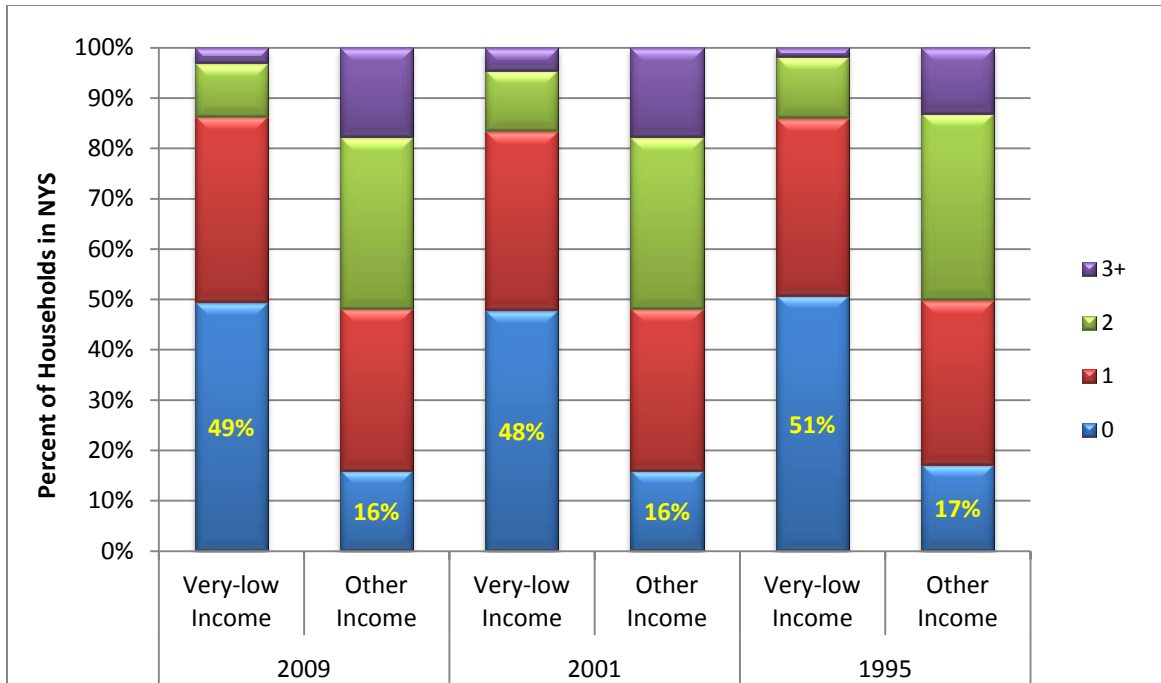


**Figure 3-10. Percent of NYS households by household size and income group**

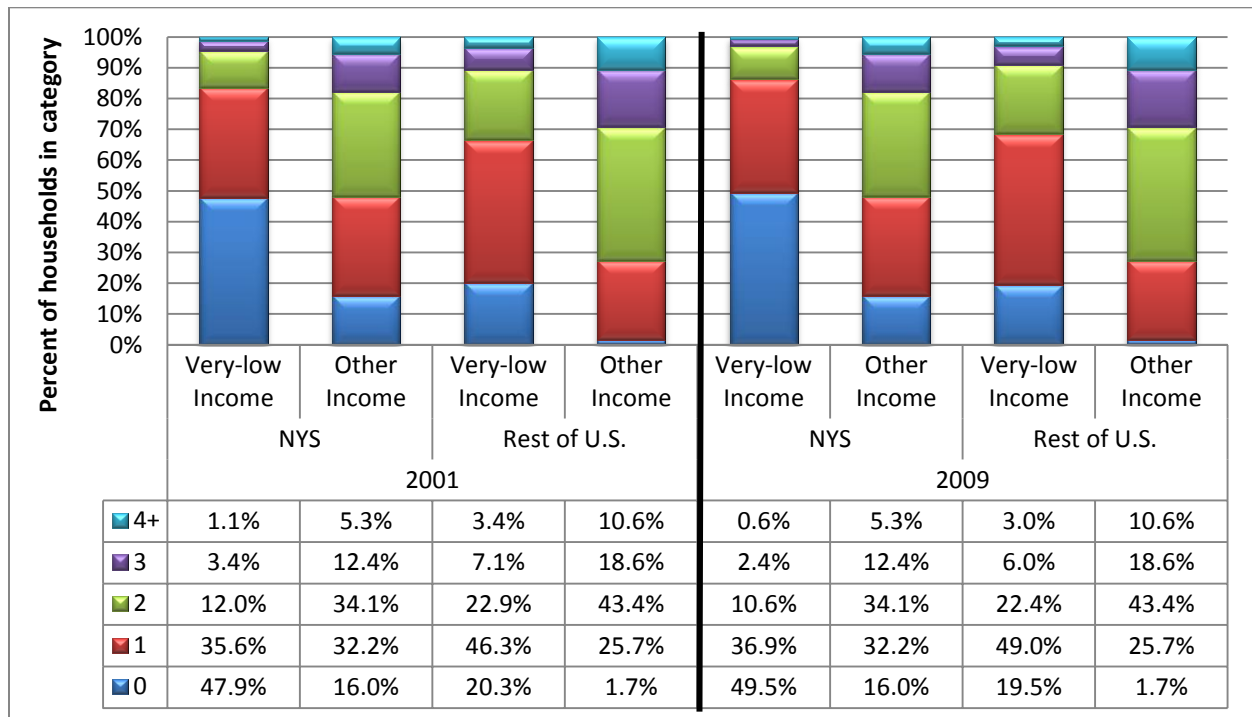
### 3.3.4 Vehicle Ownership

A similar examination on vehicle ownership also shows that the very-low income NYS households have a higher likelihood of being a zero-vehicle household than their other-income household neighbors. As seen in Figure 3-11, nearly half of the very-low income households in NYS owned zero vehicles in 2009, with a similar pattern in 2001 and 1995. On the other hand, only about one in six of their other income neighbors were zero-vehicle households. Clearly visible from Figure 3-11, the changes in the shares of zero-vehicle households across NHTS years are not significant.

Income status also affects vehicle ownership for households residing in the rest of U.S., as displayed in Figure 3-12. Nearly 20% of very-low income households outside of NYS owned zero vehicles, as compared to less than 2% of their other income household neighbors. Note that, as pointed out previously, the widely accessible public transit systems in NYC lessen driving needs, thus increasing the likelihood of not owning a vehicle among NYC households. With over half of the total NYS population living in the NYC area, its impact to the overall zero-vehicle household share in NYS is evident. As shown in Figure 3-12, changes in the shares of zero-vehicle households between years 2001 and 2009 are not significant.



**Figure 3-11. Distributions of NYS households by vehicle ownership and income status**



**Figure 3-12. Distribution comparison of NYS to the rest of the U.S. households by vehicle ownership and income status (NHTS)**

Furthermore, based on 2009 NHTS data, Figure 3-13 illustrates the relationship between the likelihood of being a zero-vehicle household and household income category. The likelihood of being a zero-vehicle household declined as the household income increases, which is true for

households in all regions. Clearly, the likelihood of being a zero-vehicle household in NYC is significantly higher than areas outside of NYC, regardless of income level for household—a well-known fact that was pointed out above and in other related studies<sup>13</sup>. As Figure 3-13 shows, shares of zero-vehicle households with income less than \$25,000 are significantly higher than those with income of \$25,000 or more, regardless of where the household resides. Note that, among households that did not report their income level, about 60% of those that lived in NYC did not own a vehicle in 2009, while it was only about 12% of those that lived outside the NYC area.

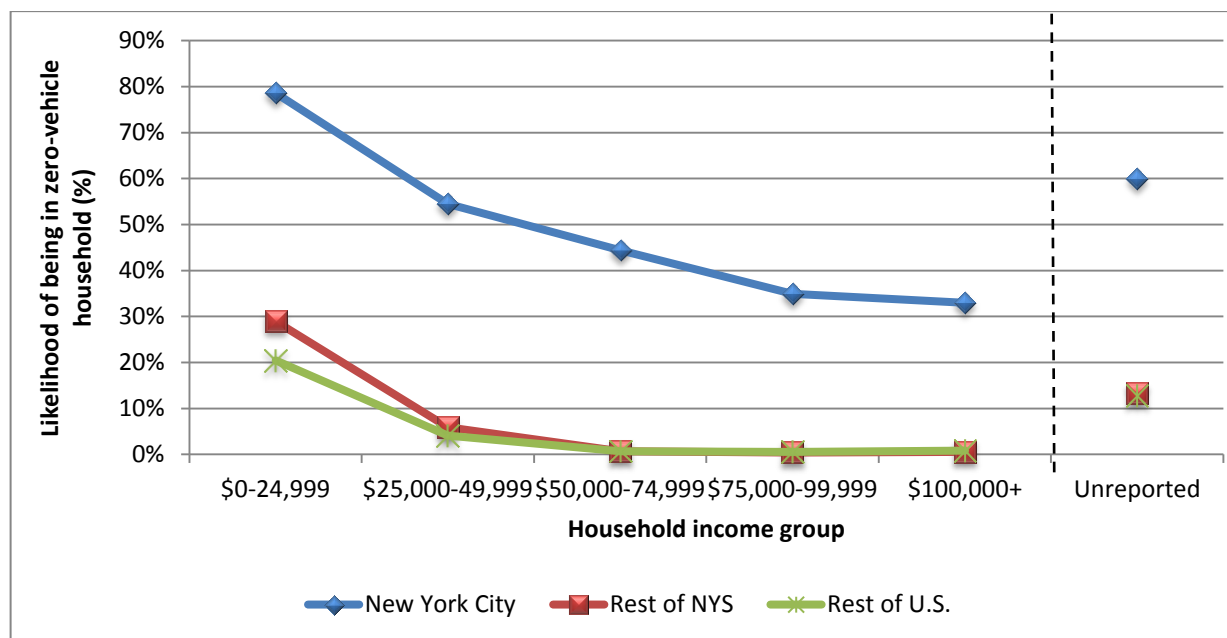
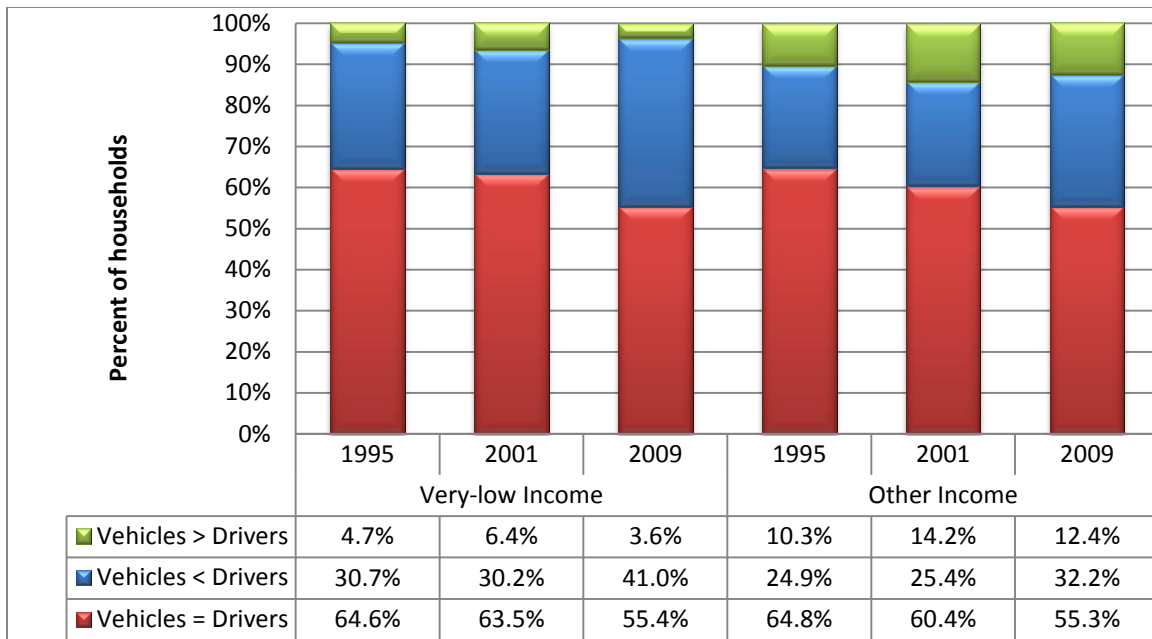


Figure 3-13. Likelihood of being a zero-vehicle household by income category and region (2009 NHTS data)

### 3.3.5 Relationship between Number of Drivers and Vehicle Ownership

When considering the number of drivers in a household against the number of vehicles owned, the majority of NYS's households have equal numbers of drivers and vehicles, regardless of the income status they have (see Figure 3-14). In 2009, 55% of NYS households in both income categories had the same number of drivers as the number of vehicles they owned. However, as displayed in Figure 3-14, very-low income NYS households are less likely (under 4%) to own more vehicles than the number of drivers of corresponding households. Over 12% of their other income household neighbors, on the other hand, owned more vehicles than the number of drivers in respective households during 2009. This is consistent with what was identified in Section 3.3.4; typically, a very-low income household owns fewer vehicles than its other income neighbor does.

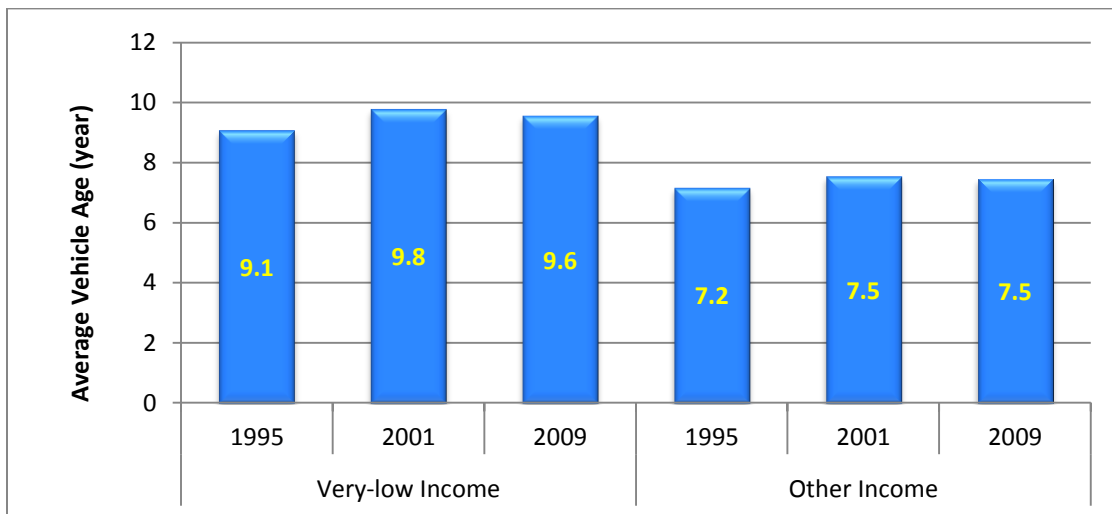
<sup>13</sup> Cite other NYS special population reports here...



**Figure 3-14. Distribution of NYS households by number of vehicle with respect to number of drivers, and income status (NHTS data)**

### 3.3.6 Vehicle Age

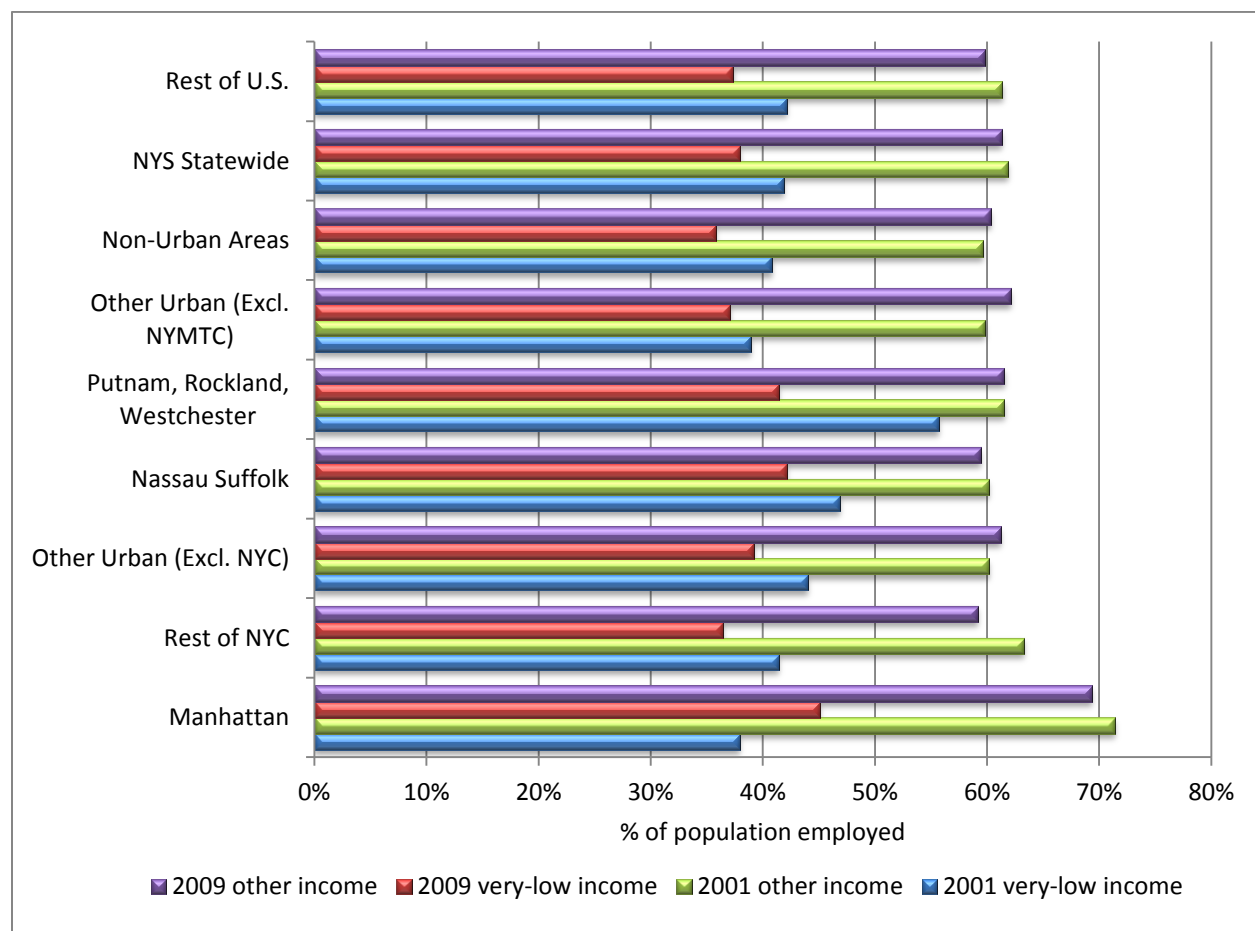
On average, vehicles owned by a typical very-low income household in NYS are about two-years older than vehicles owned by a household in the other income levels for 2009. Figure 3-15 shows that vehicles owned by a very-low income household in NYS for 2009, on average, was 9.6-years old, as compared to an average of 7.5-years old for a vehicle owned by a typical other income NYS household in the same year. The changes in average vehicle age over the three NHTS years were not significant in either household-income categories.



**Figure 3-15. Average NYS resident's vehicle age by income status over the NHTS years**

### 3.3.7 Worker Status

People from a very-low income household have a lower likelihood of being employed<sup>14</sup>, as compared to their counterparts from other income households, regardless of where they lived. As seen in Figure 3-16, where red and blue bars represent very-low income households, and purple and green represent other income households, the differences between the two income-groups' percentages of population being employed are significant. Using the Rest of NYC (i.e., outside Manhattan) as an example, while less than 37% of the population from very-low-income households lived in this region in 2009 were workers, nearly 60% of their other income household neighbors were employed during the same time. As a whole, shares of the employed population for NYS are similar to those of the Rest of U.S. No significant differences in the rates of being a worker for other income persons between 2001 and 2009 are observed in Figure 3-16, although there is a slight decline in most regions among the very-low income populations over the eight years.



**Figure 3-16. Percent of population employed by income status (2001 and 2009 NHTS)**

<sup>14</sup> “being employed” represents workers with full-time, part-time, and multiple jobs.

### 3.3.8 Life Cycle

Table 3-2 shows that the share of very-low income households in NYS was increased from 29% in 2001 to 32% in 2009. As shown in Table 3-2, households with two or more adults and no children (i.e., “2+ Adults, no children” category) accounted for a significantly higher share (around a quarter of the households) among those with other income in all three NHTS years versus only 10-13% for their counterparts with very-low income. On the other hand, over one in five (21%) very-low income NYS households were retired single-occupant households (i.e., “1 Adult, Retired, No children” category) in 2009, while the share was only 6% for their counterpart other income households for the same year.

**Table 3-2. New York State household distribution by life-cycle category and income status in 2009, 2001, and 1995 (NHTS data)**

Life Cycle Category of Households in NYS	2009 NHTS		2001 NHTS		1995 NPTS	
	Very-low income	Other income	Very-low income	Other income	Very-low income	Other income
	2,090,123	4,422,623	1,855,134	4,589,699	1,242,461	3,693,820
	32%	68%	29%	71%	25%	75%
1 Adult, No Children	17.5%	18.8%	16.3%	18.1%	17.6%	18.7%
2+ Adults, No Children	<b>10.2%</b>	<b>24.3%</b>	<b>12.9%</b>	<b>23.0%</b>	<b>13.0%</b>	<b>25.7%</b>
1 Adult, Youngest 0-5	<b>1.8%</b>	<b>0.5%</b>	<b>6.6%</b>	<b>0.7%</b>	<b>9.3%</b>	<b>0.8%</b>
2+ Adults, Youngest 0-5	10.9%	9.9%	12.5%	14.8%	13.3%	16.5%
1 Adult, Youngest 6-15	<b>5.4%</b>	<b>1.2%</b>	<b>6.2%</b>	<b>2.2%</b>	<b>7.0%</b>	<b>2.4%</b>
2+ Adults, Youngest 6-15	10.5%	15.0%	9.8%	15.3%	10.6%	15.9%
1 Adult, Youngest 16-21	2.3%	1.1%	1.5%	1.0%	1.6%	0.6%
2+ Adults, Youngest 16-21	<b>3.0%</b>	<b>7.0%</b>	4.1%	5.2%	3.4%	4.1%
1 Adult, Retired, No Children	<b>21.0%</b>	<b>6.0%</b>	<b>18.8%</b>	<b>6.0%</b>	<b>14.2%</b>	<b>4.9%</b>
2+ Adults, Retired, No Children	17.3%	16.2%	11.2%	13.4%	10.1%	10.4%
Unreported			0.3%	0.3%		
ALL	100%	100%	100%	100%	100%	100%

**Note:** yellow-shaded cell indicates estimates based on small sample size. The bolded cells represent cells with statistically significant differences between the two income categories within the same year.

Instead of the ten categories used in Table 3-2, Figure 3-17 displays an aggregated four-group life-cycle distribution of NYS households. In 2009, regardless of the number of adults in a household, the combined “retired without children” category (shown in purple bars in Figure 3-17) accounts for over 38% of NYS’s very-low income households as compared to only about 22% for the other income households. Moreover, the share of “Adults without children” among the other income NYS households is about 50% higher than that of the very-low income NYS households, i.e., 43% versus 28%, respectively.



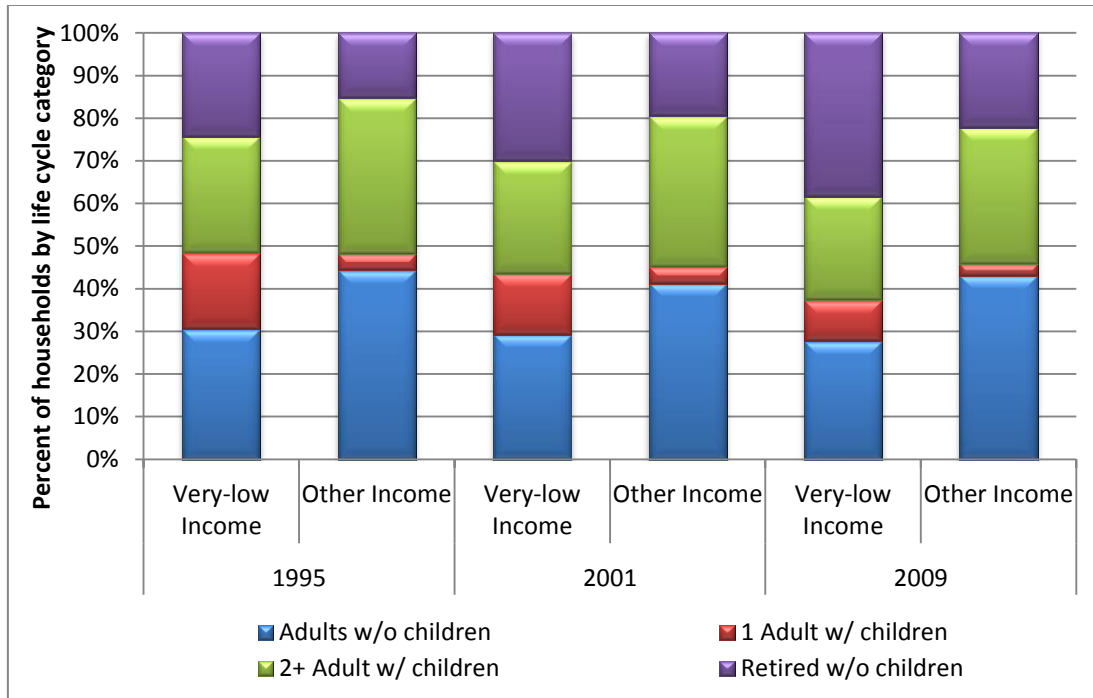


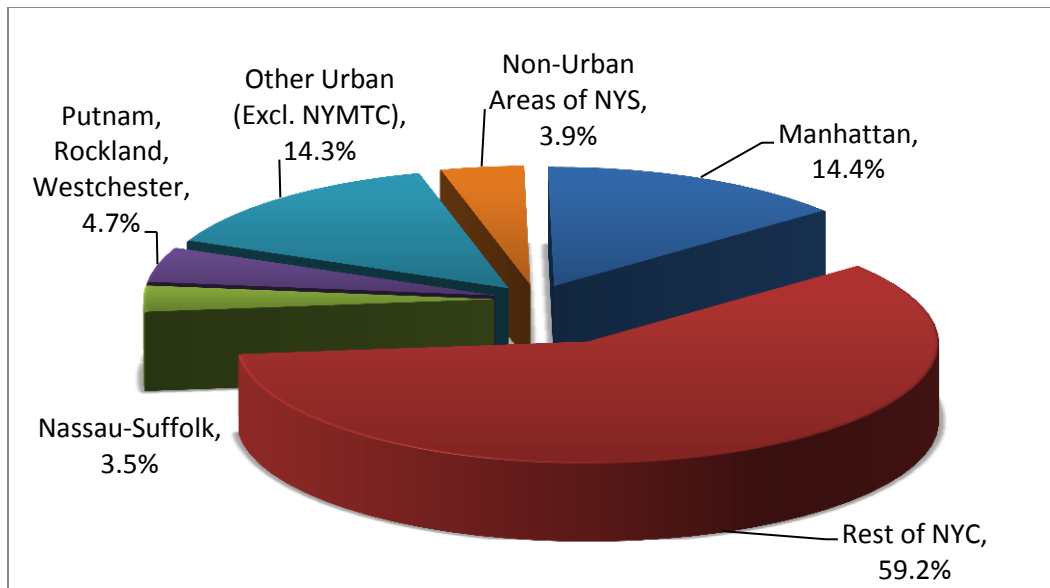
Figure 3-17. Distribution of NYS households by life cycle category (NHTS)

### 3.4 ZERO-VEHICLE VERY-LOW INCOME HOUSEHOLDS

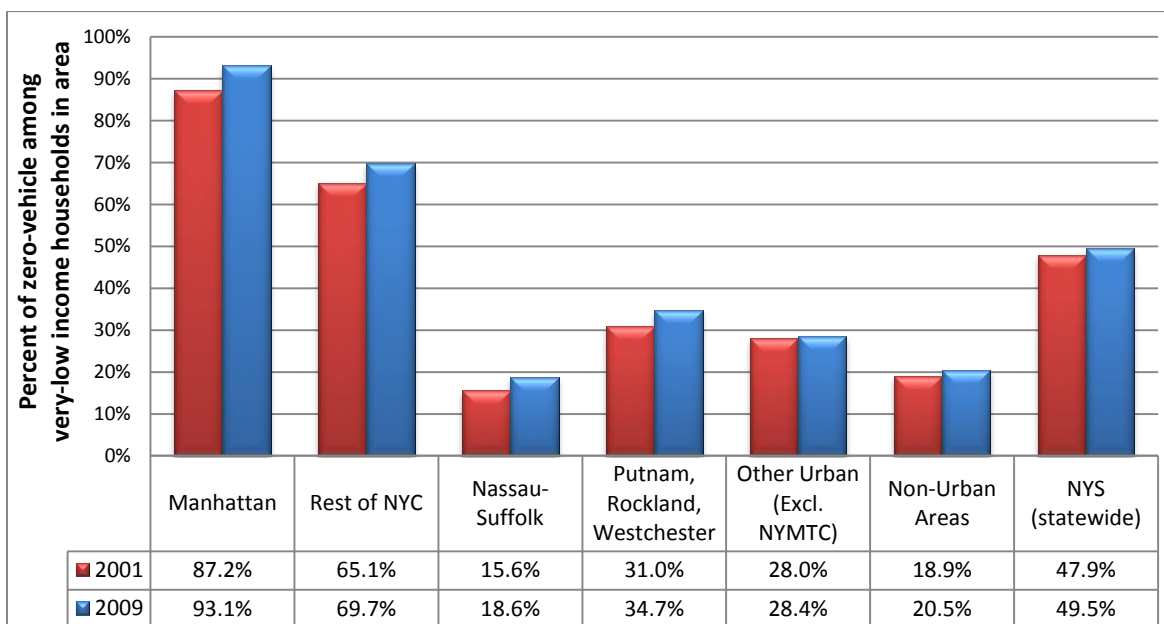
#### 3.4.1 Geographic Distribution of Zero-Vehicle Very-Low Income Households

Nearly three in five (59%) very-low income NYS households that own zero-vehicles resided outside of Manhattan but inside the five-county NYC region. As shown in Figure 3-18, about three-quarters (i.e., 59.2% + 14.4%) of NYS's very-low income households that owned no vehicles were from NYC. Considering that NYC is where nearly 60% of NYS's population resides, the heavy concentration of very-low-income-without-vehicle population in NYC might be attributed to the readily available public transit and prospective job markets in that region. Only 4% of very-low income households without any vehicles lived in rural areas of NYS during 2009.

A household without a vehicle is predominantly due to the household being unable to afford one. As mentioned previously, the widely available public transit in the NYC area certainly has an impact on vehicle ownership for its residents, especially among the very-low income households. According to 2009 NHTS data, Figure 3-19 shows that 93% of very-low income households in Manhattan owned no vehicles, while 70% of very-low income NYC households outside Manhattan were zero-vehicle households during the same year. On the other hand, only 19% of very-low-income households in Nassau/Suffolk area owned zero vehicles in 2009. There is no significant change in the shares of zero-vehicle households among very-low income households from 2001.



**Figure 3-18. Distribution of zero-vehicle very-low income households in NYS (2009 NHTS)**

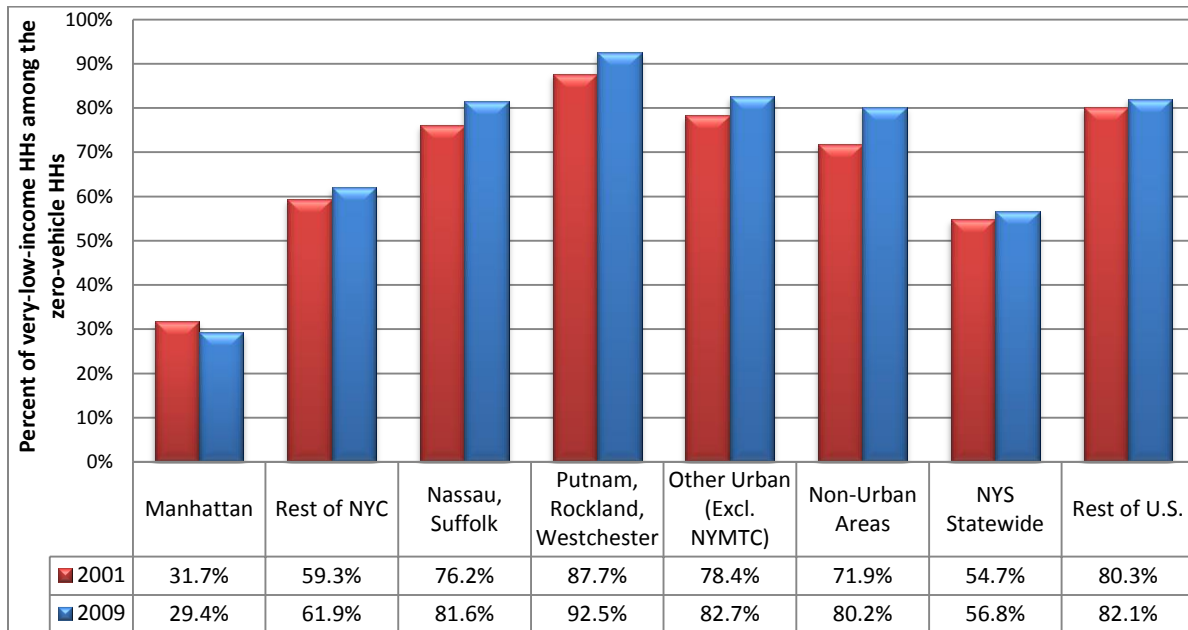


**Figure 3-19. Share of zero-vehicle households among very-low income households by region for 2001 and 2009 (NHTS data)**

### 3.4.2 Share of Very-Low Income among Households Owning Zero-Vehicles

Examining the share from another angle, less than 30% of Manhattan households that owned zero-vehicles in 2009 were indeed from a very-low income household (see Figure 3-20). This is consistent with the consensus that many residents of Manhattan choose to live without any vehicles (i.e., not because of income limitations). On the other hand, nearly 82% of zero-vehicle households from Nassau/Suffolk area, and about 93% in Putnam/Rockland/Westchester region,

belong to the very-low-income category in 2009. That is, outside of Manhattan, NHTS data clearly demonstrated the existence of an association between affordability of a vehicle and the very-low income status of a household. Note that further investigation on mobility patterns of individuals from NYS's very-low income and zero-vehicle households are discussed later in this report.



**Figure 3-20. Share of very-low income households with zero-vehicles by household region (NHTS data)**



## 4. MOBILITY OF LOW-INCOME HOUSEHOLDS

### 4.1 OVERVIEW OF LOW INCOME TRAVEL

#### 4.1.1 Impact of Income on NYS Resident's Travel

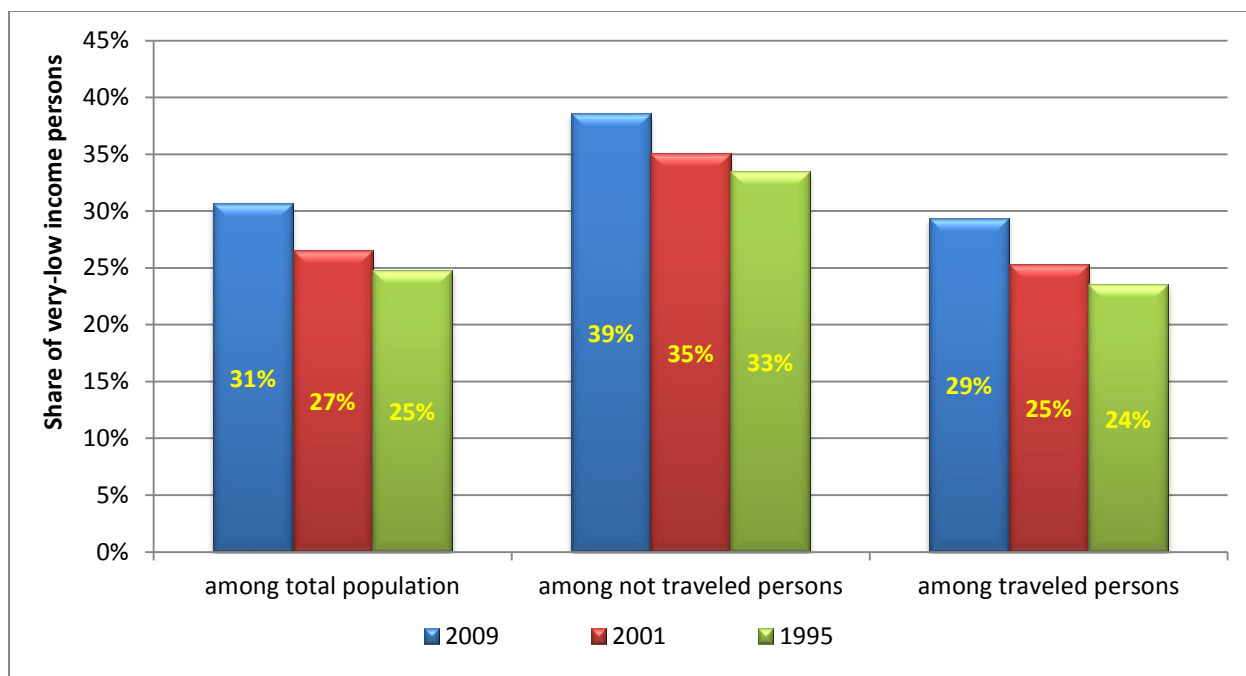
Using data collected under the NHTS, Table 4-1 summarizes the population sizes and the shares of persons who did not travel on their-assigned travel day during 1995, 2001, and 2009, by household income classifications. In 2009, about 17% of NYS residents (ages of 5 years and older) from very-low income households did not travel compared to only 12% of their counterparts from other income households. The difference between these two non-traveling-population shares is statistically significant.

Note that a similar conclusion can also be drawn from both 2001 and 1995. The NHTS data shows that a person from a very-low income household has a significantly higher likelihood of not traveling on any given day (NHTS-assigned travel day), as compared to his/her counterparts from other income households. In addition, Table 4-1 shows that changes over time, in terms of the shares of the non-traveling population in NYS, were not statistically significant.

**Table 4-1. Travel status for NYS residents by income status (2009, 2001, and 1995 NHTS data)**

<b>NYS Residents</b>	<b>2009</b>	<b>2001</b>	<b>1995</b>
<b>Total number of Persons</b>			
Very-low income	5,240,993	4,576,332	3,391,832
Other income	11,868,063	12,633,491	10,277,902
<b>Number of persons did not travel on travel day</b>			
Very-low income	896,091	804,116	597,340
Other income	1,425,899	1,486,112	1,186,178
<b>Percent of persons did not travel on travel day</b>			
Very-low income	17.1%	17.6%	17.6%
Other income	12.0%	11.8%	11.5%

Although the very-low income population merely accounted for a 31% share of all NYS residents (ages of 5 years and older) in 2009, the share of very-low income households goes up to nearly 40% for the non-traveling population only (i.e., those who did not travel on travel day). As displayed in Figure 4-1, the share of very-low income population is consistently higher (~10%) among the non-traveling group than that of traveling populations across all three NHTS years examined. Therefore, a non-traveling person is more likely to have resided in a very-low income household when compared to the rest of NYS populations.



**Figure 4-1. Share of very-low income population in NYS, by travel status on NHTS-assigned travel day (NHTS data)**

#### 4.1.2 Impact of Income on Vehicle Travel

Considering vehicle travel, Table 4-2 shows that 57% of NYS drivers from very-low income households did not drive, but not necessarily meaning all of them used POV, on their NHTS-assigned travel day during 2009. The share of drivers not driving on a given day is significantly lower (37%) for the other income households during the same year. As seen in Table 4-2, a similar pattern as stated above, also exists in 2001 and 1995. That is, a very-low income NYS driver is less likely to drive on a given day as compared to his/her counterpart other income neighbor.

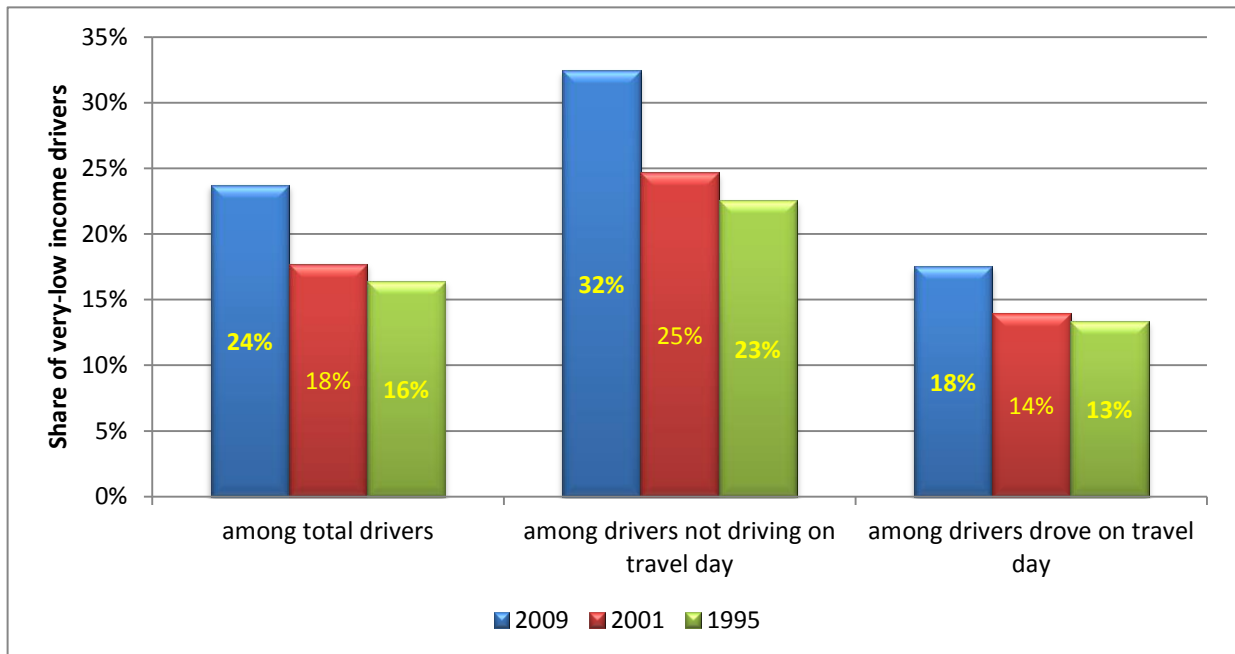
Unlike Table 4-1, where no changes over time were observed, the shares of very-low income drivers who did not drive on a travel day increased from 46% in 1995, to 49% in 2001, then to 57% in 2009 (see Table 4-2). Between 2001 and 2009, the change in shares of very-low income drivers who did not drive on a travel day is statistically significant. However, no difference in shares was visible between 2001 and 1995.

As shown in Table 4-2, the shares of drivers who did not drive on a travel day are significantly lower among other income NYS residents, as compared to those of very-low income drivers for each corresponding year (with 31% in 1995, 32% in 2001, and 37% in 2009). Similarly, the difference in shares of other income drivers who did not drive on a travel day is statistically significant between 2001 and 2009, but not between 1995 and 2001.

**Table 4-2. Travel status for NYS drivers by income status (2009, 2001, and 1995 NHTS data)**

NYS Residents	2009	2001	1995
<b>Total number of Drivers</b>			
Very-low income	2,859,924	1,833,428	1,397,895
Other income	9,186,841	8,514,340	7,107,168
<b>Number of drivers did not drive on travel day</b>			
Very-low income	1,627,778	895,106	638,765
Other income	3,390,798	2,731,085	2,193,013
<b>Percent of drivers did not drive on travel day</b>			
Very-low income	56.9%	48.8%	45.7%
Other income	36.9%	32.1%	30.9%

As displayed in Figure 4-2, a driver that did not drive on a travel day has a significantly higher likelihood of being from a very-low income household in all three NHTS years. Specifically, among drivers not driving on their assigned travel day in 2009, nearly one-third (32%) of those drivers came from a very-low-income household (Figure 4-2). The shares of drivers from a very-low income household among those who did drive on a travel day are much lower, at 13%-18% over the three NHTS years. This further confirms that income status has an impact on the mobility of NYS residents. Explicitly, NHTS data shows that mobility for people from very-low income households are more limited than that of their counterparts from other income households, regardless of how mobility was measured (i.e., focusing on drivers only or on all residents in NYS). Additional measures (e.g., trip rates and trip length) on mobility, income status and other travel characteristics are discussed in the rest of this Section.



**Figure 4-2. Share of very-low-income NYS residents drivers by travel status on NHTS-assigned travel day (NHTS data)**

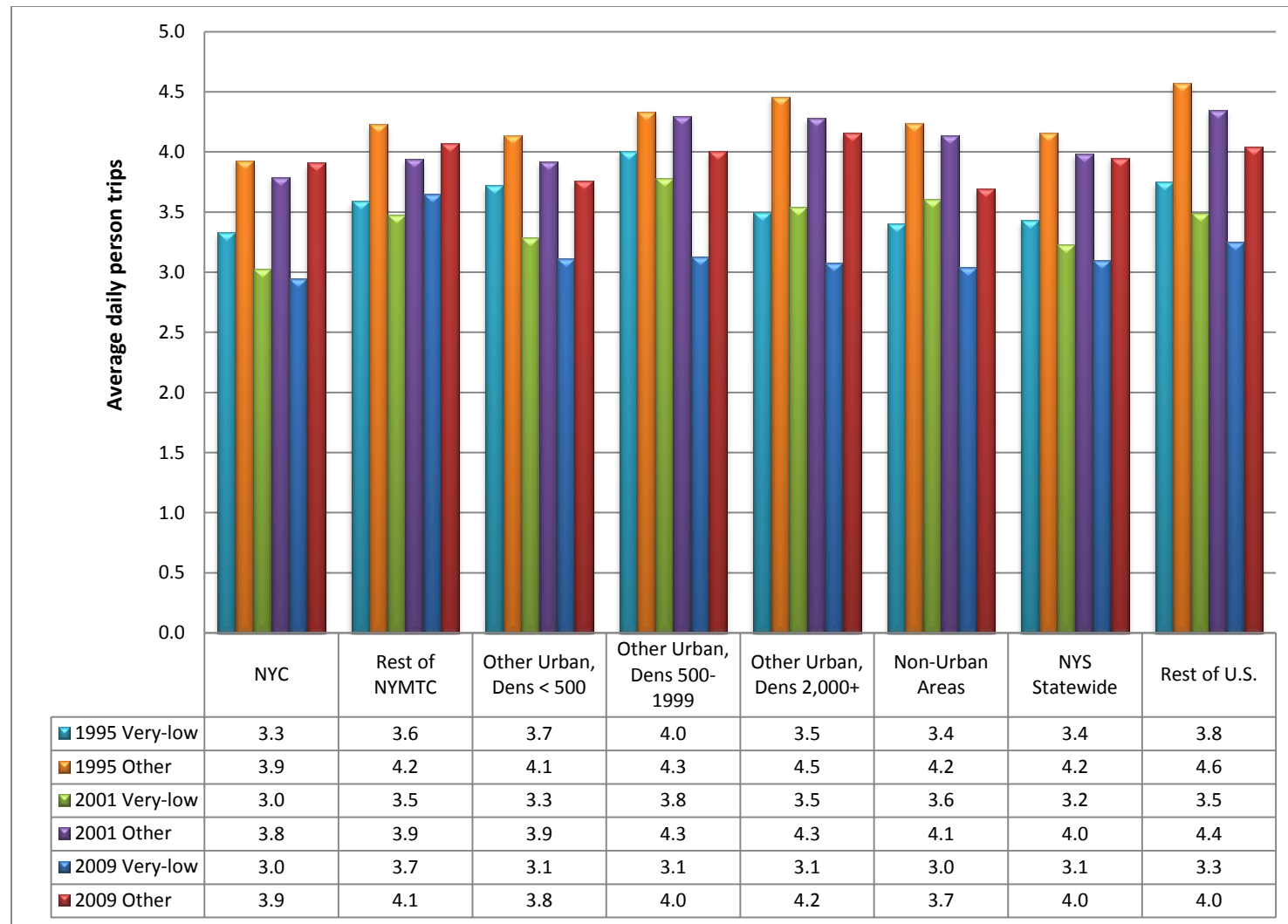
## **4.2 TRAVEL FREQUENCIES BY PERSON TRIP**

### **4.2.1 Average Daily Person-Trip Rate**

Figure 4-3 presents the average number of person-trips per day by income status, region of residency, and year using NHTS data from 1995, 2001, and 2009. As seen in the figure, persons from very-low income households, on average, took fewer daily trips as compared to their counterparts from other income households. For example, while a NYS resident in the other income group traveled an average of 3.95 person-trips per day during 2009, his/her neighbor from a very-low income household made nearly 20% fewer daily trips, an average of 3.10 person-trips in the same year. The gap in person-trip rates between the two income groups is most visible for those who lived in NYC or other urban areas in NYS with 2,000+ in population density per square-mile. The very-low income population in NYC was about 25% less mobile (when measured by person-trip rates) than their counterpart other income population, with a daily average of 2.95 person-trips versus 3.91 person-trips, respectively (Figure 4-3). Similarly, the very-low income population from NYS's other most-dense urban areas traveled about 26% less frequently than their counterpart other income neighbors, with an average of 3.08 daily person-trips versus 4.16 daily person-trips, respectively.

Overall, there is no significant difference in the average daily person-trip rates between NYS and the rest of the U.S. A reduction in daily person trip rates over time (1995 to 2009), particularly among very-low income households, is also noticeable for most regions shown in Figure 4-3. Appendix B contains additional tables for daily person trips per person (Table B-5), daily vehicle trips per driver (Table B-6), and average vehicle trip length (Table B-7).

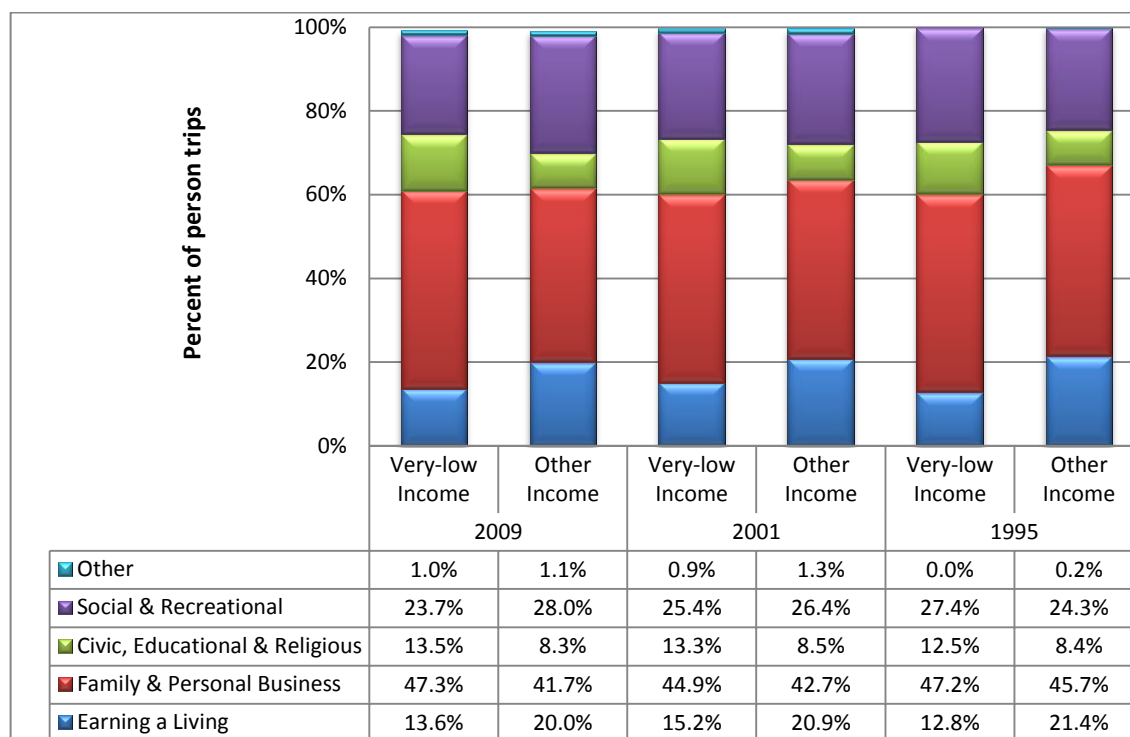




**Figure 4-3. Average daily person trips by income status, region, and year (NHTS data)**

#### 4.2.2 Share of Daily Person-Trips by Purpose and Income

Figure 4-4 presents person-trip distributions, by trip purpose and traveler's income status, for trips taken by NYS residents during the latest three NHTS years. People from NYS's very-low income households are more likely to travel for family and personal business, or school/church activities, but less likely to travel for work or social/recreational activities, when compared with their other income household neighbors. Specifically, less than 14% of person-trips taken by NYS's very-low income population in 2009 were for earning a living (i.e., work), while 20% of person-trips made by their other income counterparts accounted for work-trips during the same year. On the other hand, travel for "civic, educational and religious" activities accounted for nearly 14% of trips taken by very-low income persons in 2009, while only 8% of trips made by other income population were for this same purpose.



**Figure 4-4. Distribution of person trips by trip purpose and income status (NHTS data)**

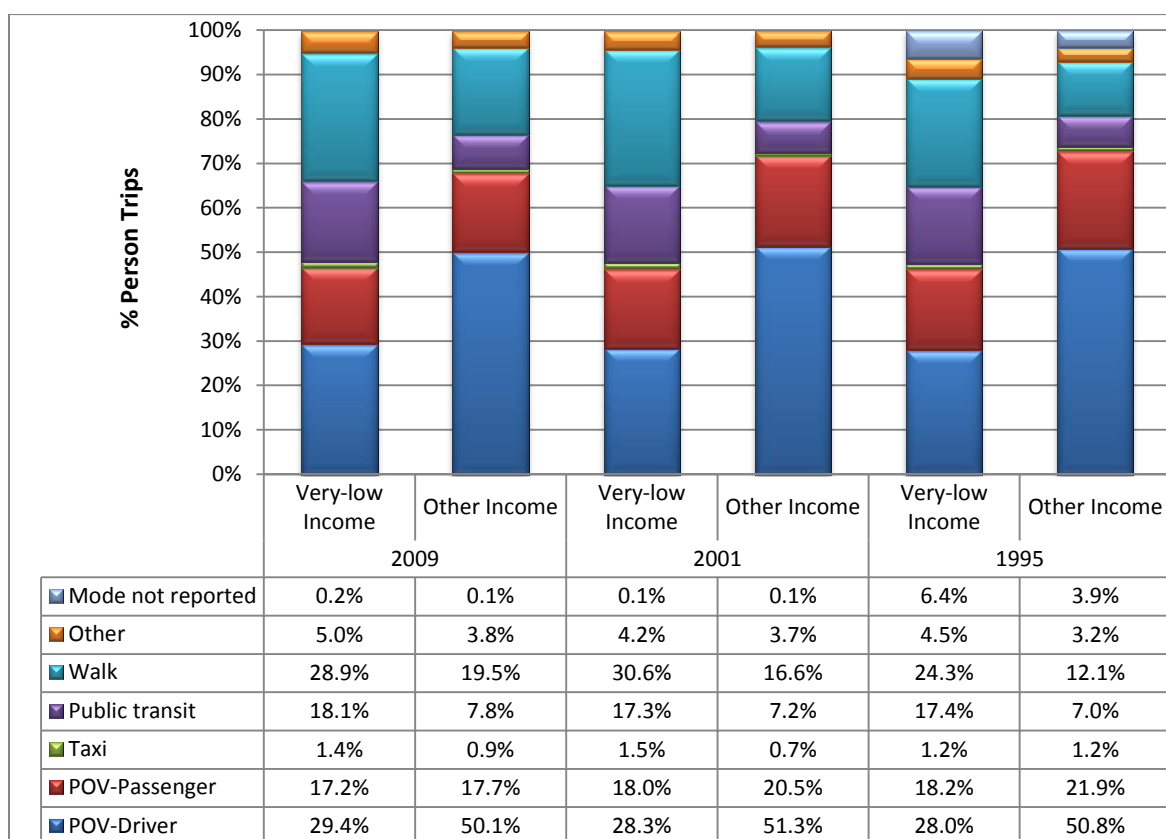
Notice the distributions of person-trip by trip-purpose remains relatively stable over the three NHTS periods within each income group. This implies that regardless of how frequently one travels, people generally conduct similar types of daily activities year after year.

#### 4.2.3 Share of Daily Person-Trips by Mode and Income

As displayed in Figure 4-5, very-low income residents of NYS were less likely to drive on a daily basis than their other income neighbors during all three NHTS years. Over half of the daily trips made by other income group in NYS were by driving during these years, as compared to a very-low income NYS resident who drove less than 30% of their daily trips. About 70% of

person trips taken by a typical NYS other income person in 2009 were made in a privately owned vehicle (POV) (either as a driver or as a passenger). This share was about 47% for trips made by an average very-low income NYS individual during the same year.

On the other hand, a NYS very-low income resident was more than twice as likely to use public transit for daily travel as his/her counterpart other income neighbor in a given year—18% versus 8% in 2009, respectively (Figure 4-5). Furthermore, the share of person trips made by walking was also significantly higher among the NYS very-low income population, as compared to their counterpart other income neighbors, about 29% versus 20% respectively during 2009. Mode shares for person trips within each given income category, as seen in Figure 4-5, generally did not show any significant changes over the last 14 years (from 1995 to 2009), except for walk trips and unreported modes. Note that ‘mode not reported’ is relatively much lower in 2001 and 2009, as compared to 1995, due to significant efforts and improvements of repeated survey for incomplete questionnaires.

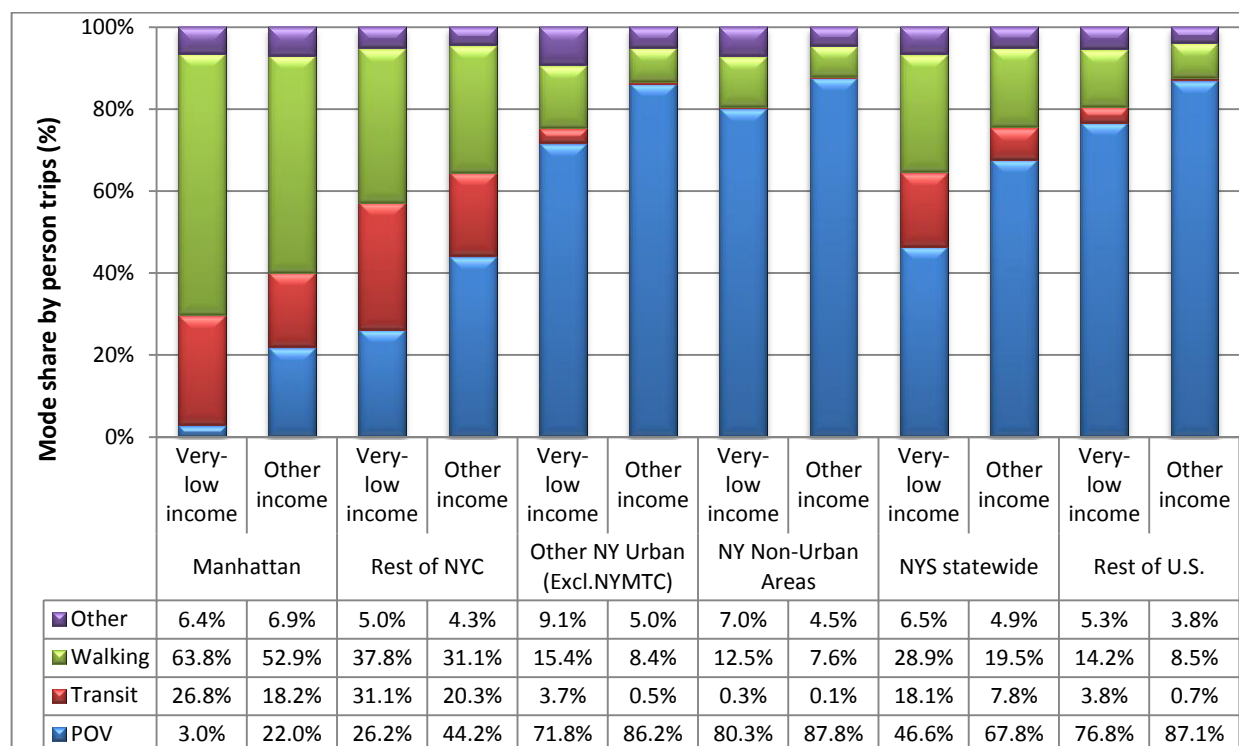


**Figure 4-5. Distribution of NYS resident person trips by mode and income status (NHTS data)**

#### 4.2.3.1 Regional Differences

Transit and walking played a significant role in meeting travel needs for particularly Manhattan residents, regardless of their income status. As presented in Figure 4-6, for Manhattan residents, 90% of person trips made by very-low income residents and 71% of trips taken by their other income counterpart neighbors in 2009 were by public transit or walking.

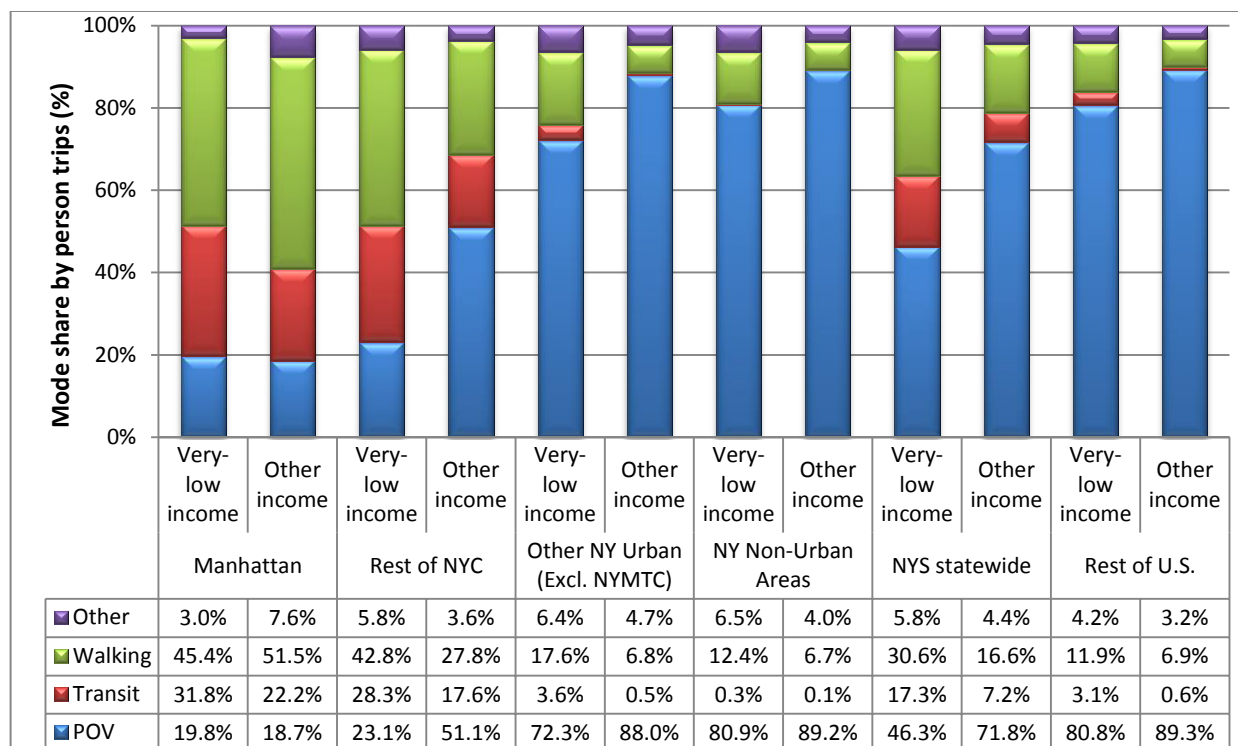
Not surprisingly, other Manhattan residents are more likely to travel by POV, as compared to the very-low income population from this same area. Outside of Manhattan, according to Figure 4-6 very-low income residents of NYC also have a significantly higher likelihood (69%, total of 38% and 31%) of utilizing public transit and walking in their daily travel activities, when compared to their neighbors in an other income category (51% for public transit and walking).



**Figure 4-6. Comparison of mode shares by income status for selected areas in NYS and the Rest of U.S. (2009 NHTS)**

On the other hand, Figure 4-6 shows there is a higher share of POV use (44%) among other income population that lived in the Rest of NYC region, as compared to their very-low income neighbors (26%). Transit clearly is not an alternative for the majority of NYS residents who lived outside of NYMTC or in rural areas of the state. For people outside of NYMTC, nearly 4% of person-trips for very-low income persons were made by public transit, while only 0.5% of trips made by their other income neighbors were on public transit. Figure 4-6 also shows that within each respective income level, the trip distributions by mode for residents of “other NY urban” and those of the Rest of U.S. area are relatively similar.

Figure 4-7 shows comparable mode share distributions using 2001 NHTS data. The mode-share patterns for all regions in each of the income groups are all consistent with those corresponding categories observed in Figure 4-6. The only exception is the very-low income category in Manhattan, where 2001 data showed a significantly lower share of walking and a significantly higher share of POV use than in 2009.



**Figure 4-7. Comparison of mode shares by income status for selected areas in NYS and the Rest of U.S. (2001 NHTS)**

#### 4.2.3.2 Impacts of Trip Purpose

To illustrate whether mode use differs between income categories, and among various travel activities, Table 4-3 summarizes daily person-trips by mode, trip purpose, and income level, for NYS resident trips taken during the last three NHTS years (2009, 2001, and 1995). Clearly seen in Table 4-3, other income New Yorkers predominantly traveled by POVs (either as a driver or as a passenger) regardless of their trip purposes. Note that a POV was also the most chosen mode for very-low income NYS residents when making trips for work (earning a living) or for visiting family and conducting personal business. For trips made for school and religious activities, social and recreational, and other purposes, NYS's very-low income residents were most likely to use public transit or walk to reach their destinations. Nonetheless, Table 4-3 shows that NYS's very-low income persons clearly utilized public transit and walking significantly more frequently for all trip purposes than their other income neighbors. Note that cells estimated with a small number of samples are highlighted in yellow.

Table 4-3. Daily NYS resident person-trips by mode, purpose, and income status – 2009, 2001, and 1995 NHTS

2009												
	Earning a Living		Family & Personal Business		Civic, Educational & Religious		Social & Recreational		Other		All purposes	
	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other
<b>Average PT/person</b>	<b>0.42</b>	<b>0.79</b>	<b>1.47</b>	<b>1.65</b>	<b>0.42</b>	<b>0.33</b>	<b>0.73</b>	<b>1.11</b>	<b>0.03</b>	<b>0.04</b>	<b>3.10</b>	<b>3.95</b>
POV-Driver	42.6%	64.8%	35.1%	57.1%	13.1%	25.3%	20.9%	38.0%	3.9%	13.2%	29.4%	50.1%
POV-Passenger	12.7%	5.6%	17.4%	16.4%	14.9%	27.7%	20.4%	25.1%	20.1%	23.0%	17.2%	17.7%
Taxi	1.3%	0.9%	1.9%	0.5%	0.5%	1.0%	0.9%	1.2%	.	7.5%	1.4%	0.9%
Public Transit	30.7%	16.6%	13.0%	4.9%	21.9%	10.1%	18.2%	4.9%	18.1%	21.2%	18.1%	7.8%
Walk	9.1%	9.8%	30.7%	20.1%	30.6%	12.1%	34.9%	27.4%	55.1%	25.1%	28.9%	19.5%
Other	3.2%	2.2%	1.7%	0.8%	18.9%	23.9%	4.6%	3.1%	2.8%	10.1%	5.0%	3.8%
Unreported	0.4%	0.1%	0.1%	0.2%	0.2%	0.1%	.	0.1%	.	.	0.2%	0.1%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2001												
<b>Average PT/person</b>	<b>0.49</b>	<b>0.83</b>	<b>1.45</b>	<b>1.70</b>	<b>0.43</b>	<b>0.34</b>	<b>0.82</b>	<b>1.05</b>	<b>0.03</b>	<b>0.05</b>	<b>3.23</b>	<b>3.98</b>
POV-Driver	38.7%	65.6%	33.5%	58.0%	11.4%	23.2%	22.5%	39.8%	16.0%	26.3%	28.3%	51.3%
POV-Passenger	12.0%	5.9%	18.2%	19.4%	14.5%	29.6%	23.1%	30.4%	14.2%	20.7%	18.0%	20.5%
Taxi	1.1%	1.2%	1.7%	0.4%	1.0%	0.6%	1.4%	0.8%	1.2%	0.9%	1.5%	0.7%
Public Transit	31.2%	17.0%	12.7%	3.6%	20.8%	9.3%	15.2%	4.5%	17.1%	11.9%	17.3%	7.2%
Walk	14.2%	8.3%	32.2%	17.7%	37.0%	15.9%	33.9%	21.2%	46.3%	27.0%	30.6%	16.6%
Other	2.7%	2.0%	1.7%	1.0%	15.0%	21.3%	3.7%	3.3%	4.7%	12.8%	4.2%	3.7%
Unreported	0.1%	0.1%	.	0.0%	0.4%	0.0%	0.2%	0.0%	0.6%	0.5%	0.1%	0.1%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1995												
<b>Average PT/person</b>	<b>0.44</b>	<b>0.89</b>	<b>1.62</b>	<b>1.90</b>	<b>0.43</b>	<b>0.35</b>	<b>0.94</b>	<b>1.01</b>	<b>0.00</b>	<b>0.01</b>	<b>3.43</b>	<b>4.16</b>
POV-Driver	39.9%	65.9%	34.3%	56.2%	10.6%	20.7%	19.3%	37.9%	23.5%	30.6%	28.0%	50.8%
POV-Passenger	11.8%	6.9%	16.4%	19.9%	16.6%	29.6%	25.2%	36.4%	35.5%	32.2%	18.2%	21.9%
Taxi	0.9%	1.8%	1.5%	0.7%	0.4%	0.3%	1.1%	1.8%	.	.	1.2%	1.2%
Public Transit	29.7%	15.6%	13.7%	3.6%	18.1%	8.9%	17.8%	4.9%	10.1%	2.0%	17.4%	7.0%
Walk	11.8%	5.7%	27.0%	14.7%	26.8%	14.0%	24.5%	12.2%	.	26.0%	24.3%	12.1%
Other	2.3%	1.7%	1.0%	0.8%	19.1%	23.3%	5.1%	2.0%	27.0%	.	4.5%	3.2%
Unreported	3.5%	2.4%	6.3%	4.2%	8.3%	3.3%	6.9%	4.8%	4.1%	9.1%	6.4%	3.9%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: Yellow shaded cells are estimated based on small number of samples.

Figure 4-8 emphasizes public transit shares for person-trips made by New Yorkers during the three NHTS years. As clearly shown in Figure 4-8, public transit was more frequently used among NYS's very-low income persons than trips made by their other income neighbors, regardless of trip purpose. Furthermore, Figure 4-9 shows that when a New Yorker in other income group used public transit in 2009, there was a 43% chance that it was for commuting. However, public transit was more likely utilized by very-low income NYS residents for family and person business trips in 2009.

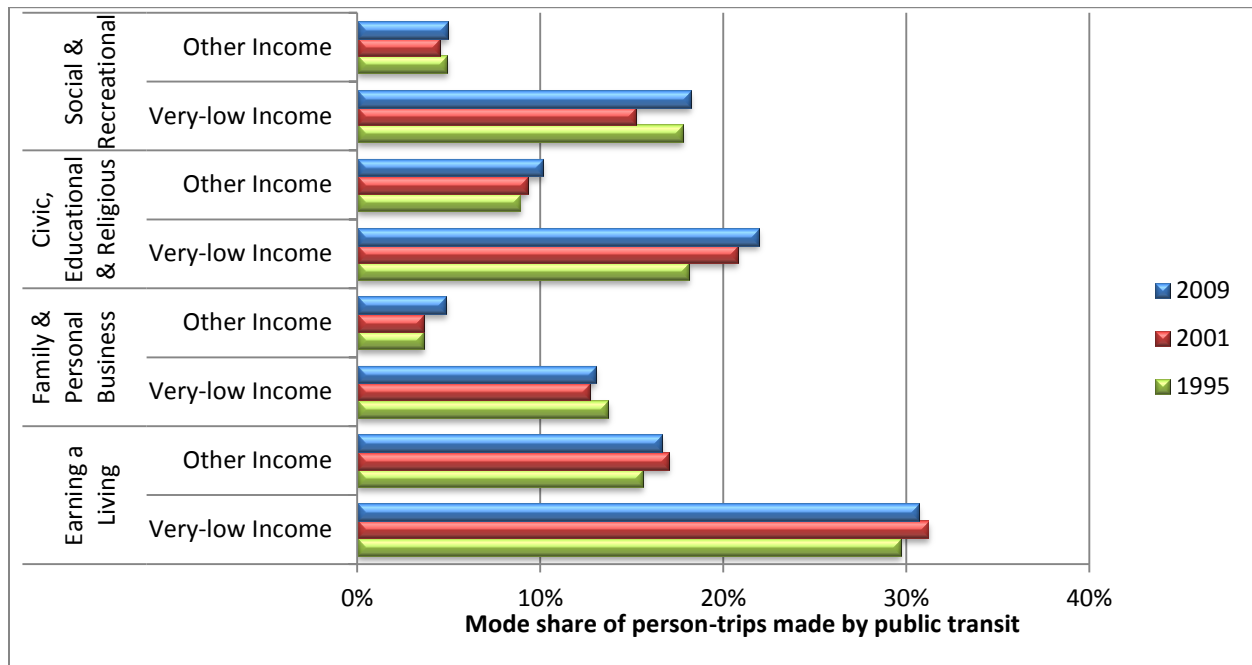


Figure 4-8. Percent of NYS's person-trips made on public transit, by purpose and income status (NHTS data)

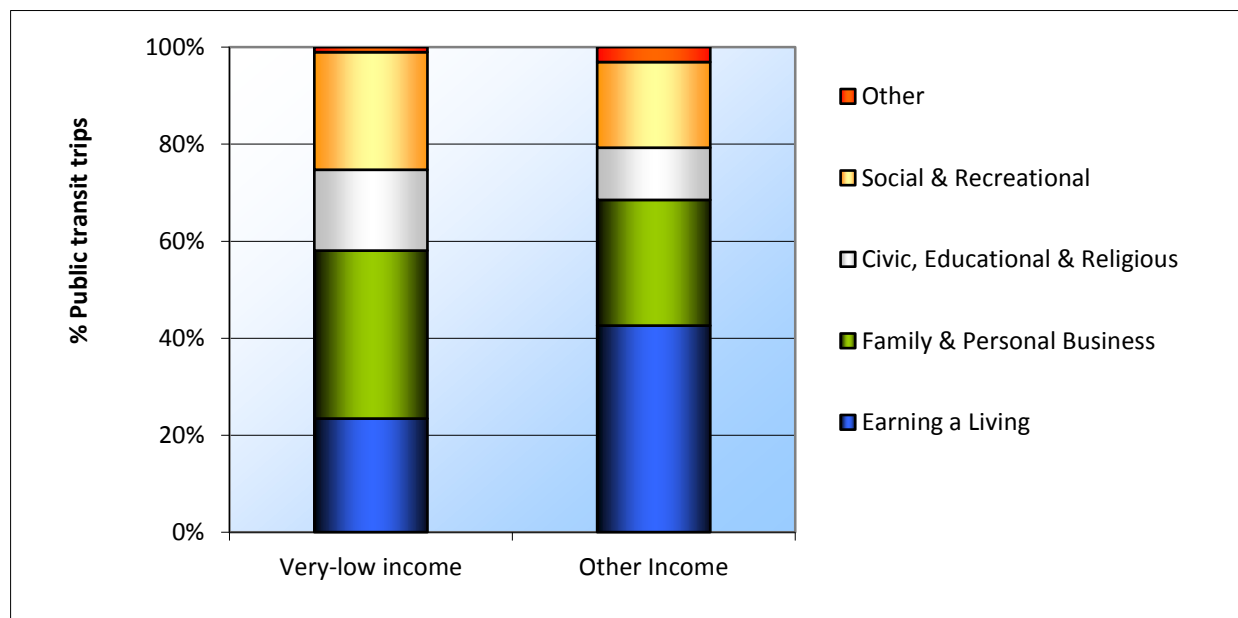


Figure 4-9. Distribution of public transit trips by purpose (2009 NHTS)

Similarly, Figure 4-10 displays NYS resident person-trip shares for walk trips by trip purpose and income status. Except for work trips, NYS's very-low income residents had a higher likelihood of taking walk trips to conduct their daily activities for all non-work related purposes than those of their other income neighbors.

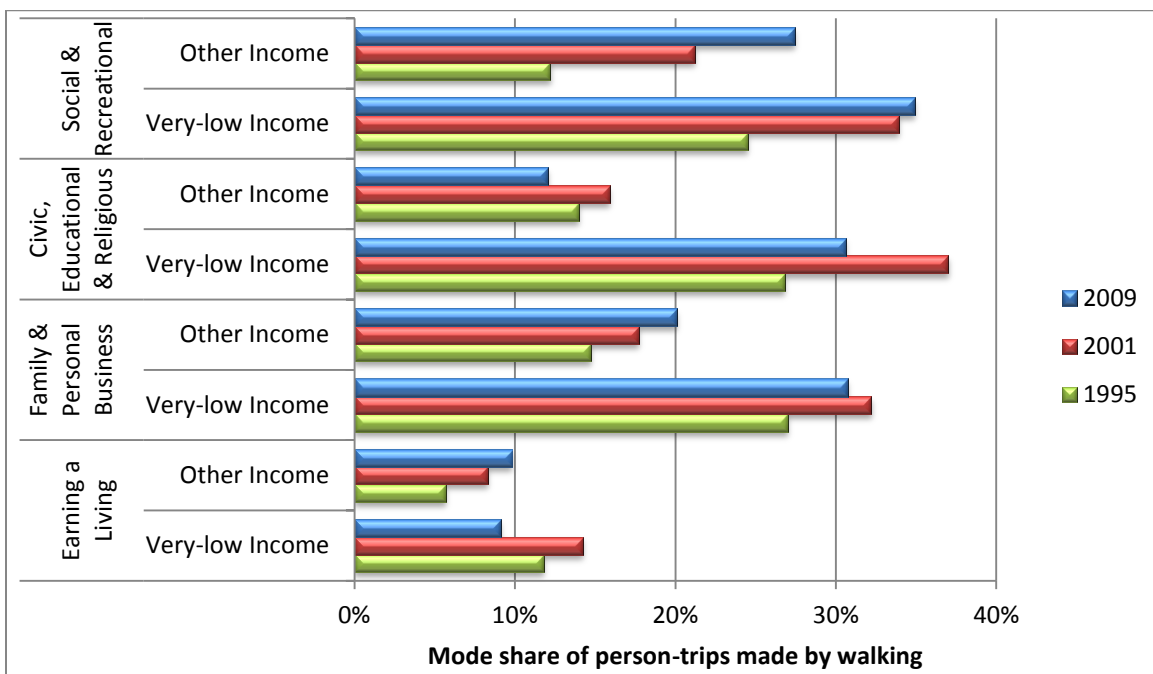


Figure 4-10. Percent of NYS's walking person-trips by trip purpose and income level (NHTS data)

#### 4.2.3.3 Influence of Urban Size (with Population Density)

Considering geography, Table 4-4 presents mode shares on daily person-trips by region and income status using the latest three NHTS datasets. The proportion of walk trips made by NYC residents is remarkably high, a unique circumstance not seen in any other regions. During 2009, walk trips accounted for 41% of daily person-trips made by NYC's very-low income population, and about 37% among trips taken by other income persons in the same region. Outside of NYC in 2009, very-low income New Yorkers took about 9% to 19% of their daily person-trips on foot, depending on where they lived, compared to the shares of only 7%-11% among their other income neighbors (Table 4-4).

Table 4-4 also shows a significantly higher share of public transit use among very-low income NYC residents than that of their counterpart other income neighbors, 31% versus 20% respectively during 2009. Availability of public transit typically is limited in less dense urban areas (with population density <500) and rural areas of NYS, therefore transit mode shares in those areas are quite low regardless of the residents' income level. These regional public transit mode shares are further displayed in Figure 4-11 to illustrate the striking difference in public transit use between NYC and other regions.



**Table 4-4. Daily person-trips by mode, urban size (population density), and income status – 2009, 2001, and 1995 NHTS**

	New York City		Rest of NYMTC		Other urban, dens < 500		Other urban, dens 500-1999		Other urban, dens 2000+		NYS Non-urban areas		NYS Statewide		Rest of U.S.	
	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other
<b>2009</b>																
<b>Average PT/person</b>	<b>2.95</b>	<b>3.91</b>	<b>3.65</b>	<b>4.07</b>	<b>3.11</b>	<b>3.76</b>	<b>3.13</b>	<b>4.01</b>	<b>3.08</b>	<b>4.16</b>	<b>3.04</b>	<b>3.69</b>	<b>3.10</b>	<b>3.95</b>	<b>3.25</b>	<b>4.04</b>
POV-Driver	11.0%	25.4%	46.6%	62.4%	58.6%	65.9%	50.2%	65.5%	49.1%	64.9%	53.7%	65.6%	29.4%	50.1%	49.3%	63.9%
POV passenger	12.4%	12.5%	23.7%	20.1%	26.2%	21.8%	22.4%	20.4%	16.8%	20.2%	26.6%	22.3%	17.2%	17.7%	27.5%	23.3%
Taxi	1.8%	2.4%	1.4%	0.1%	0.0%	0.0%	0.5%	0.1%	1.5%	0.1%	0.2%	0.1%	1.4%	0.9%	0.3%	0.1%
Public Transit	30.6%	19.7%	6.0%	2.1%	0.4%	0.3%	3.8%	0.3%	5.0%	0.7%	0.3%	0.1%	18.1%	7.8%	3.8%	0.7%
Walk	40.9%	37.3%	16.5%	10.9%	8.7%	6.9%	13.9%	8.2%	18.9%	9.9%	12.5%	7.6%	28.9%	19.5%	14.2%	8.5%
Other	3.4%	2.6%	5.2%	4.3%	5.9%	4.9%	9.4%	5.3%	8.7%	3.8%	6.7%	4.4%	5.0%	3.8%	4.7%	3.6%
No Response	0.0%	0.1%	0.6%	0.1%	0.2%	0.2%	.	0.2%	0.0%	0.3%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%
All	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>2001</b>																
<b>Average PT/person</b>	<b>3.03</b>	<b>3.79</b>	<b>3.48</b>	<b>3.94</b>	<b>3.29</b>	<b>3.92</b>	<b>3.78</b>	<b>4.30</b>	<b>3.54</b>	<b>4.28</b>	<b>3.61</b>	<b>4.14</b>	<b>3.23</b>	<b>3.98</b>	<b>3.49</b>	<b>4.35</b>
POV-Driver	12.0%	29.1%	50.7%	61.7%	56.0%	64.4%	55.1%	65.3%	42.4%	63.4%	50.1%	62.9%	28.3%	51.3%	50.5%	64.0%
POV passenger	10.7%	14.2%	27.1%	22.2%	28.0%	24.6%	29.9%	23.1%	23.6%	23.7%	30.8%	26.4%	18.0%	20.5%	30.3%	25.3%
Taxi	1.7%	1.7%	0.4%	0.3%		0.0%	0.1%	0.1%	2.8%	0.2%	0.8%	0.1%	1.5%	0.7%	0.1%	0.1%
Public Transit	28.8%	18.7%	3.6%	2.4%	0.4%	0.2%	0.4%	0.4%	5.3%	0.7%	0.3%	0.1%	17.3%	7.2%	3.1%	0.6%
Walk	43.2%	33.5%	12.8%	9.4%	8.6%	5.8%	9.9%	6.3%	22.0%	7.9%	12.4%	6.7%	30.6%	16.6%	11.9%	6.9%
Other	3.5%	2.8%	5.3%	3.8%	6.9%	5.0%	4.5%	4.8%	4.0%	3.9%	5.7%	3.9%	4.2%	3.7%	3.9%	3.1%
No Response	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%		0.1%		0.0%	0.1%	0.1%	0.1%	0.1%
All	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>1995</b>																
<b>Average PT/person</b>	<b>3.33</b>	<b>3.93</b>	<b>3.59</b>	<b>4.23</b>	<b>3.72</b>	<b>4.14</b>	<b>4.01</b>	<b>4.33</b>	<b>3.50</b>	<b>4.46</b>	<b>3.40</b>	<b>4.24</b>	<b>3.43</b>	<b>4.16</b>	<b>3.75</b>	<b>4.57</b>
POV-Driver	10.0%	27.4%	48.2%	60.7%	56.2%	65.7%	54.0%	60.7%	48.4%	63.0%	55.3%	61.6%	28.0%	50.8%	49.5%	63.8%
POV passenger	11.8%	15.5%	26.9%	24.3%	30.5%	25.2%	27.2%	26.2%	22.3%	23.7%	28.8%	26.3%	18.2%	21.9%	28.3%	25.9%
Taxi	1.6%	3.2%	0.9%	0.3%	0.1%	0.0%	0.4%	0.1%	0.9%	0.2%	0.4%		1.2%	1.2%	0.3%	0.1%
Public Transit	28.6%	18.7%	2.7%	2.5%	0.2%	0.4%	2.8%	0.5%	6.7%	1.6%	0.6%	0.5%	17.4%	7.0%	3.6%	0.8%
Walk	37.0%	28.6%	8.3%	5.5%	3.4%	1.9%	6.8%	3.8%	11.9%	4.7%	5.0%	3.3%	24.3%	12.1%	9.4%	3.9%
Other	3.6%	1.7%	8.4%	3.4%	4.9%	4.3%	3.8%	4.9%	3.7%	2.6%	5.1%	4.8%	4.5%	3.2%	4.2%	2.8%
No Response	7.4%	4.8%	4.5%	3.3%	4.8%	2.5%	5.2%	3.9%	6.1%	4.2%	4.9%	3.4%	6.4%	3.9%	4.8%	2.8%
All	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Note:** Yellow shaded cells are estimates based on small samples.

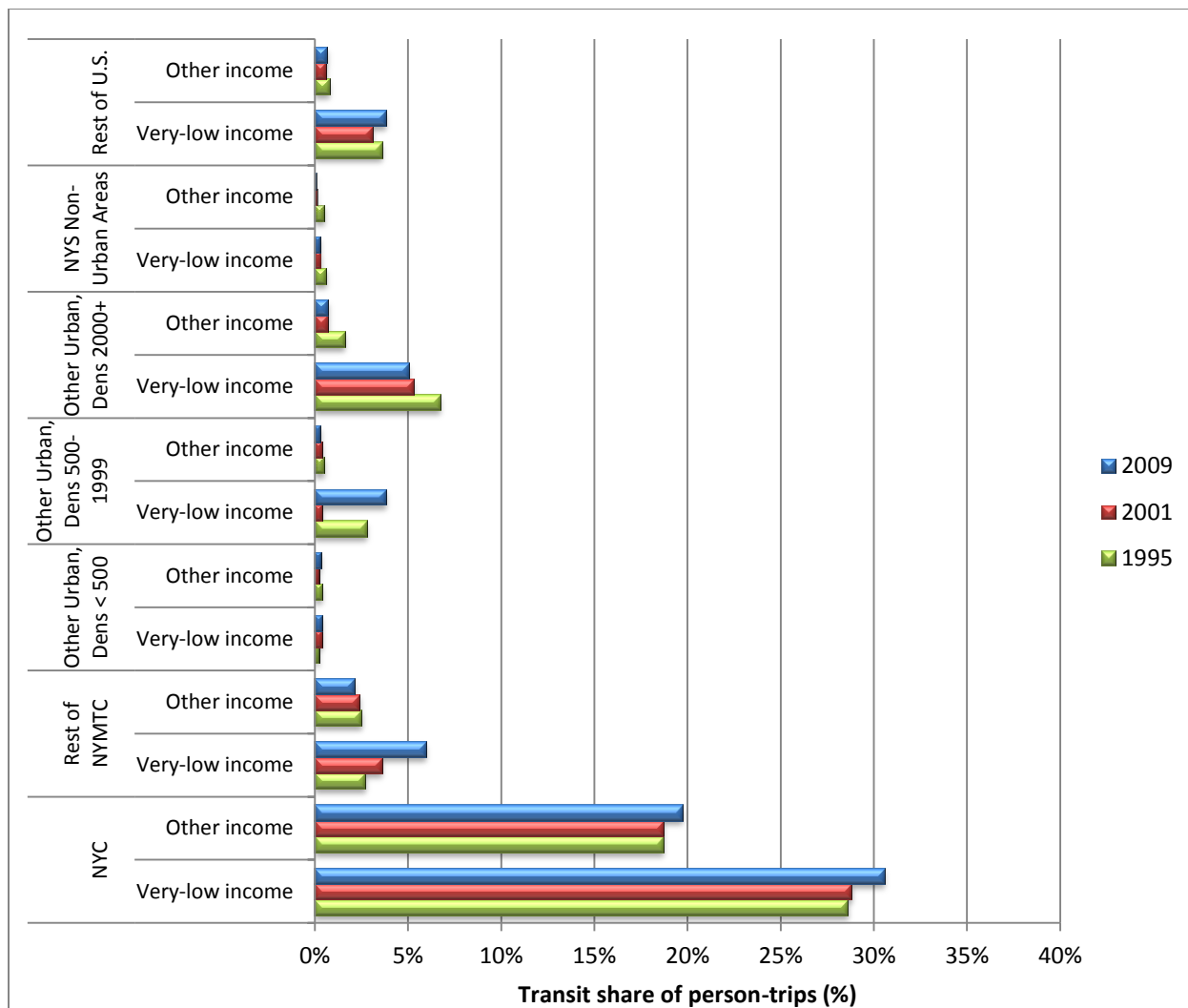
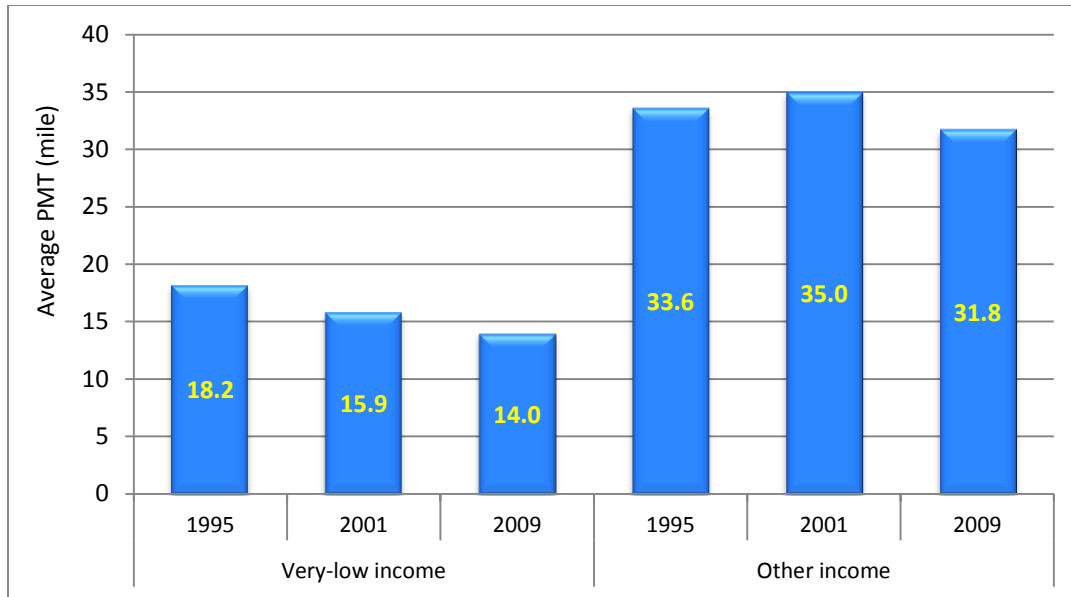


Figure 4-11. Transit person-trip mode shares by urban size (in population density) and income level (NHTS data)

### 4.3 MOBILITY STATISTICS RELATED TO TRIP LENGTH

#### 4.3.1 Average Person-Miles Traveled

Based on NHTS data, NYS residents from a very-low-income household traveled significantly fewer miles (i.e., shorter trip distances) as measured by person-miles traveled (PMT), as compared to trips made by other income households. Specifically, in 2009, very-low income New Yorkers traveled an average of 14 miles per day versus 32 miles per day by their counterpart other income New Yorkers (Figure 4-12). Although Figure 4-12 seems to show a slightly declining trend in average PMT for NYS's very-low income population, those differences were not statistically significant.



**Figure 4-12. Average person-miles traveled by income status for NYS (NHTS data)**

#### 4.3.2 Distribution of PMT by Trip Purpose

Figure 4-13 displays the distributions of average daily PMT for NYS, by trip purpose and income group. Specifically, Figure 4-13 shows that a significant share (~40%) of PMT made by very-low income residents in 2009 was to conduct family & personal business. During the same year (2009), however, PMT made by a typical other income person was more evenly distributed among work, family/personal, and social/recreational activities. Distribution wise, there is not any visible difference over time in PMT shares by trip purpose among the other group. For the very-low income group, there is a slight increase in PMT share (about 5%) for work trips, and a decrease in PMT share (near 10%) for social/recreational trips, in 2009

Note that the data label shown on each segment of the bars in Figure 4-13 represents the share of PMT in miles for the given type of activity (i.e., trip purpose) in the given income group. Using the 2009 very-low income group as an example, the values on the blue segment indicates that out of the 14 miles of PMT (average per person PMT seen in Figure 4-12), a total of 3.4 miles were for work trips (where  $3.4/14=24\%$ ). Similarly, the number on the red segment indicates that 5.6 miles (within the 14 miles of daily average PMT) were for “family & personal business” trips (where  $5.6/14=40\%$ ).

Based on the estimates of purpose-specific PMTs (Figure 4-13), a typical very-low income New Yorker traveled significantly fewer miles than one from other income households for travels associated with work, family/personal business, or social/recreational activities. The significant income-gap on average PMTs is true in each of the three NHTS years. Changes over time in average PMTs for a given trip purpose and within the same income group are not statistically significant, however.

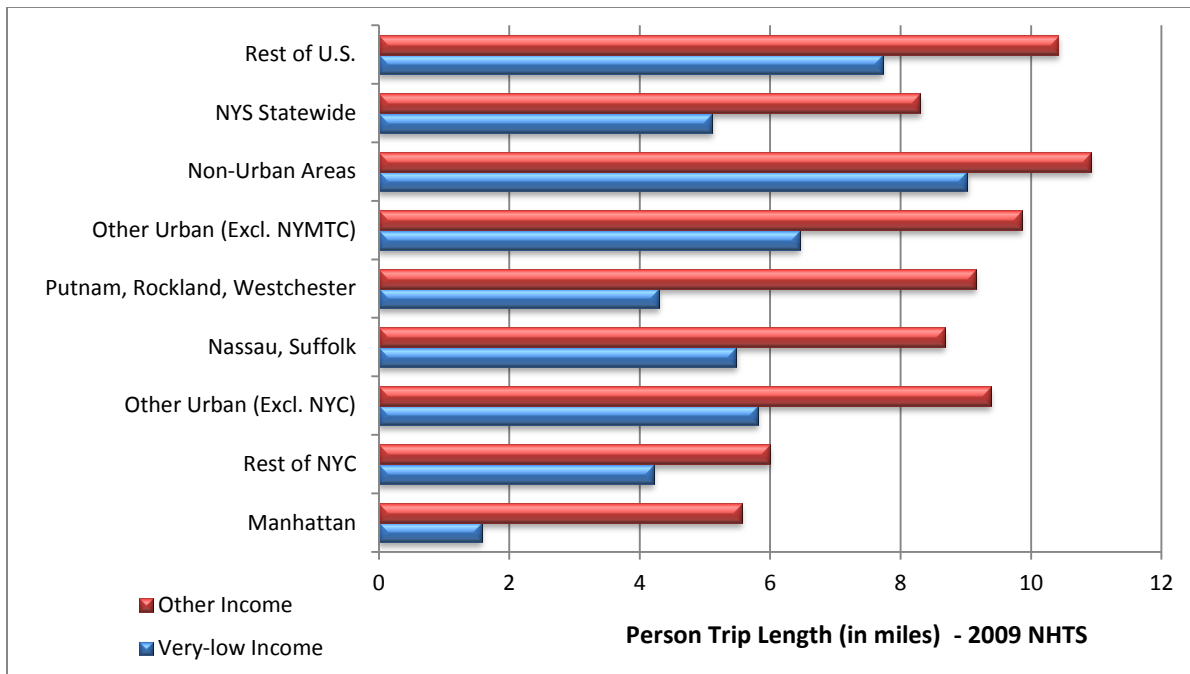


**Figure 4-13. Distribution of PMT by trip purpose and income status for NYS (NHTS data)**

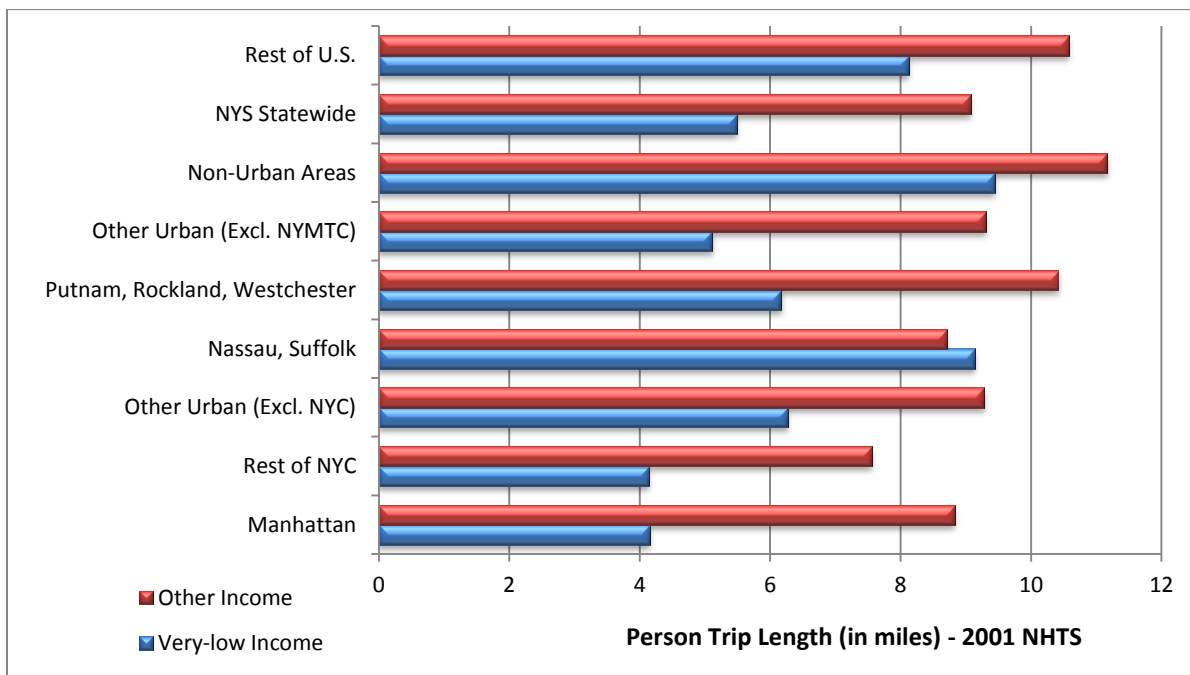
### 4.3.3 Impacts of Income on Average Person-Trip Length (Distance)

On average, persons from a very-low-income household traveled significantly shorter distances for daily activities (measured in person-trips), as compared to trips taken by their neighbors in other income group. As seen in Figure 4-14, a typical person-trip made by very-low income residents of Manhattan during 2009 was 1.6 miles per trip, versus 5.6 miles per trip for their counterpart other income neighbors. In urban areas outside of NYMTC, a typical very-low income person traveled an average of 6.5 miles per trip, as compared to an average other income counterpart who traveled about 53% farther per trip or an average of 10 miles per person-trip.

Furthermore, Figure 4-14 shows that, statewide, very-low income NYS residents traveled about 5.1 miles per trip on average, while their other income neighbors took 62% longer trips, just over 8.3 miles per trip on average. Outside of NYS, the average length of person-trips taken by the very-low income group was 7.7 miles per trip in 2009 (Figure 4-14), versus 10.4 miles per trip (or 35% longer in distance) for trips made by their counterpart other income neighbors. A similar analysis using NHTS 2001 data was also performed and the results are presented in Figure 4-15. Person-trip length was higher in 2001 (compared to the 2009 level) for trips made by other income residents of NYC regions, and for very-low income residents from Manhattan.



**Figure 4-14. Average daily person-trip length (in miles) by region and income status (2009 NHTS)**



**Figure 4-15. Average daily person-trip length (in miles) by region and income status (2001 NHTS)**

## 4.4 VEHICLE TRAVEL TRIP FREQUENCIES

### 4.4.1 Average Daily Vehicle-Trip Rate

Regarding vehicle trips, NYS drivers from very-low income households took a significantly fewer number of vehicle trips than their counterpart other income drivers in each of the three NHTS years. Specifically, as shown in Figure 4-16, a typical very-low income driver from NYS made only 1.7 vehicle trips per day in 2009, versus an average of 2.6 vehicle trips for drivers from other income households in NYS during the same year. Clearly, Figure 4-16 shows a visible decline in the average number of vehicle trips over time, for both income categories. These declines in both income groups, especially from 2001 to 2009, are statistically significant.

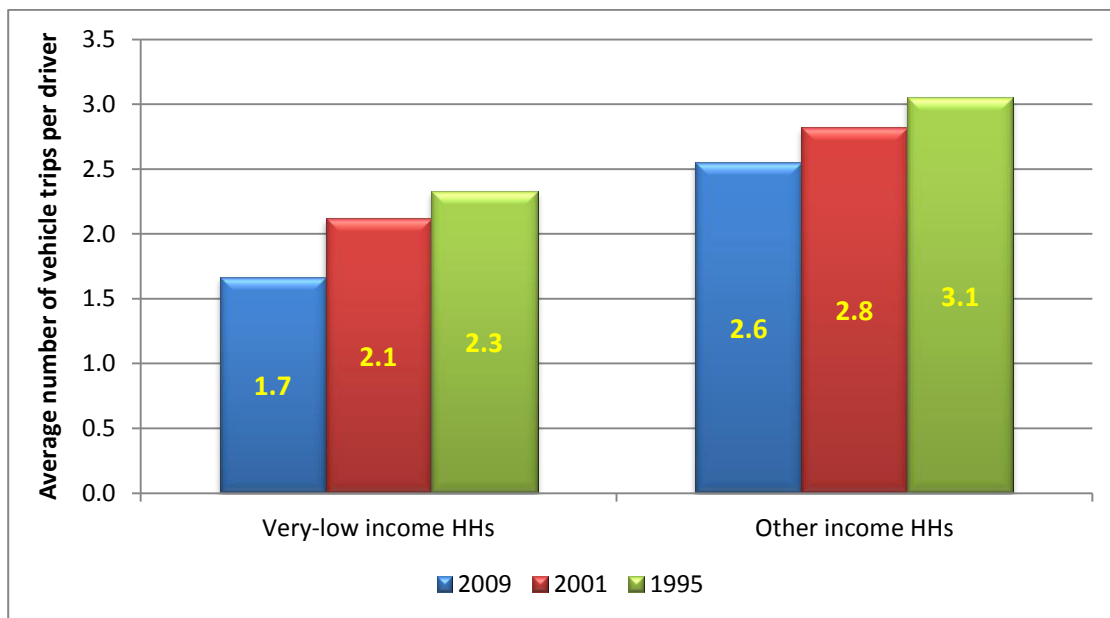
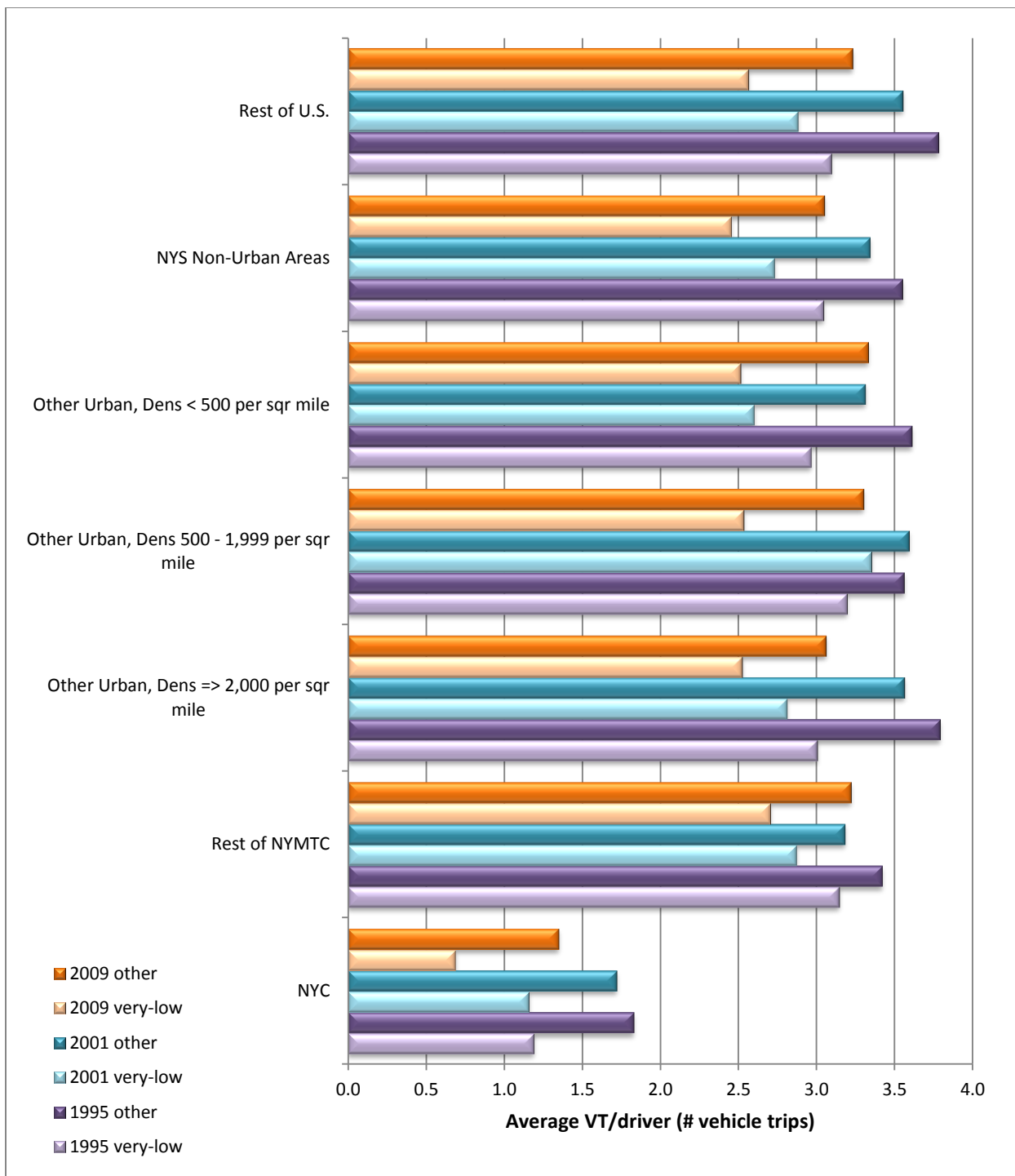


Figure 4-16. Average vehicle-trip rates by income status for NYS households (NHTS data)

### 4.4.2 Regional Differences in Vehicle-Trip Rates

In addition to examining all NYS drivers' vehicle-trip frequencies as a whole, potential regional differences in drivers' travel patterns were also investigated. On average, NYS drivers from very-low-income households made fewer vehicle trips, as compared to trips made by their counterpart drivers from other income households, regardless of where they lived. As Figure 4-17 shows, NYC drivers clearly had the least number of vehicle-trips per driver (about 1 trip) than drivers from any other regions (around 3 trips), including areas within and outside of NYS. In all areas examined, drivers from very-low-income households, on average, made fewer vehicle-trips than their counterpart other income neighbors during the same year. A reduction in the average number of vehicle-trips over time in either income group is also visible for nearly all regions presented in Figure 4-17.

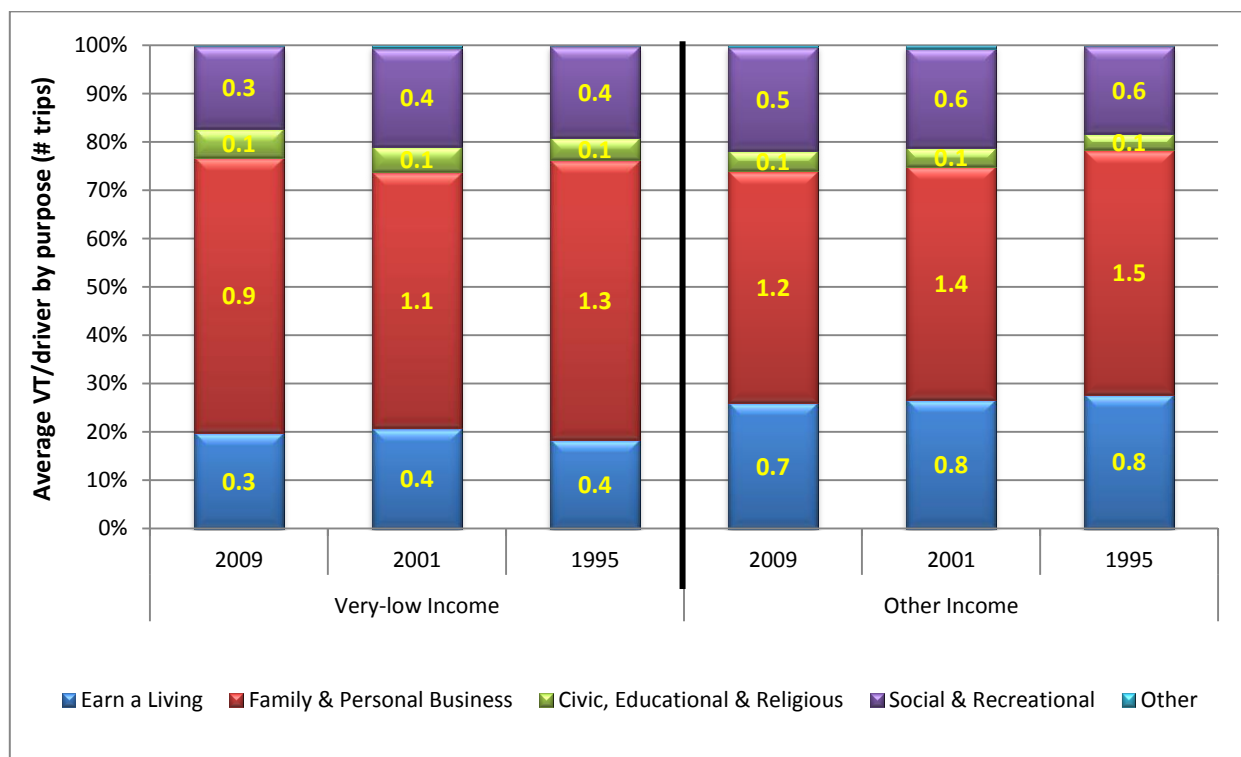


**Figure 4-17. Average number of vehicle-trips/driver by region/population-density and income status (NHTS data)**

#### 4.4.3 Share of Vehicle-Trips per Driver by Purpose

The statistics for average vehicle-trips per driver, as presented in Figure 4-16, were further analyzed to examine whether income status has any influence on the different travel activities. With respect to the distributions of vehicle-trips per driver in 2009, Figure 4-18 reveals that a very-low income driver has a smaller share of work-related vehicle trips (20%), as compared to 26% for work-related vehicle trips among their counterpart neighbors with other income. On the other hand, a very-low income driver has a higher share of “family and personal business” vehicle-trips (57%), as compared to a NYS driver with other income (48%) during the same year.

Furthermore, as the yellow “data labels” in Figure 4-18 show, a very-low income NYS driver took less than 0.4 vehicle trips daily for “earning a living,” while a driver from other income households in NYS made about twice as many vehicle trips per day for the same trip purpose. This pattern was repeated across all three NHTS years for drivers in both income groups. In addition, a very-low income NYS driver made roughly one vehicle trip daily for “family and personal business” activities during 2009. During the same period, the counterpart other income NYS driver took about 33% more vehicle trips (1.2 vehicle-trips) per day for those same activities.



**Figure 4-18. Distribution and number of average vehicle-trips for NYS drivers by trip purpose and income status (NHTS data)**

Figure 4-18 shows a declining trend in the average number of vehicle-trips made for “family and personal business” purposes on a per driver basis. This pattern is not as visible in other



types of activities, however. Because the predominant shares of daily vehicle-trips taken by NYS drivers were made for “family and personal business” purposes (as seen in Figure 4-18), the declining trend can be attributed to the overall pattern seen in Figure 4-16.

As summarized in Table 4-5, a typical very-low income driver is more likely to take vehicle trips for “family/personal business” activities, when compared with other income households. This is consistent across all regions (including outside NYS) and all population densities studied in NYS. On the other hand, Table 4-5 shows that drivers with very-low income traveled fewer vehicle-trips for “earn a living” purposes as compared to their other income counterpart drivers from the same region. For example, Table 4-5 indicates that about 14% of daily vehicle-trips taken by a very-low income NYC driver were to earn a living versus 19% for a driver with other income in 2009. Furthermore, in NYS’s rural area (i.e., non-urban area), about 29% of vehicle trips made by a higher income driver were for work purposes, compared to 20% for a typical driver who was from very-low income households during 2009.

**Table 4-5. Average number of vehicle trips (VT) per driver by purpose, population density, and income status (2009, 2001, and 1995 NHTS data)**

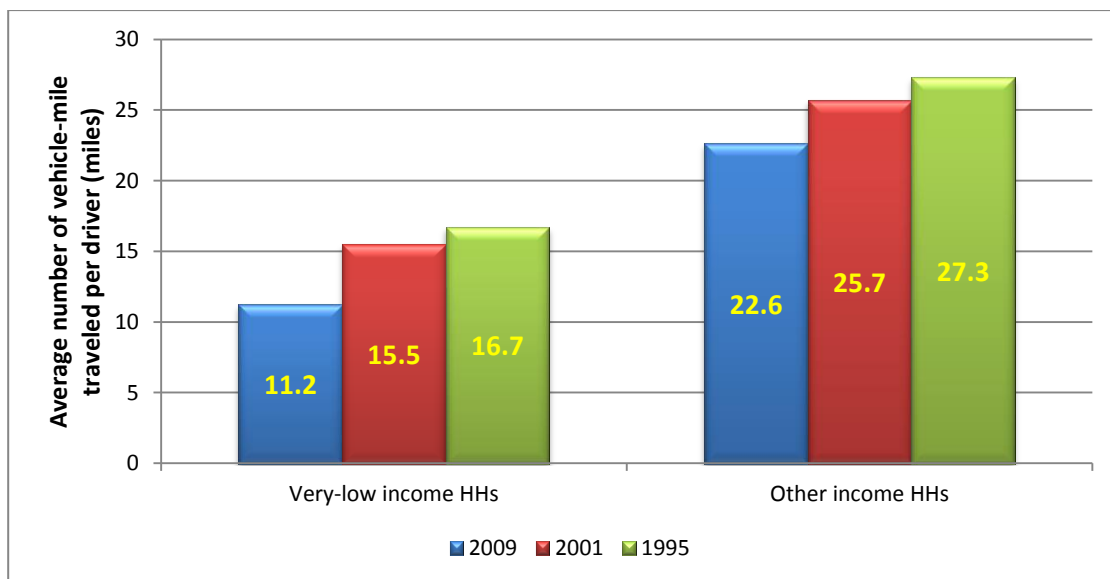
Trip Purposes	NYC		Rest of NYMTC		Other Urban, dens < 500/sqr-mile		Other Urban, dens 500 -1,999/sqr-mile		Other Urban, dens ≥2,000/sqr-mile		NYS non-Urban areas		Rest of U.S.	
	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other	Very-low	Other
<b>2009 NHTS</b>														
<b>Total VT/Driver</b>	<b>0.69</b>	<b>1.35</b>	<b>2.70</b>	<b>3.22</b>	<b>2.52</b>	<b>3.06</b>	<b>2.53</b>	<b>3.30</b>	<b>2.51</b>	<b>3.33</b>	<b>2.45</b>	<b>3.05</b>	<b>2.56</b>	<b>3.23</b>
Earn a Living	14.3%	19.1%	21.6%	25.7%	21.4%	29.0%	21.4%	28.7%	20.6%	26.6%	20.1%	29.4%	20.9%	27.4%
Family/Personal Business	67.5%	52.7%	54.5%	48.5%	54.8%	45.2%	52.7%	44.6%	52.5%	45.7%	54.6%	45.1%	53.2%	45.2%
Civic, Educational & Religious	3.8%	3.4%	7.8%	4.8%	3.9%	3.6%	4.7%	4.3%	7.4%	4.6%	5.6%	3.8%	5.6%	4.8%
Social/Recreational	13.3%	23.1%	15.7%	20.1%	18.6%	21.1%	20.6%	21.3%	18.7%	22.5%	19.3%	20.5%	19.0%	21.5%
Other	0.0%	0.2%	0.4%	0.6%	0.2%	0.3%	0.0%	0.2%	0.0%	0.1%	0.0%	0.1%	0.3%	0.3%
Unreported	1.1%	1.6%	0.1%	0.4%	1.2%	0.9%	0.7%	1.0%	0.8%	0.5%	0.3%	1.1%	1.1%	0.8%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>2001 NHTS</b>														
<b>Total VT/Driver</b>	<b>1.16</b>	<b>1.72</b>	<b>2.87</b>	<b>3.18</b>	<b>2.6</b>	<b>3.31</b>	<b>3.35</b>	<b>3.59</b>	<b>2.81</b>	<b>3.56</b>	<b>2.73</b>	<b>3.34</b>	<b>2.88</b>	<b>3.55</b>
Earn a Living	25.60%	25.80%	21.30%	26.20%	16.30%	29.30%	12.70%	26.70%	16.20%	25.70%	23.10%	27.60%	21.00%	27.40%
Family/Personal Business	56.10%	49.70%	48.30%	47.90%	55.10%	47.00%	53.30%	47.70%	52.40%	48.90%	55.40%	47.80%	52.40%	47.10%
Civic, Educational & Religious	3.80%	3.70%	6.70%	3.90%	3.90%	3.20%	7.60%	4.70%	6.60%	4.20%	4.00%	3.30%	6.30%	4.70%
Social/Recreational	14.40%	19.40%	22.80%	21.20%	22.90%	20.00%	25.90%	20.30%	24.10%	20.70%	17.10%	20.80%	20.00%	20.20%
Other	0.00%	1.30%	0.90%	0.60%	1.20%	0.40%	0.30%	0.50%	0.70%	0.50%	0.30%	0.30%	0.30%	0.50%
Unreported	0.10%	0.10%		0.20%	0.60%	0.10%	0.30%	0.10%	0.00%	0.10%	0.10%	0.30%	0.10%	0.10%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1995 NHTS</b>														
<b>Total VT/Driver</b>	<b>1.19</b>	<b>1.83</b>	<b>3.14</b>	<b>3.42</b>	<b>2.96</b>	<b>3.61</b>	<b>3.19</b>	<b>3.56</b>	<b>3</b>	<b>3.79</b>	<b>3.04</b>	<b>3.55</b>	<b>3.09</b>	<b>3.78</b>
Earn a Living	16.3%	27.5%	21.4%	26.4%	19.3%	30.5%	13.3%	27.0%	19.0%	27.4%	17.5%	29.7%	21.0%	28.8%
Family/Personal Business	60.3%	51.2%	57.7%	51.8%	55.9%	48.5%	61.8%	50.6%	51.7%	51.2%	60.2%	48.3%	54.9%	49.2%
Civic, Educational & Religious	6.2%	4.0%	6.1%	3.4%	3.4%	3.2%	4.0%	3.8%	5.1%	2.7%	2.2%	3.3%	5.6%	3.9%
Social/Recreational	17.2%	17.2%	14.5%	18.3%	21.4%	17.8%	20.9%	18.5%	24.2%	18.5%	19.6%	18.6%	18.5%	18.0%
Other		0.0%		0.1%		0.1%	0.0%	0.1%		0.1%	0.3%	0.1%	0.0%	0.1%
Unreported			0.3%	0.0%						0.1%	0.2%		0.0%	0.0%
All	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**Note:** Yellow shaded cell estimates were based on small samples

## 4.5 INFLUENCE OF INCOME ON VEHICLE-TRIP LENGTH

### 4.5.1 Vehicle-Miles Traveled per Driver

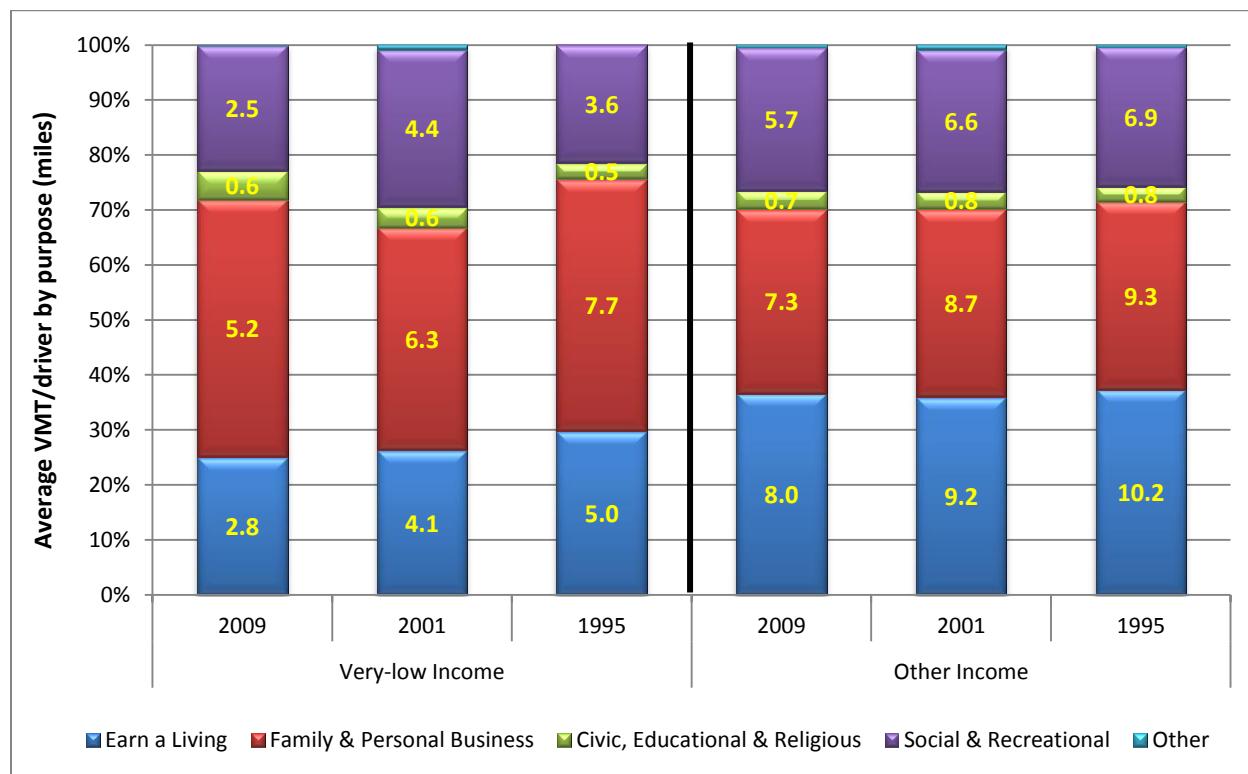
Figure 4-19 presents the average daily vehicle-miles traveled (VMT) by income level of drivers who lived in NYS. According to NHTS 2009 data, a very-low income driver from NYS traveled about 11.2 vehicle-miles daily in 2009, as compared to twice as many (22.6) vehicle-miles per day from a NYS driver in other income households. This echoes with how a NYS very-low income driver traveled significantly less frequent in a vehicle as well as made considerably shorter vehicle trips, when compared to vehicle trips made by other income drivers from NYS. This situation also holds true for previous NHTS years, although the gap due to income levels (on average daily VMT) was smaller, less than 40% in both 2001 and 1995. Like vehicle-trips (see Figure 4-16), a decreasing trend in VMT over time is visible in Figure 4-19. Within each income category, this downward trend in average daily VMT per driver, between 2001 and 2009, was found to be statistically significant.



**Figure 4-19. Average daily VMT (miles) by income status for drivers in NYS (NHTS data)**

Likewise, income influence on the shares of trip purpose as measured in daily VMT per driver was also examined using NHTS data. Using the 2009 average daily VMT of a very-low income driver, Figure 4-20 shows that 2.8 miles of the total 11.2 VMT (see Figure 4-19), i.e., 25% in shares, were attributed to trips made for “earn a living” purposes. On the other hand, 8 miles out of the daily average of 22.6 miles in VMT (i.e., 35% share) traveled by other income drivers were made for the same purpose during 2009. Moreover, a typical higher income NYS driver is not only more likely to use a vehicle for work trips than a low-income driver, but also higher-income drivers also traveled more vehicle miles than their counterpart drivers from very-low income households (8 miles versus under 3 miles, respectively).

As shown in Figure 4-20, on a VMT per driver basis, nearly half of the daily VMT made by a very-low income NYS driver in 2009 was made to conduct family/personal business. Only about one-third of daily VMT by other income drivers was taken for the same reason during that year.



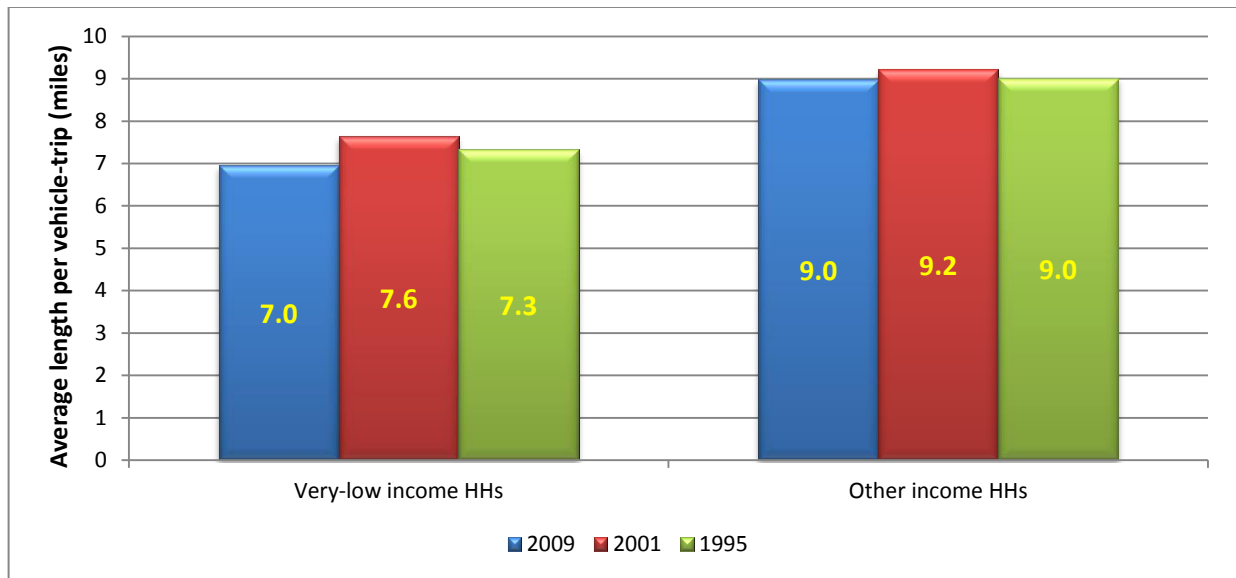
**Figure 4-20. Distribution of daily vehicle-miles traveled (VMT) by trip purpose and income status (NHTS data)**

#### 4.5.2 Average Vehicle-Trip Distance

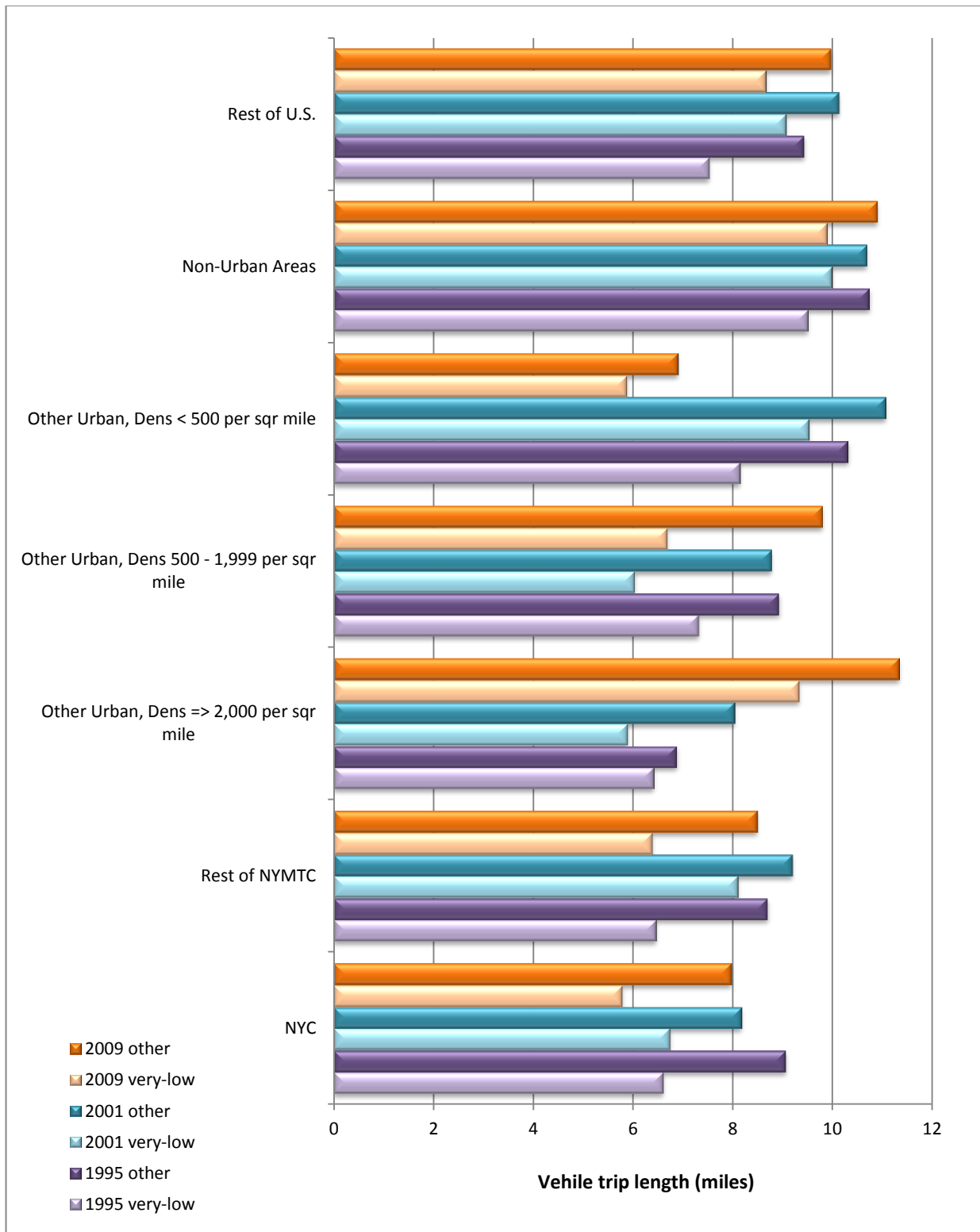
The NYS drivers from a very-low-income household not only traveled fewer vehicle-miles, as compared to their counterpart neighbors from other income households (Figure 4-19); they also made shorter vehicle trips than drivers from other income households. As displayed in Figure 4-21, drivers from a very-low income household in NYS traveled about 7 miles per vehicle-trip on a typical day in 2009, while drivers with higher income traveled an average of 2 miles further (29% more miles) for each vehicle trip taken during the same year. Unlike VMT, there were no significant differences in the average vehicle-trip length over the three NHTS years among drivers from each given income category.

Regardless of the size of population density, drivers from very-low income households consistently made shorter vehicle-trips, on average, than drivers with higher incomes (Figure 4-21). According to the 2009 NHTS data, population density seems to have an impact on the length of vehicle-trips for urban regions that are outside NYMTC—i.e., the higher the density, the longer the average trip length (Figure 4-22). Interestingly, a reversed pattern from those

observed in previous NHTS data (2001 and 1995) was seen. There are no significant differences in the average vehicle-trip length for drivers from NYC and those of the rest of NYMTC, regardless of drivers' income status.



**Figure 4-21. Average travel distance (miles) per vehicle-trip made by NYS drivers (NHTS data)**



**Figure 4-22. Average length of vehicle trips by population density/region and income status (2009, 2001, & 1995 NHTS)**

### 4.5.3 Effects of Income on Vehicle-Trip Travel Time

In addition to travel distance, the total time spent on daily vehicle-trips made by a driver who drove on the NHTS-assigned travel day was also analyzed in this study. Among drivers who drove on their travel day, those from very-low income households spent an average of about 68 minutes daily in vehicles during 2009, as compared to about 76 minutes for their higher income counterpart drivers (Figure 4-23). The similar trend is shown in 1995, but not in 2001 (average time spent in a vehicle per driver for very-low income households is larger than that of other income level households in 2001). The daily time spent in a vehicle decreased since 2001 for drivers with very-low incomes, dropping from 81 minutes in 2001 to 68 minutes in 2009. Such a level of reduction in time was not observed among higher income drivers, however.

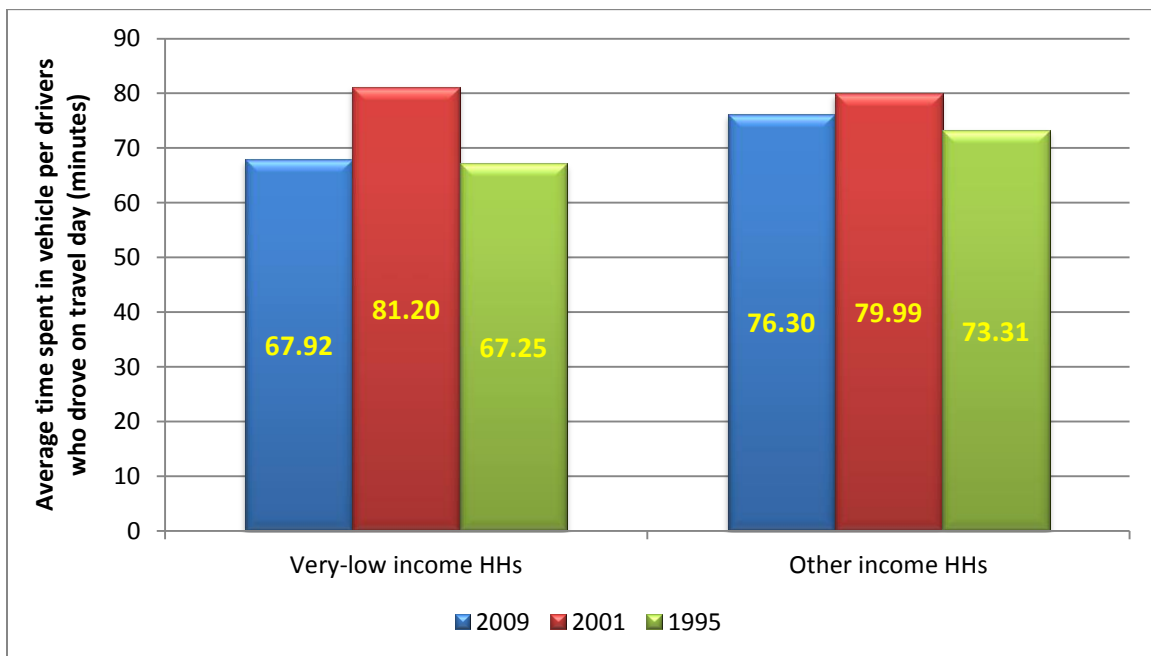


Figure 4-23. Average time spent in vehicle per NYS-driver who drove on travel day (minutes)

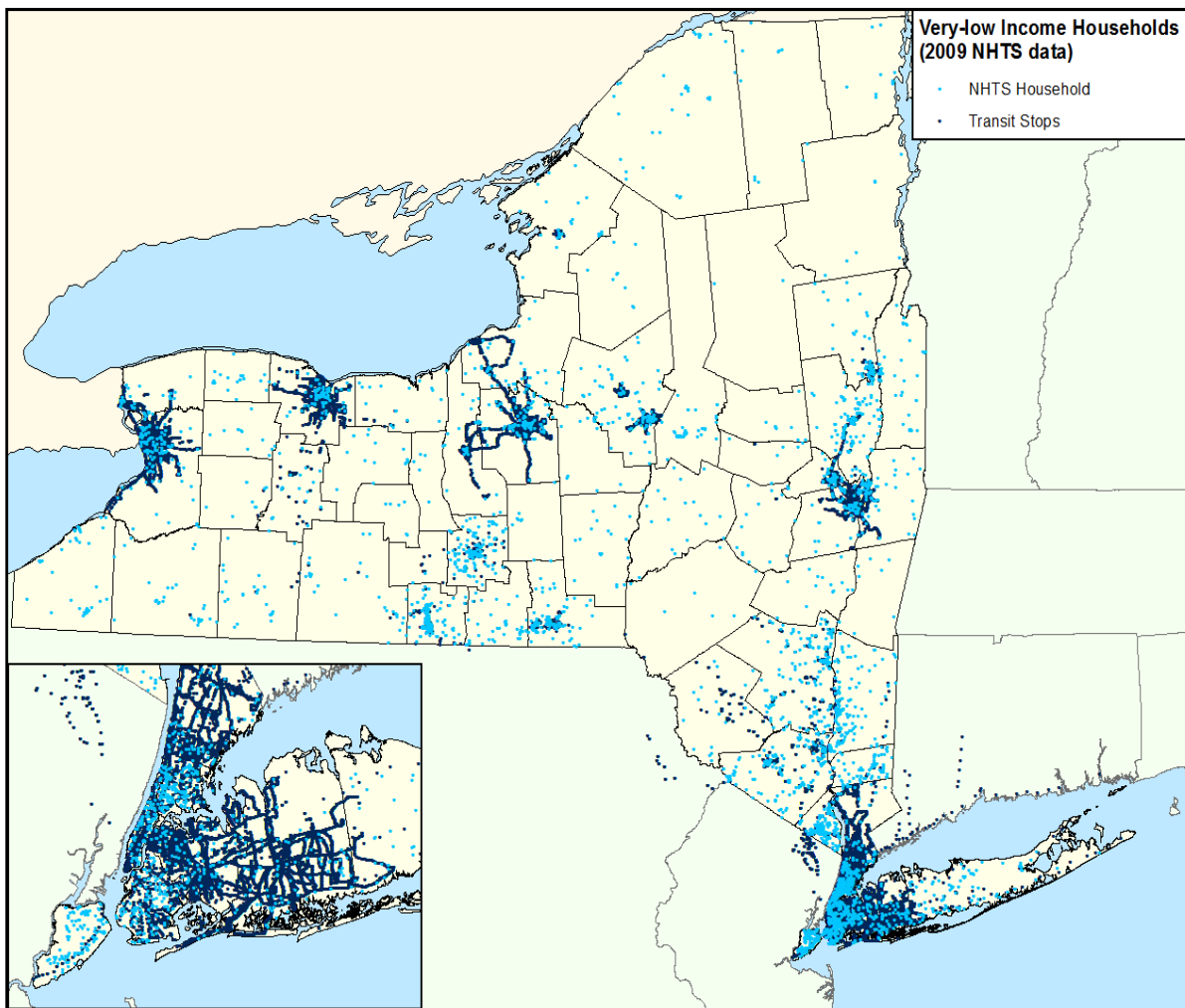




## 5. TRANSPORTATION ACCESSIBILITY AND EQUALITY

### 5.1 ACCESSIBILITY TO PUBLIC TRANSPORTATION

As discussed earlier in this report, mode share for public transit is significantly higher among NYS's very-low income population than that of higher income neighbors. Not surprisingly, Figure 5-1 shows that the majority of very-low income households in NYS were in close proximity to transit stops. Using 2009 NHTS data along with transit data obtained from NYS General Transit Feed Specification (GTFS), over 70% of NYS very low income population, with ages of 5 years and over (NHTS constraint), lived within a one-mile radius of transit stops.



**Figure 5-1. Distribution of very-low income households and locations of public transit stops in NYS**

Note that a one-mile radius was chosen for this study because this distance is achievable within roughly 20 minutes walking under normal conditions. This one-mile transit stop radius essentially covered 84% of NYS's very-low income population, while only 17% of their

counterpart other income New Yorkers lived within the same range. Clearly, NYS's public transit plays an important role in serving its very-low income population's mobility needs.

### 5.1.1 Influence of Income on Public Transit Uses

Based on the 2009 NHTS, Figure 5-2 indicates that the likelihood of using public transit decreases as the person's household income increases. Nearly 35% of all persons in NYC with income under \$25,000 used public transit, compared to 13% for their neighbors from the \$100,000+ income households. Moreover, less than 4% of persons with the lowest income level (under \$25,000) who lived outside of NYC utilized public transit during 2009—likely associated with the availability of (or rather, the lack of) public transit services. Note that Figure 5-2 shows public transit use among NYC residents who did not report their incomes was also significant (25%).

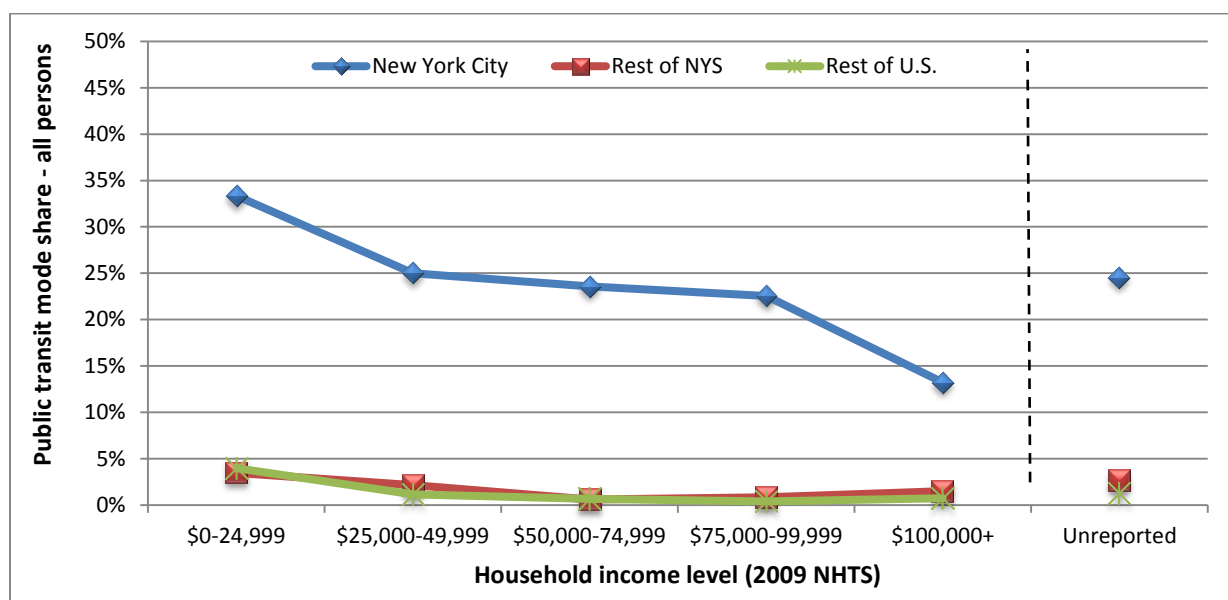
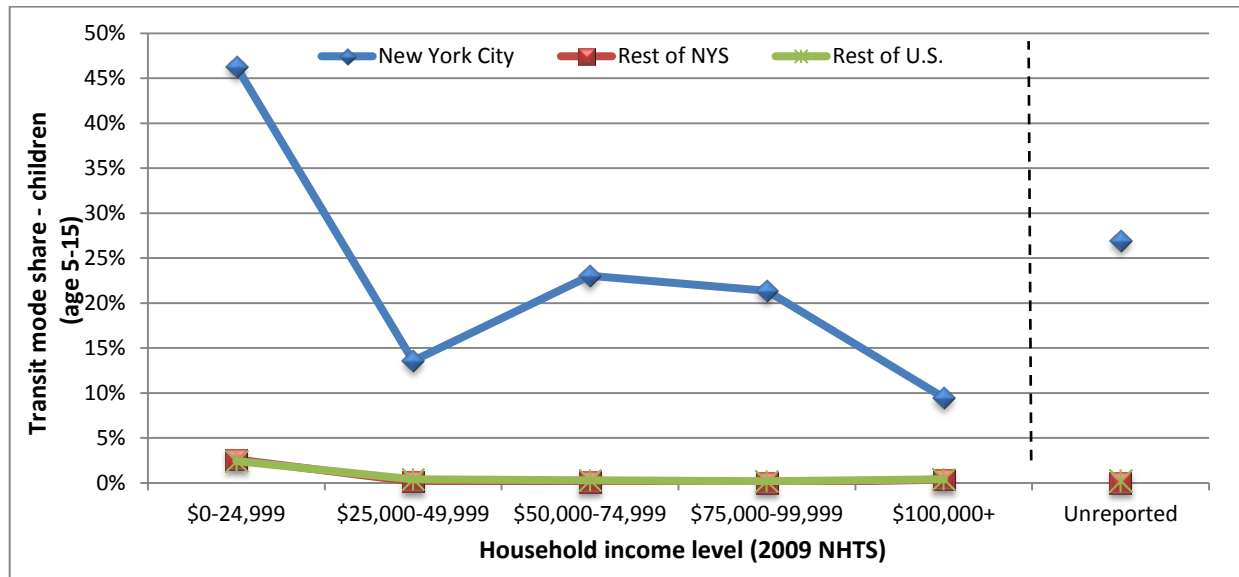


Figure 5-2. Public transit share (all persons age 5 years and over) by income and region (2009 NHTS)<sup>15</sup>

Children (ages 5-15 years old) from the lowest income households (under \$25,000) of NYC had the highest likelihood (46%) of taking public transit compared to children of higher income households (Figure 5-3). In contrast, only 13% of children in households with \$100,000 or more incomes from NYC used public transit during 2009. Outside of NYC, children from other NYS regions and those of the rest of U.S. used public transit similarly, regardless of their income status. Children from the lowest income households residing outside of NYC still show a higher likelihood of taking public transit than those of other households from the same region, 2.4% versus 0.4% or under, respectively.

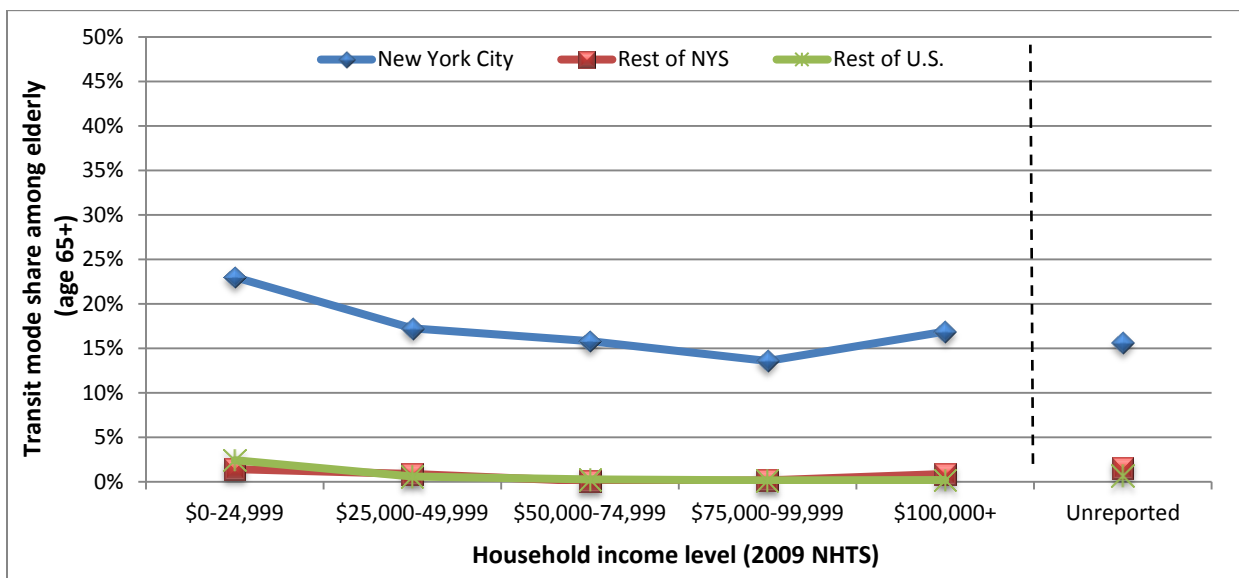
<sup>15</sup> Public transit share by income and region for other years, 2001 and 1995, can be obtained from NHTS, but may not be directly comparable due to many factors, such as changes of transit network, overall traffic conditions of NYC, consideration of inflation factor with different income levels.

Unlike the patterns seen in Figures 5-2 (for the entire population) and 5-3 (for children), Figure 5-4 displays a much smoother public transit share pattern for NYC's elderly residents (ages of 65 years and older) over the household income levels. Elderly NYC residents with the lowest income (under \$25,000) still have a higher likelihood of using public transit than their higher income counterpart neighbors, 23% versus 17% or lower, respectively.



**Figure 5-3. Public transit share among children (ages 5-15) by income and region (2009 NHTS)**

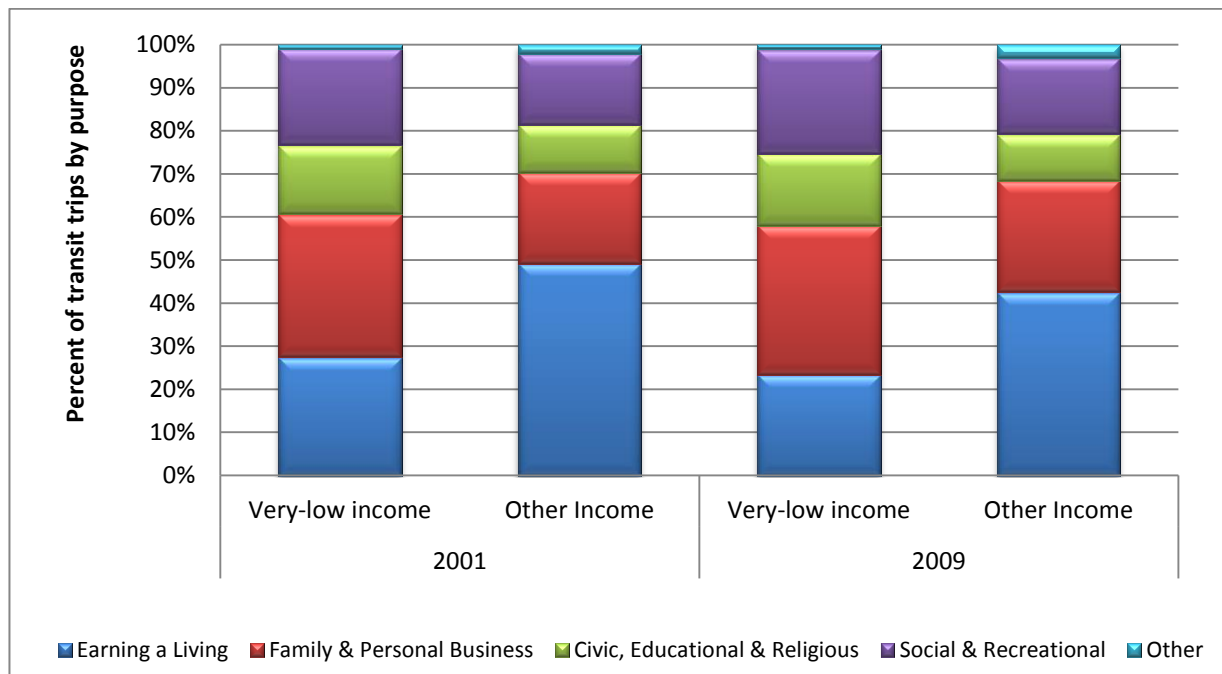
Clearly visible in Figure 5-4, the gap in public transit mode shares between the poorest and others with higher incomes was much smaller among elderly residents. Interestingly, for New Yorkers who lived in NYC and household incomes of \$100,000 or more, public transit was an alternate mode of transportation for 17% of their elderly members.



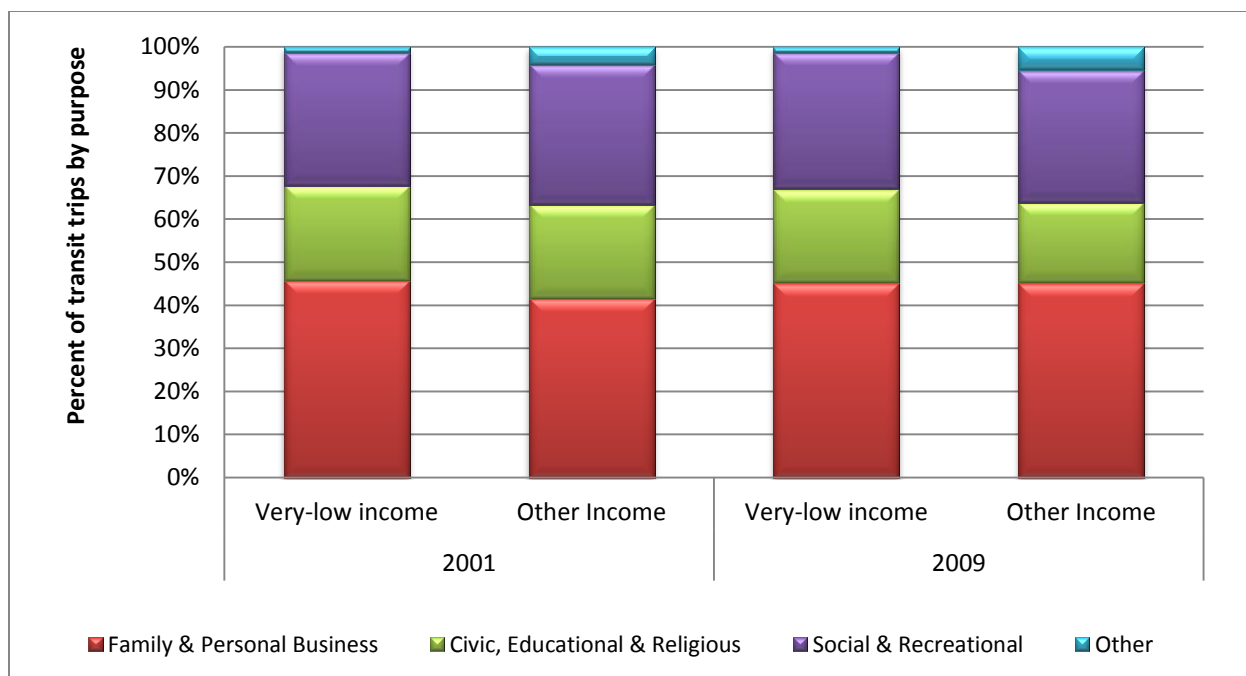
**Figure 5-4. Public transit share among elderly residents (65+) by income and region (2009 NHTS)**

### 5.1.2 Public Transit Use by Income Status and Trip Purpose

Most of the public transit trips made by NYS's very-low income households on a daily basis were for family & personal business purposes in both 2001 and 2009. On the other hand, most of the public transit trips made by their higher income neighbors were for conducting their daily activities for work purposes during the same period. As seen in Figure 5-5, 35% the daily public transit trips taken by NYS's very-low income residents in 2009 were for family/personal business activities, versus 26% among their counterpart other income transit-user neighbors. On the contrary, nearly 43% of public transit trips made by other income New Yorkers were to earn a living (work), as compared to only 23% among public transit trips taken by their lower income counterpart neighbors. Aside from work trips, however, no significant influence due to trip purpose was found. Figure 5-6 shows that the non-work trip-purpose distributions of daily public transit trips are very similar, regardless of the income level of the travelers.



**Figure 5-5. Distribution of daily public transit trips by trip purpose and income level in NYS (2009 & 2001 NHTS)**

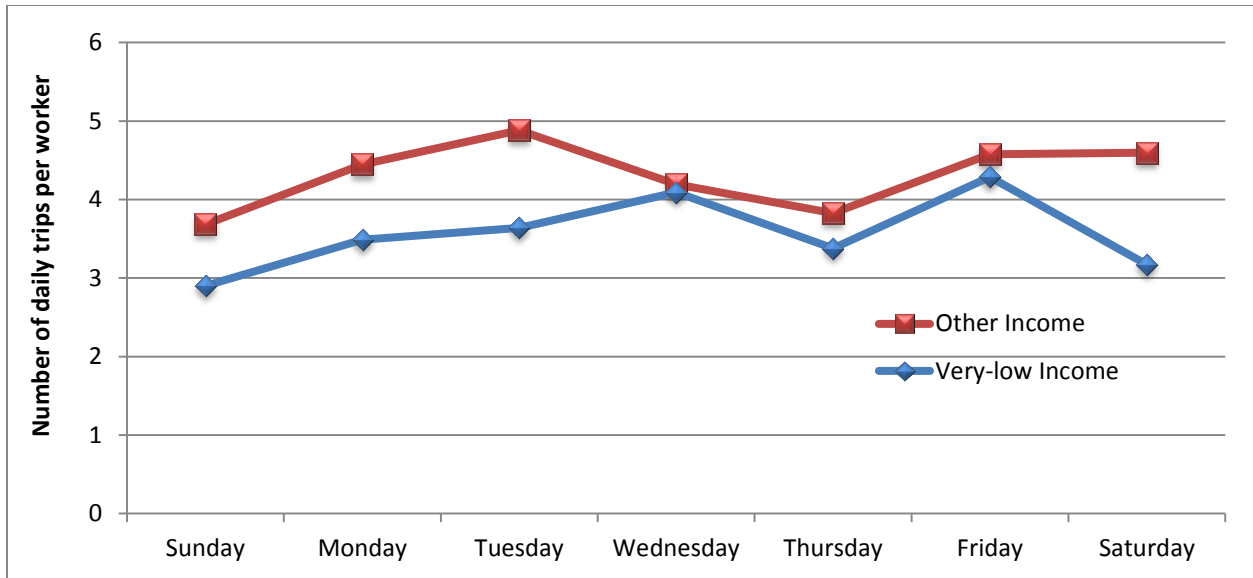


**Figure 5-6. Distribution of daily public transit trips by non-work purpose and income for NYS residents (NHTS)**

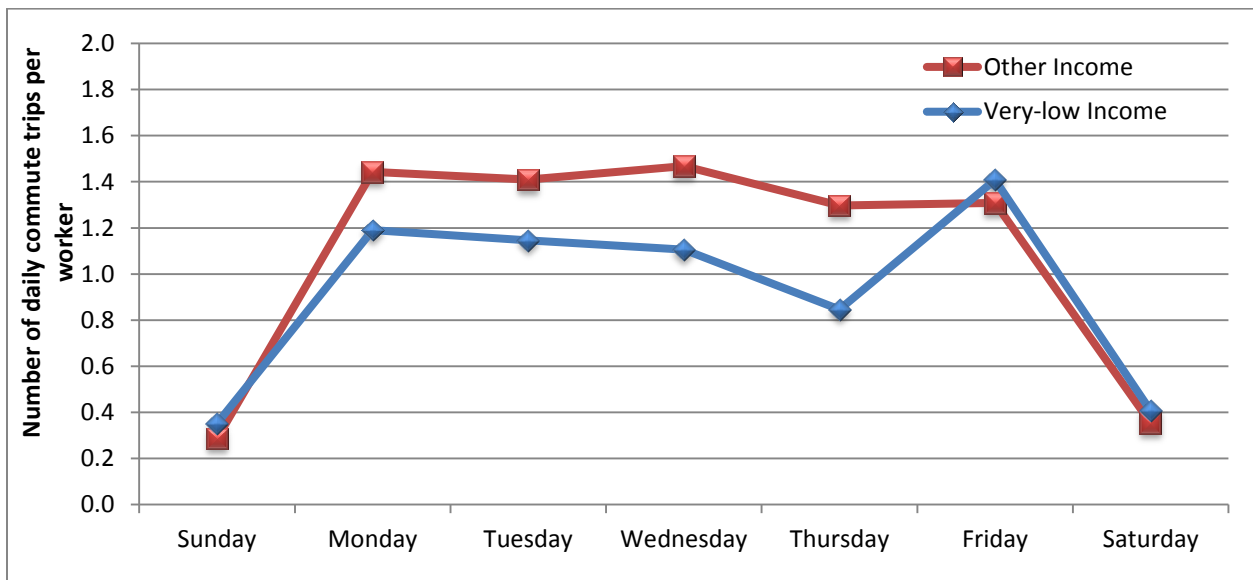
## **5.2 WORKER COMMUTE PATTERNS**

### **5.2.1 Trip Frequency by Day of the Week Traveled**

Overall, among NYS residents, other income workers made more daily trips than very-low income workers during weekends as well as weekdays (Figure 5-7). The differences during the second half of the weekdays were not as visible, however. When focusing on commute trips (Figure 5-8), a very-low income worker appears to make slightly more daily commute trips compared to his/her other income counterpart during the Friday-Sunday period. This might be attributed to lower income workers who are more likely to be employed by lower-paying service sector jobs, which tend to require more help during the weekends (including Friday nights).



**Figure 5-7. Average number of daily person-trips per worker by income status for NYS residents (2009 NHTS)**

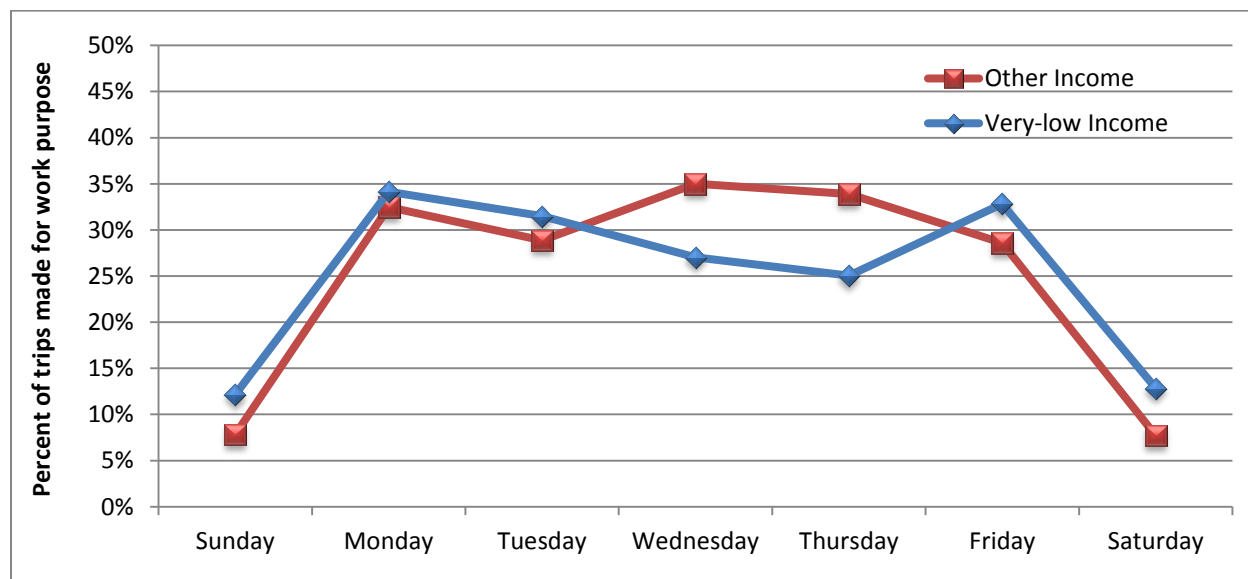


**Figure 5-8. Average number of daily commute trips per worker by income status for NYS residents (2009 NHTS)**

Figure 5-9 shows that the shares of commute trips were slightly higher for a very-low income worker on most days, except for Wednesday and Thursday. On average, roughly one-third of daily trips made by a very-low income worker during weekdays were for work (Figure 5-9). Weekend commute trips accounted for less than 8% of daily trips made by an other income worker, compared to about 12-13% of daily trips made by a very-low income worker.

Due to sample size limitations, however, these estimates were subjected to higher uncertainties - i.e., with a wider range of standard errors, thus not as precise. Consequently, the

impacts of income status on the average number of daily trips (as well as commute trips) made by NYS workers, during 2009, were inconclusive.



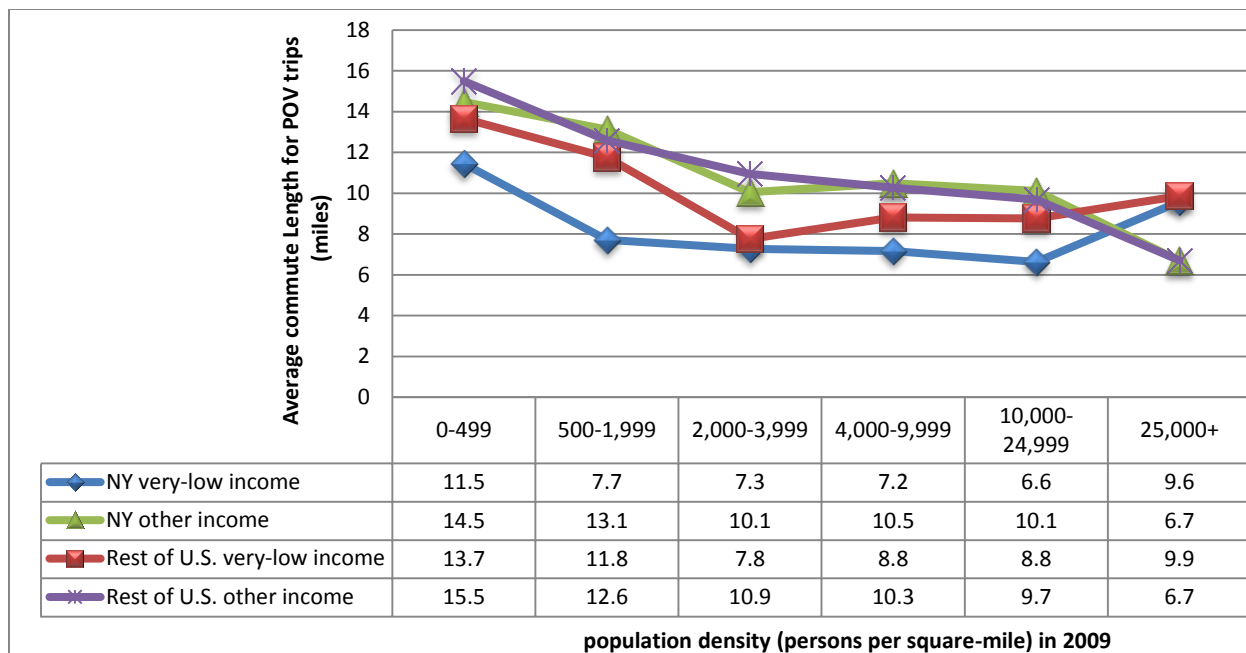
**Figure 5-9. Percent of daily person trips made for work purpose by income status for NYS**

### 5.2.2 Length of POV Commute-Trip by Population Density

Summarized in Figure 5-10, workers from very-low income households typically traveled shorter distances in POVs for their commute trips than those made by workers from higher income households in 2009, regardless of where they lived. The only exception is for workers who lived in the highly populated urban areas (25,000+ in population density), where a very-low income worker traveled an average of 3 miles farther in POV commute trips than his/her counterpart from other income households (Figure 5-10).

In addition, Figure 5-10 shows no visible differences in trip length (in miles) for commute-trips made in POVs between other income NYS workers and those from the rest of U.S., with respect to the population density of their resident locations (see green and purple lines in Figure 5-10). However, this chart clearly shows that POV commute-trip lengths among other income workers, on average, decreases as the population density in which they resided increases.

The average commute-trip length by POVs for workers from a very-low income household in NYS (blue line in Figure 5-10) also displays a declining trend as the population density (in which they lived) increases. However, as pointed out above, average commute-trip length on POVs for those who lived in the highest density place (including NYC) does not follow that trend. Similarly, workers from very-low income households who lived in the rest of U.S., on average, traveled slightly longer distances in a POV for their daily commute trips, especially for those who lived in less dense locations (i.e., rural or small urban areas).



**Figure 5-10. Average POV commute-trip length (in miles) by income status, population density, and region in 2009**

Table 5-1 summarizes workers' daily commute statistics with respect to their modes of transportation used for commuting (POV, public transit, walk, and other), by their income status and population density for the areas in which they lived during 2009. Based on the average commute length statistics presented in Table 5-1, it is clearly visible that, in most non-walking cases, an other income worker traveled a longer commute-trip than one from a very-low income household, except for those who lived in a highly-populated areas (i.e., 25,000+ in population density).



**Table 5-1. Commute statistics by mode, population density, and household income status in 2009 (2009 NHTS)**

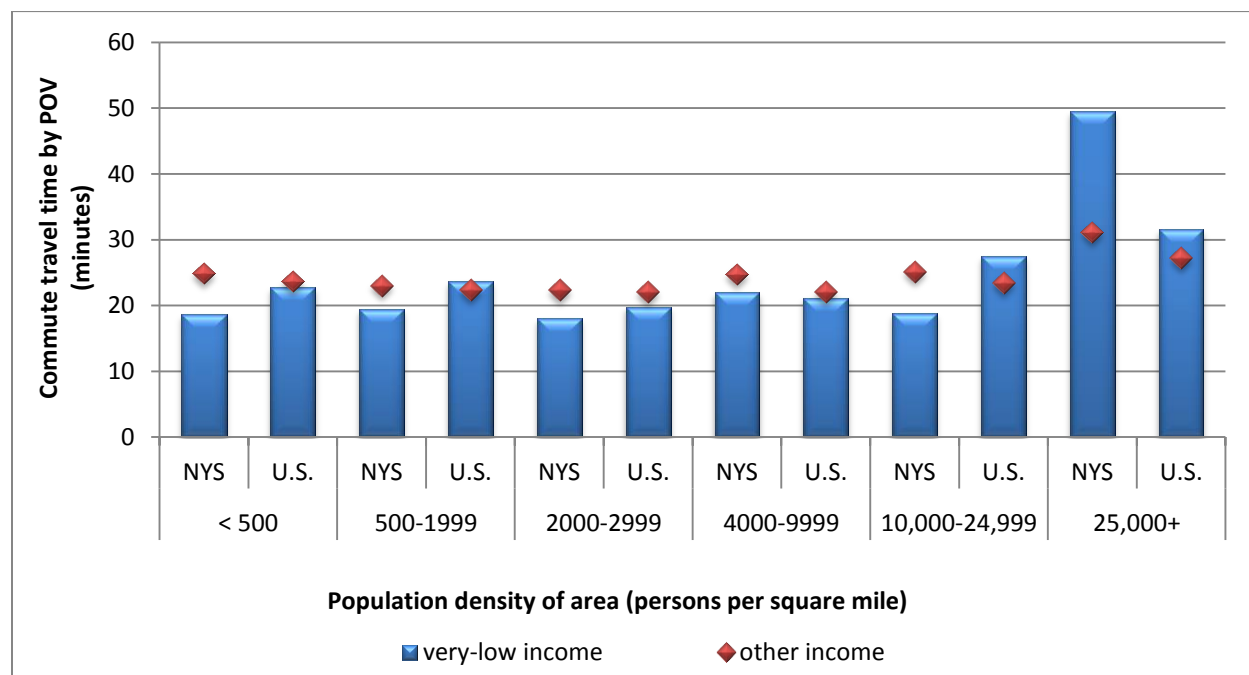
Mode of Transportation for Commute Trips	Population Density (Population per square mile)											
	< 500		500-1,999		2,000-2,999		4,000-9,999		10,000-24,999		25,000+	
	NYS	U.S.	NYS	U.S.	NYS	U.S.	NYS	U.S.	NYS	U.S.	NYS	U.S.
<b>Average Commute Length (miles)</b>												
<b>Very-low-income Persons</b>												
Private vehicle	10.0	13.4	9.9	11.9	6.9	9.1	7.7	9.3	5.9	10.5	21.4	13.2
Public Transit	8.2	5.3	2.0	9.3	4.3	5.5	6.1	8.8	8.3	6.3	6.9	9.9
Other	7.8	3.8	7.2	6.5	6.6	5.0	2.8	6.4	18.3	3.2	6.0	10.0
Walk	0.4	0.7	2.0	3.3	0.5	0.8	1.2	1.0	0.4	1.0	0.7	0.6
<b>Other-income Persons</b>												
Private vehicle	15.1	15.0	11.8	12.6	11.2	10.8	10.6	10.2	9.0	9.7	9.7	8.9
Public Transit	21.9	7.0	29.4	27.3	29.1	19.7	16.1	12.7	13.3	8.4	7.7	5.3
Other	88.7	46.4	9.5	35.2	2.9	15.5	4.6	10.4	33.8	11.6	3.4	4.2
Walk	0.6	0.5	1.1	0.6	0.5	0.8	0.7	0.8	0.9	1.0	2.2	0.7
<b>Commute Travel Time (minutes)</b>												
<b>Very-low-income Persons</b>												
Private vehicle	18.7	22.8	19.4	23.7	18.0	19.8	22.0	21.1	18.8	27.5	49.5	31.5
Public Transit	42.0	58.7	27.8	45.7	33.5	47.6	34.8	55.8	45.7	49.1	53.7	57.0
Other	27.4	18.4	21.6	18.2	14.6	28.8	22.4	29.4	41.6	18.9	39.1	24.4
Walk	6.0	10.9	14.4	17.7	10.0	16.9	20.7	17.8	16.2	16.6	15.6	14.0
<b>Other-income Persons</b>												
Private vehicle	24.9	23.7	23.0	22.4	22.4	22.1	24.7	22.1	25.2	23.5	31.2	27.3
Public Transit	63.4	39.8	70.4	59.6	70.9	79.4	61.4	48.6	69.8	51.6	48.0	47.3
Other	36.8	24.9	41.6	26.7	18.4	38.1	22.6	30.9	42.2	23.8	21.6	22.6
Walk	9.8	8.6	14.5	25.1	15.6	17.4	14.8	12.9	19.0	14.5	20.9	12.8
<b>Average Commute Speed (miles per hour)</b>												
<b>Very-low-income Persons</b>												
Private vehicle	32.2	35.2	30.5	30.1	23.1	27.5	20.9	26.3	18.8	23.0	25.9	25.1
Public Transit	11.8	5.4	4.3	12.2	7.7	6.9	10.6	9.4	10.9	7.7	7.7	10.4
Other	17.2	12.4	20.1	21.4	27.2	10.4	7.5	13.0	26.4	10.0	9.2	24.7
Walk	4.4	3.7	8.4	11.4	2.8	2.7	3.4	3.3	1.5	3.5	2.9	2.7
<b>Other-income Persons</b>												
Private vehicle	36.4	38.1	30.6	33.7	29.9	29.3	25.7	27.8	21.4	24.7	18.7	19.5
Public Transit	20.8	10.6	25.0	27.5	24.6	14.9	15.8	15.7	11.4	9.7	9.6	6.7
Other	144.5	112.0	13.7	79.2	9.3	24.5	12.2	20.2	48.1	29.3	9.6	11.2
Walk	3.6	3.6	4.5	1.5	2.0	2.7	3.0	3.8	2.8	4.2	6.3	3.1

**Note:** Yellow shaded cells are based on small samples.

### 5.2.3 Average Commute Travel Time

Included in Table 5-1 are summaries of commute trips by travel time (in minutes) for a worker's daily trip with respect to the mode used, income level, and population density of the region where the worker lived in 2009. Typically, a worker spent less time on commute trips made by POVs as compared to commuting by other non-walk modes, regardless of income status or regions. Workers taking public transit, on the other hand, generally spent the most time commuting.

Furthermore, Figure 5-11 demonstrates no significant differences in commute travel time on POVs (in minutes) between very-low income workers and those from other income households, regardless of population density of the areas they lived. Again, due to relatively large sample variations in these travel time estimates, no conclusions on any impacts due to income levels for commute travel time could be drawn. Note that a summary table on standard errors associated with estimates provided in Table 5-1 is included in Appendix B of this report as a reference.



**Figure 5-11. Commute travel time per worker for POV trips by income status and population density (2009 NHTS)**

A similar display of a worker's daily commute travel time on public transit during 2009, by income and region (measured by population density), is presented in Figure 5-12. As seen from statistics presented in Table 5-1, along with their associated standard errors in Appendix Table B-8, most of these cells were subjected to relatively wide range of errors. This clearly indicates higher degrees of uncertainties on the estimates. Therefore, impacts due to income status, and/or population density, on worker's commuting behavior using public transit were also inconclusive.

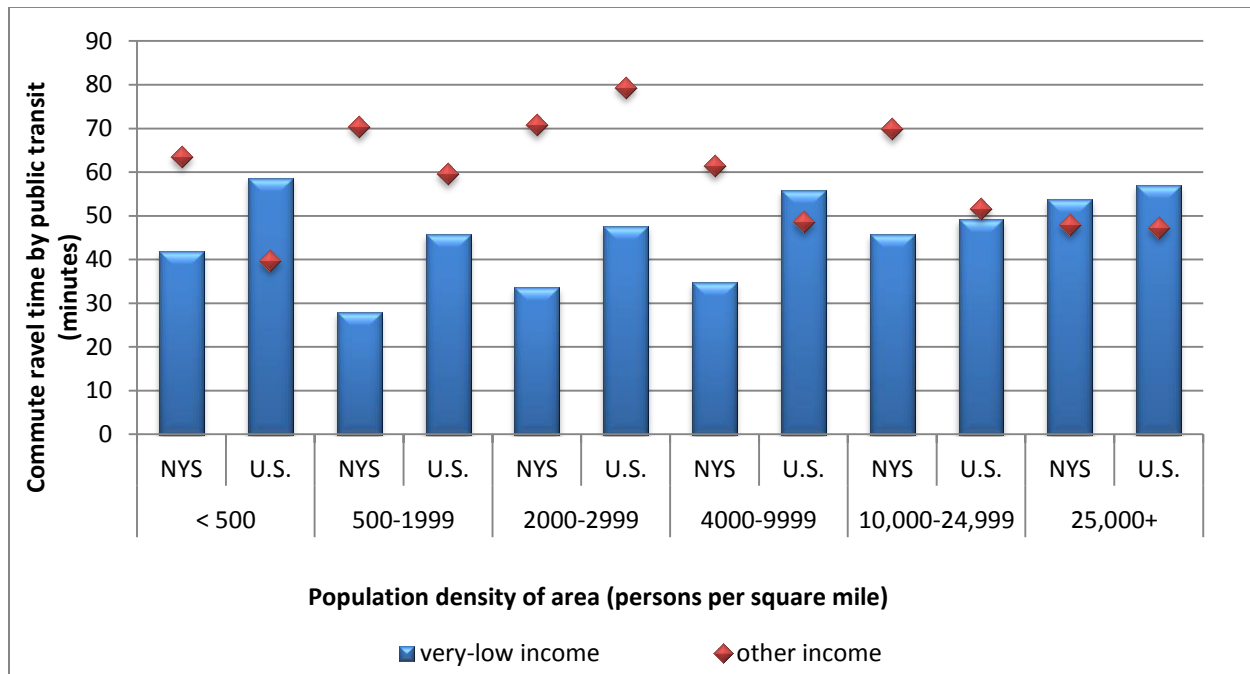


Figure 5-12. Commute travel time per worker for trips made using public transit during 2009 by income status and population density (2009 NHTS)

## 5.3 LOW-INCOME ZERO-VEHICLE HOUSEHOLDS

### 5.3.1 Effect on Mode Shares

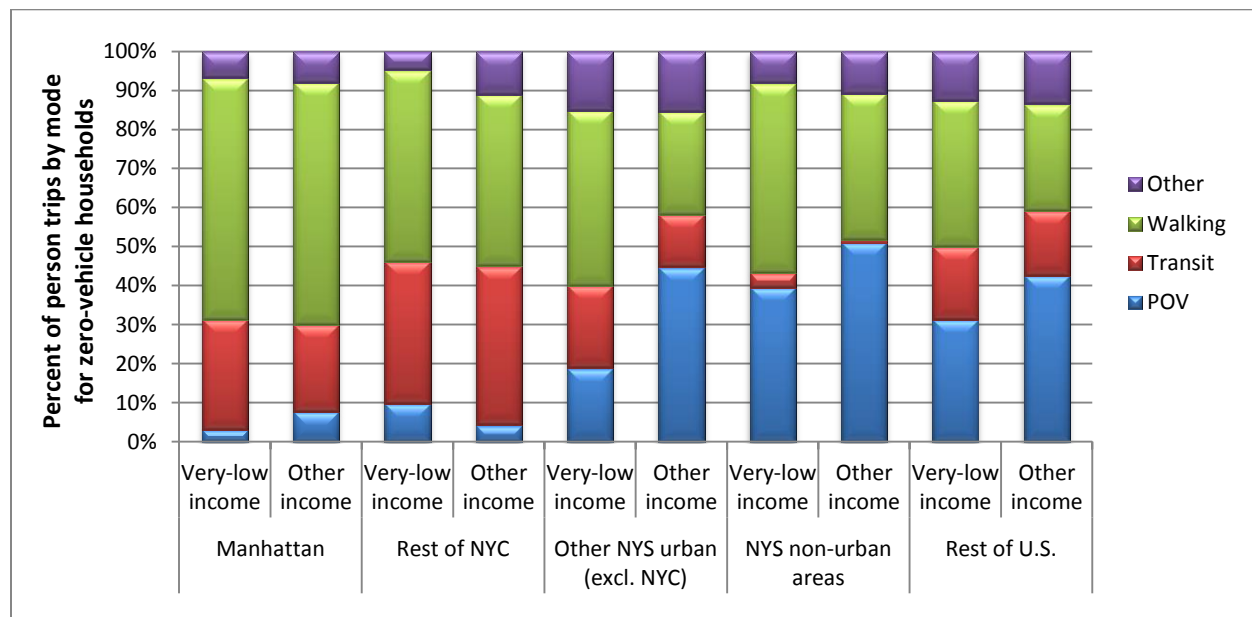
As pointed out earlier in this report (Figure 3-12), about 50% of the very-low income households in NYS did not own any vehicles, compared to only 20% in the rest of the U.S. Most of these zero-vehicle households in NYS were located in NYC. Regardless of income status, a very-low income New Yorker is more likely to not have traveled and made fewer, as well as shorter, daily trips than a counterpart from other income households in any given day (Table 5-2).

Walking is a primary mode of transportation for persons from very-low income with zero-vehicle households. Specifically, most person-trips taken by individuals from zero-vehicle households within Manhattan in 2009 were made by walking (Figure 5-13), and accounted for 62% of all person-trips taken regardless of income status. Outside of NYS, 37% of person-trips taken by residents from very-low income zero-vehicle households were also walking.

Although POV is the most frequently used mode of transportation among individuals from other income zero-vehicle households who lived in NYS urban areas outside NYC (40%), still nearly one in four (24%) of their trips were made by walking (Figure 5-13). In addition, public transit was another primary mode used by those from zero-vehicle households in NYC, for both income groups. The POV use was more significant for zero-vehicle households residing in rural areas of NYS and the rest of U.S., regardless of household income status.

**Table 5-2. Mobility statistics for NYS residents with/without access to vehicle (2009 NHTS)**

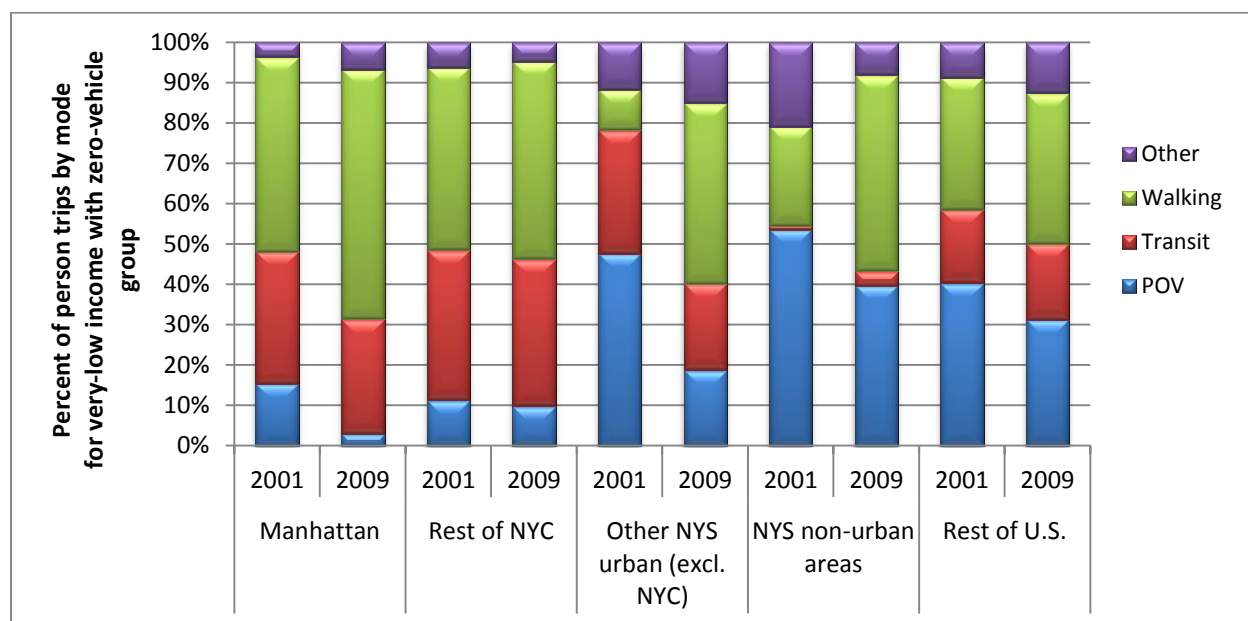
Mobility Measures	2009	
	Zero-Vehicle Households	Households With Vehicles
<b>Percent person did not travel on travel day</b>		
Very-low-income	19.9%	14.9%
Other-income	15.6%	11.5%
<b>Avg. PT/person</b>		
Very-low-income	2.81	3.33
Other-income	3.77	3.97
% difference between income groups	-25.4%	-16.2%
<b>Average PMT/person</b>		
Very-low-income	6.46	19.99
Other-income	13.59	34.42
% difference between income groups	-52.4%	-41.9%
<b>Average Person trip length</b>		
Very-low-income	2.74	6.58
Other-income	3.90	8.87
% difference between income groups	-29.8%	-25.8%



**Figure 5-13. Mode shares of person-trips for zero-vehicle households, by income status and region (2009 NHTS)**

In addition, Figure 5-14 compares the above mode share patterns over time between 2001 and 2009. There is a clear increase in the shares of walk trips in all regions, based on person-trips taken by individuals from very-low income with zero-vehicle households. Most of the increases in shares of walk trips can be attributed to the decrease in associated POV share, except for those of the rest of NYC where no significant difference between the two NHTS years were identified. Interestingly, Figure 5-14 indicates public transit shares accounted for nearly 20% of person-trips made by individuals from the very-low income with zero-vehicle households who lived outside of NYS. This is consistent over the two NHTS years, which could indicate that

very-low income with zero-vehicle households are more likely to live in urban areas where public transit is available.



**Figure 5-14. Mode shares of person-trips for very-low income with zero-vehicle households by region (2001 and 2009 NHTS)**

## 5.4 MOBILITY OF CHILDREN IN POVERTY

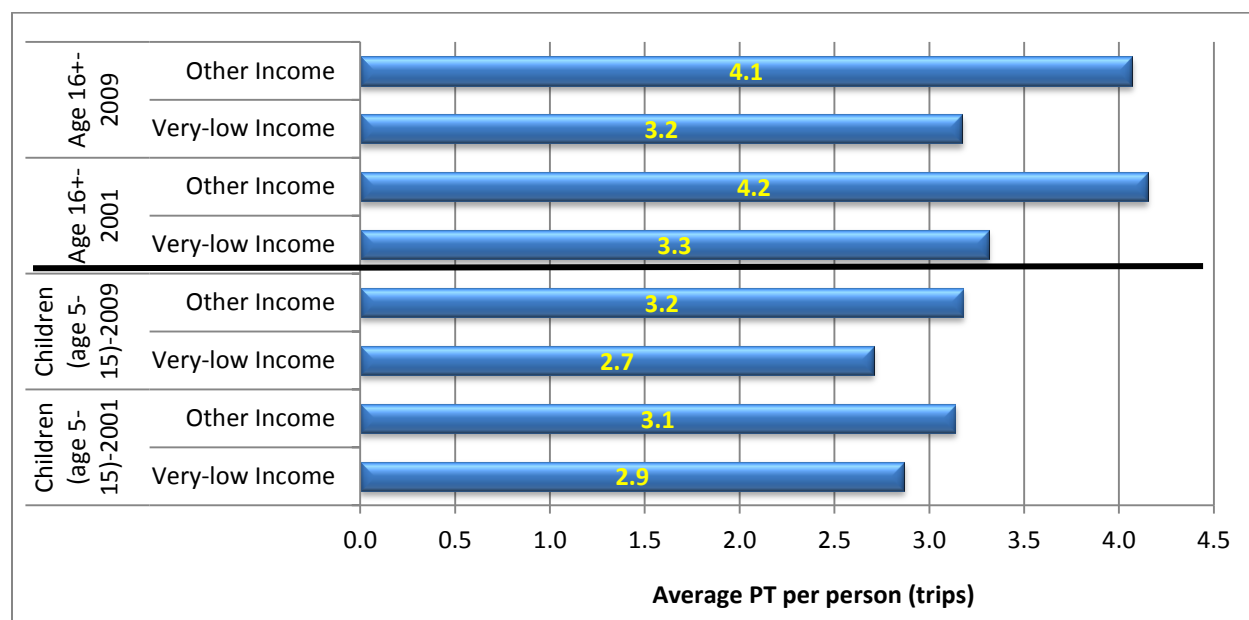
To evaluate how income status might influence the mobility of children in NYS, this section examines travel statistics with a focus on the population ages 5 through 15 years old during 2009. Recall that, the scope of NHTS includes only persons ages 5 years and above.

### 5.4.1 Person Trips

As discussed in Section 4.2 (Figure 4-3), on average a typical very-low income New Yorker (of any age) traveled 3.1 trips daily in 2009 while a person from other income households made about 3.9 trips per day in the same year. Expectedly, NYS's children (5-15 years old) typically traveled less frequently than older NYS residents (ages of 16 years and older). On average, Figure 5-15 shows that children from a very-low-income NYS household traveled 2.7 trips daily in 2009, as compared to 3.2 trips for their counterpart older neighbors. For other income households, these daily travel frequencies are 3.2 trips and 4.1 for children and non-children of NYS residents, respectively.

Beyond the age impact on trip frequencies, the fact that individuals from a very-low income household made fewer trips than their counterpart higher income neighbors remains consistent within each age group (children or not) and for both 2001 and 2009 survey years. Income influence on travel frequencies appears to be less among children, however. Specifically, children of lower income households made about 19% (2.7 vs. 3.2) fewer trips than the higher

income children in 2009. For those over 15 years old, this trip-frequency gap went up to about 28% (3.2 vs. 4.1).

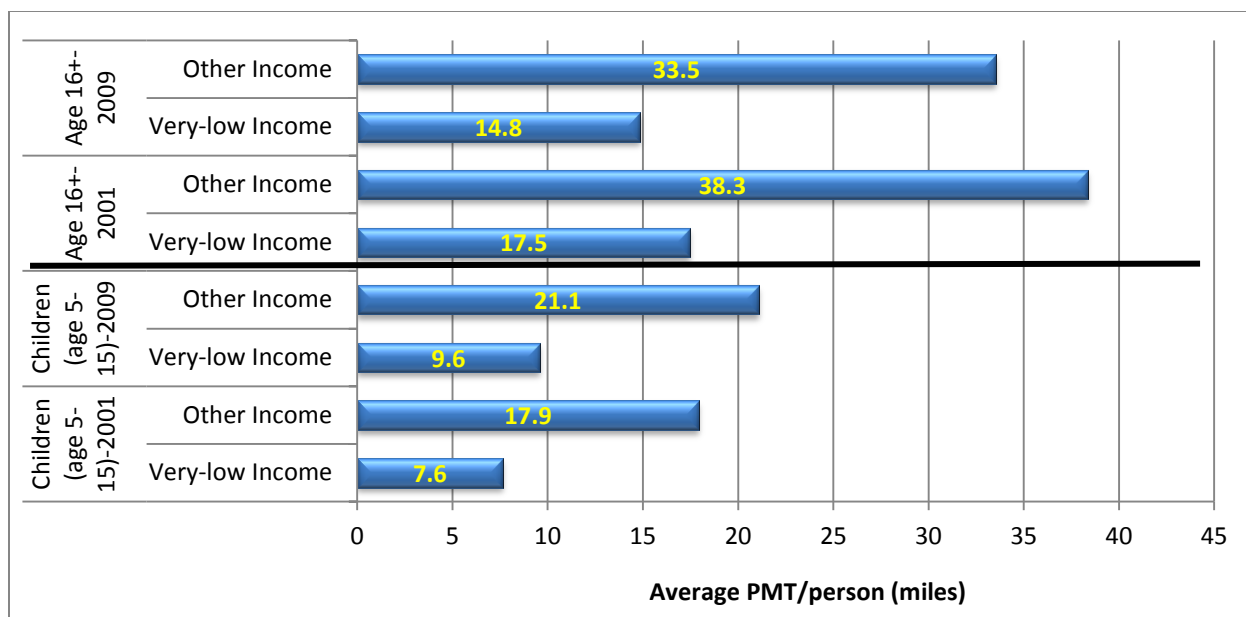


**Figure 5-15. Average daily person-trips comparison between children (age 5-15 years old) and all others in NYS by income status (NHTS data)**

## 5.4.2 Person-Miles Traveled

Similarly, Figure 5-16 presents average daily person-miles traveled by age group (children vs. non-children) and income status using 2001 and 2009 NHTS data. Understandably, children traveled fewer miles on a daily basis than older New Yorkers within the same income class in NYS, i.e., 9.6 miles versus 14.8 miles respectively for children of very-low income households and 21.1 miles versus 33.5 miles respectively for those from other incomes.

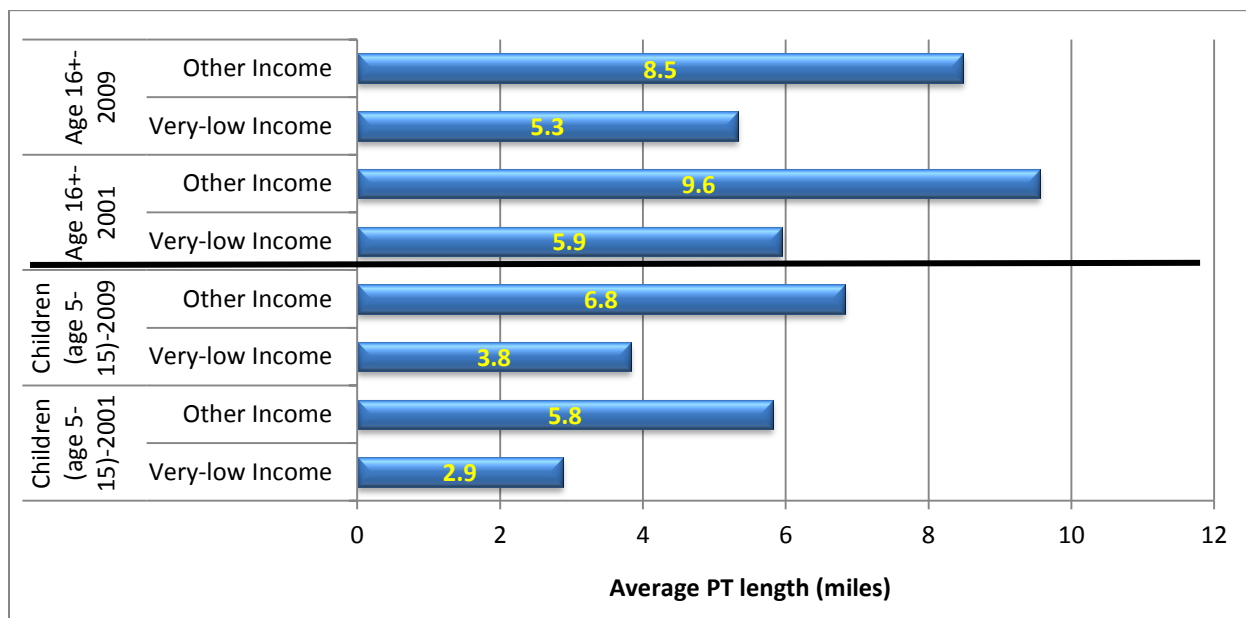
On any typical day, children from NYS's very-low income households traveled less than 10 miles daily on average, as compared to over 21 miles per day among children of higher income households in 2009 (Figure 5-16). The gap in average person-miles traveled between the two income groups is also significant among New Yorkers who were 16 years and older.



**Figure 5-16. Comparison of average daily person-miles traveled between children (age 5-15 years old) and all others in NYS by income status (NHTS data)**

### 5.4.3 Average Person-Trip Length

In NYS, the average person-trip length for children was shorter, by about 2 miles on average, than the age group of 16 or older, within the same income group (Figure 5-17). Moreover, very-low income individuals regardless of age typically traveled about 3 miles shorter per each trip than person trips made by their counterpart higher income neighbors in 2009.



**Figure 5-17. Comparison of average person-trip length between children (ages 5-15 years old) and others in NYS by income status (NHTS data)**

#### 5.4.4 Mode Shares on Trips Made by Children (ages 5-15 years old)

According to 2009 NHTS data, about one-third of children in NYS lived in very-low income households, compared to 27% in the rest of the country. As presented in Table 5-3, children from very-low income households in NYS traveled the least frequency (2.7 trips on the average) and made shorter trips (average of 9.6 miles), daily, than all other children in the nation. Furthermore, children of other income households were significantly more likely to travel by POVs as compared to those of very-low income children, especially for children living in NYS. On the other hand, nearly half of the daily trips taken by a typical NYS very-low income child were made by walking or riding public transit (Table 5-3).

**Table 5-3. Mobility statistics of children by mode of transportation and household income level (2009 NHTS)**

Mode Share Stats	NYS		Rest of U.S.	
	Very-low Income	Other Income	Very-low Income	Other Income
Among children under 16	<b>33.6%</b>	<b>66.4%</b>	<b>27.3%</b>	<b>72.7%</b>
<b>Average PT/person</b>	<b>2.71</b>	<b>3.18</b>	<b>2.82</b>	<b>3.34</b>
POV	34.0%	58.2%	62.2%	74.1%
Public transit	17.2%	5.3%	2.0%	0.3%
Walk	32.2%	17.8%	19.0%	10.9%
Other	16.7%	18.6%	16.6%	14.6%
Unreported			0.3%	0.1%
All	100%	100%	100%	100%
<b>Average PMT/person</b>	<b>9.57</b>	<b>21.07</b>	<b>15.79</b>	<b>29.39</b>
POV	65.5%	67.9%	84.8%	81.5%
Public transit	14.6%	2.8%	1.6%	0.1%
Walk	4.4%	1.5%	2.1%	0.7%
Other	15.5%	27.8%	11.3%	17.6%
Unreported			0.2%	0.1%
All	100%	100%	100%	100%
<b>Average PT Length</b>	<b>3.8</b>	<b>6.82</b>	<b>5.97</b>	<b>8.93</b>

Furthermore, as shown in Table 5-3, around two-thirds of the daily person-miles traveled by children from NYS were by POVs, regardless of their household income levels. Expectedly, the POV shares of person-miles traveled for children residing outside of NYS were significantly higher, at 85% and 82% for children from very-low income and other income groups, respectively. The very-low income children in NYS traveled an average of 3.8 miles per trip as compared to 6.8 miles per trip for their other income counterpart neighbors—equivalent to an approximately 80% longer distance per trip. Outside of NYS, children from other income households made about 50% longer trips than those from very-low income households, 8.9 miles versus 6.0 miles, respectively.

#### 5.5 VERY-LOW-INCOME ELDERLY

As summarized in Table 5-4, a significant portion of very-low income elderly households (i.e., a household with one or more persons of ages 65+ years) were single-person households,

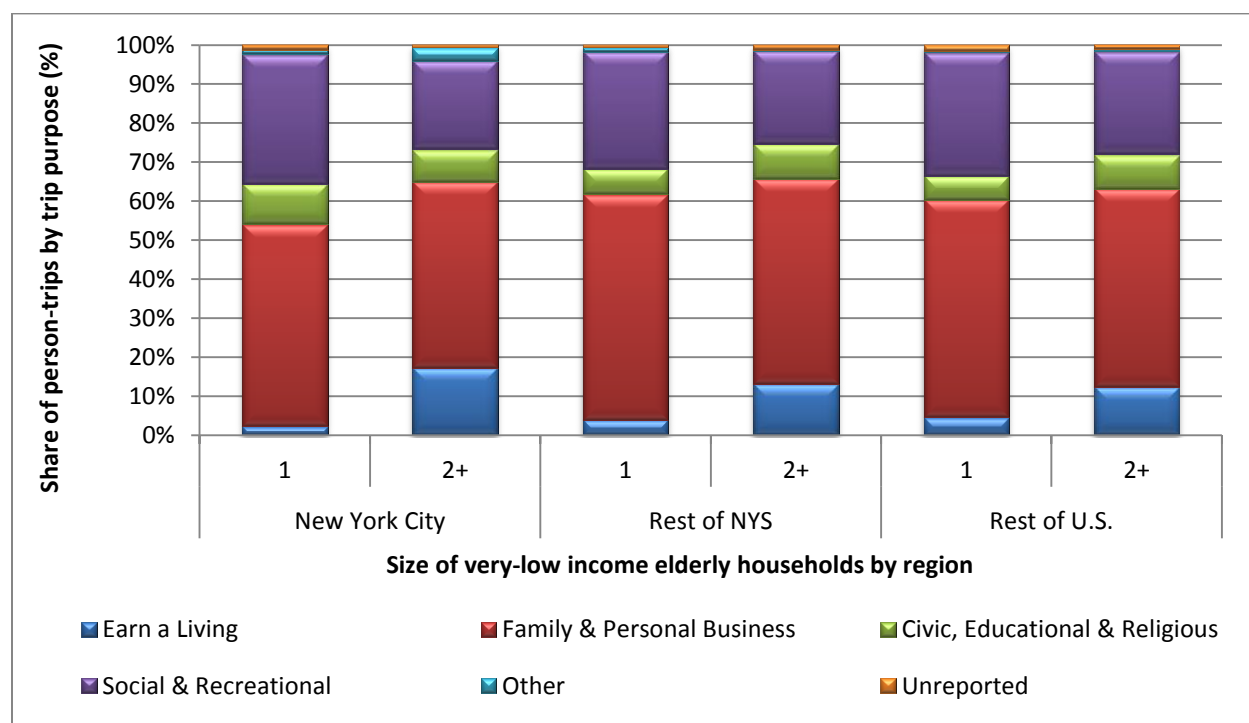


regardless of where they lived in 2009. Specifically, nearly three in five (59%) very-low income elderly households in NYS, but outside of NYC, lived alone, while it was 46% for those residing inside of NYC. The share of single occupant very-low income elderly households in the rest of U.S. is also significant and accounted for 53% of all very-low income elderly households in this region during 2009.

**Table 5-4. Very-low income elderly households by household size and region in 2009 (NHTS data)**

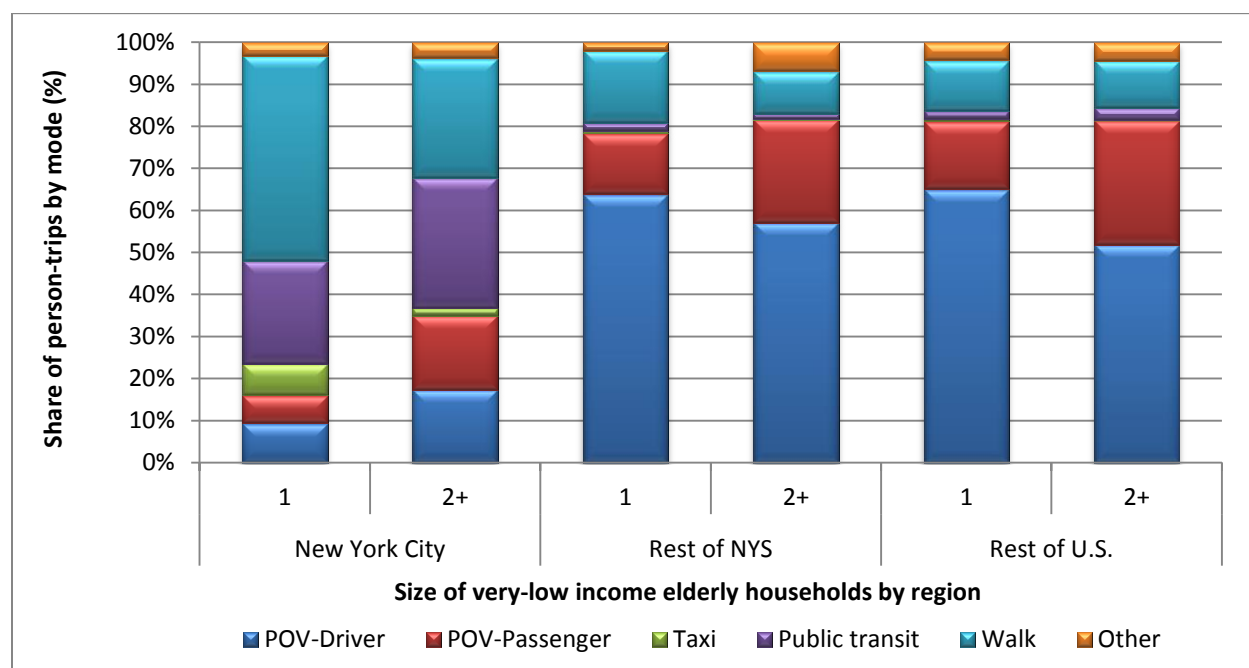
Very-low income elderly households (HHs)	Number of households			Number of persons		
	1-person HHs	2+ persons HHs	% live alone	1-person HHs	2+ persons HHs	% live alone
New York City	192,407	223,881	46.2%	203,070	692,996	22.7%
Rest of NYS	276,866	192,622	59.0%	256,766	528,264	32.7%
Rest of U.S.	6,398,797	5,624,308	53.2%	5,580,859	4,135,572	28.3%

As shown in Figure 5-18, more than half of person-trips made by a very-low income elderly household in 2009 were to conduct family/personal business activities, irrespective of where they lived. Besides that, nearly all of the remaining person-trips taken by very-low income elderly households were made for social or recreational purposes. Clearly visible in Figure 5-18 was a significantly higher share of person-trips made for earning a living among 2+ occupants in the very-low income elderly households. That is, it is more likely for households with two or more members to have a worker (i.e., making work trips) than those who lived alone. Overall, no significant regional differences for the shares by trip purpose are observed in Figure 5-18.



**Figure 5-18. Shares of person-trips for very-low income elderly households by trip purpose, household size, and region of residency in 2009**

In terms of mode share, individuals from a very-low income elderly household in NYC have a significantly higher likelihood of walking or taking public transit for their trips, as compared to trips made by their counterparts from other regions. Based on information illustrated in Figure 5-19, about half of the person-trips made by a single occupant very-low income elderly household in NYC were walking and another 24% of their trips were taken on public transit. On the other hand, Figure 5-19 shows that trips made by persons from a multi-occupant very-low income elderly household in NYC were split almost equally among modes of POV, public transit, and walking. Expectedly, POV was the main mode of transportation (either as a driver or a passenger) for persons from very-low income elderly households located outside of NYC, and accounted for about 80% of their daily person-trips taken in 2009 (Figure 5-19).

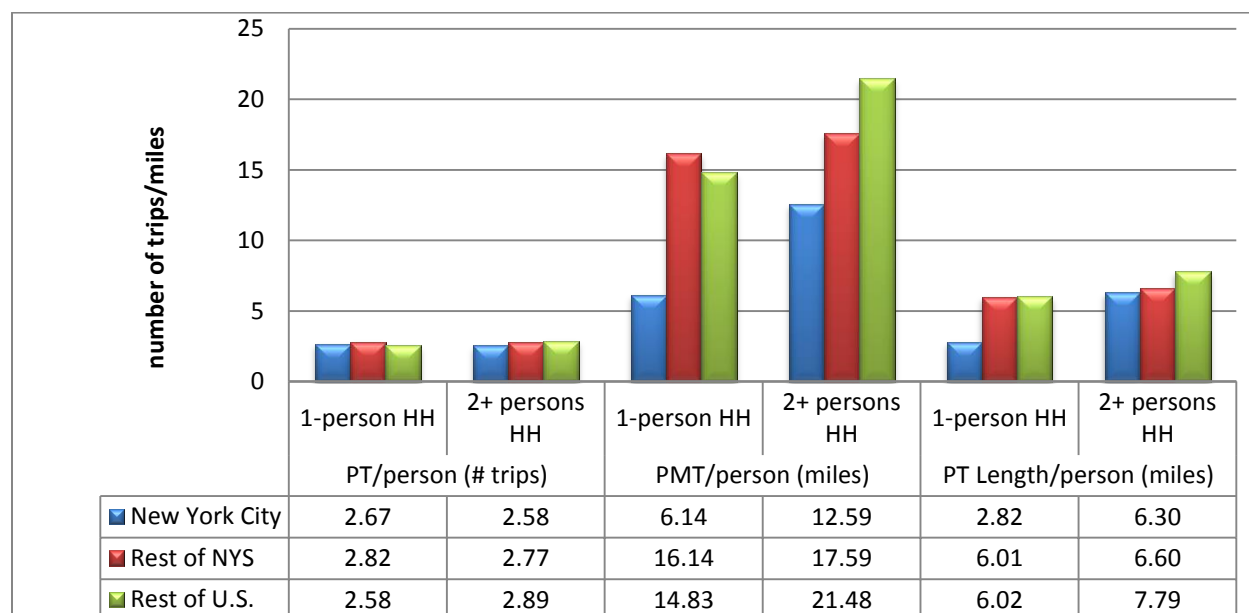


**Figure 5-19. Mode share on person-trips made by individuals from very-low income elderly households, by household size and region (2009 NHTS)**

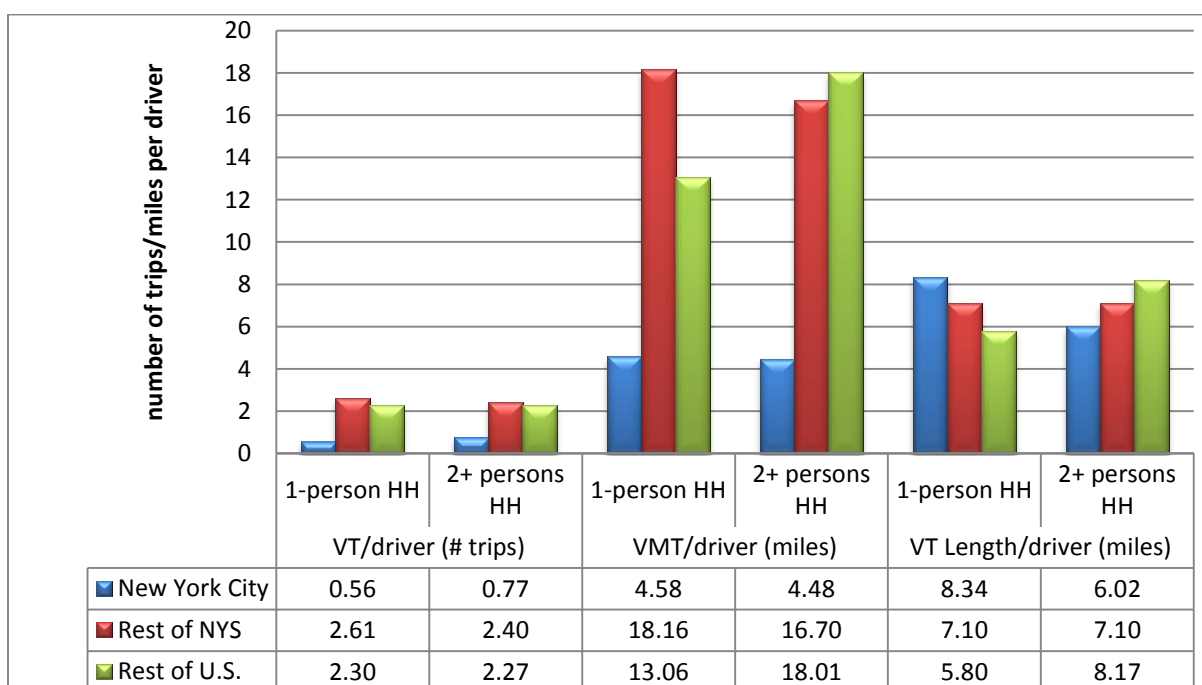
Figure 5-20 summarizes mobility statistics (measured in person-trips) for very-low income elderly households by size and location of the household. Although no significant differences were found in terms of travel frequencies (i.e., PT/person), single individuals from a very-low income elderly household in NYC traveled shorter distances on a daily or per-trip basis, as compared to trips made by their larger household counterpart neighbors. Due to sample size limitations, nearly all estimates presented in the lower part of Figure 5-20 were associated with relatively high uncertainties. The only statistically significant differences can be drawn with average PMT and average PT length were between the single and 2+ groups, specifically among very-low income elderly households who lived in the rest of the U.S.

For POV trips, Figure 5-21 shows that NYC drivers from very-low income elderly households clearly made significantly fewer vehicle trips than their counterparts that lived

outside of NYC, regardless of household size. Similar to above, the impact of household-size was only significant (statistically) on average vehicle-trip distances (VMT/driver and VT length per driver), where single household drivers from a very-low income elderly household from the rest of the U.S. traveled shorter distances than vehicle-trips made by their counterpart drivers from multiple-person households in the same region.



**Figure 5-20. Travel statistics for trips made by persons from very-low income elderly households by size of household and region (2009 NHTS)**



**Figure 5-21. Travel statistics for vehicle trips made by drivers from very-low income elderly households, by size and region (2009 NHTS)**



## 6. VIEWS OF TRANSPORTATION SERVICES BY LOW-INCOME HOUSEHOLDS

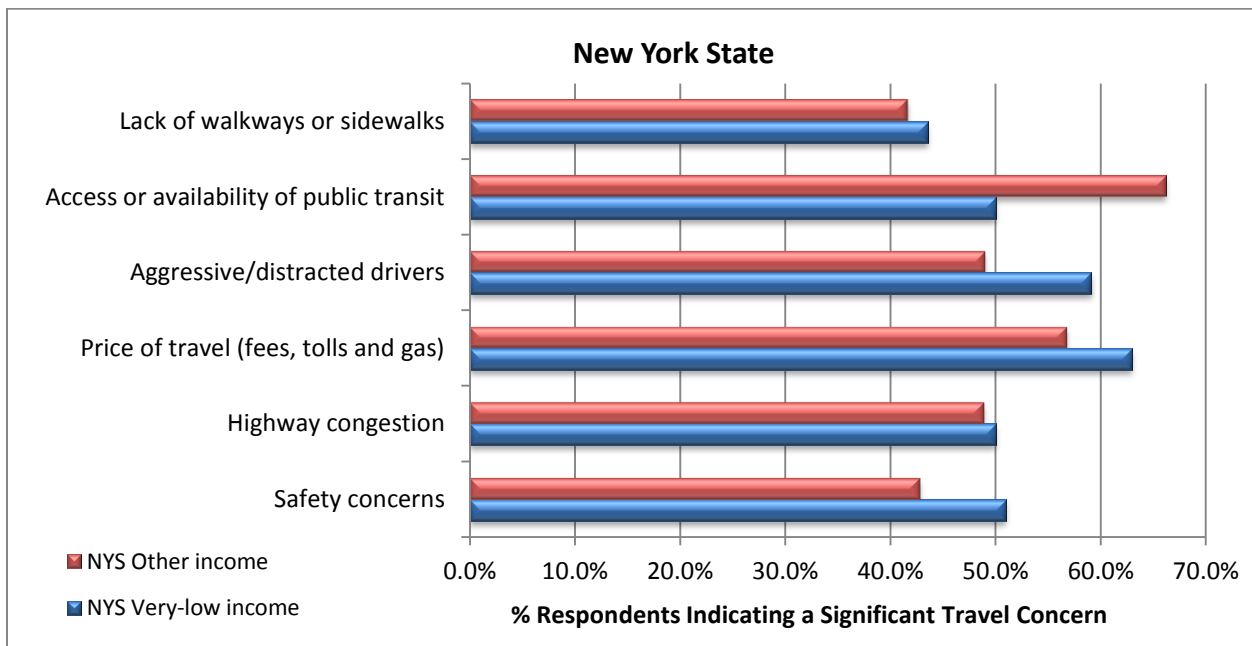
Under the 2009 NHTS, each survey respondent was asked to select **one** concern (out of the list below) that the respondent considered as **the most** important issue related to his/her travel. The choices were:

- Highway congestion
- Access to or availability of public transit
- Lack of walkways or sidewalks
- Price of travel including things like transit fees, tolls, and the cost of gasoline
- Aggressive or distracted drivers
- Safety concerns, like worrying about being in a traffic accident

After one item was selected as the most important issue, a follow-up question was then asked - which required the respondent to rate the selected issue/concern as: a little issue, a moderate issue, or a big issue. Information collected from these two survey questions are the basis for statistical summaries reported in this Section.

### 6.1 PERCEPTIONS ON BIG ISSUES

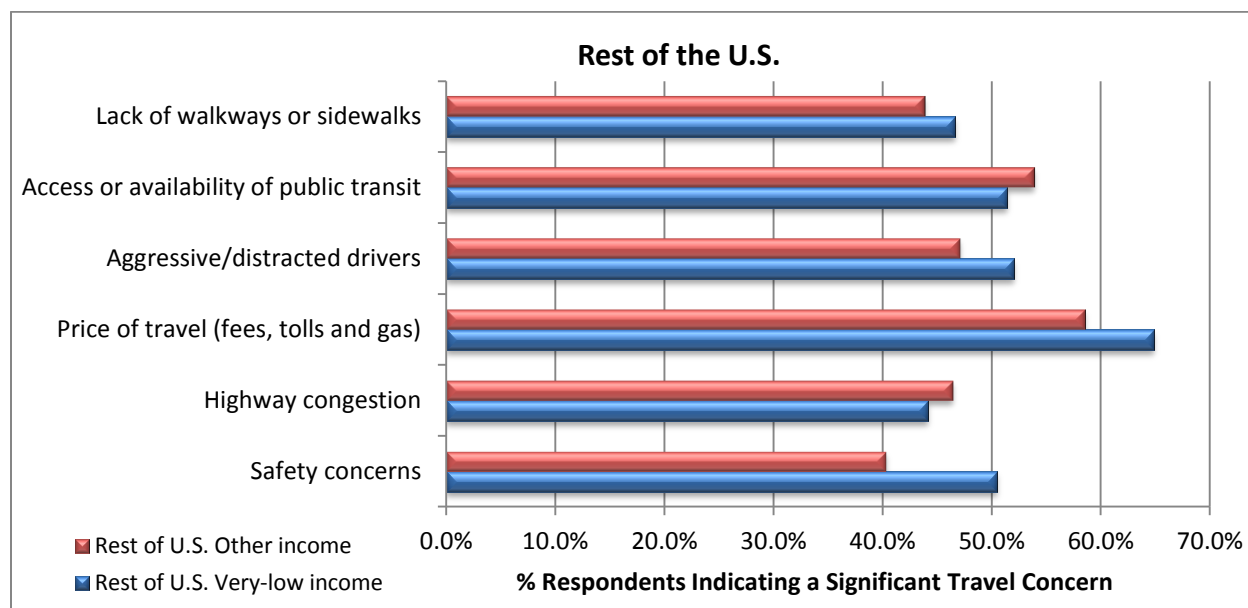
According to the 2009 NHTS, Figure 6-1 shows that “access or availability of public transit” was viewed as a big concern by 66% of NYS’s other income residents who considered it as the most important issue. Over half (57%) of other income NYS residents identified “price of travel” as their most important issue and it was considered a big concern.



**Figure 6-1. Big issues associated with travel concerns by NYS residents (2009 NHTS)**

Among NYS’s very-low income individuals, 63% indicated “price of travel” as the most important issue and thought that was a big problem. The issue of “aggressive/distracted drivers” was expressed as a big issue for 59% of the very-low income New Yorkers who selected this item as their most important concern. Interestingly, “access/availability of public transit” was only considered “a big issue” by half of those very-low income NYS residents who identified it as their most important issue.

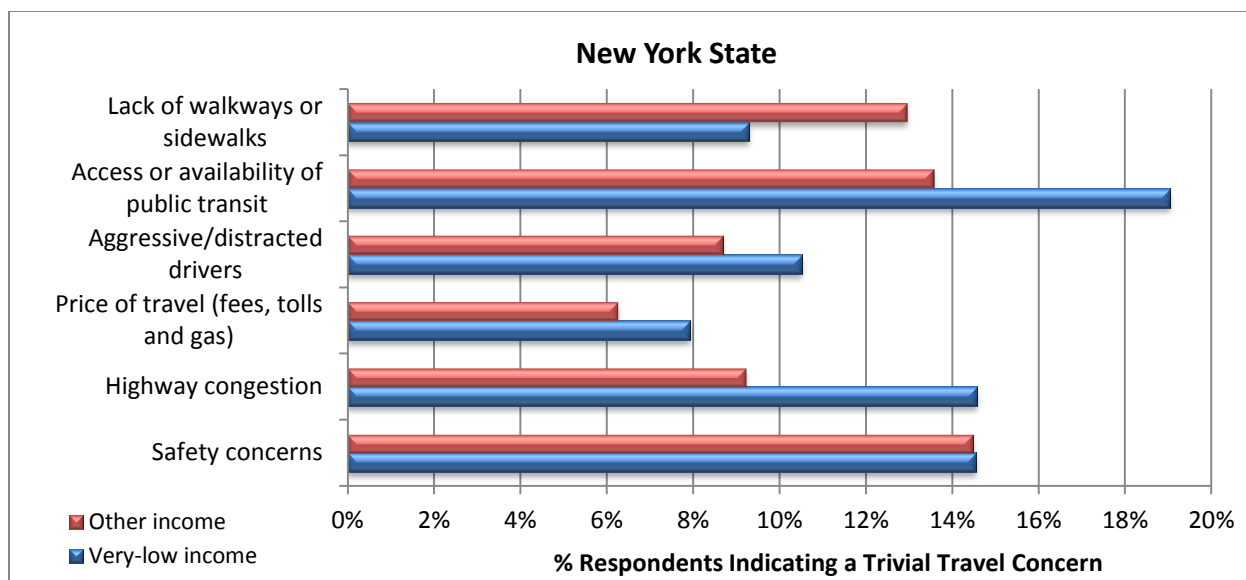
Outside of NYS, “price of travel” was reflected as a big issue by 59% and 65% of those who identified it as their most important concern among individuals from the other income households and the very-low income households, respectively (Figure 6-2). No significant differences were visible concerning respondents’ attitudes toward the “lack of walkways or sidewalks” or “highway congestion” between individuals from the two income groups, regardless of where they lived.



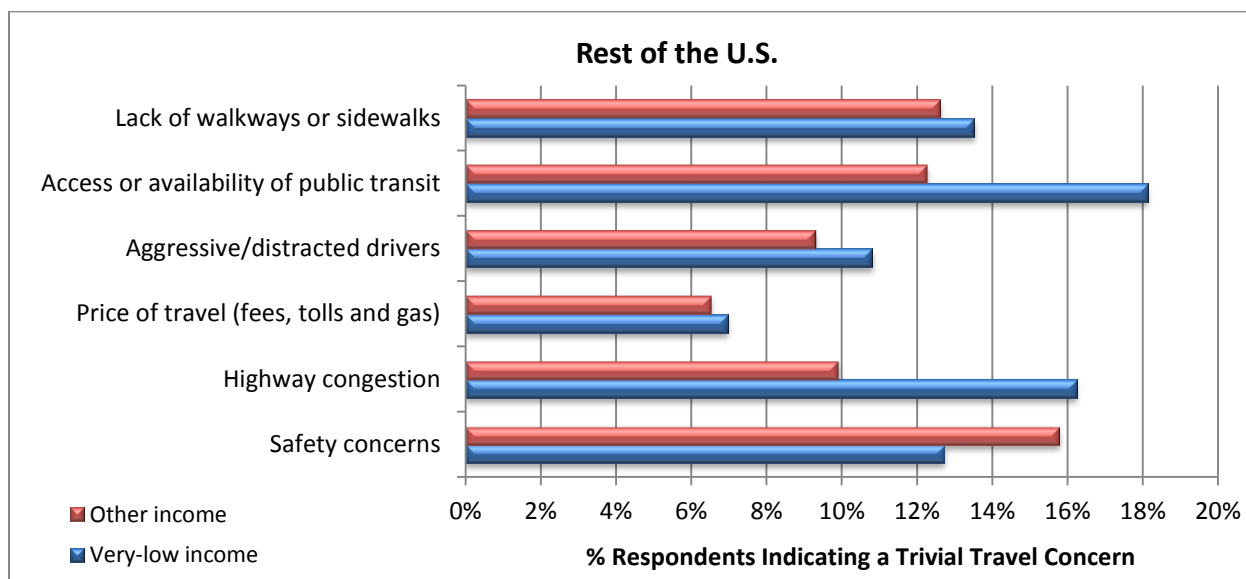
**Figure 6-2. Big issues of travel concerns for individuals lived in the Rest of U.S. (2009 NHTS)**

## 6.2 OPINIONS ON LITTLE ISSUES

On the other hand, although “Access/availability of public transit” was selected as the most important concern by certain New Yorkers, some actually noted that it was only a little issue (i.e., trivial) during the follow-up question. Specifically, nearly 20% of very-low income NYS individuals, who expressed “Access/availability of public transit” as the most important concern, said it was a little issue; compared to 14% among the higher income respondents from NYS (Figure 6-3). A similar pattern was also found for individuals living in the rest of the U.S. (Figure 6-4).



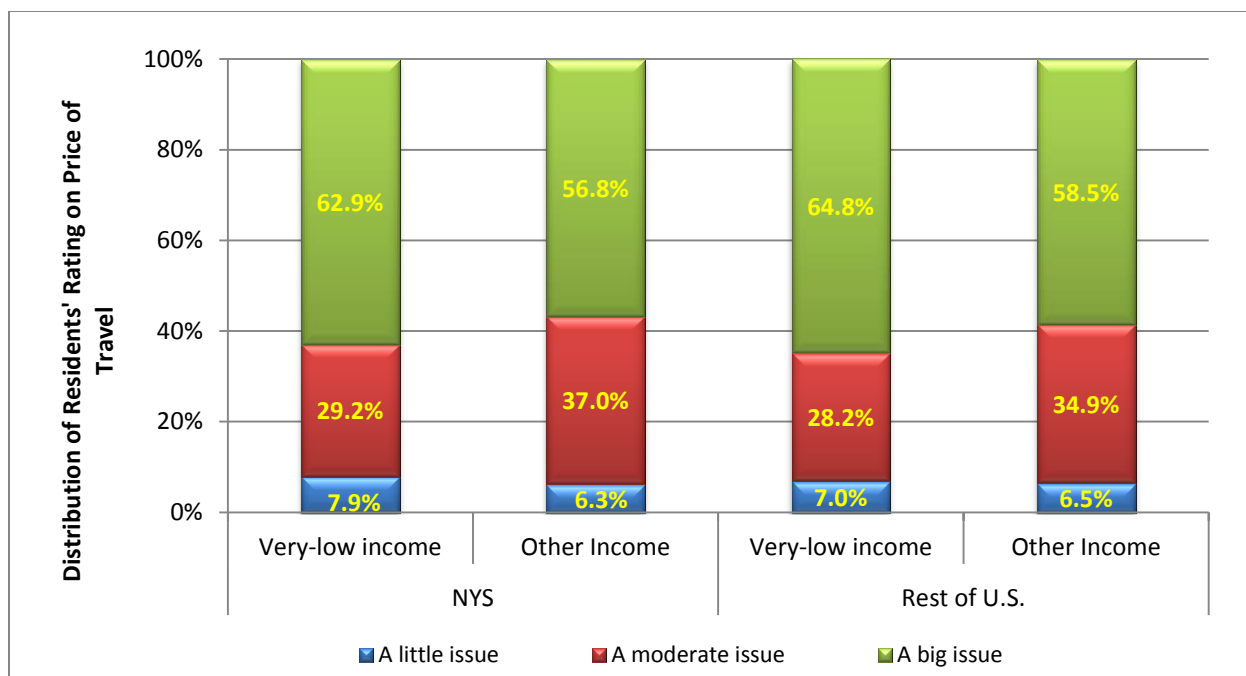
**Figure 6-3. Travel concerns identified as big issues by individuals living in NYS (2009 NHTS)**



**Figure 6-4. Travel concerns identified as little issues by individuals living in the Rest of U.S. (2009 NHTS)**

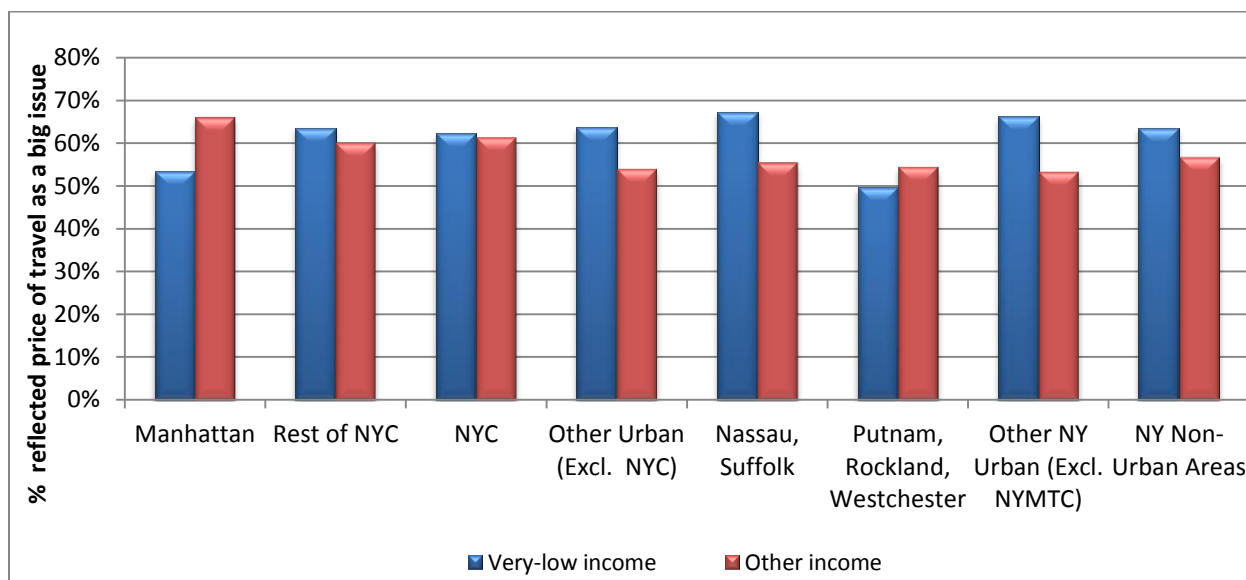
### 6.3 COST OF TRAVEL

Among New Yorkers who identified the “price of travel” as their most important travel concern in 2009, 63% of those came from a very-low income household responded this was a big issue (Figure 6-5), compared to 57% of higher income households. Outside of NYS, the percentage of individuals who expressed the “price of travel” as the most important concern, and a big issue, were slightly higher than NYS, 65% among very-low income respondents and 59% in the higher income respondents. As shown in Figure 6-5, a small percent of those who expressed the “price of travel” as their most important concern said it was a little issue, regardless of income.



**Figure 6-5. Share of rating on residents' view among those who expressed “price of travel” was the most important concern by income status and region (2009 NHTS)**

Furthermore, across NYS regions, more than half of all those who identified the “price of travel” as their most important travel concern have expressed that it was a big issue (Figure 6-6). This view was shared by very-low income individuals as well as those with higher incomes. In all regions, except for residents of Manhattan, individuals from a very-low income household were more likely to choose price of travel as a big issue than those of their counterpart higher income neighbors.



**Figure 6-6. Percent of individuals who thought price of travel was a big issue given that it was the most important issue they identified, by income and region (2009 NHTS)**



## 6.4 COMPARISON WITH VIEWS FROM VERY-LOW INCOMES

Because questions used in the 2009 NHTS for gathering respondents' view of transportation services are different from those included in previous surveys (where all questions were asked of all respondents, not just those indicating an issue as most important), only some general comparisons between a few issues can be compiled. Considering only responses from the very-low income individuals, Figure 6-7 shows that the percentage of significant concerns (or big issues) regarding the "lack of walkways/sidewalks," "highway congestion," and "worrying about a traffic accident" were all much higher in 2009 than previous years. Regional differences between very-low income New Yorkers and residents from the rest of the U.S. were not significant. Note that 2009 NHTS questions did not include concerns for "rough pavement or potholes" or "traffic or road congestion."

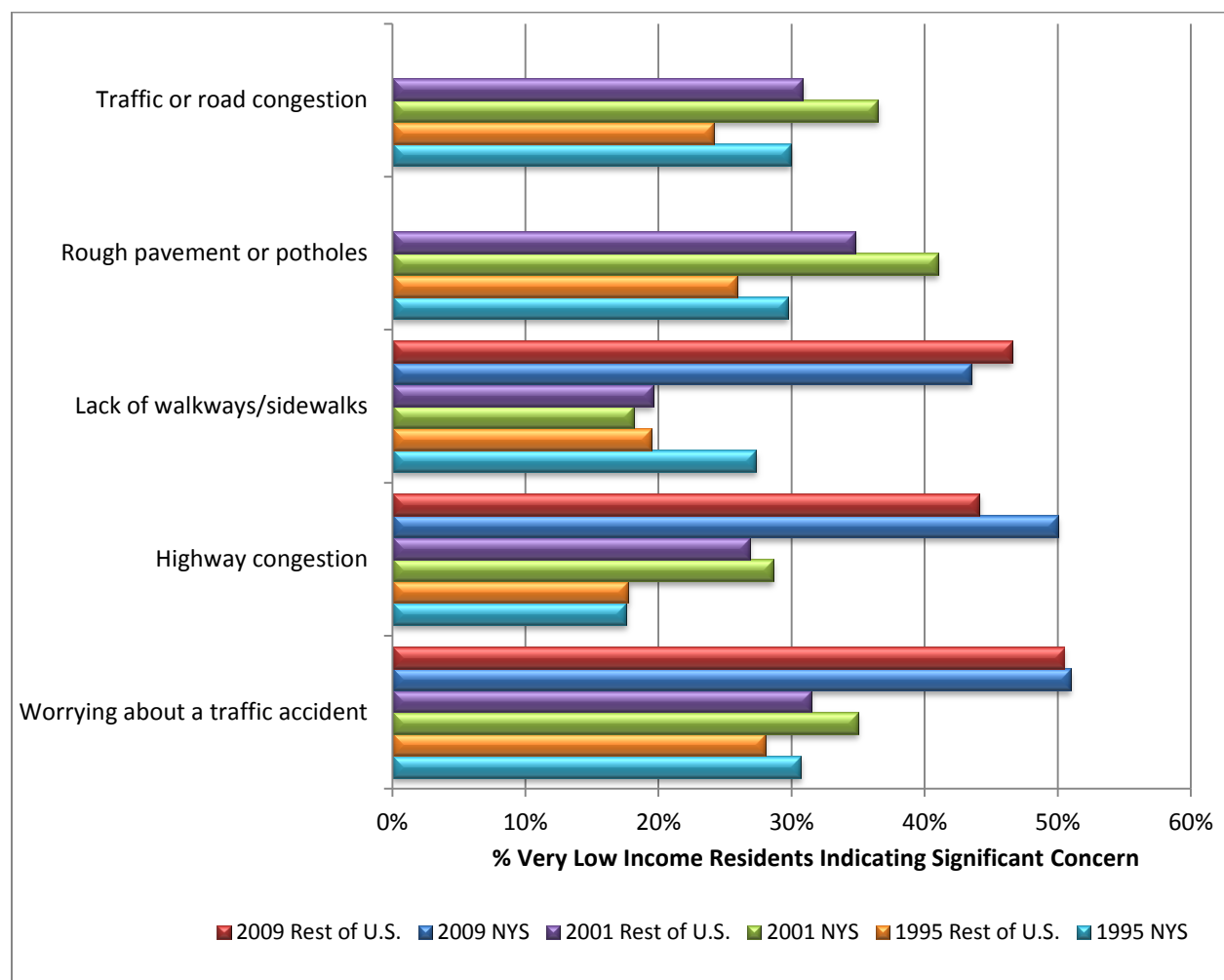


Figure 6-7. Percent of very-low income residents indicating a given issue as significant concern or a big issue



## **7. SUMMARY**

### **7.1 OVERVIEW**

This report details finding from an examination of travel behaviors and patterns (or trends) associated with the low-income population in NYS. The main data source used in this study was the 2009 NHTS (including national and add-on samples in NYS). Due to the uniqueness of NYC, regional analyses were conducted by comparing statistics from NYC to other regions in NYS in many cases.

As described in Section 2.5 of this report, the “low-income” term in this study was based on HUD’s definition of very-low income households. That is, the low-income cutoffs were adjusted for both household size and geographic region so that they can better account for differences in regional housing markets, which is particularly important in areas such as NYC. Two groups of income categories were used in this study, namely very-low income and other income.

### **7.2 KEY FINDINGS**

#### **7.2.1 Population Size**

- ❖ Based on the 2009 NHTS, 29% of NYS residents (ages 5 years and older) lived in very-low income households, and accounted for 32% of the total households in NYS (Figure 3-1 and Figure 3-2).
- ❖ In 2009, the greatest concentration of very-low income NYS residents was in NYC but located outside of Manhattan. One in four persons who lived in Manhattan came from a very-low income household, as compared to 44% for those who lived elsewhere in NYC (

- ❖ Table 3-1).
- ❖ Similarly, the share of very-low income residents within NYS (as a whole) was 31%, versus 26% in the rest of the U.S. (

- ❖ Table 3-1).

### **7.2.2 Characteristics of the Low-Income Households**

- ❖ Poverty rates among African-American and Hispanic populations are significantly higher than other races among NYS residents. The share of very-low income Hispanic populations in NYS went from 44% in 1995 to 63% in 2009, while the rate among African-Americans remained under 50% and their counterpart White neighbors stayed under 20% (Figure 3-4 and Figure 3-5).
- ❖ Nearly two in five very-low income NYS households were single occupant (i.e., lived alone) in 2009, while it was less than one in four among NYS's higher income households in the same year. The majority of the very-low income residents who lived alone in NYS were retired adults (Figure 3-10 and Table 3-2).
- ❖ According to the 2009 NHTS, 22% of very-low income households in NYS had no access to drivers in their households (i.e., no drivers) as compared to only 3% among their higher income neighbors (Figure 3-7).
- ❖ Half of all very-low income households in NYS owned zero vehicles in 2009, compared to only 16% of their higher income neighbors with zero-vehicles in the household. Very-low income households located outside of NYS also had a higher likelihood of owning zero vehicles than their higher income neighbors, with 20% versus 2% respectively. The likelihood of being a zero-vehicle household in NYC is significantly higher than areas outside of NYC, regardless of income level (Figure 3-11, Figure 3-12, and Figure 3-13).
- ❖ During 2009, nearly three-quarters of NYS's very-low income households with zero-vehicles were located in NYC (Figure 3-18). Outside Manhattan, zero-vehicle households are predominately very-low income households (Figure 3-20).
- ❖ On average, vehicles owned by a very-low income household in NYS were about 2 years older than vehicles owned by their higher income neighbors (Figure 3-15).
- ❖ While less than 37% of very-low income populations from the rest of NYC (i.e., lived outside Manhattan) were workers in 2009, nearly 60% of their higher-income neighbors were employed during the same year (Figure 3-16).

### **7.2.3 Travel Patterns of Very-Low Income Population**

- ❖ During 2009, 17% of NYS residents from a very-low income household did not travel, while only 12% of their counterpart higher income neighbors did not travel. This similar pattern was consistent over time since 1995 (Table 4-1).
- ❖ Although the very-low income population merely accounted for 31% of NYS residents (ages five years and older) in 2009, nearly 40% of New Yorkers who did not travel on their NHTS-assigned travel day were from very-low income households (Figure 4-1).

- ❖ For vehicle travel, 57% of NYS drivers who lived in a very-low income household did not drive on their travel day in 2009, as compared to 37% of NYS drivers from higher income households (Table 4-2).
- ❖ The NHTS data shows that mobility for individuals from a very-low income household was more limited than that of other income individuals –regardless of how mobility was measured (based on drivers only or considered all NYS residents).
- ❖ New Yorkers who lived in very-low income households were more likely to travel for family/personal business or school/church activities, but less likely to travel for work or social/recreational purposes as compared to their higher income neighbors (Figure 4-4).
- ❖ Higher income New Yorkers predominantly traveled by POVs (either as a driver or as a passenger) regardless of trip purposes. A POV was also the most used mode for individuals from a very-low income NYS household when making trips for work or for visiting family and conducting personal business. For other trips, very-low-income New Yorkers were most likely to use public transit or walk to reach their destinations (Table 4-3).
- ❖ Considering why walking was used when making a daily trip, a very-low income New Yorker had a higher likelihood of traveling by walking to conduct their non-work associated daily activities than their higher income neighbors (Figure 4-10).

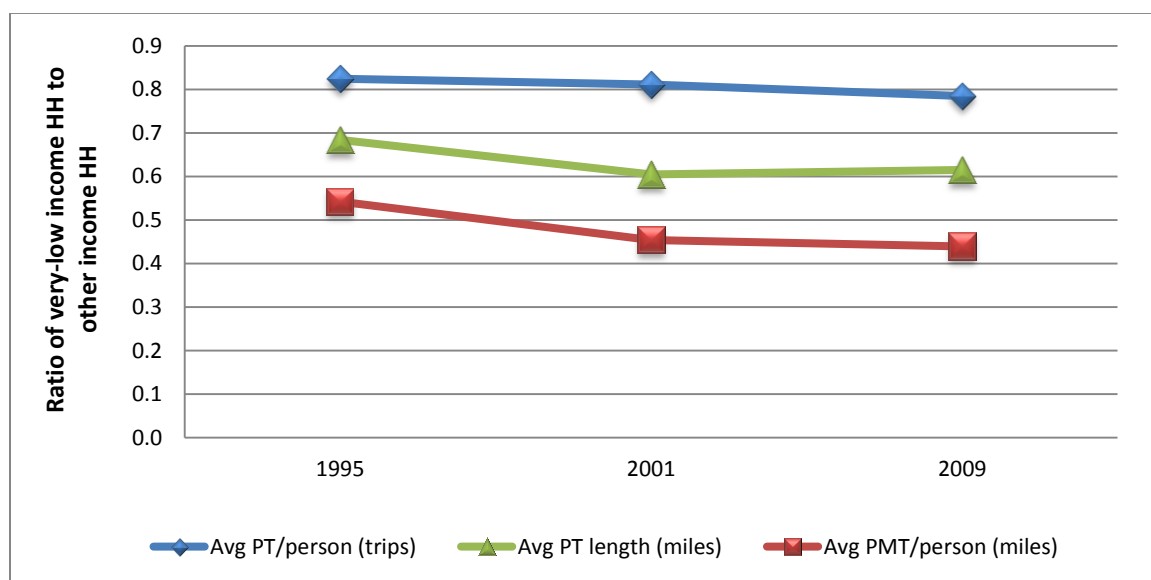
#### 7.2.4 Mobility of Very-Low Income Population

- ❖ On average, persons from a very-low income household traveled less frequently than their higher-income counterpart neighbors did in the same year.
- ❖ While a NYS resident in other income group traveled an average of 3.95 trips daily during 2009, a very-low income individual from NYS took nearly 22% fewer trips on a daily basis in the same year (Figure 4-3 and Table 7-1).

**Table 7-1. Mobility statistics for person-trips taken by NYS residents by income status**

<b>Travel Statistics – person trips</b>	<b>2009</b>	<b>2001</b>	<b>1995</b>
<b>Avg. PT/person</b>			
Very-low income	3.10	3.23	3.43
Other income	3.95	3.98	4.16
% difference between income groups	-21.5%	-18.8%	-17.5%
<b>Average PMT/person</b>			
Very-low income	13.97	15.87	18.22
Other income	31.77	34.98	33.61
% difference between income groups	-56.0%	-54.6%	-45.8%
<b>Average Person trip length</b>			
Very-low income	5.11	5.49	5.67
Other income	8.30	9.08	8.29
% difference between income groups	-38.5%	-39.5%	-31.6%

- ❖ About 70% of daily person-trips taken by a typical other income New Yorker were made in a POV (either as a driver or as a passenger), as compared to only 47% for trips made by a very-low income New Yorker in 2009 (Figure 4-5).
- ❖ NYS's very-low income residents were more than twice as likely to use public transit for their daily travel. Mode share for person-trips made by walking was also significantly higher among very-low income New Yorkers (Figure 4-5).
- ❖ Based on NHTS data, a very-low income NYS resident traveled 56% fewer miles as compared to trips taken by a New Yorker in other income group. In 2009, a very-low income New Yorker traveled an average of 14 miles per day, versus 32 miles per day among the other New Yorkers (Figure 4-12 and Table 7-1).
- ❖ A typical very-low income New Yorker traveled significantly fewer miles (measured in PMT) than one from a higher income household, particularly on trips made for work, family/personal business, and social/recreational purposes (Figure 4-13).
- ❖ Statewide, very-low income New Yorkers traveled on average about 5.1 miles per trip, while their other income neighbors took 62% longer trips, over 8.3 miles per trip in 2009 (Figure 4-14).
- ❖ As illustrated in Figure 7-1, for every trip (measured in PT) made by a New Yorker in other income category in 2009, a very-low income NYS resident only took 0.8 trips. Moreover, for every person-mile (measured in PMT) a higher income NYS resident traveled, the very-low income person only made about 0.44 person-miles in the same year. With respect to the average daily person-trip length in 2009, a very-low income individual from NYS traveled only 0.6 miles for every mile that a New Yorker in other income group made.



**Figure 7-1. Mobility statistics for trips made by a very-low-income NYS resident, in relation to each trip made by an other-income person (NHTS data)**

- ❖ Drivers from a very-low income household in NYS took significantly fewer vehicle trips than their counterparts from other income households in all NHTS years.
- ❖ A typical very-low income driver from NYS made an average of only 1.7 vehicle-trips per day in 2009, which is a significant drop from the daily average of 2.1 vehicle-trips in 2001. During this time, a driver with other income level took a higher average of 2.6 vehicle-trips in 2009 with a decline from 3.1 vehicle-trips in 2001 (Figure 4-16 and Table 7-2).
- ❖ NYC drivers particularly took the least number of vehicle-trips than drivers from all other regions, regardless of whether they were within or outside of NYS (Figure 4-17).
- ❖ A very-low income driver was more likely to take vehicle trips for family/personal business activities, when compared to one from a higher income household. This is consistent across all regions (in and outside of NYS) and with all population densities considered in NYS (Table 4-5).
- ❖ According to 2009 NHTS data, a very-low income NYS driver traveled about 11.2 VMT on a daily basis, as compared to twice as many miles per day (22.6 miles) for an other income NYS driver in the same year (Figure 4-19 and Table 7-2).
- ❖ Specifically, higher income drivers from NYS are not only more likely to use a vehicle for work-related trips, they also traveled more miles in vehicles for that purpose, as compared to drivers from very-low income households in NYS with VMT of 8.0 miles versus 2.8 miles respectively (Figure 4-20).

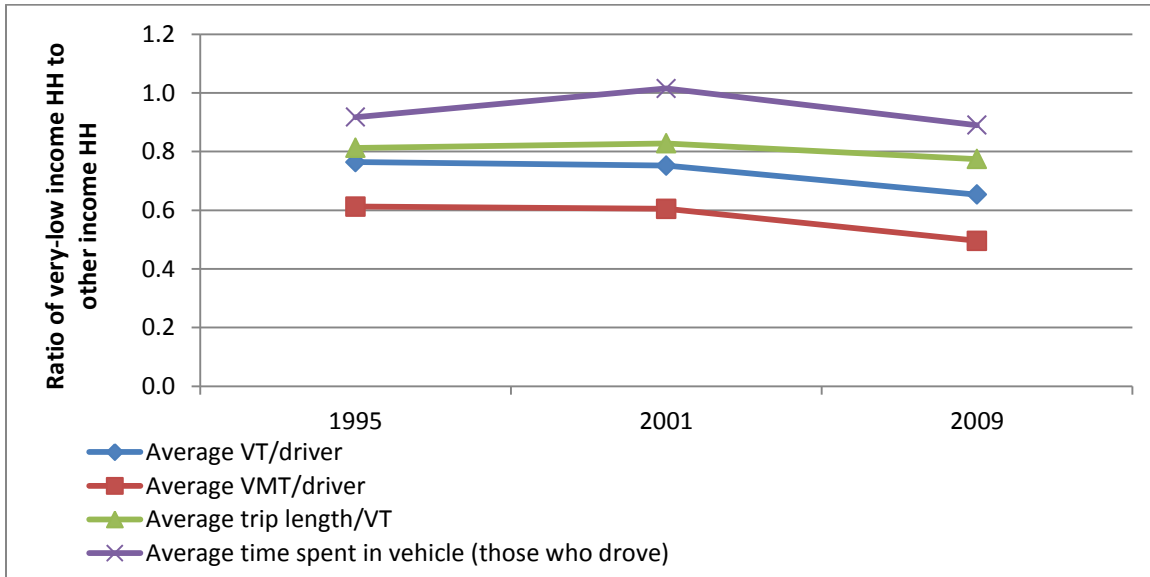
**Table 7-2. Mobility statistics for vehicle-trips taken by NYS residents by income status**

<b>Travel Statistics – vehicle trips</b>	<b>2009</b>	<b>2001</b>	<b>1995</b>
<b>Avg. VT/driver</b>			
Very-low income	1.67	2.12	2.33
Other income	2.55	2.82	3.05
% difference between income groups	-34.7%	-24.8%	-23.6%
<b>Average VMT/driver</b>			
Very-low income	11.22	15.51	16.71
Other income	22.62	25.65	27.28
% difference between income groups	-50.4%	-39.5%	-38.7%
<b>Average VT length (mile)</b>			
Very-low income	6.95	7.63	7.33
Other income	8.98	9.22	9.02
% difference between income groups	-22.6%	-17.2%	-18.7%
<b>Average time spent in vehicle (those who drove in travel day, min.)</b>			
Very-low income	67.92	81.20	67.25
Other income	76.30	79.99	73.31
% difference between income groups	-11.0%	1.5%	-8.3%

- ❖ Drivers from a very-low income household in NYS traveled about 7 miles per vehicle-trip on any typical day in 2009, while drivers with higher income traveled about 2 miles farther (29% more distance) on each vehicle trip they took during the same year (Figure 4-21 and Table 7-2).



- ❖ Among drivers who drove on the travel day in 2009, those from very-low income households spent nearly 9 minutes less time in a vehicle as compared to time spent by their higher income counterpart drivers (Figure 4-23 and Table 7-2).
- ❖ As shown in Figure 7-2 for 2009, a typical very-low income NYS driver took fewer vehicle trips (0.7 trips), had less VMT (0.5 miles), made shorter vehicle trips (0.8 miles), and spent less time in vehicles (0.9 minutes) when compared to each vehicle-trip made by higher income NYS drivers in the same year.



**Figure 7-2. Mobility statistics for vehicle trips made by a very-low-income NYS driver, in relation to each trip made by an other-income driver (NHTS data)**

## 7.2.5 Accessibility & Transportation Equality Issues

### 7.2.5.1 Access to Public Transit

- ❖ Essentially, 84% of NYS's very-low income populations lived within a one-mile radius of transit stations, while only 17% of the other income New Yorkers lived within the same range (Section 5.1).
- ❖ Nearly 35% of all persons in NYC with income under \$25,000 used public transit, as compared to 13% for those who are in the \$100,000+ income category. Moreover, children from NYC households with income under \$25,000 had the highest likelihood of taking public transit (Figure 5-2).
- ❖ Elderly NYC residents with income under \$25,000 also have a higher likelihood of using public transit than their higher income neighbors, 23% versus 17% respectively (Figure 5-4).
- ❖ Nearly 43% of public transit trips made by higher income New Yorkers were for work, as compared to only 23% among public transit trips taken by those very-low income NYS

residents. Aside from work trips, shares of public transit use by trip purpose were quite similar for New Yorkers from the two income categories (Figure 5-5 and Figure 5-6).

#### **7.2.5.2 Worker Commute Patterns**

- ❖ A very-low income worker from NYS made slightly more commute trips during a Friday-Sunday time period than a person from other income households in 2009. This may reflect that a lower income worker was more likely to be employed by lower-paying service sector employers, which tend to require more help during non-normal workdays, i.e., from Friday to Sunday (Figure 5-8).
- ❖ Typically, NYS workers spent less time on commute trips made in a POV, as compared to commuting by other non-walk modes of transportation, regardless of income status or location. Workers using public transit, on the other hand, generally spent the most time commuting (Table 5-1).

#### **7.2.5.3 Zero-Vehicle and Low-Income**

- ❖ About 50% of the very-low income households in NYS did not own any vehicles. Most of these zero-vehicle very-low income households were located in NYC (Figure 3-12).
- ❖ Most trips taken by individuals from zero-vehicle households within Manhattan in 2009 were made by walking, and accounted for 62% of all daily person-trips taken, regardless of income status (Figure 5-13).
- ❖ Outside of NYS, those from a zero-vehicle very-low income household also walked on 37% of their daily person trips (Figure 5-13).

#### **7.2.5.4 Mobility of Children in Poverty**

- ❖ Children (ages 5-15 years old) from a very-low income household in NYS traveled an average of 2.7 trips every day in 2009, as compared to 3.2 trips among higher income children from NYS. As a comparison, older New Yorkers (ages 16 years and older) from a very-low income household made an average of 3.2 trips on a daily basis in 2009, while their counterpart neighbors in other income group took 4.1 person-trips per day within the same year (Figure 5-15).
- ❖ The influence of income on travel frequencies seems to be less among children. Specifically, children of very-low income households made about 19% fewer trips than the higher income children did in 2009, as compared to 28% among those over 15 years old (Figure 5-15).
- ❖ Children traveled fewer miles on a daily basis than older persons within the same income class in NYS, with PMT of 9.6 miles versus 14.8 miles respectively among very-low income households and 21.1 miles versus 33.5 miles respectively for those from other incomes (Figure 5-16).

- ❖ On a per-trip basis, NYS’s very-low income children traveled about 3 miles shorter on each daily trip than their counterpart higher income neighbors in 2009 (Figure 5-17).
- ❖ Children from a very-low income household in NYS traveled less frequently and made shorter trips on a daily basis than trips made by all other children in the nation. Nearly half of the daily trips taken by a typical NYS very-low income child were walking or using public transit (Table 5.3).

#### **7.2.5.5 Lived-Alone Elderly with Very-Low Income**

- ❖ About half of the daily trips taken by a NYC single elderly person in a very-low income household were walking and another 24% were via public transit. On the other hand, daily trips made by NYC residents from a larger size very-low income elderly household were split almost equally among POVs, public transit, and walking (Figure 5-19).
- ❖ Individuals from a single-occupant, very-low income elderly household in NYC traveled shorter distances on a daily basis or per-trip basis, as compared to trips taken by their counterpart neighbors from a larger-size household (Figure 5-20).
- ❖ NYC drivers from a very-low income elderly household traveled significantly fewer POV trips than their counterpart New Yorkers who lived outside of NYC, regardless of household size (Figure 5-21).

#### **7.2.6 Views on Transportation Quality**

- ❖ Over three in five of those very-low income New Yorkers indicated “price of travel” as the most important issue for them, and expressed that it was a big problem. The issue of “aggressive/distracted drivers” was also expressed as a big issue by nearly 60% of the very-low income New Yorkers who identified this issue as their most important concern (Figure 6-1).
- ❖ The concern for “access/availability of public transit” was only considered a big issue by half of those very-low income NYS residents who identified it as their most important issue, however (Figure 6-1).
- ❖ Outside of NYS, the “price of travel” was reflected as a big issue by 65% of the very-low income individuals who said that “price of travel” was their most important concern (Figure 6-2).
- ❖ In all regions, except for Manhattan and Putnam-Rockland-Westchester, New Yorkers from a very-low income household were more likely to reflect “price of travel” as a big issue than the opinions expressed by their counterpart higher income neighbors (Figure 6-6).

## **APPENDIX A. GLOSSARY**



## APPENDIX A. GLOSSARY

This glossary provides the most commonly used terms in the NHTS and definitions for those terms. These definitions are provided to assist the user in the interpretation of NHTS data.

<b>Term</b>	<b>Definition</b>
<b>Adult</b>	For NHTS, this is defined as a person 18 years or older.
<b>Block Group</b>	A subdivision of a Census tract that averages 1000 to 1100 people, and approximately 400-500 housing units. The source used for the 2009 NHTS was TeleAtlas MatchMaker (derived from Census 2000 definition).
<b>Census Tract</b>	A small subdivision of a county, containing approximately 4,000 persons. Tracts can range in population from 2,500 to 8,000. The geographic size of the tract may vary considerably, depending on population density. Tracts were designed to be homogeneous in regard to population characteristics, economic status and living conditions when they were first delineated. Since the first tracts were delineated for the 1890 Census, today's tracts may be far from homogeneous. The source used for the 2009 NHTS was TeleAtlas MatchMaker (derived from Census 2000 definition).
<b>Driver</b>	A driver is a person who operates a motorized vehicle. If more than one person drives on a single trip, the person who drives the most miles is classified as the principal driver.
<b>Employed</b>	A person is considered employed if (s) he worked for pay, either full time or part time, during the week before the interview. This includes persons who work at home or persons who have more than one job.
<b>Education Level</b>	The number of years of regular schooling completed in graded public, private, or parochial schools, or in colleges, universities, or professional schools, whether day school or night school. Regular schooling advances a person toward an elementary or high school diploma, or a college, university, or professional school degree.
<b>Household</b>	A group of persons whose usual place of residence is a specific housing unit; these persons may or may not be related to each other. The total of all U.S. households represents the total civilian non-institutionalized population. A household does not include group quarters (i.e., 10 or more persons living together, none of whom are related).
<b>Household Income</b>	Household income is the money earned by all family members in a household, including those temporarily absent. Annual income consisted of the income earned 12 months preceding the interview. Household income includes monies from all sources, such as wages and salary, commissions, tips, cash bonuses, income from a business or farm, pensions, dividends, interest, unemployment or workmen's compensation, social security, veterans' payments, rent received from owned property (minus the operating costs), public assistance payments, regular gifts of money from friends or relatives not living in the household, alimony, child support, and other kinds of periodic money income other than earnings. Household income excludes in-kind income such as room and board, insurance payments, lump-sum inheritances, occasional gifts of money from persons not living in the same household, withdrawal of savings from banks, tax refunds, and the proceeds of the sale of one's house, car, or other personal property.
<b>Household Members</b>	Household members include all people, whether present or temporarily absent, whose usual place of residence is in the sample unit. Household members also

<b>Term</b>	<b>Definition</b>
	include people staying in the sample unit who have no other usual place of residence elsewhere.
<b>Household Vehicle</b>	A household vehicle is a motorized vehicle that is owned, leased, rented or company-owned and available to be used regularly by household members during the two-week travel period. Household vehicles include vehicles used solely for business purposes or business-owned vehicles, so long as they are driven home and can be used for the home to work trip, (e.g., taxicabs, police cars, etc.). Household vehicles include all vehicles that were owned or available for use by members of the household during the travel period, even though a vehicle may have been sold before the interview. Vehicles excluded from household vehicles are those which were not working and were not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.
<b>Journey-to-Work Trips (Commute trips)</b>	Includes travel to and from a place where one reports for work. Does not include any other work-related travel. Does not include any trips for persons who work at home.
<b>Means of Transportation</b>	<p>A mode of travel used for going from one place (origin) to another (destination). A means of transportation includes private and public transit modes, as well as walking.</p> <p>The following transportation modes, grouped by major mode, are included in the NHTS data.</p> <p><b>Private Vehicle</b> – a stipulation for being a private vehicle is that the vehicle is privately owned or operated.</p> <ol style="list-style-type: none"> <li>1. Car. Includes cars and station wagons. Leased and rented cars are included if they are privately operated and not used for picking up passengers in return for fare.</li> <li>2. Van. Includes vans or minivans designed to carry 5 to 13 passengers, or to haul cargo.</li> <li>3. Sport Utility Vehicle. Includes vehicles that are a hybrid of design elements from a van, a pickup truck and a station wagon. Examples include a Ford Explorer, Jeep Cherokee, or Nissan Pathfinder.</li> <li>4. Pickup Truck. Includes vehicles with an enclosed cab that usually accommodates 2-3 passengers, and has an open cargo area in the rear. Late model pickups often have a back seat that allows for total seating of 4 -6 passengers. Pickup trucks usually have the same size of wheel-base as a full-size station wagon. This category also includes pickups with campers.</li> <li>5. Other Truck: This category consists of all trucks other than pickup trucks (i.e., dump trucks, trailer trucks, etc.).</li> <li>6. RV or Motor Home: An RV or motor home includes a self-powered recreational vehicle that is operated as a unit without being towed by another vehicle (e.g., a Winnebago motor home).</li> <li>7. Motorcycle: This category includes large, medium, and small motorcycles and mopeds.</li> <li>8. Golf Cart: This includes all electric or gas operated vehicles designed for use on a golf course, but whose use has recently extended to use within smaller, often gated, communities.</li> </ol> <p><b>Public Transportation</b>, as used in FHWA publications and analysis of NHTS</p>

Term	Definition
	<p>data, typically includes the following that are indicated in bold below, mass transit bus, commuter bus, commuter train, subway/elevated rail, and streetcar/trolley.</p> <p>Bus. This category includes:</p> <ol style="list-style-type: none"> <li>9. <b>mass transit systems</b>, these are local public transit buses that are available to the general public,</li> <li>10. <b>commuter buses</b>, these are buses used for short-distance public transport purposes (e.g., city bus or public bus), school buses, and</li> <li>12. charter/tour buses, these are private buses operating on a fixed schedule between population centers, and</li> <li>13. city to city buses, these are buses that run from one urban center to the other (e.g., Greyhound), and</li> <li>14. shuttle buses, these are buses that shuttle passengers from one fixed place to another (e.g., airport shuttles).</li> </ol> <p>Train: This category includes:</p> <ol style="list-style-type: none"> <li>15. Amtrak/Intercity Train that run from one urban center to another,</li> <li>16. <b>Commuter</b> trains and passenger trains</li> <li>17. <b>Subway and elevated rail</b> (also known as rail rapid transit) is a high capacity system operated on a fixed rail or guide way system on a private right of way, and</li> <li>18. <b>Trolley/streetcars</b> are vehicles that run on a fixed rail system powered by electricity obtained from an overhead power distribution system.</li> </ol> <p><b>Other Modes</b></p> <ol style="list-style-type: none"> <li>11. School Buses.</li> <li>19. Taxi. Taxis include the use of a taxicab by a passenger for fare, including limousines. The taxi category does not include rental cars if they are privately operated.</li> <li>20. Ferry. This includes travel by passenger line ferries.</li> <li>21. Airplane. . Airplanes include commercial airplanes and smaller planes that are available for use by the general public in exchange for a fare. Private and corporate planes and helicopters are also included.</li> <li>22. Bicycle: This category includes bicycles of all speeds and sizes that do not have a motor.</li> <li>23. Walk: This category includes walking and jogging.</li> <li>24. Special Transit for People with Disabilities. This includes things like "Dial-A-Ride"</li> <li>97. Other. Includes any type of transportation not previously listed, (e.g. skate boards, roller blades, sailboats, cruise ships, etc).</li> </ol>
<b>Metropolitan Statistical Area (MSA)</b>	<p>Except in the New England States, a Metropolitan Statistical Area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition, contiguous counties are included in an MSA if, according to certain criteria, they are socially and economically integrated with the central city. In the New England States, MSA's consist of towns and cities instead of counties. The source used for the 2009 NHTS was 1999 Metropolitan Areas: Cartographic Boundary Files. File ma99_99.shp from <a href="http://www.census.gov/geo/www/cob/ma1999.html">http://www.census.gov/geo/www/cob/ma1999.html</a>.</p>
<b>Motorized Vehicle</b>	<p>Motorized vehicles are all vehicles that are licensed for highway driving. Snow mobiles and minibikes are specifically excluded.</p>



<b>Term</b>	<b>Definition</b>
<b>New York City</b>	New York City is defined in this report as the five county area: Bronx, Kings, Queens, New York (Manhattan), and Richmond.
<b>New York State Metro Area</b>	The New York State Metro area includes the following three areas: (1) Nassau, Suffolk; (2) New York City, (which includes the following counties: Bronx, Kings, Queens, New York, and Richmond); and (3) Putnam, Rockland, and Westchester.
<b>Passenger</b>	For a specific trip, a passenger is any occupant of a motorized vehicle, other than the driver.
<b>Person Miles of Travel (PMT)</b>	PMT is a primary measure of person travel. When one person travels one mile, one person mile of travel results. Where 2 or more persons travel together in the same vehicle, each person makes the same number of person miles as the vehicle miles. Therefore, four persons traveling 5 miles in the same vehicle results in 20 person miles ( $4 \times 5 = 20$ ).
<b>Person Trip</b>	A person trip is a trip by one or more persons in any mode of transportation. Each person is considered as making one person trip. For example, four persons traveling together in one auto are counted as four person trips.
<b>POV</b>	A privately-owned vehicle or privately-operated vehicle. Either way, the intent here is that this is not a vehicle available to the public for a fee, such as a bus, subway, taxi, etc.
<b>Travel Day</b>	A travel day is a 24-hour period from 4:00 a.m. to 3:59 a.m. designated as the reference period for studying trips and travel by members of a sampled household.
<b>Travel Day Trip</b>	<p>A travel day trip is defined as any time the respondent went from one address to another by private motor vehicle, public transportation, bicycle, walking, or other means. However, a separate trip is not counted in two instances:</p> <ol style="list-style-type: none"> <li>1. When the sole purpose for the trip is to get to another vehicle or mode of transportation in order to continue to the destination.</li> <li>2. Travel within a shopping center, mall or shopping areas of 4-5 blocks is to be considered as travel to one destination.</li> </ol>
<b>Travel Day Trip Purpose</b>	<p>A trip purpose is the main reason that motivates a trip. There are 36 travel day trip purposes used in the 2009 NHTS.</p> <p>Trip purposes were collected using a From-To approach. For each trip, the origin and destination are on the file in specific terms if reported by the respondent (e.g. from work to Bob's Beef Pit). The 36 trip reasons are defined below. The numbers in parentheses represent the value of WHYTO (trip purpose) in the dataset.</p> <ol style="list-style-type: none"> <li>1. To Home (01). Represents a trip to the respondents' primary residence.</li> <li>2. Go to Work (11). This is the first trip to the work location on travel day.</li> <li>3. Return to Work (12). A trip to work that is not the first trip to the workplace on the travel day (e.g., returning to work after lunch).</li> <li>4. Attend Business Meeting/Trip (13). Represents a work related trip whose purpose is to attend a business meeting.</li> <li>5. Other Work Related (14). A work related trip whose purpose is not specified.</li> </ol>

<b>Term</b>	<b>Definition</b>
6.	Go to School as a Student (21). Represents a trip whose purpose is to go to school as a student.
7.	Go to Religious Activity (22). Represents a trip whose purpose is to go to a place to attend a religious activity.
8.	Go to Library, School Related (23). Represents a trip whose purpose is to go to the library as part of a school related activity.
9.	Go to Daycare/Before or After School Care (24). Represents a trip whose purpose is to attend day care or a supervised before or after school care program
10.	Other School/Religious Activity (20). Represents school and religious activities that are not captured in WHYTO 21-24 above.
11.	Medical/Dental Services (30). Represents a trip made to obtain medical, dental, or mental health treatment, or other related professional services.
12.	Buy Goods: groceries/clothing/hardware store (41). Represents a shopping trip whose purpose is to purchase commodities for use or consumption elsewhere. This purpose also includes all shopping trips even if nothing is purchased.
13.	Buy Services: video rentals/dry cleaning/post office/car service/bank (42). This category includes the purchase of services other than medical/dental or other professional services.
14.	Buy Gas (43). Represents a trip made specifically to get gas.
15.	Shopping/Errands (40). Represents shopping and errand trips that are not captured in WHYTO 41-43 above.
16.	Go to the Gym/Exercise/Play Sports (51). Represents a trip made for exercise, to engage in exercise or to participate in a sport.
17.	Rest or Relaxation/Vacation (52). Represents a trip made for the purpose of relaxing or taking a vacation, but does not include visiting family.
18.	Visit Friends/Relatives (53). Represents the social/recreational trip whose purpose is to visit with family and friends.
19.	Go out/Hang out: entertainment/theater/sports event/go to bar (54). Represents trips whose purpose is entertainment related or hanging out with friends. Typically this event takes place in a public venue.
20.	Visit Public Place: historical site/museum/park/library (55). Represents a trip purpose that is educational or enlightening.
21.	Social/Recreational (50). This category includes social and recreational trips that are not captured in WHYTO 51-55 above.

<b>Term</b>	<b>Definition</b>
22.	Use Professional Services: attorney/accountant (61). Represents a trip made for to engage professional services other than for medical/dental purposes.
23.	Attend Funeral/Wedding (62). Represents a trip whose purpose is to attend a funeral or a wedding.
24.	Use Personal Services: grooming/haircut/nails (63). Represents a trip for personal services such as to get a massage or get a haircut.
25.	Pet Care: walk the dog/vet visits (64).
26.	Attend Meeting: PTA/home owner's association/local government (65). Represents a trip purpose to attend a non-work related meeting, such as a community meeting
27.	Family Personal Business/Obligations (60). Represents a trip for 13 personal business but is not captured in WHYTO 61-65 above.
28.	Pickup Someone (71). Represents a trip whose purpose was to pick up a passenger.
29.	Take and Wait (72). Represents a trip made to take someone to a destination and then wait with or for them at the destination and then depart together.
30.	Drop Someone Off (73). Represents a trip whose purpose was to drop off a passenger (but not wait for them).
31.	Transport Someone (70). Represents trips with a passenger that are related to picking up or dropping off someone but is not captured in WHYTO 71-73 above.
32.	Social Event (81). Represents a trip whose purpose is to attend a social event but eating a meal is not a key component of the event.
33.	Get/Eat Meal (82). Represents a trip whose primary purpose is to get and eat a meal.
34.	Coffee/Ice Cream/Snacks (83). Represents a trip whose purpose is to get/eat a snack or drink, something less than a meal.
35.	Meals (80). Represents a trip whose purpose is to eat or get a meal but is not captured in WHYTO 81-83 above.
36.	Other (97). Represents a trip purpose not captured by any of the specific WHYTO categories described above.
<b>Urbanized Area</b>	<p>An urbanized area consists of the built up area surrounding a central core (or central city), with a population density of at least 1,000 persons per square mile. Urbanized areas do not follow jurisdictional boundaries thus it is common for the urbanized area boundary to divide a county.</p> <p>For the 2009 NHTS, Urban Areas were calculated two ways.</p>

<b>Term</b>	<b>Definition</b>
	<ul style="list-style-type: none"> <li>• Variable URBAN uses the 2000 Urbanized Areas: Cartographic Boundary Files. File ua00_d00.shp from <a href="http://www.census.gov/geo/www/cob/ua2000.html">http://www.census.gov/geo/www/cob/ua2000.html</a>. Two codes are used: 0 = Not in Urban Area, 1 = in Urban Area</li> <li>• Variable URBAN1 uses the 2000 Urbanized Areas: Cartographic Boundary Files. File ua00_d00.shp from <a href="http://www.census.gov/geo/www/cob/ua2000.html">http://www.census.gov/geo/www/cob/ua2000.html</a>. Three codes are used: 0 = Not in Urban Area, 1 = in Urban Cluster, 2 = in Urban Area, 3 = in area surrounded by urban areas.</li> </ul>
<b>Vehicle</b>	In the 2009 NHTS, the term vehicle includes autos, passenger vans, sport utility vehicles, pickups and other light trucks, RV's, motorcycles and mopeds owned or available to the household.
<b>Vehicle Miles of Travel (VMT)</b>	VMT is a unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.
<b>Vehicle Occupancy</b>	Vehicle occupancy is the number of persons, including driver and passenger(s) in a vehicle; also includes persons who did not complete a whole trip. NHTS occupancy rates are generally calculated as person miles divided by vehicle miles.
<b>Vehicle Trip</b>	A trip by a single privately-operated vehicle (POV) regardless of the number of persons in the vehicle.
<b>Worker</b>	See "Employed."



## **APPENDIX B. SUPPLEMENTAL TABLES AND FIGURES**



**Table B-1A. 2009 HUD very low income cutoffs, New York State**

Type	Name	FY2009MFI	Number of Persons							
			1	2	3	4	5	6	7	8
MSA	Albany-Schenectady-Troy, NY MSA	74100	25950	29650	33350	37050	40000	43000	45950	48900
MSA	Binghamton, NY MSA	58600	20500	23450	26350	29300	31650	34000	36350	38700
MSA	Buffalo-Niagara Falls, NY MSA	63500	22250	25400	28600	31750	34300	36850	39350	41900
MSA	Glens Falls, NY MSA	59400	20800	23750	26750	29700	32100	34450	36850	39200
MSA	Ithaca, NY MSA	71300	25150	28700	32300	35900	38750	41650	44500	47400
MSA	Kingston, NY MSA	69700	24400	27900	31350	34850	37650	40450	43200	46000
MSA	Poughkeepsie-Newburgh-Middletown, NY MSA	81800	28650	32700	36800	40900	44150	47450	50700	54000
MSA	Rochester, NY MSA	66500	23300	26600	29950	33250	35900	38550	41250	43900
MSA	Syracuse, NY MSA	63700	22300	25500	28650	31850	34400	36950	39500	42050
MSA	Utica-Rome, NY MSA	55800	19550	22300	25100	27900	30150	32350	34600	36850
AREA	Nassau-Suffolk, NY HUD Metro FMR Area	101800	35650	40700	45800	50900	54950	59050	63100	67200
AREA	New York, NY HUD Metro FMR Area	61600	26900	30700	34550	38400	41450	44550	47600	50700
AREA	Rockland County, NY HUD Metro FMR Area	102000	35700	40800	45900	51000	55100	59150	63250	67300
AREA	Westchester County, NY Statutory Exception Area	105300	36850	42100	47400	52650	56850	61050	65300	69500
COUNTY	Allegany County, NY	50700	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Cattaraugus County, NY	51000	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Cayuga County, NY	58900	20600	23550	26500	29450	31800	34150	36500	38850
COUNTY	Chautauqua County, NY	51900	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Chenango County, NY	53700	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Clinton County, NY	60900	21300	24350	27400	30450	32900	35300	37750	40200
COUNTY	Columbia County, NY	65400	22900	26150	29450	32700	35300	37950	40550	43150
COUNTY	Cortland County, NY	56800	19900	22700	25550	28400	30650	32950	35200	37500
COUNTY	Delaware County, NY	51700	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Elmira, NY MSA	55500	19450	22200	25000	27750	29950	32200	34400	36650
COUNTY	Essex County, NY	55200	19300	22100	24850	27600	29800	32000	34200	36450
COUNTY	Franklin County, NY	50200	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Fulton County, NY	50900	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Genesee County, NY	59200	21750	24850	27950	31050	33550	36000	38500	41000
COUNTY	Greene County, NY	57500	20150	23000	25900	28750	31050	33350	35650	37950
COUNTY	Hamilton County, NY	52100	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Jefferson County, NY	51200	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Lewis County, NY	50200	19200	21950	24700	27450	29650	31850	34050	36250



COUNTY	Montgomery County, NY	54400	22200	25400	28550	31750	34250	36800	39350	41900
COUNTY	Otsego County, NY	54700	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Schuyler County, NY	54500	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Seneca County, NY	57200	20000	22900	25750	28600	30900	33200	35450	37750
COUNTY	St. Lawrence County, NY	49600	19200	21950	24700	27450	29650	31850	34050	36250
COUNTY	Steuben County, NY	53800	20050	22900	25800	28650	30950	33250	35550	37800
COUNTY	Sullivan County, NY	59100	20700	23650	26600	29550	31900	34300	36650	39000
COUNTY	Wyoming County, NY	59300	20750	23700	26700	29650	32000	34400	36750	39150
COUNTY	Yates County, NY	53000	19200	21950	24700	27450	29650	31850	34050	36250

**Table B-1B. 2001 HUD Very low income cutoffs, New York State**

<b>TYPE</b>	<b>NAME</b>	<b>FY95MFI</b>	<b>1 PERSON</b>	<b>2 PERSON</b>	<b>3 PERSON</b>	<b>4 PERSON</b>	<b>5 PERSON</b>	<b>6 PERSON</b>	<b>7 PERSON</b>	<b>8 PERSON</b>
PMSA	Buffalo-Niagara Falls, NY	48400	16950	19350	21800	24200	26150	28050	30000	31950
PMSA	Dutchess County, NY	63400	22200	25350	28550	31700	34250	36750	39300	41850
PMSA	Nassau-Suffolk, NY	78700	27550	31500	35400	39350	42500	45650	48800	51950
PMSA	New York, NY	59100	20700	23650	26600	29550	31900	34300	36650	39000
PMSA	Newburgh, NY-PA	55800	19550	22300	25100	27900	30150	32350	34600	36850
MSA	Albany-Schenectady-Troy, NY	53000	18550	21200	23850	26500	28600	30750	32850	35000
MSA	Binghamton, NY	44700	15650	17900	20100	22350	24150	25950	27700	29500
MSA	Elmira, NY	43200	15100	17300	19450	21600	23350	25050	26800	28500
MSA	Glens Falls, NY	44200	15450	17700	19900	22100	23850	25650	27400	29150
MSA	Jamestown, NY	39600	14500	16550	18650	20700	22350	24000	25650	27300
MSA	Rochester, NY	52900	18500	21150	23800	26450	28550	30700	32800	34900
MSA	Syracuse, NY	47900	16750	19150	21550	23950	25850	27800	29700	31600
MSA	Utica-Rome, NY	40500	14500	16550	18650	20700	22350	24000	25650	27300
AREA	Rockland County, NY	85400	29400	33600	37800	42000	45350	48700	52100	55450
AREA	Westchester County, NY	85800	30050	34300	38600	42900	46350	49750	53200	56650
COUNTY	Allegany County	37000	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Cattaraugus County	38200	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Chenango County	40000	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Clinton County	44200	15450	17700	19900	22100	23850	25650	27400	29150
COUNTY	Columbia County	48700	17050	19500	21900	24350	26300	28250	30200	32150
COUNTY	Cortland County	44300	15500	17700	19950	22150	23900	25700	27450	29250
COUNTY	Delaware County	39000	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Essex County	39000	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Franklin County	37600	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Fulton County	38700	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Greene County	44200	15450	17700	19900	22100	23850	25650	27400	29150
COUNTY	Hamilton County	36900	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Jefferson County	38600	14500	16550	18650	20700	22350	24000	25650	27300

COUNTY	Lewis County	38000	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Otsego County	42600	14900	17050	19150	21300	23000	24700	26400	28100
COUNTY	St. Lawrence County	38600	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Schuyler County	38300	14500	16550	18650	20700	22350	24000	25650	27300
COUNTY	Seneca County	44800	15700	17900	20150	22400	24200	26000	27800	29550
COUNTY	Steuben County	42000	14700	16800	18900	21000	22700	24350	26050	27700
COUNTY	Sullivan County	45100	15800	18050	20300	22550	24350	26150	27950	29750
COUNTY	Tompkins County	52400	18350	20950	23600	26200	28300	30400	32500	34600
COUNTY	Ulster County	44500	15600	17800	20050	22250	24050	25800	27600	29350
COUNTY	Wyoming County	41700	14600	16700	18750	20850	22500	24200	25850	27500
COUNTY	Yates County	39900	14500	16550	18650	20700	22350	24000	25650	27300

**Table B-1C. 1995 HUD very low income cutoffs, New York State**

TYPE	NAME	FY95MFI	1 PERSON	2 PERSON	3 PERSON	4 PERSON	5 PERSON	6 PERSON	7 PERSON	8 PERSON
PMSA	Buffalo-Niagara Falls, NY	39000	13650	15600	17550	19500	21050	22600	24200	25750
PMSA	Dutchess County, NY	54800	19200	21900	24650	27400	29600	31800	34000	36150
PMSA	Nassau-Suffolk, NY	63400	22200	25350	28550	31700	34250	36750	39300	41850
PMSA	New York, NY	43000	17150	19600	22050	24500	26450	28400	30400	32350
PMSA	Newburgh, NY-PA	48800	17100	19500	21950	24400	26350	28300	30250	32200
MSA	Albany-Schenectady-Troy, NY	43800	15350	17500	19700	21900	23650	25400	27150	28900
MSA	Binghamton, NY	39900	13950	15950	17950	19950	21550	23150	24750	26350
MSA	Elmira, NY	35600	12450	14250	16000	17800	19200	20650	22050	23500
MSA	Glens Falls, NY	37800	13250	15100	17000	18900	20400	21900	23450	24950
MSA	Jamestown, NY	33300	12300	14050	15800	17550	18950	20350	21750	23150
MSA	Rochester, NY	45400	15900	18150	20450	22700	24500	26350	28150	29950
MSA	Syracuse, NY	41400	14500	16550	18650	20700	22350	24000	25650	27300
MSA	Utica-Rome, NY	35200	12300	14100	15850	17600	19000	20400	21800	23250
AREA	Westchester County, NY	66900	23400	26750	30100	33450	36150	38800	41500	44150
COUNTY	Allegany County	31200	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Cattaraugus County	31300	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Chenango County	34500	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Clinton County	35400	12400	14150	15950	17700	19100	20550	21950	23350
COUNTY	Columbia County	39100	13700	15650	17600	19550	21100	22700	24250	25800
COUNTY	Cortland County	36300	12700	14500	16350	18150	19600	21050	22500	23950
COUNTY	Delaware County	31700	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Essex County	33100	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Franklin County	30100	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Fulton County	32400	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Greene County	35400	12400	14150	15950	17700	19100	20550	21950	23350
COUNTY	Hamilton County	30600	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Jefferson County	32800	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Lewis County	32500	12300	14050	15800	17550	18950	20350	21750	23150

TYPE	NAME	FY95MFI	1 PERSON	2 PERSON	3 PERSON	4 PERSON	5 PERSON	6 PERSON	7 PERSON	8 PERSON
COUNTY	Otsego County	34900	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Schuyler County	32800	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Seneca County	37000	12950	14800	16650	18500	20000	21450	22950	24400
COUNTY	St. Lawrence County	32200	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Steuben County	33600	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Sullivan County	37700	13200	15100	16950	18850	20350	21850	23350	24900
COUNTY	Tompkins County	42100	14750	16850	18950	21050	22750	24400	26100	27800
COUNTY	Ulster County	44500	15600	17800	20000	22250	24050	25800	27600	29350
COUNTY	Wyoming County	35000	12300	14050	15800	17550	18950	20350	21750	23150
COUNTY	Yates County	32300	12300	14050	15800	17550	18950	20350	21750	23150

**Table B-2. Census poverty thresholds for 2009 by size of family and number of related children under 18 years**

Size of family unit	Weighted Average Thresholds	Related children under 18 years								Eight or more
		None	One	Two	Three	Four	Five	Six	Seven	
<b>One person</b> (unrelated individual)...	<b>10,956</b>									
Under 65 years.....	11,161	11,161								
65 years and over.....	10,289	10,289								
<b>Two people</b> .....	<b>13,991</b>									
Householder under 65 years.....	14,439	14,366	14,787							
Householder 65 years and over.....	12,982	12,968	14,731							
<b>Three people</b> .....	<b>17,098</b>	16,781	17,268	17,285						
<b>Four people</b> .....	<b>21,954</b>	22,128	22,490	21,756	21,832					
<b>Five people</b> .....	<b>25,991</b>	26,686	27,074	26,245	25,603	25,211				
<b>Six people</b> .....	<b>29,405</b>	30,693	30,815	30,180	29,571	28,666	28,130			
<b>Seven people</b> .....	<b>33,372</b>	35,316	35,537	34,777	34,247	33,260	32,108	30,845		
<b>Eight people</b> .....	<b>37,252</b>	39,498	39,847	39,130	38,501	37,610	36,478	35,300	35,000	
<b>Nine people or more</b> .....	44,366	47,514	47,744	47,109	46,576	45,701	44,497	43,408	43,138	41,476

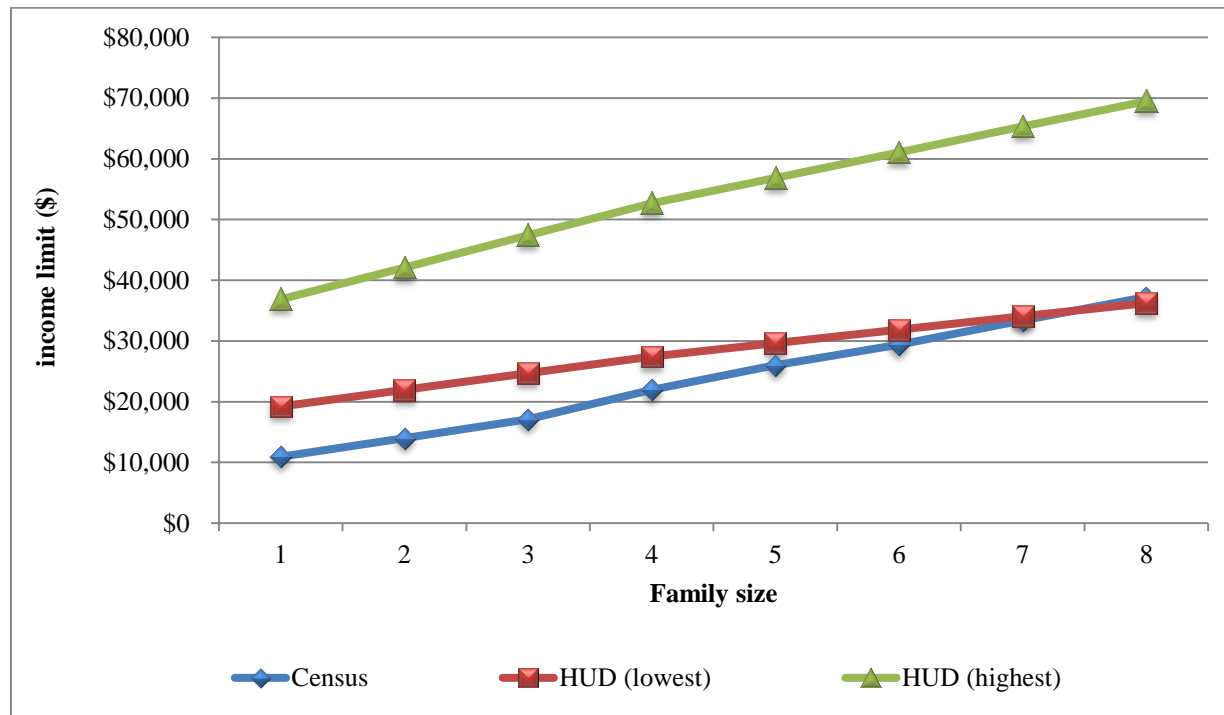
**Note:** The poverty thresholds are updated each year using the change in the average annual Consumer Price Index for All Urban Consumers (CPI-U). Since the average annual CPI-U for 2009 was lower than the average annual CPI-U for 2008, poverty thresholds for 2009 are slightly lower than the corresponding thresholds for 2008.

**Table B-3. Example of HUD very-low income cutoff by MSA and county in NYS for 2009**

Name	2009 median family income	Number of persons							
		1	2	3	4	5	6	7	8
Albany-Schenectady-Troy, NY MSA	74,100	25,950	29,650	33,350	37,050	40,000	43,000	45,950	48,900
Binghamton, NY MSA	58,600	20,500	23,450	26,350	29,300	31,650	34,000	36,350	38,700
Buffalo-Niagara Falls, NY MSA	63,500	22,250	25,400	28,600	31,750	34,300	36,850	39,350	41,900
Glens Falls, NY MSA	59,400	20,800	23,750	26,750	29,700	32,100	34,450	36,850	39,200
Ithaca, NY MSA	71,300	25,150	28,700	32,300	35,900	38,750	41,650	44,500	47,400
Kingston, NY MSA	69,700	24,400	27,900	31,350	34,850	37,650	40,450	43,200	46,000
Poughkeepsie-Newburgh-Middletown, NY MSA	81,800	28,650	32,700	36,800	40,900	44,150	47,450	50,700	54,000
Rochester, NY MSA	66,500	23,300	26,600	29,950	33,250	35,900	38,550	41,250	43,900
Syracuse, NY MSA	63,700	22,300	25,500	28,650	31,850	34,400	36,950	39,500	42,050
Utica-Rome, NY MSA	55,800	19,550	22,300	25,100	27,900	30,150	32,350	34,600	36,850
Nassau-Suffolk, NY HUD Metro FMR Area	101,800	35,650	40,700	45,800	50,900	54,950	59,050	63,100	67,200
New York, NY HUD Metro FMR Area	61,600	26,900	30,700	34,550	38,400	41,450	44,550	47,600	50,700
Rockland County, NY HUD Metro FMR Area	102,000	35,700	40,800	45,900	51,000	55,100	59,150	63,250	67,300
<b>Westchester County, NY Statutory Exception Area</b>	105,300	<b>36,850</b>	<b>42,100</b>	<b>47,400</b>	<b>52,650</b>	<b>56,850</b>	<b>61,050</b>	<b>65,300</b>	<b>69,500</b>
<b>Allegany County, NY</b>	50,700	<b>19,200</b>	<b>21,950</b>	<b>24,700</b>	<b>27,450</b>	<b>29,650</b>	<b>31,850</b>	<b>34,050</b>	<b>36,250</b>
Cattaraugus County, NY	51,000	19,200	21,950	24,700	27,450	29,650	31,850	34,050	36,250
Cayuga County, NY	58,900	20,600	23,550	26,500	29,450	31,800	34,150	36,500	38,850
Chautauqua County, NY	51,900	19,200	21,950	24,700	27,450	29,650	31,850	34,050	36,250
Chenango County, NY	53,700	19,200	21,950	24,700	27,450	29,650	31,850	34,050	36,250
Clinton County, NY	60,900	21,300	24,350	27,400	30,450	32,900	35,300	37,750	40,200
Columbia County, NY	65,400	22,900	26,150	29,450	32,700	35,300	37,950	40,550	43,150
Cortland County, NY	56,800	19,900	22,700	25,550	28,400	30,650	32,950	35,200	37,500
Delaware County, NY	51,700	19,200	21,950	24,700	27,450	29,650	31,850	34,050	36,250

**Data source:** Information extracted from HUD published 2009 data for State of New York..

**Note:** Highlighted in green is an area with the highest values of HUD very-low income limits; while yellow shows the one with the lowest very-low income limits.



**Figure B-1. Comparison of Census national poverty thresholds and HUD very-low income limits for areas in NYS (2009)**

**Table B-4A. Persons 5+ and households by HUD low income and very low income status, 2009 NHTS**

	Manhattan	Rest of NYC	New York City	Other Urban (Excluding NYC)	Nassau, Suffolk	Putnam, Rockland, Westchester	NY Metro Total	Other Urban (Excluding NY Metro)	ALL Urban	Non-Urban Areas	Statewide	Rest of US
<b>Persons 5+</b>	<b>1,534,921</b>	<b>6,253,053</b>	<b>7,787,974</b>	<b>8,781,608</b>	<b>2,698,459</b>	<b>1,265,119</b>	<b>11,751,552</b>	<b>4,818,031</b>	<b>16,569,583</b>	<b>1,712,219</b>	<b>18,281,802</b>	<b>264,772,070</b>
Very Low Income	360,337	2,548,724	2,909,061	1,939,611	523,147	333,477	3,765,685	1,082,988	4,848,673	392,321	5,240,993	66,417,900
Low Income*	539,798	3,483,486	4,023,284	3,305,909	919,157	464,877	5,407,318	1,921,875	7,329,193	739,568	8,068,761	108,763,683
Not Low Income	909,067	2,350,647	3,259,715	4,882,397	1,588,821	715,267	5,563,803	2,578,309	8,142,112	898,183	9,040,295	142,436,942
Unreported	86,056	418,919	504,975	593,303	190,481	84,975	780,431	317,847	1,098,278	74,468	1,172,746	13,571,446
<b>% Persons 5+</b>												
Very Low Income	23.48%	40.76%	37.35%	22.09%	19.39%	26.36%	32.04%	22.48%	29.26%	22.91%	28.67%	25.08%
Low Income*	35.17%	55.71%	51.66%	37.65%	34.06%	36.75%	46.01%	39.89%	44.23%	43.19%	44.14%	41.08%
Not Low Income	59.23%	37.59%	41.86%	55.60%	58.88%	56.54%	47.35%	53.51%	49.14%	52.46%	49.45%	53.80%
Unreported	5.61%	6.70%	6.48%	6.76%	7.06%	6.72%	6.64%	6.60%	6.63%	4.35%	6.41%	5.13%
<b>HHs</b>	<b>749,335</b>	<b>2,305,938</b>	<b>3,055,273</b>	<b>3,380,154</b>	<b>911,037</b>	<b>469,399</b>	<b>4,435,710</b>	<b>1,999,718</b>	<b>6,435,427</b>	<b>702,055</b>	<b>7,137,482</b>	<b>105,963,848</b>
Very Low Income	159,472	878,592	1,038,064	856,329	194,483	140,423	1,372,970	521,423	1,894,394	195,730	2,090,123	28,789,669
Low Income*	250,693	1,274,661	1,525,354	1,415,361	331,248	199,849	2,056,451	884,264	2,940,715	327,586	3,268,301	46,166,790
Not Low Income	421,244	822,561	1,243,805	1,663,837	488,853	228,936	1,961,593	946,049	2,907,642	336,804	3,244,445	52,528,073
Unreported	77,398	208,717	286,115	300,957	90,937	40,615	417,666	169,405	587,071	37,665	624,736	7,268,985
<b>% HHs</b>												
Very Low Income	21.28%	38.10%	33.98%	25.33%	21.35%	29.92%	30.95%	26.07%	29.44%	27.88%	29.28%	27.17%
Low Income*	33.46%	55.28%	49.93%	41.87%	36.36%	42.58%	46.36%	44.22%	45.70%	46.66%	45.79%	43.57%
Not Low Income	56.22%	35.67%	40.71%	49.22%	53.66%	48.77%	44.22%	47.31%	45.18%	47.97%	45.46%	49.57%
Unreported	10.33%	9.05%	9.36%	8.90%	9.98%	8.65%	9.42%	8.47%	9.12%	5.36%	8.75%	6.86%

\* Low Income persons and households also contain those in the Very Low income category



**Table B-4B. Persons 5+ and households by HUD low income and very low income status, 2001 NHTS**

	Manhattan	Rest of NYC	New York City	Other Urban (Excluding NYC)	Nassau, Suffolk	Putnam, Rockland, Westchester	NY Metro Total	Other Urban (Excluding NY Metro)	ALL Urban	Non-Urban Areas	Statewide	Rest of US
<b>Persons 5+</b>	<b>1,428,557</b>	<b>6,010,400</b>	<b>7,438,957</b>	<b>7,909,564</b>	<b>2,516,956</b>	<b>1,181,859</b>	<b>11,137,773</b>	<b>4,210,748</b>	<b>15,348,521</b>	<b>2,045,872</b>	<b>17,394,393</b>	<b>240,182,520</b>
Very Low Income	335,804	2,190,996	2,526,800	1,340,959	346,927	240,798	3,114,525	753,235	3,867,759	375,350	4,243,110	48,410,575
Low Income*	525,093	3,319,118	3,844,211	2,513,912	740,423	330,518	4,915,152	1,442,970	6,358,123	782,674	7,140,797	91,003,447
Not Low Income	735,057	2,225,389	2,960,446	4,768,017	1,547,374	750,482	5,258,303	2,470,161	7,728,464	1,153,223	8,881,687	133,399,071
Unreported	168,407	465,893	634,301	627,634	229,158	100,858	964,317	297,617	1,261,935	109,975	1,371,909	15,780,002
<b>% Persons 5+</b>												
Very Low Income	23.51%	36.45%	33.97%	16.95%	13.78%	20.37%	27.96%	17.89%	25.20%	18.35%	24.39%	20.16%
Low Income*	36.76%	55.22%	51.68%	31.78%	29.42%	27.97%	44.13%	34.27%	41.42%	38.26%	41.05%	37.89%
Not Low Income	51.45%	37.03%	39.80%	60.28%	61.48%	63.50%	47.21%	58.66%	50.35%	56.37%	51.06%	55.54%
Unreported	11.79%	7.75%	8.53%	7.94%	9.10%	8.53%	8.66%	7.07%	8.22%	5.38%	7.89%	6.57%
<b>HHs</b>	<b>751,869</b>	<b>2,323,819</b>	<b>3,075,688</b>	<b>3,241,542</b>	<b>933,098</b>	<b>470,801</b>	<b>4,479,587</b>	<b>1,837,643</b>	<b>6,317,230</b>	<b>865,978</b>	<b>7,183,208</b>	<b>100,182,138</b>
Very Low Income	163,749	824,876	988,626	676,180	164,417	109,146	1,262,189	402,617	1,664,806	190,328	1,855,134	23,136,196
Low Income*	244,927	1,250,526	1,495,453	1,161,230	296,740	148,228	1,940,420	716,263	2,656,683	350,553	3,007,236	40,710,234
Not Low Income	406,600	808,084	1,214,684	1,774,180	536,004	271,116	2,021,803	967,061	2,988,864	448,733	3,437,597	51,373,810
Unreported	100,342	265,210	365,551	306,131	100,355	51,457	517,363	154,319	671,682	66,692	738,375	8,098,094
<b>% HHs</b>												
Very Low Income	21.78%	35.50%	32.14%	20.86%	17.62%	23.18%	28.18%	21.91%	26.35%	21.98%	25.83%	23.09%
Low Income*	32.58%	53.81%	48.62%	35.82%	31.80%	31.48%	43.32%	38.98%	42.05%	40.48%	41.86%	40.64%
Not Low Income	54.08%	34.77%	39.49%	54.73%	57.44%	57.59%	45.13%	52.63%	47.31%	51.82%	47.86%	51.28%
Unreported	13.35%	11.41%	11.89%	9.44%	10.75%	10.93%	11.55%	8.40%	10.63%	7.70%	10.28%	8.08%

\* Low Income persons and households also contain those in the Very Low income category

**Table B-4C. Persons 5+ and households by HUD low income and very low income status, 1995 NPTS**

	Manhattan	Rest of NYC	New York City	Other Urban (Excluding NYC)	Nassau, Suffolk	Putnam, Rockland, Westchester	NY Metro Total	Other Urban (Excluding NY Metro)	ALL Urban	Non-Urban Areas	Statewide	Rest of US
<b>Persons 5+</b>	<b>1,432,998</b>	<b>5,358,983</b>	<b>6,791,981</b>	<b>7,917,005</b>	<b>2,467,001</b>	<b>1,166,000</b>	<b>10,424,982</b>	<b>4,284,004</b>	<b>14,708,986</b>	<b>2,098,002</b>	<b>16,806,988</b>	<b>224,868,012</b>
Very Low Income	353,182	1,617,951	1,971,133	1,059,801	334,087	137,695	2,442,915	588,019	3,030,934	360,898	3,391,832	35,499,832
Low Income*	544,174	2,566,281	3,110,455	2,022,101	552,258	218,984	3,881,697	1,250,859	5,132,556	730,573	5,863,129	70,270,507
Not Low Income	602,059	1,772,576	2,374,636	4,359,989	1,392,628	661,662	4,428,926	2,305,699	6,734,625	1,071,980	7,806,605	117,487,262
Unreported	286,765	1,020,126	1,306,891	1,534,915	522,115	285,355	2,114,360	727,445	2,841,805	295,449	3,137,254	37,110,242
<b>% Persons 5+</b>												
Very Low Income	24.65%	30.19%	29.02%	13.39%	13.54%	11.81%	23.43%	13.73%	20.61%	17.20%	20.18%	15.79%
Low Income*	37.97%	47.89%	45.80%	25.54%	22.39%	18.78%	37.23%	29.20%	34.89%	34.82%	34.89%	31.25%
Not Low Income	42.01%	33.08%	34.96%	55.07%	56.45%	56.75%	42.48%	53.82%	45.79%	51.10%	46.45%	52.25%
Unreported	20.01%	19.04%	19.24%	19.39%	21.16%	24.47%	20.28%	16.98%	19.32%	14.08%	18.67%	16.50%
<b>HHs</b>	<b>667,703</b>	<b>1,884,641</b>	<b>2,552,344</b>	<b>2,823,951</b>	<b>794,304</b>	<b>407,602</b>	<b>3,754,251</b>	<b>1,622,044</b>	<b>5,376,295</b>	<b>755,700</b>	<b>6,131,995</b>	<b>92,858,005</b>
Very Low Income	132,355	524,603	656,958	439,638	120,885	45,895	823,737	272,859	1,096,596	145,866	1,242,461	16,270,896
Low Income*	220,336	844,873	1,065,209	798,574	193,593	77,667	1,336,469	527,314	1,863,783	272,366	2,136,149	30,935,881
Not Low Income	303,393	660,014	963,407	1,469,088	426,746	228,931	1,619,085	813,410	2,432,495	367,637	2,800,132	46,568,019
Unreported	143,974	379,754	523,728	556,289	173,965	101,004	798,697	281,320	1,080,017	115,697	1,195,714	15,354,105
<b>% HHs</b>												
Very Low Income	19.82%	27.84%	25.74%	15.57%	15.22%	11.26%	21.94%	16.82%	20.40%	19.30%	20.26%	17.52%
Low Income*	33.00%	44.83%	41.73%	28.28%	24.37%	19.05%	35.60%	32.51%	34.67%	36.04%	34.84%	33.32%
Not Low Income	45.44%	35.02%	37.75%	52.02%	53.73%	56.17%	43.13%	50.15%	45.24%	48.65%	45.66%	50.15%
Unreported	21.56%	20.15%	20.52%	19.70%	21.90%	24.78%	21.27%	17.34%	20.09%	15.31%	19.50%	16.54%

\* Low Income persons and households also contain those in the Very Low income category

**Table B-5. Daily person trips per person by region of residency**

HH Income Group	NHTS year	NYC	Rest of NYMTC	Other Urban, Dens 2,000+ per square mile	Other Urban, Dens 500-1,999 per square mile	Other Urban, Dens <500 per square mile	NYS Non-Urban Areas	Rest of U.S.
Very-low income	1995	3.3	3.6	3.5	4.0	3.7	3.4	3.8
	2001	3.0	3.5	3.5	3.8	3.3	3.6	3.5
	2009	3.0	3.7	3.1	3.1	3.1	3.0	3.3
Other income	1995	3.9	4.2	4.5	4.3	4.1	4.2	4.6
	2001	3.8	3.9	4.3	4.3	3.9	4.1	4.4
	2009	3.9	4.1	3.8	4.0	4.2	3.7	4.0

**Table B-6. Daily vehicle trips per driver by region of residency**

HH Income Group	NHTS year	NYC	Rest of NYMTC	Other Urban, Dens 2,000+ per square mile	Other Urban, Dens 500-1,999 per square mile	Other Urban, Dens < 500 per square mile	NYS Non-Urban Areas	Rest of U.S.
Very-low income	1995	1.2	3.1	3.0	3.2	3.0	3.0	3.1
	2001	1.2	2.9	2.8	3.4	2.6	2.7	2.9
	2009	0.7	2.7	2.5	2.5	2.5	2.5	2.6
Other income	1995	1.8	3.4	3.8	3.6	3.6	3.6	3.8
	2001	1.7	3.2	3.6	3.6	3.3	3.3	3.6
	2009	1.4	3.2	3.1	3.3	3.3	3.1	3.2

**Table B-7. Daily vehicle trip length by region of residency**

HH Income Group	NHTS year	NYC	Rest of NYMTC	Other Urban, Dens 2,000+ per square mile	Other Urban, Dens 500-1,999 per square mile	Other Urban, Dens < 500 per square mile	NYS Non-Urban Areas	Rest of U.S.
Very-low income	1995	6.6	6.5	6.4	7.3	8.1	9.5	7.5
	2001	6.7	8.1	5.9	6.0	9.5	10.0	9.1
	2009	5.8	6.4	9.3	6.7	5.9	9.9	8.7
Other income	1995	9.1	8.7	6.9	8.9	10.3	10.7	9.4
	2001	8.2	9.2	8.0	8.8	11.1	10.7	10.1
	2009	8.0	8.5	11.3	9.8	6.9	10.9	10.0

Table B-8. Standard errors for commute statistics by mode, income status, and population density in 2009

Mode of commute trips	Population Density (Population per square mile)											
	< 500		500-1999		2000-2999		4000-9999		10,000-24,999		25,000+	
	NYS	U.S	NYS	U.S	NYS	U.S	NYS	U.S	NYS	U.S	NYS	U.S
Average Commute Length (miles)												
Very Low Income Persons												
Private vehicle	1.25	0.75	1.59	1.17	0.80	0.54	1.78	0.75	1.35	1.08	10.03	2.94
Public transit	1.95	2.34	4.06	5.81	1.17	1.93	1.74	1.28	2.12	1.61	2.22	3.58
Other	3.81	1.89	3.75	4.86	4.05	0.42	1.71	1.10	17.69	1.28	3.89	3.79
Walk	0.06	0.12	1.02	2.92	0.19	0.17	1.12	0.21	0.17	0.25	0.12	0.07
Not Very Low Income Persons												
Private vehicle	0.51	0.28	0.49	0.41	0.77	0.24	0.64	0.25	0.85	0.57	1.39	0.98
Public transit	10.33	3.74	3.80	7.32	3.30	5.43	2.26	2.10	1.84	1.21	0.67	1.08
Other	70.49	36.14	6.29	25.65	0.14	7.07	1.71	2.62	18.65	8.32	0.54	1.08
Walk	0.08	0.07	0.45	0.11	0.05	0.37	0.18	0.13	0.18	0.21	0.64	0.11
Commute Travel Time (minutes)												
Very Low Income Persons												
Private vehicle	1.53	1.00	1.89	1.93	1.59	0.82	5.50	1.02	3.71	1.54	14.39	3.47
Public transit	13.41	10.03	6.16	26.81	6.34	11.56	7.05	4.44	2.95	6.06	2.89	4.40
Other	5.78	6.39	4.18	7.99	2.16	2.38	2.07	2.86	20.42	3.50	17.01	11.56
Walk	2.36	3.01	4.41	8.93	6.32	2.84	6.43	3.25	4.59	2.86	2.34	1.07
Not Very Low Income Persons												
Private vehicle	0.74	0.36	0.98	0.44	1.24	0.43	1.18	0.39	1.72	1.09	2.46	2.85
Public transit	9.68	7.92	6.01	9.30	6.53	23.79	6.01	3.97	4.77	3.41	1.97	9.76
Other	11.40	6.16	13.87	5.49	4.30	8.60	6.04	3.92	11.38	5.39	2.70	3.36
Walk	1.44	1.05	1.95	10.88	3.44	3.48	3.26	1.38	3.05	1.55	2.77	1.45
Average Commute Speed (mph)												
Very Low Income Persons												
Private vehicle	2.17	0.97	3.59	1.45	2.01	1.01	1.47	1.29	1.47	2.08	5.87	3.35
Public transit	5.00	3.99	6.48	2.74	1.06	1.45	1.91	1.12	2.78	1.27	2.61	3.25
Other	3.95	4.07	9.15	6.08	17.51	0.52	3.80	2.56	23.46	3.19	7.60	3.15
Walk	2.49	0.81	1.74	7.20	1.11	0.76	5.89	0.47	0.64	0.96	0.71	0.21
Not Very Low Income Persons												
Private vehicle	0.52	0.32	0.99	0.59	0.69	0.41	1.07	0.35	1.23	0.82	1.96	2.08
Public transit	7.50	3.52	1.40	4.97	2.23	1.39	1.44	1.94	1.43	1.16	0.77	1.65
Other	68.86	77.29	3.80	51.68	2.15	5.91	1.28	4.58	26.11	18.37	0.96	1.61
Walk	0.50	0.41	1.49	0.38	0.36	1.08	0.48	0.41	0.74	0.76	1.21	0.49

Yellow shaded cells are based on small samples.



