



U.S. CENSUS MONITORING BOARD
Presidential Members

Undercounting Commuters

February 2001



U.S. Census Monitoring
Board

4700 Silver Hill Road
Suite 1250-3
Suitland, MD 20746

PRESIDENTIAL MEMBERS

Phone: (301) 457-9900
Fax: (301) 457-9901

Gilbert F. Casellas
Co-Chair

Cruz M. Bustamante

Everett M. Ehrlich

Lorraine A. Green

Margarita Roque
Executive Director

February 20, 2001

The Presidential Members of the U.S. Census Monitoring Board present the research findings of Dr. Paul Ong and Elena Ong, "Undercounting Commuters."

The study finds that the 1990 census undercount adversely affected commuters-to-work in major metropolitan areas. Those who use public transportation were more severely undercounted than those who drive alone to work.

Sincerely,

A handwritten signature in cursive script, reading "Gilbert F. Casellas".

Gilbert F. Casellas, Co-Chair

UNDERCOUNTING COMMUTERS

REPORT TO U.S. CENSUS MONITORING BOARD

**Paul Ong, Ph.D.
and
Elena Soohoo Ong, M.S.**

**ONG & ASSOCIATES
10479 Colina Way
Los Angeles, CA 90077
ongetc@earthlink.net
(310) 470-6808 (voice)
(310) 470-0919 (FAX)**

UNDERCOUNTING COMMUTERS

EXECUTIVE SUMMARY

- The estimates presented in this report show a systematic pattern to the undercount of commuters in 1990.
- For the 22 metropolitan areas analyzed, the census missed over a half million commuters, or 1.7 percent of all commuters in those areas.
- The undercount rate was higher for those using mass transit (3.2 percent), particularly transit users who were African Americans (5.8 percent) and Latinos (5.2 percent), poor (5.4 percent), and residents of predominantly minority communities (5.4 percent). On the other hand, there was essentially no net undercount for non-Hispanic white solo drivers and those in predominantly non-Hispanic white communities.
- The relationship between income and community composition can be seen in Graphs 4 and 5 from the report. The undercount rate increases as incomes fall, and as the minority percent of the population grows.
- The undercount differential was often sizeable within metropolitan areas. The gap between sub-groups with the lowest estimated undercount rates and the sub-groups with the highest estimated undercount rates was as high as 10 percentage points.
- The undercount of commuters can distort transportation policy and plans, financial allocation and governmental programs in three ways:
 1. an economically inefficient underfunding of work-related transportation programs,
 2. inadequate support for mass transit,
 3. and, underserving disadvantaged populations.
- The 2000 Census has reduced the undercount, but there continues to be a differential undercount that remains a problem.

UNDERCOUNTING COMMUTERS

PART I: INTRODUCTION

This report estimates the undercount of the number of commuters, and how the undercount varies by demographic, economic and geographic characteristics. The commute to work is key to the economy's productivity because it links Americans to the work site, transforming people from being a consumer at their place of residence to producers on the job. The commute to work has profound economic consequences. How workers get to their jobs plays a critical role in defining the extent of traffic congestion that wastes time and contributes to the level of air pollution that affects health. Persons without adequate access to private transportation can be isolated from employment opportunities. Having accurate statistics on the number of commuters and the way they travel to work is key to sound public policy, effective transportation plans, fair allocation of public resources, and the design of governmental programs.

Although there are other sources of information on travel patterns, the decennial census is important in the transportation field for five reasons. One, the census is the single largest data set. Transportation-oriented surveys (such as the Nationwide Personal Transportation Survey) contain more questions, but the number of respondents to these specialized surveys is miniscule when compared to the number of respondents to the census. Two, census data are consistent across all parts of the country, while the transportation-oriented surveys are often unique to specific locations. Three, the quality of census data is much higher because the Bureau of the Census has one of the best data gathering operations and because federal law enhances individual cooperation in the decennial census. Four, census data are used extensively in the transportation field. For example, the Bureau of Transportation Statistics distributes the widely used "Census Transportation Planning Package," which is based on the 1990 census and is widely used by local and regional authorities for transportation analysis and planning. Five, census statistics are used as a benchmark for other surveys.

Unfortunately, the decennial census does not count every person in the United States, producing what is known as the undercount problem. The estimated percent of the population missed declined steadily from 5.4 percent in 1940 to 1.2 percent in 1980, and then increased to 1.8 percent in 1990. One of the troubling aspects of the undercount is the sizable variation across groups, which is known as the differential undercount. For example, estimates based on data from the 1990 Post Enumeration Survey (PES) indicate that the undercount rate for non-Hispanic whites (NH whites) was several times lower than the rate for minorities. Less than one percent (0.7 percent) of NH whites were missed by the census, compared to 4.4 percent for African Americans, 5.0 percent for Hispanics, 2.4 percent for Asians, and 12.2 percent for American Indians. Undercount rates also vary by regions, level of urbanization and home ownership.

A differential undercount can have grave implications by undermining our understanding of the nature and magnitude of the problems and challenges facing this nation. The uncounted population can be overlooked in legislation and funding formulas. This bias potentially affects transportation policy, funding, and programs. The demographic and economic factors that are related to the population undercount correlate with travel behavior and the means by which workers get to their place of employment. There may also be differences by locations due to variations in the availability of public transit and demographic composition. The type of travel at greatest risk of suffering from a high differential undercount is tied to

public transit, the mode used most often by minorities and the poor. A possible consequence of a differential undercount by type of travel is a mismatch between people's needs and the service provided.

A first step to addressing a potential undercount of commuters is to estimate the number of undercounted commuters by mode of transportation, and determine how the undercount rates vary by metropolitan areas, race and ethnicity, economic status, and the racial composition of communities. The report uses the 5 percent 1990 PUMS (Public Use Micro Sample), which is the only data set sufficiently large enough to generate detailed disaggregated rates. Data from this source is over a decade old, but the required data from the 2000 Census will not be available for another two or three years. Despite this limitation, an analysis of the 1990 PUMS can nevertheless provide some important insights into the differential undercount of commute-to-work and lay a foundation for working with the 2000 PUMS when it becomes available.

The rest of this report presents the analysis. Part II describes the 22 metropolitan statistical areas (MSAs) included in this study. Part III presents the estimates of the under count rates. Part IV discusses some of the potential implications. The appendices contain technical details and MSA-specific estimates.

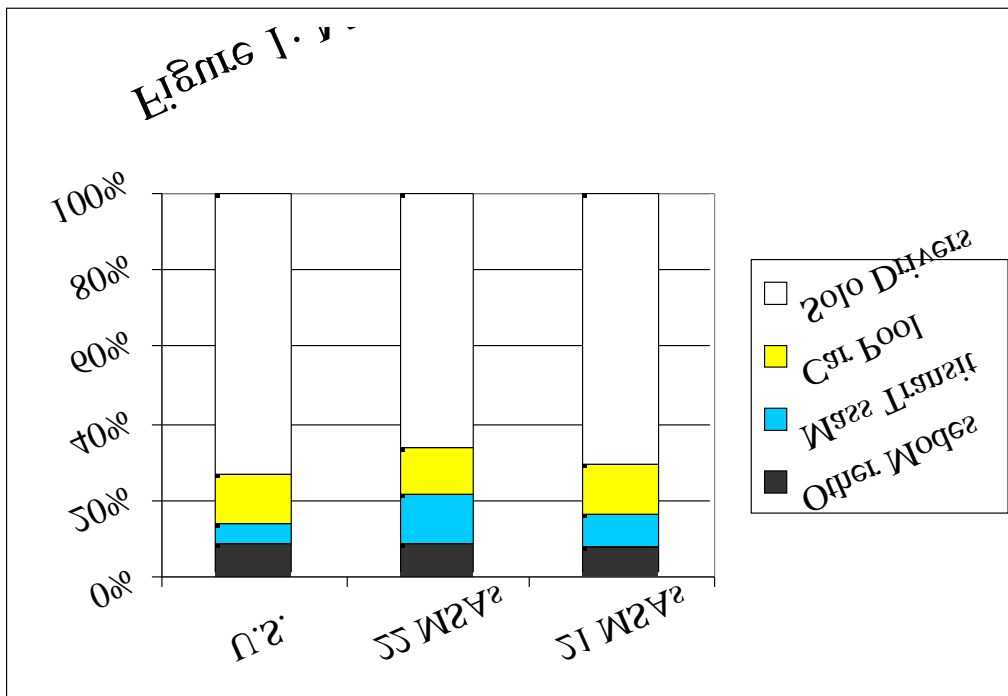
PART II: DESCRIPTION OF MSAs IN STUDY:

The analysis of the undercount of commuters includes the 22 large Metropolitan Statistical Areas (MSAs) listed in Table 1. In 1990, over 74 million persons and 34 million commuters lived in these metropolitan areas, accounting for over a quarter of the nation's population and commuters. These metropolitan areas were selected to facilitate an examination of how the undercount varies by regions and population size.

Table 1:
List of Metropolitan Statistical Areas

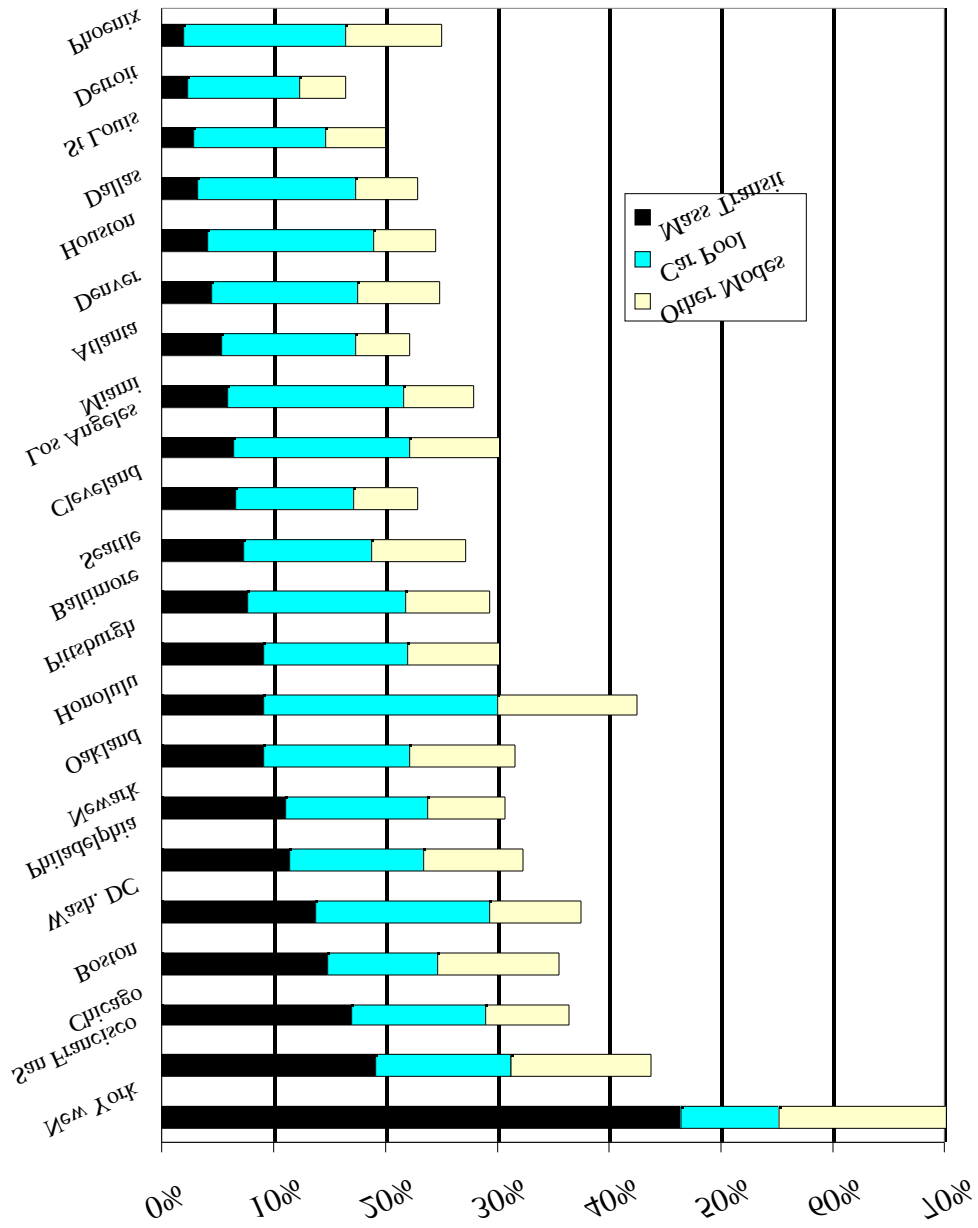
MSA Ranking	Name	1990 Population
1	Los Angeles-Long Beach, CA	8,863,052
2	New York, NY	8,546,846
3	Chicago, IL	7,410,858
4	Philadelphia, PA	4,922,257
5	Detroit, MI	4,266,654
6	Washington, DC	4,222,830
7	Houston, TX	3,321,911
8	Boston, MA	3,227,779
9	Atlanta, GA	2,959,500
10	Dallas, TX	2,676,248
15	St Louis, MO-IL	2,492,348
17	Pittsburgh, PA	2,394,811
18	Baltimore, MD	2,382,172
19	Phoenix, AZ	2,238,498
20	Cleveland, OH	2,202,087
21	Oakland, CA	2,108,078
23	Seattle, WA	2,033,128
24	Miami, FL	1,937,194
25	Newark, NJ	1,915,724
27	Denver, CO	1,622,980
28	San Francisco, CA	1,603,678
66	Honolulu, HI	836,231

The modal split for the study areas can be seen in Figure 1. Modal split is the distribution of commutes by transportation mode, which is classified into four major categories (solo driver, car pool, mass transit, and all other modes). The ways workers commute to work in the 22 MSAs were shaped by their highly urbanized environment; consequently, workers in these metropolitan areas had more access to alternative forms of transportation and were less likely to drive alone. While 73 percent of the nation's workers drove alone to get to work, only 66 percent of those in the 22 MSAs used this mode. On the other hand, 13 percent of the MSA workers used mass transit, compared to only 5 percent for the nation as a whole. The greater use of mass transit was due in part to New York, where nearly half of all commuters use mass transit. Even without New York, the percent of the workers in the remaining 21 MSAs using mass transit was higher than the nation (7 percent versus 5 percent).



There is considerable variation in the modal split among the 22 MSAs. Figure 2 ranks the metropolitan areas according to the percent of trips made on mass transit. As indicated earlier, New York MSA is at one extreme, where nearly half of all workers used mass transit. This extremely high rate is due to the existence of an extensive subway network and public transit system, a high population density that makes mass transit economically feasible, and high land cost that pushes up the cost of owning private vehicles. The San Francisco metropolitan area is a distant second, where about a fifth of commuters used mass transit. In general, older urban areas have higher rates of mass-transit usage. Although Los Angeles is frequently depicted as the prototypical automobile-dominated metropolis, transit usage there is close to the national average. Among the 22 MSAs, Detroit has the highest automobile usage rate, where nine in ten workers were a driver or passenger in a private vehicle. Not surprisingly, Detroit, along with Phoenix, is at the other extreme in terms of public transit, where about only 2 percent of the commuters used mass transit.

Figure 5



There is also considerable variation in the socioeconomic characteristics of commuters by mode of transportation, particularly between solo drivers and mass-transit riders. Solo drivers were more likely to be non-Hispanic whites (NH whites) in families with higher incomes and residing in largely white communities. Nearly three quarters of solo drivers were NH whites, but less than half of mass-transit users were. The typical solo driver lived in a family with an income about four and a half times as high as the poverty level, but the typical mass-transit user lived in a family with an income only three and a half times as high as the poverty level. Moreover, the typical solo driver lived in a community that was 78 percent NH white, while the typical mass-transit user lived in a community that was 55 percent NH white. The socioeconomic characteristics of those in car pools and in other transportation modes fall between the socioeconomic characteristics of solo drivers and transit users, as can be seen in Table 2.

=====

TABLE 2:
Socioeconomic Characteristics by Mode, All MSAs

	Solo Drivers	Car Pool	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%
Race/Ethnicity				
NH Whites	73.0%	54.6%	43.1%	66.2%
African Americans	12.0%	17.0%	32.3%	12.8%
Latinos	9.7%	19.5%	16.7%	13.8%
APIs	4.9%	8.3%	7.4%	6.6%
Other	0.4%	0.6%	0.5%	0.6%
Family Poverty Rate				
Below 200%	11.7%	20.9%	24.9%	27.5%
200%-299%	13.4%	17.2%	17.1%	16.2%
300%-399%	16.2%	16.4%	15.6%	14.1%
400%-499%	15.0%	13.1%	12.2%	10.8%
500% plus	43.8%	32.4%	30.1%	31.5%
*PUMA Percent Minority				
0%-10%	25.4%	17.3%	6.2%	14.5%
11%-25%	29.3%	25.1%	19.5%	27.7%
26%-50%	23.5%	24.0%	28.1%	28.3%
51%-75%	12.3%	17.2%	17.7%	17.0%
76% plus	9.6%	16.4%	28.5%	12.6%

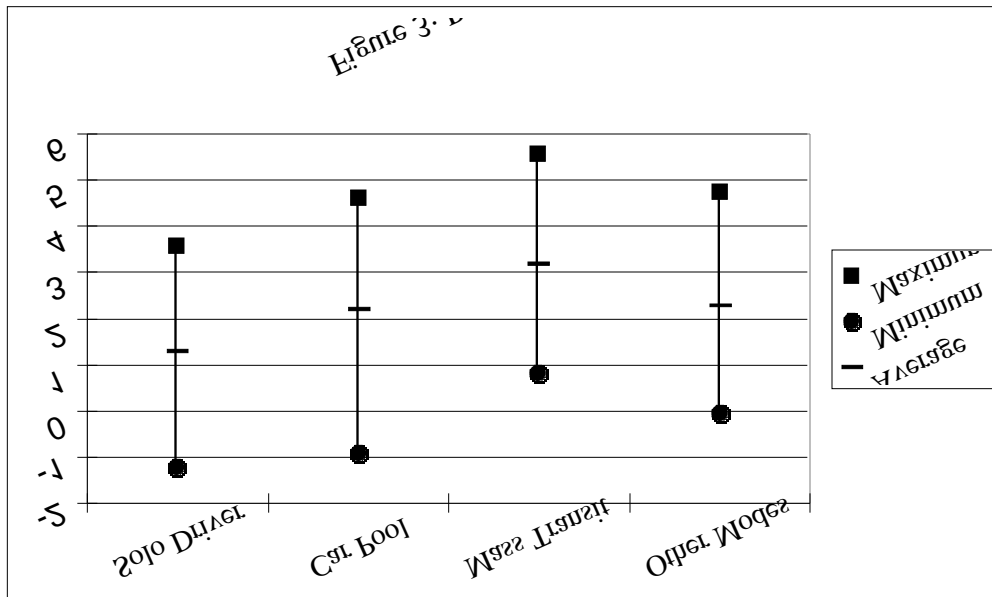
=====

*Public Use Micro-Sample Areas

PART III: UNDERCOUNT RATES OF COMMUTERS

Clearly, the modes of transportation are correlated with demographic and economic characteristics; therefore, the undercounts for population groups (e.g., by race and ethnicity) translate into systematic undercounts of commuters. The undercount rate is defined as the difference between the adjusted and unadjusted counts as a percentage of the adjusted count. The estimated undercount rates are 1.3 percent for solo drivers, 2.2 percent for those in car pools, 3.2 percent for mass-transit riders, and 2.3 percent for those who used other modes of transportation. One consequence of this pattern is a differential undercount by transportation mode. By definition, a differential undercount is the difference between the undercount rates for two populations. The greatest disparity in the undercount rates is between solo drivers and mass-transit riders. The estimated undercount rate for mass-transit riders is two and a half times as large as for solo drivers. This is not surprising given the socioeconomic characteristics described above.

The variation in the undercount rates by transportation mode holds for each of the MSAs, although there is a sizeable spread in the rates across the 22 metropolitan areas. In every metropolitan area, solo drivers were the least likely to be undercounted, and mass-transit riders were the most likely to be undercounted. The range in the undercount rates is depicted in Figure 3. Pittsburgh, Philadelphia and Boston have the lowest undercount rates, while Houston, Miami, and Los Angeles have the highest undercount rates. The variation in the undercount rates across MSAs is due to differences in the socioeconomic composition of the labor force and the level of racial and income segregation by transportation modes. Moreover, there is a variation in the differential undercount rates by mode of transportation. The undercount rate is higher for mass-transit riders than solo drivers in all 22 MSAs, but the size of the gap varies. For example, Newark had the largest difference between the undercount rates for solo drivers and mass-transit riders, a gap of 2.7 percentage points. On the other hand, the gap was only 1.4 percentage points for Seattle.



Undercount rates also vary within modes by socioeconomic characteristics, which can be seen in the statistics in Table 3. In general, the undercount rate is higher for minorities, those with lower family income, and those residing in minority communities. This pattern is not surprising because the estimates for commuters are derived from the reported undercount rates for the general population. The highest estimated undercount rates for commuters are for African American workers who travel to work on mass transit and

“other modes.” Approximately 6 percent of the trips were not counted. The rates are also high for Latinos and the working poor. On the other hand, those residing in predominantly NH white communities had the lowest undercount rates. In fact, the estimates indicate that there was a slight over count for residents of these communities who commuted as solo drivers and mass-transit riders.

=====

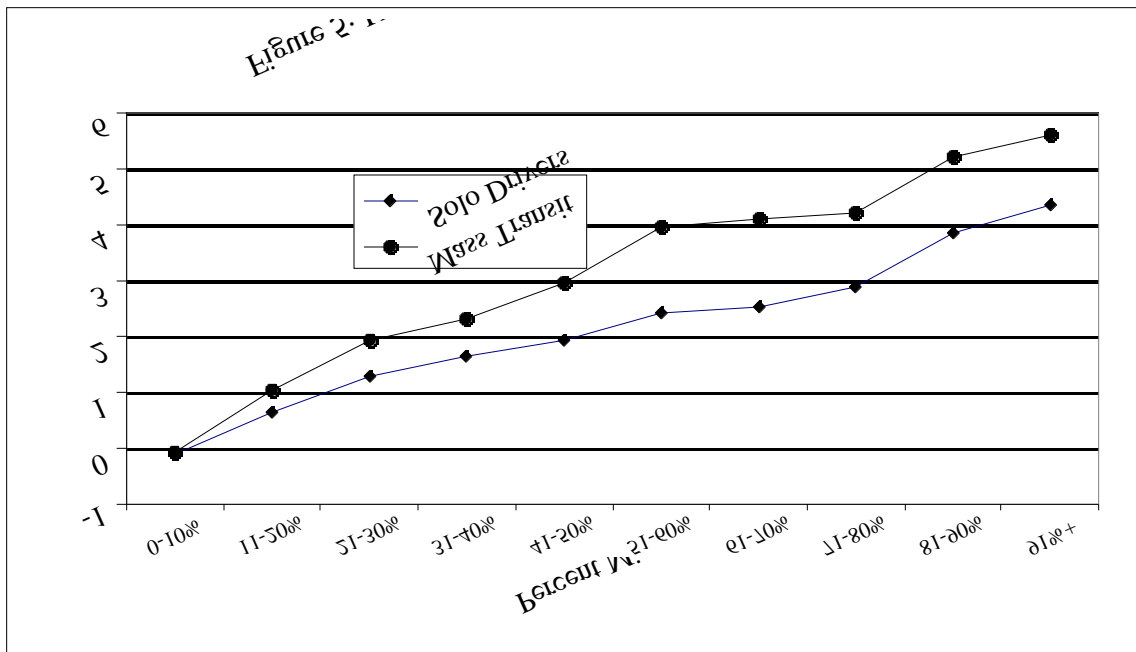
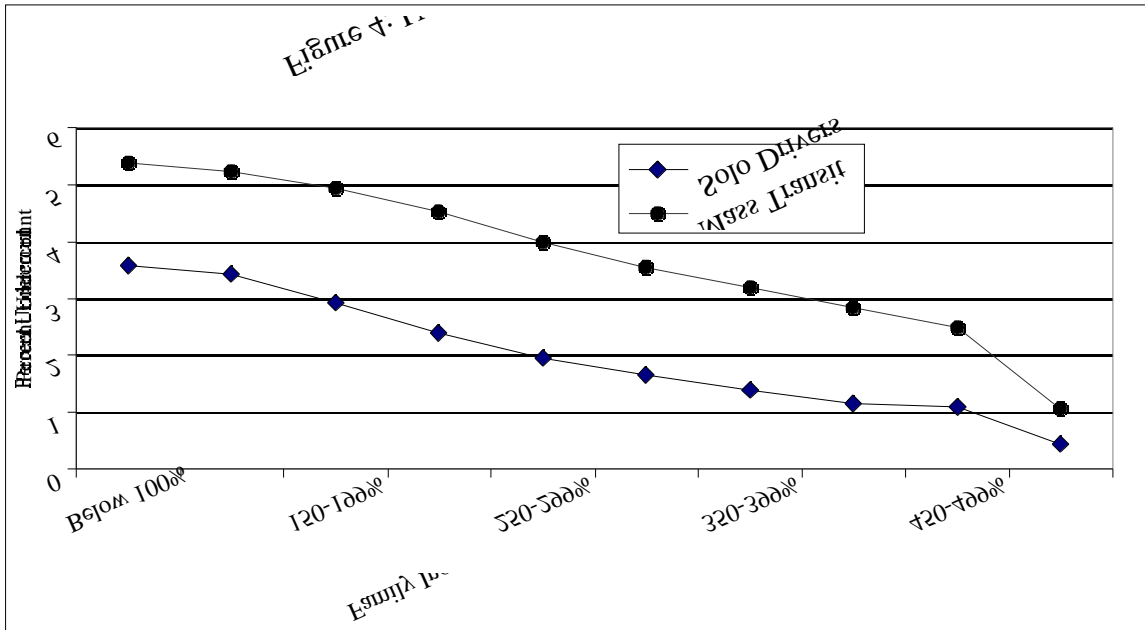
TABLE 3:
Estimated Undercount Rates, All 22 MSAs

	Solo Drivers	Car Pool	Mass Transit	Other Modes
All Commuters	1.28%	2.20%	3.20%	2.27%
Race/Ethnicity				
NH Whites	0.29%	0.41%	0.33%	0.66%
African Americans	4.57%	4.84%	5.75%	6.02%
Latinos	4.51%	5.12%	5.65%	5.58%
APIs	1.49%	1.74%	3.39%	4.14%
Other	1.10%	1.42%	1.27%	1.55%
Family Poverty Rate				
Below 200%	3.26%	4.27%	5.19%	3.86%
200%-299%	2.15%	3.06%	4.27%	2.83%
300%-399%	1.52%	2.20%	3.38%	2.11%
400%-499%	1.12%	1.51%	2.67%	1.47%
500% plus	0.44%	0.65%	1.06%	0.64%
*PUMA Percent Minority				
0%-10%	-.09%	0.18%	-.08%	0.26%
11%-25%	0.77%	1.29%	1.25%	1.40%
26%-50%	1.65%	2.32%	2.59%	2.30%
51%-75%	2.53%	3.24%	4.00%	3.49%
76% plus	3.92%	4.45%	5.35%	4.74%

=====

*Public Use Micro-Sample Areas

Figure 4 provides greater details on how the estimated undercount rates vary by economic status for solo drivers and mass-transit riders. The graph reports the undercount rates for ten income categories. Unfortunately, the census data do not provide any more breakdowns beyond 500 percent of the poverty threshold. Despite this limitation, the estimates show a consistent pattern. For any given income bracket, the differential undercount is about two percentage points, with a narrowing of the gap between the two rates with higher family income. This within-bracket gap between the two rates among lower-income commuters is roughly the same as the difference between the undercount rates for all solo drivers and for all mass-transit riders (1.9 percentage points). While the gap for higher-income commuters is smaller, this economic class had relatively few mass-transit riders. The variation in the gap is even more pronounced in a more detailed analysis by the racial composition of communities, which is depicted in Figure 5. Within bracket differences in the undercount rates range from nearly zero to one and a half percentage point, with the gap growing as the percent minority increases.



PART IV: CONCLUDING REMARKS

The estimates presented in this report show a systematic pattern to the undercount of the number of commuters by transportation mode, race/ethnicity, family income and community composition. The study has limitations because it does not directly measure the undercount by types of commutes. The only systematic data on the population undercount come from the Post Enumeration Survey (PES) for the 1990 decennial census. We used the available undercount rates by race/ethnicity, home ownership, and regional divisions to estimate the undercount for commuting. Despite this limitation, the findings are consistent with what is expected: mass transit riders, non-whites, low-income persons, and residents of minority communities had higher than average undercount rates. The gap between sub-groups with the lowest estimated undercount rates and the sub-groups with the highest estimated undercount rates is sizeable, over 10 percentage points. This estimated gap might well understate the real differential because of the limitations of data. Although the study uses the most fine grain statistics possible, the underlying population undercount rates are averages for large groups that fail to capture the diversity within each sub-group. There are, no doubt, groups and neighborhoods where the population and commuter undercount rates are higher than the highest reported average from the PES and in this report. These groups and neighborhoods are at greatest risk of being hurt by the undercount.

The undercount of commuters can distort transportation policy, financial allocation and social / governmental programs at four levels:

- . First, when planners and policy analysts undercount the total number of commuters, planners and policy analysts potentially underestimate the importance of the commute relative to other economic activities. This can lead to an economically inefficient under funding of work-related transportation programs relative to other programs.
- . Second, when planners and policy analysts undercount the number of mass transit riders relative to solo drivers (and other modes), planners and policy analysts potentially underestimate the importance of public transportation relative to private transportation in the commute to work. This can lead to inadequate support for mass transit.
- . Third, when minorities and low-income commuters are likely to be missed in the census data, planners and policy analysts will not be able to fully understand the magnitude of the needs of these groups. Unintentionally, and systematically, this can lead to underserving people who are already economically marginalized.
- . Fourth, when commuters in minority communities are at greater risk of being excluded in the official statistics, planners and policy analysts will not have a full accounting of the needs of these neighborhoods. Consequently, the lack of adequate resources increases the risk of leaving this community further behind.

The undercount of the commute to work also has a ripple effect. Inaccurate information makes it difficult for analysts to understand the detailed relationship between travel patterns and two unwanted consequences -- the loss of valuable time due to traffic congestion, and a lower quality of life due to air pollution. These have real personal costs that translate into economic impacts on productivity and general well-being. The undercount not only affects those who are working but also those who want to work. The misallocation of public resources by groups and neighborhoods discussed above also means that many of the disadvantaged who are unemployed face additional barriers to finding a job because they are without transportation resources. Moreover, many with a job face the threat of losing their jobs because they are without a reliable, efficient, and feasible way to get to work.

It is difficult to measure the degree to which transportation policy, financial allocations and social and economic development programs, are distorted because of the undercount. Such a task is well beyond the limited scope of this report. Moreover, most transportation agencies have other sources of information that may attenuate the problems created by the undercount in the decennial census. Nonetheless, it is safe to say that having accurate statistics on the number of commuters and the way they travel to work is key to sound public policy, effective transportation plans, fair allocation of public resources, and the design of governmental programs. This will require that we have the information and methodologies needed to ensure that commute data from the 2000 Census is inclusive of everyone.

APPENDIX A

METHODOLOGY

The undercount rate is defined as the difference between the adjusted and unadjusted counts as a percentage of the adjusted count:

$$\text{Undercount_Rate} = 100 * (\text{Adjusted_Count} - \text{Unadjusted_Count}) / (\text{Adjusted_Count}).$$

A differential undercount is the difference between the undercount rates for two populations. An example is the difference between solo drivers and riders on mass transit. The unadjusted counts of commute trips are based on the numbers tabulated from the PUMS using the reported weights. The adjusted counts of commute trips, on the other hand, are calculated by re-weighting the counts with the undercount rates.

The unadjusted counts are tabulated from the PUMS using the reported person weight, which is labeled as PWGT. Since the PUMS is only a sample, weights are used to inflate the estimates to the number expected for the entire population. The average weight for the 5 percent PUMS is 20, which means that each observation in the PUMS represents 20 persons; consequently, 1 solo driver in the PUMS would ideally represent 20 solo drivers in the entire population. If there are 1,000 solo drivers reported in the PUMS for a given community, then we would estimate that there were approximately 20,000 solo drivers in that community. The term “approximately” is used because samples are subject to random errors, variations in sampling rates by geography, differences in response rates, and other factors. Because of differences in response rates and other factors, the reported weights are not all equal to 20, with some lower and other higher. For the 21 MSAs in this report, the value of PWGT ranges from 2 to 172, with a mean value of 22.3. The reported weights inflate the estimates to the unadjusted population in 1990. In other words, inflating the PUMS numbers by the weights produces estimates of the “100 percent characteristics.” According to conversations with a key staff member of the Bureau of the Census, the “100 percent characteristics” refers to the counted population only (Gregg Robinson, January 10, 2001). The weights do not adjust for the undercount. These weights, then, can be used to estimate the number of unadjusted counts of commute trips.

For example,

$$\text{Unadjusted_Count}_i = \text{SUM OF } (\text{PWGT}_{j,i}), \text{ for all } j\text{'s from } 1 \text{ to } n.$$

The subscript ‘i’ denotes mode ‘i’ and the subscript ‘j’ denotes the jth person who uses mode ‘i’. In this example, there are n persons using mode ‘i’. This analysis uses the four modes described earlier (solo driver, car pool, mass transit, and other modes). Estimates of unadjusted counts are made for sub-groups by MSA, race/ethnicity, economic status, and the racial composition of (Public Use Micro-Sample Areas) PUMAs.

Estimating the adjusted counts by transportation mode is more difficult. There is no survey that directly collects information on who was missing in the 1990 census by travel modes. Instead, it is possible to estimate the number of adjusted counts of commute trips by using published information from the Post Enumeration Survey (PES). There are alternative sets of estimated undercount rates using different combinations of population characteristics. This project will use the estimated population-based undercount rate by region, race and home ownership for large urbanized areas. Home ownership is important because it is a proxy, albeit a crude one, for economic status. The average homeowner has a higher income than the

average non-owner. Unfortunately, there is no other available economic stratification. The rates to be used in this study are reproduced in Table 2. They come from Appendix Table 2, "Estimates for Revised Post-Strata Groups," in the paper "What the Census Bureau's Coverage Evaluation Programs Tells Us about Differential Undercount," by Howard Hogan and J. Gregory Robinson, 1993.

=====
 Appendix Table A1:
 PES-Based Undercount Rates
 Large Urbanized Areas

	NE	South	Mid-W	West
Non-Hispanic Whites and others				
Home Owners	-2.13	0.68	-0.26	-0.34
Non-Owners	1.16	2.56	2.33	3.18
African Americans				
Home Owners	1.63	2.16	0.81	6.10
Non-Owners	8.37	6.27	5.99	9.96
Non-Black Hispanics				
Home Owners	0.67	2.53	-4.33	2.89
Non-Owners	6.72	9.34	6.64	5.91
Asian/Pacific Islanders				
Home Owners	-1.45	-1.45	-1.45	-1.45
Non-Owners	6.96	6.96	6.96	6.96

=====

There are no region-specific undercount rates for Asian/Pacific Islanders. The population-based undercount rates in Table 2 are used to develop new weights using the following formula:

$$PWGT2_k = (PWGT_k)/(1+Undercount_rate_k),$$

where 'k' is a unique combination of region, race and homeownership. An example of 'k' is an African-American homeowner in the South. For the 21 MSAs in this report, value of PWGT2 ranges from 2 to 188.8, with a mean value of 22.7. Using PWGT2_k to inflate counts from the PUMS will produce estimated counts that reflect the adjusted population size. When applied to commute trips, the result is an adjusted count that accounts for the undercount:

$$Adjusted_Count_i = \text{SUM OF } (PWGT2_{j,i}), \text{ for all } j\text{'s from 1 to n.}$$

The subscripts are defined earlier, and the process is repeated for the four modes described earlier (solo driver, car pool, mass transit, and other modes), and the appropriate sub-groups by MSAs, race/ethnicity, economic status, and the racial composition of PUMAs.

APPENDIX B

VARIABLE DEFINITIONS

The report extracted and merged data from over three million person-level records and over one million household-level records. Transportation mode and the number of riders in a private vehicle are the two key items related to the commute to work. Transportation mode is based on question 23a in the 1990 Census long form: “How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation, fill the circle of the one used for most of the distance.” The number of riders in a private vehicle is based on question 23b, which was asked for those using a private vehicle: “How many people, including this person, usually rode to work in the car, truck or van LAST WEEK?” The responses for the two questions are combined and grouped into four categories:

- 1) solo driver,
- 2) car pool,
- 3) mass transit, and
- 4) other modes.

Mass transit includes travel on a bus, trolley bus, streetcar, trolley car, subway, or railroad. Other modes include ferryboat, taxicab, motorcycle, bicycle, walked, worked at home, and other methods. Information on commute to work is collected for those with a job or self-employed. (The groups excluded are those not in the labor force, the unemployed, those with a job but not working, those in the armed forces, and anyone under the age of 16 regardless of employment status.)

The key socio-economic variables are home ownership, race, Hispanic Origin, and poverty status. Race and Hispanic Origin are combined to create exclusive five racial/ethnic categories:

- 1) Non-Hispanic Whites,
- 2) African-Americans,
- 3) Latinos,
- 4) Asian Pacific Islander Americans, and
- 5) All others.

Latinos include Hispanics who classify themselves as either white or another race. African-Americans includes African-Americans of Hispanic Origin and non-Hispanic Origin. The same rule regarding the inclusion of Hispanic Origin and non-Hispanic Origin also applies to Asian Pacific Islander Americans.

Economic status of individuals is classified into one of five categories of defined family income:

- 1) Below 200% of the federal poverty threshold,
- 2) 200% to 299% of the federal poverty threshold,
- 3) 300% to 399% of the federal poverty threshold,
- 4) 400% to 499% of the federal poverty threshold, and
- 5) 500% or more of the federal poverty threshold.

The poverty threshold is approximately four times the cost of a nutritionally adequate food plan designed by the Department of Agriculture. The poverty threshold is adjusted by the family size, number of children relative to parents, and whether the head of the household is elderly. For a two-parent family with two

children, the threshold used for the 1990 census is \$12,575. The income data are based on the annual total for the year prior to the census. Poverty status is not calculated for those not residing in a family unit (e.g., individuals residing in group quarters.)

Individuals are also classified by the racial composition of their PUMA (Public Use Micro-sample Areas). A PUMA is a subdivision of a MSA that is comprised of at least 100,000 residents, and it is the smallest geographic identifier available in the PUMS. There are five categories based on the relative size of the minority population (African-Americans, Latinos, Asian Pacific Islander Americans and Others) as a percent of the PUMA population:

- 1) 0% to 10% minority,
- 2) 11% to 25% minority,
- 3) 26% to 50% minority;
- 4) 51% to 75% minority; and
- 5) 76% to 100% minority.

The racial composition of a PUMA is not directly available in the PUMS. Instead, it has to be created by summarizing the total (adjusted) population by the PUMA and then merging that information into the person records.

APPENDIX C

METROPOLITAN-LEVEL SUMMARIES

Appendix C contains a descriptive summary for each metropolitan area, along with detailed tables on modal split and under-count rates. The metropolitan areas are equivalent to the MSAs (metropolitan statistical areas) with one exception. The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area; therefore, there are 21 metropolitan areas. The summaries are not comprehensive, but instead, focus on key highlights and disadvantaged groups. Additional statistics can be found in Tables C1 to C28. The first eight present metropolitan-level statistics, and the rest provide detailed statistics for individual metropolitan areas. The summaries discuss only the findings related to solo drivers and mass transit users, the groups at the two extremes in terms of the undercount. Each summary has three sections.

The first section of a summary, “Demographic Profile of Commuters,” provides an overview of the racial composition, distribution by family income, and community composition. Family income is indexed against the federal poverty threshold, and a community is defined by a PUMA (Public Use Micro Sample Areas). It should be noted that a PUMA is not equivalent to a neighborhood. A PUMA contains more than 100,000 persons; consequently, it is likely to contain several neighborhoods. PUMA-level statistics should be interpreted with care. A PUMA that is predominantly of one race (e.g., those where non-Hispanic whites comprise at least 90 percent of the population) is likely to contain highly segregated neighborhoods. However, it is not possible to determine unambiguously whether a PUMA with a racially mixed population contains integrated or segregated neighborhoods. Additional information on these terms can be found in Appendix B. All statistics are based on adjusted counts.

The second section, “Modal Split,” ranks each metropolitan area in terms of the percent of commuters who fall into the four transportation modes: solo drivers, car pools, mass transit users and alternative modes. The section also summarizes the percent in each mode. Additional information on these terms can be found in Appendix B, and all statistics are based on adjusted counts.

The third section, “Estimated Undercount,” summarizes the major findings on the undercount of commuters. The section starts by ranking each metropolitan area in terms of the undercount rate for solo drivers and mass transit users. There are also statistics on the undercount rates for these two modes. The section summarizes the demographic characteristics of solo drivers and mass transit users. Where appropriate, prominent groups are identified by race/ethnicity, family income and community composition. The section also highlights the groups that had exceptionally high estimated undercount rates.

For convenience, the summaries use some common terms for PUMAs. A PUMA that is “predominantly NH white” has a population that is at least 75 percent NH white, and a PUMA that is “predominantly minority” has a population that is less than 25 percent NH white. A PUMA that is majority NH white has a population that is at least 50 percent NH white, and a PUMA that is majority minority has a population that is less than 50 percent NH white.

ATLANTA, GEORGIA

Demographic Profile of Commuters:

A large majority of Atlanta's commuters were non-Hispanic whites (71 percent), and African Americans comprised the largest minority group (25 percent). Thirty-nine percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the average for the 21 metropolitan areas under study), and 14 percent had family incomes less than 200 percent of the federal poverty threshold (lower than the 21 metropolitan area average). Twenty-three percent lived in a community that was "ethnically/racially mixed," neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Nearly two-thirds of commuters, 65 percent, however, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while only 13 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Atlanta ranked #15 in the percent of commuters who were mass transit users and #3 in the percent of commuters who were solo car drivers. For the other two modes, Atlanta was #13 in the percent of commuters who were in carpools, and #20 in the percent of commuters who used alternative modes of transportation. Ninety percent of Atlanta's commuters were automobile drivers: 78 percent were solo drivers and 12 percent were in carpools, while 5 percent were mass transit users and 5 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Atlanta ranks #5 in the highest rate of the undercount for mass transit users and #5 in the highest rate of the undercount for solo drivers. In Atlanta, the estimated undercount rates were 4.4 percent among mass transit users and 1.9 percent among solo drivers (higher than the 21 metropolitan area average of 3.2 percent among mass transit users and 1.3 percent among solo drivers).

Atlanta's mass transit users were predominantly African-American (74 percent), low income (41 percent family incomes less than 200 percent of the federal poverty threshold), and residents of predominantly minority communities (50 percent lived in PUMAs that were 75 percent or more minority). Among ethnic/racial groups, the undercount rate was high for Latinos (8.6 percent), and for African Americans (5.1 percent). The undercount rate was also high for the poor (5.4 percent for those with family incomes less than 200 percent of the federal poverty threshold) and for residents of predominantly minority communities (4.8 percent in PUMAs that were 75 percent or more minority).

Solo drivers are the reverse image of mass transit users. In Atlanta, solo drivers were predominantly NH white (76 percent), high income (43 percent with family incomes 500 percent+ of the federal poverty threshold), and residents of predominantly NH white communities (68 percent lived in PUMAs that are at least three-quarters NH white). The undercount rate was higher among minorities, the poor and residents of predominantly minority communities. The rate was 5.9 percent for Latinos and 4.0 percent for African-Americans. The undercount was a high of 3.3 percent for the poor (<200 percent federal poverty threshold) and a high of 3.2 percent in predominantly minority communities (>75 percent minority).

BALTIMORE, MARYLAND

Demographic Profile of Commuters:

A large majority of Baltimore's commuters were non-Hispanic whites (75 percent), and African Americans comprised the largest minority group (22 percent). Forty-one percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the average for the 21 metropolitan areas under study), and 13 percent had family incomes less than 200 percent of the federal poverty threshold (a lower percent than the 21 metropolitan area average). Twenty-eight percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More commuters, 68 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) and only 5 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Baltimore ranked #10 in the percent of commuters who were mass transit users and #11 in the percent of commuters who were solo car drivers. For the other two modes, Baltimore was #8 in the percent of commuters who were in carpools, and #11 in the percent of commuters who used alternative modes of transportation. Eighty-five percent of Baltimore's commuters were made by automobile drivers: 71 percent were made by solo drivers and 14 percent were made by carpoolers, while 8 percent were made by mass transit users and 8 percent were made by users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas, Baltimore ranks #6 in the highest rate of undercount for mass transit users and #8 in the highest rate of the undercount for solo drivers. In Baltimore, the estimated undercount rates were 3.9 percent among mass transit users and 1.6 percent among solo drivers (higher than the 21 metropolitan averages of 3.2 percent among mass transit users and 1.3 percent among solo drivers).

Baltimore's mass transit users were predominantly African American (69 percent), poor (32 percent with family incomes less than 200 percent of the federal poverty threshold), and residents of majority minority communities (56 percent lived in PUMAs 51 percent+ minority). Among the racial/ethnic groups, Latinos and African Americans had the highest rate of undercount (6.4 percent and 4.9 percent, respectively). The undercount rate was higher for the poor (5.0 percent for those with family incomes less than 200 percent of the federal poverty threshold) than for the higher income (2.0 percent undercount rate for persons with family incomes 500 percent+ of the federal poverty threshold). The rate was 4.5 percent for residents of predominantly minority communities (greater than 75 percent minority).

In Baltimore, the socioeconomic profile of solo drivers is the reverse image of mass transit users. Solo drivers were predominantly white (81 percent non-Hispanic White), higher income (47 percent with family incomes 500 percent+ of the federal poverty threshold), and residents of predominantly white neighborhoods (75 percent lived in neighborhoods that were at least three-quarters NH white). Among solo drivers, the undercount rate was significantly higher for Latinos (5.1 percent) and African-Americans (3.9 percent), for the poor (2.9 percent), and for residents of predominantly minority communities (3.1 percent).

BOSTON, MASSACHUSETTS

Demographic Profile of Commuters:

Boston's commuters were predominantly non-Hispanic whites (86 percent), and African Americans comprised the largest minority group (7 percent). Forty-nine percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average), and 12 percent of the commuters had family incomes less than 200 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average). Thirteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 84 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while only 3 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Boston ranked #3 in the percent of commuters who were mass transit users and #16 in the percent of commuters who were solo car drivers. For the other two modes, Boston was #20 in the percent of commuters who were in carpools, and #3 in the percent of commuters who used alternative modes of transportation. Seventy-four percent of Boston's commuters were automobile drivers: 64 percent were solo drivers and 10 percent were in carpools, while 15 percent were mass transit users and 11 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas, Boston ranks #20 in the highest rate of undercount for mass transit users and #19 in the highest rate of the undercount for solo drivers. In Boston, the estimated undercount rates were 1.4 percent among mass transit users and -0.7 percent among solo drivers (much lower than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Boston's mass transit users were 73 percent non-Hispanic-white and 15 percent African-American. Unlike other metropolitan areas, Boston's mass transit users were not poor, nor had the majority of mass transit users lived in predominantly minority communities. Over a third (37 percent) had family incomes 500 percent+ of the federal poverty threshold, and 64 percent lived in predominantly white communities (<26 percent minority). Among racial/ethnic groups, the highest rate of undercount occurs among African-Americans (6.7 percent), followed by Latinos (5.8 percent). The undercount was a high of 3.3 percent for the poor, and a high of 5.5 percent for residents of predominantly minority communities.

Boston's solo drivers were predominantly NH white (91 percent), higher income (55 percent had family incomes 500 percent+ of the federal poverty threshold), and 91 percent lived in predominantly white communities (PUMAs over three-quarters non-Hispanic-white). African Americans had the highest rate of undercount (5.4 percent), followed by Latinos at 4.6 percent. The undercount rate for the poor was a high of 1.3 percent, and the undercount rate for residents of predominantly minority communities was a high of 4.6 percent.

CHICAGO, ILLINOIS

Demographic Profile of Commuters:

Chicago's commuters were non-Hispanic white (69 percent), African-American (17 percent), and Latino (10 percent). Forty percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly the same as the 21 metropolitan area average), and 14 percent had family incomes less than 200 percent of the federal poverty threshold (lower than the 21 metropolitan area average). Thirty-one percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More than half of all commuters, 57 percent lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while 24 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Chicago ranked #2 in the percent of commuters who were mass transit users and #17 in the percent of commuters who were solo car drivers. For the other two modes, Chicago ranked #14 in the percent of commuters who were in carpools, and #13 in the percent of commuters who used alternative modes of transportation. Seventy-six percent of Chicago's commuters were automobile drivers: 64 percent were solo drivers and 12 percent were in carpools, while 17 percent were mass transit users and 7 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas, Chicago ranks #17 in the highest rate of the undercount for mass transit users and #14 in the highest rate of the undercount for solo drivers. In Chicago, the estimated undercount rates were 2.2 percent for mass transit users and 0.7 percent for solo drivers (lower than the 21 metropolitan area average undercount rate of 3.2 percent among mass transit users, and 1.3 percent among solo drivers).

More than half (52 percent) of Chicago's mass transit users were non-Hispanic White, while 31 percent were African-American. Thirty-one percent were higher income (family incomes 500 percent+ of the federal poverty threshold); and 29 percent were residents of communities that were 11-25 percent minority. Among the racial/ethnic groups, the undercount was highest among African-Americans (3.9 percent), Latinos (3.1 percent) and Asian Pacific Americans (3.0 percent). The undercount rate was a high of 4.0 percent for the poor (persons with family income less than 200 percent of the federal poverty threshold), and the undercount was 3.7 percent for those in predominantly minority (75 percent+ minority) communities.

Solo drivers were predominantly non-Hispanic white (76 percent), higher income (45 percent with family incomes 500 percent+ of the federal poverty threshold), and residents of predominantly non-Hispanic white communities (64 percent). African Americans had the highest rate of undercount (2.8 percent). Solo drivers with family incomes <200 percent of the federal poverty threshold had a high undercount rate of 2.3 percent, and those lived in predominantly minority communities had a high undercount rate of 2.6 percent.

CLEVELAND, OHIO

Demographic Profile of Commuters:

A large majority of Cleveland's commuters were non-Hispanic whites (81 percent), and African Americans comprised the largest minority group (16 percent). Thirty-four percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average), and 14 percent had family incomes less than 200 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average). Twenty-four percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More commuters, 70 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white), while only 5 percent, lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Cleveland ranked #12 in the percent of commuters who were mass transit users and #4 in the percent of commuters who were solo car drivers. For the other two modes, Cleveland ranked #18 in the percent of commuters who were in carpools, and #16 in the percent of commuters who used alternative modes of transportation. Eighty-eight percent of Cleveland's commuters were automobile drivers: 77 percent were solo drivers and 11 percent were in carpools, while 7 percent were mass transit users and 6 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 "metropolitan areas," Cleveland ranks #18 in the highest rate of undercounts for mass transit users, and #15 in the highest rate of undercount for solo drivers. In Cleveland, the estimated undercount rates were 2.2 percent for mass transit users and 0.6 percent for solo drivers (lower than the 21 metropolitan area average of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Cleveland's mass transit users were 50 percent non-Hispanic white, and 47 percent African-Americans. Many of Cleveland's mass transit users were poor (29 percent had family incomes <200 percent federal poverty threshold), but a significant share, 46 percent, lived in predominantly non-Hispanic white communities (0-25 percent minority communities). Among the racial/ethnic groups, the undercount rate was highest among African-Americans (3.8 percent), the poor (3.6 percent for persons with family incomes <200 percent of the federal poverty threshold), and 3.5 percent in communities that were 51-75 percent minority.

In contrast, solo drivers were predominantly NH white (85 percent), residents of predominantly white neighborhoods (74 percent in neighborhoods < 26 percent minority), and higher income (37 percent had family incomes 500 percent+ of the federal poverty threshold). Nonetheless, the undercount was higher among minorities, the poor and residents of predominantly minority communities. Among ethnic/racial minorities, African-Americans experienced the highest rate of undercount, 2.7 percent, followed by Asian Pacific Americans at 2.1 percent. The undercount rate was also high among the poor (1.8 percent for persons with family incomes <200 percent of the federal poverty threshold) than the non-poor (0.2 percent). The undercount rate was also high for those living in predominantly minority communities (2.1 percent) and lower for those living in communities 0-10 percent minority (0.3 percent).

DALLAS, TEXAS

Demographic Profile of Commuters:

Dallas' commuters were racially/ethnically-mixed: 70 percent were non-Hispanic whites, 14 percent were African-American and 13 percent were Latino. There was a bi-modal income distribution. Thirty-four percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average), while 20 percent had family incomes less than 200 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average). Forty-two percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More commuters, close to half, 48 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white), while only 10 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Dallas ranked #18 in the percent of commuters who were mass transit users and #5 in the percent of commuters who were solo car drivers. For the other two modes, Dallas ranked #7 in the percent of commuters who were in carpools, and #17 in the percent of commuters who used alternative modes of transportation. Ninety-one percent of Dallas's commuters were automobile drivers: 77 percent were solo drivers and 14 percent were in carpools, while 3 percent were mass transit users and 6 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Dallas ranks #4 in the highest rate of undercount for mass transit users and #4 in the highest rate of undercount for solo drivers. In Dallas, the estimated undercount rates were 4.5 percent for mass transit users and 2.2 percent for solo drivers (higher than the 21 metropolitan area average of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Demographically, 47 percent of Dallas' mass transit users were African-American, 32 percent non-Hispanic White, and 20 percent Latino. Over two-fifths, 42 percent, had family incomes <200 percent of the federal poverty threshold, and 32 percent lived in predominantly minority communities (51-75 percent minority). Among the racial/ethnic groups, the undercount was highest for Latinos (7.9 percent) and African-Americans (5.1 percent). The undercount rate was also high among the poor (5.8 percent for persons with family incomes <200 percent of the federal poverty threshold), and 5.5 percent for persons who lived in PUMAs that were 51-75 percent minority, and 5.1 percent for persons who lived in PUMAs that were greater than 75 percent minority.

In contrast, solo drivers were mostly non-Hispanic white (75 percent), high income (38 percent had family incomes 500 percent+ of the federal poverty threshold), and residents of predominantly white neighborhoods (51 percent lived in neighborhoods that had 0-25 percent minority residents). Latinos experienced the highest rate of undercount, 6.3 percent, followed by African-Americans at 4.3 percent. The undercount rate was high among the poor (4.1 percent for persons with family incomes <200 percent of the federal poverty threshold), and those living in predominantly minority communities (3.6 percent).

DENVER, COLORADO

Demographic Profile of Commuters:

A large majority of Denver's commuters were non-Hispanic whites (81 percent), and Latinos comprised the largest minority group (11 percent). Thirty-four percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (a lower percentage than for all metropolitan areas), and 17 percent had family incomes less than 200 percent of the federal poverty threshold (roughly equal to the percentage for all metropolitan areas). Nineteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). The majority, 81 percent, lived in predominantly non-Hispanic white communities (PUMAs where at least three-quarters of the population were NH white) while 0 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Denver ranked #16 in the percent of commuters who were mass transit users and #7 in the percent of commuters who were solo car drivers. For the other two modes, Denver was #10 in the percent of commuters who were in carpools, and #12 in the percent of commuters who used alternative modes of transportation. Eighty-eight percent of Denver's commuters were automobile drivers: 75 percent were solo drivers and 13 percent were in carpools, while 5 percent were mass transit users and 7 percent were users of alternative modes of transportation.

Estimated Undercount:

Denver ranks #11 in the highest rate of undercount for mass transit users and #10 in the highest rate of undercount for solo drivers. In Denver, the estimated undercount rates were 3.3 percent for mass transit users and 1.4 percent for solo drivers (slightly higher than the 21 metropolitan average of the undercount, which was 3.2 percent for mass transit users and 1.3 percent for solo drivers).

The majority of Denver's mass transit users were non-Hispanic whites (63 percent), poor (32 percent had family incomes <200 percent of the federal poverty threshold), and residents of predominantly white communities (64 percent lived in PUMAs that were <25 percent minority). The undercount rate was highest among minorities, the poor and those living in communities with a greater percentage of ethnic/racial minorities. The undercount was highest among African-Americans (8.9 percent), followed by Latinos (4.7 percent). The undercount was particularly high among the poor (5.0 percent for mass transit users <200 percent of the federal poverty threshold) and for populations living in "mixed race/ethnicity" communities (5.4 percent undercount rate in PUMAs that were 26-50 percent minority and a 4.9 percent undercount rate in communities that were 51-75 percent minority).

The overwhelming majority of solo drivers were NH whites (83 percent), higher income (36 percent had family incomes 500 percent+ of the federal poverty threshold), and residents of predominantly NH white communities (84 percent lived in PUMAs that were greater than 75 percent non-Hispanic white). The undercount rate was highest among minorities, the poor and those living in communities with more minorities. The undercount for African-Americans was a high of 7.8 percent, followed by Latinos at 4.0 percent. The undercount was a high of 3.0 percent for the poor (persons with family incomes <200 percent of the federal poverty threshold) and a high of 3.2 percent for persons living in communities that were between 51-75 percent minority.

DETROIT, MICHIGAN

Demographic Profile of Commuters:

A large majority of Detroit's commuters were non-Hispanic whites (81 percent), and African Americans comprised the largest minority group (16 percent). Forty-three percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (a higher percentage than for all metropolitan areas), and only 12 percent had family incomes less than 200 percent of the federal poverty threshold (a lower percent than for all metropolitan areas). Thirteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). The majority, 79 percent, of commuters lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) and only 9 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Detroit ranked #20 in the percent of commuters who were mass transit users and #1 in the percent of commuters who were solo car drivers, and. For the other two modes, Detroit ranked #19 in the percent of commuters who were in carpools, and #21 in the percent of commuters who used alternative modes of transportation. Ninety-four percent of Detroit's commuters were automobile drivers: 84 percent were solo drivers and 10 percent were in carpools, while only 2 percent were mass transit users and 4 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Detroit ranks #13 in terms of highest undercount rate for mass transit users and #17 for solo drivers. In Detroit, the undercount rates were 3.0 percent for mass transit users and 0.5 percent for solo drivers (lower than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

The majority of Detroit's mass transit users were African-American (74 percent), 39 percent were poor (family incomes <200 percent of the federal poverty threshold) and 76 percent were residents of PUMAs with 51 percent+ minority population. The populations most affected by the differential undercount are minorities, the poor and those living in minority communities. Among the racial/ethnic groups, Asian Pacific Americans experienced the highest rate of undercount (4.2 percent), followed by African-Americans at 3.8 percent. At the same time, the poor experienced a higher undercount rate (4.0 percent) than the non-poor (1.1 percent), and residents of predominantly minority communities (PUMAs with 75 percent+ minority population) experienced a higher undercount rate (3.7 percent) than those living in predominantly white communities (0.5 percent).

The overwhelming majority of solo car drivers were non-Hispanic white (84 percent), nearly half, 46 percent, had household incomes of 500 percent+ of the federal poverty threshold, and close to two-thirds, 65 percent, lived in predominantly white communities (0-10 percent minority communities). Generally, the poor and those living in predominantly minority communities experienced the highest rates of undercount. Among solo drivers, African-Americans experienced the highest rates of undercount (2.5 percent). At the same time, the poor experienced a high rate of undercount (1.6 percent), as well as those living in predominantly minority (75 percent+ minority) communities (2.2 percent).

HONOLULU, HAWAII

Demographic Profile of Commuters:

Honolulu's commuters were 60 percent Asian Pacific Islander and 33 percent non-Hispanic white. Thirty-seven percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the 21 metropolitan area average), and 18 percent had family incomes less than 200 percent of the federal poverty threshold (roughly equal to the 21 metropolitan area average). Eighty-four percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). There were no commuters who lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white).

Modal Split:

Among the 21 metropolitan areas under study, Honolulu ranked #8 in the percent of commuters who were mass transit users and #20 in the percent of commuters who were solo car drivers. For the other two modes, Honolulu ranked #1 in the percent of commuters who were in carpools and #2 in the percent of commuters who used alternative modes of transportation. Seventy-eight percent of Honolulu's commuters were automobile drivers: 57 percent were solo drivers and 21 percent were in carpools, while 9 percent were mass transit users and 13 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Honolulu ranks #12 in having the highest undercount rate for mass transit users and #9 for solo drivers. In Honolulu, the estimated undercount rates were 3.0 percent for mass transit users and 1.6 percent for solo drivers, compared to the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers.

Honolulu's highest undercount rate was associated with persons who use alternative modes of transportation, i.e., walking, biking, and telecommuting: 3.6 percent. Alternative mode users were predominantly white (51 percent were non-Hispanic white, 37 percent Asian Pacific American and 8 percent Latino). Honolulu's alternative mode users had incomes at opposite ends of the income spectrum – 23 percent had family incomes of <200 percent of the federal poverty threshold, while 27 percent had family incomes 500 percent+ of the federal poverty threshold. The undercount was highest for African-Americans (9.9 percent), Latinos (5.6 percent), the poor (4.4 percent), and residents of predominantly minority communities (3.9 percent).

Honolulu's solo drivers had the lowest undercount rate. Solo drivers were predominantly Asian Pacific American (60 percent), and higher income (44 percent had family incomes 500 percent+ of the federal poverty threshold). Relative to other modes, a smaller percentage of solo drivers lived in dominant minority communities. African-Americans were most adversely affected by the undercount, with a 9.5 percent rate, followed by Latinos at 4.9 percent. The poor had a high undercount rate of 4.2 percent, and those residing in predominantly minority communities had a high undercount rate (2.6 percent).

HOUSTON, TEXAS

Demographic Profile of Commuters:

Houston's commuters were 61 percent non-Hispanic white, 19 percent Latino and 16 percent African-American. Thirty-two percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average), and 23 percent had family incomes less than 200 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average). Seventy-one percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Twenty-one percent of commuters lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while only 7 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Houston ranked #17 in the percent of commuters who were mass transit users and #6 in the percent of commuters who were solo car drivers. For the other two modes, Houston ranked #5 in the percent of commuters who were in carpools, and #18 in the percent of commuters who used alternative modes of transportation. Ninety-one percent of Houston's commuters were automobile drivers: 76 percent were solo drivers and 15 percent were in carpools, while 4 percent were mass transit users and 6 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Houston ranks #3 in having the highest undercount rate for mass transit users and #3 for solo drivers. In Houston, the estimated undercount rates were 4.7 percent for mass transit users and 2.4 percent for solo drivers (higher than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Houston's mass transit users were very diverse – 37 percent African-American, 31 percent non-Hispanic Whites, and 29 percent Latino. Houston's mass transit users were poor (45 percent had family incomes <200 percent of the federal poverty threshold) and 72 percent lived in "mixed race/ethnicity communities," (41 percent lived in 26-50 percent minority communities and 31 percent lived in 51-75 percent minority communities). The undercount was highest among minorities, the poor, and residents of predominantly minority communities. Among the racial/ethnic groups, the undercount was highest for Latinos (7.9 percent) and African-Americans (5.2 percent). The poor had a 6.5 percent undercount rate, while those living in PUMAs that were 51-75 percent minority) had the 5.5 percent undercount rate.

Houston's solo drivers were 66 percent NH white, 15 percent Latino and 14 percent African-American. Thirty-six percent had family incomes 500 percent+ of the federal poverty threshold and the majority, 54 percent, lived in communities that were 26-50 percent minority. Latinos were most adversely affected by the undercount (6.0 percent), followed by African-Americans at 4.1 percent. The poor an undercount rate was a high of 4.4 percent, and those residing in dominant minority communities had an undercount rate of 3.8 percent.

LOS ANGELES, CALIFORNIA

Demographic Profile of Commuters:

Los Angeles's commuters 45 percent were non-Hispanic white, 33 percent Latino, 11 percent Asian Pacific American and 10 percent African-American. Thirty-five percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average) and 23 percent had family incomes less than 200 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average). Sixty-six percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Fewer, 9 percent, of commuters lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white), and 26 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Los Angeles ranked #13 in the percent of commuters who were mass transit users, and #13 in the percent of commuters who were solo car drivers. For the other two modes, Los Angeles ranked #2 in the percent of commuters who were in carpools, and #10 in the percent of commuters who used alternative modes of transportation. Eighty-six percent of Los Angeles's commuters were automobile drivers: 70 percent were solo drivers and 16 percent were in carpools, while 7 percent were mass transit users and 8 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Los Angeles ranks #2 in having the highest undercount rate of mass transit users and #2 in having the highest undercount of solo drivers. In Los Angeles, the estimated undercount rates were 5.4 percent for mass transit users and 2.8 percent for solo drivers (higher than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Los Angeles' mass transit users were predominantly minorities: 62 percent were Latino and 14 percent were African-American. The majority of mass transit users were poor (55 percent had family incomes <200 percent of the federal poverty threshold), and 48 percent were residents of PUMAs with a 75 percent+ minority population. Among the racial/ethnic groups, the undercount was highest for African-Americans at 9.1 percent, followed by Latinos at 5.5 percent, and Asian Pacific Americans at 4.0 percent. The rate was also high among the poor (5.9 percent), and residents of predominantly minority communities (5.8 percent).

Solo drivers were 52 percent non-Hispanic white, 26 percent Latino and 11 percent Asian Pacific American. Forty-two percent had family incomes 500 percent+ of the federal poverty threshold. Over two-thirds lived in "ethnically/racially mixed communities": 32 percent lived in PUMAs that were 26-50 percent minority and 36 percent lived in PUMAs that were 51-75 percent minority. African-Americans were the most adversely affected by the undercount with a rate of 8.1 percent, followed by Latinos at 4.5 percent. The poor had a high undercount rate of 4.7 percent, and those residing in predominantly minority communities had an undercount rate of 4.6 percent.

MIAMI, FLORIDA

Demographic Profile of Commuters:

Miami's commuters were 50 percent Latino, 30 percent non-Hispanic whites and 18 percent African-American. Incomes were at both ends of the spectrum. Twenty-seven percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (lower than the metropolitan area average), while 27 percent had family incomes less than 200 percent of the federal poverty threshold (higher than the metropolitan area average). Forty-seven percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population), and the remainder, 53 percent, lived in predominantly minority communities. There were no commuters who lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white); all lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Miami ranked #14 in the percent of commuters who were mass transit users, and #10 in the percent of commuters who were solo car drivers. For the other two modes, Miami was #3 in the percent of commuters who were in carpools, and #15 in the percent of commuters who used alternative modes of transportation. Eighty-eight percent of Miami's commuters were automobile drivers: 72 percent were solo drivers and 14 percent were in carpools, while 6 percent were mass transit users and 6 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, Miami ranks #1 in the highest undercount rate for mass transit users and #1 in the highest undercount for solo drivers. In Miami, the estimated undercount rates were 5.6 percent for mass transit users and 3.6 percent for solo drivers (significantly higher than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Miami's mass transit users were very diverse: 44 percent Latino, 41 percent African-American, and 14 percent non-Hispanic Whites. The majority of mass transit users were poor (55 percent had family incomes <200 percent of the federal poverty threshold), and 63 percent lived in predominantly minority communities (PUMAs with a 75 percent+ minority population). Among the racial/ethnic groups, the undercount was highest for Latinos (7.6 percent), 4.6 percent for African-Americans, and 3.2 percent for Asian Pacific Americans. The poor had an undercount rate a high of 6.5 percent, and those residing in predominantly minority communities (75 percent+ minority) had a rate a high of 6.2 percent.

Miami's solo drivers were very diverse: 49 percent Latino, 34 percent non-Hispanic white, and 16 percent African-American. Income was at both ends of the spectrum. Nearly a third, 31 percent, had family incomes 500 percent+ of the federal poverty threshold, but at the same time, a significant share was poor (21 percent had family incomes <200 percent of the federal poverty threshold). Over 51 percent of solo car drivers lived in predominantly minority communities (PUMAs with 51-75 percent minority population). Latinos were the most adversely affected by the undercount with a 5.3 percent rate, followed by African-Americans at 3.8 percent. The poor had a rate a high of 5.5 percent, and residents of predominantly minority communities had a rate as high as 4.4 percent.

NEW YORK, NEW YORK

Demographic Profile of Commuters:

New York's commuters were 51 percent non-Hispanic white, 25 percent African-American, 16 percent Latino and 7 percent Asian Pacific American. Forty-one percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the 21 metropolitan area average) and 17 percent had family incomes less than 200 percent of the federal poverty threshold (roughly equal to the 21 metropolitan area average). Forty-six percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Slightly more commuters, 28 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) than the 26 percent who lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, New York ranked #1 in the percent of commuters who were mass transit users, and #21 in the percent of commuters who were solo car drivers. For the other two modes, New York was #21 in the percent of commuters who were in carpools, and #1 in the percent of commuters who used alternative modes of transportation. Thirty-nine percent of New York's commuters were automobile drivers: 30 percent were solo drivers and 9 percent were in carpools, while 46 percent were mass transit users and 15 percent were users of alternative modes of transportation.

Estimated Undercount:

Among the 21 metropolitan areas under study, New York ranks #9 in the highest undercount rate for mass transit users and # 13 in the highest undercount rate for solo drivers. In New York, the estimated undercount rates were 3.5 percent for mass transit users and 1.0 percent for solo drivers, compared to the 21 "MSA" average of 3.2 percent among mass transit users and 1.3 percent among solo drivers.

New York's mass transit users were very diverse: 41 percent non-Hispanic White, 32 percent African-American, 19 percent Latino and 8 percent Asian Pacific American. Over a third (35 percent) had high incomes (family incomes 500 percent+ of the federal poverty threshold), while a fifth (20 percent) were poor (had family incomes <200 percent of the federal poverty threshold). Among the racial/ethnic groups, the undercount was highest for African-Americans (6.7 percent), followed by Latinos (5.9 percent) and Asian Pacific Americans (4.0 percent). The poor had a high rate of undercount at 5.7 percent, and residents of predominantly minority communities (PUMAs with a 75 percent+ minority population) also had a high rate of undercount, 6.0 percent.

New York's solo drivers were predominantly 64 percent NH white, 19 percent African American and 12 percent Latino. Over half were well off (51 percent had family incomes 500 percent+ of the federal poverty threshold). Over a third (37 percent) lived in predominantly NH white communities (PUMAs with less than 25 percent minority population). Nonetheless, African-Americans were the most adversely affected by the undercount with a 5.3 percent undercount rate, followed by Latinos at 4.9 percent, and Asian Pacific Americans at 2.6 percent. Likewise, the poor had an undercount rate a high of high undercount 3.7 percent, and residents of predominantly minority communities had an undercount rate a high of 4.8 percent.

NEWARK, NEW JERSEY

Demographic Profile of Commuters:

A large majority of Newark's commuters were non-Hispanic whites (64 percent), and African Americans comprised the largest minority group (23 percent). Fifty-one percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (the highest percent of all 21 metropolitan areas), and 11 percent had family incomes less than 200 percent of the federal poverty threshold (the lowest percent of all 21 metropolitan areas). Thirty-eight percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 49 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while 13 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Newark ranked #7 in the percent of commuters who were mass transit users and #14 in the percent of commuters who were solo car drivers. For the other two modes, Newark was #12 in the percent of commuters who were in carpools, and #14 in the percent of commuters who used alternative modes of transportation. Eighty-two percent of Newark's commuters were automobile drivers: 69 percent were solo drivers and 13 percent were in carpools, while 11 percent were mass transit users and 7 percent were users of alternative modes of transportation.

Estimated Undercount:

Newark ranks #15 in the highest undercount rate for mass transit users and #18 in the highest undercount rate for solo drivers. The estimated undercount rates in Newark were 2.9 percent for mass transit users and 0.2 percent for solo drivers (lower than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Newark's mass transit users were very diverse: 46 percent African-American, 40 percent non-Hispanic White, and 10 percent Latino. Both rich and poor used mass transit to commute-to-work: 42 percent were higher income (had family incomes 500 percent+ of the federal poverty threshold), but 18 percent were poor (had family incomes <200 percent of the federal poverty threshold). Likewise, mass transit users lived in a wide range of neighborhoods. Among the racial/ethnic groups, the undercount was highest for African-Americans (6.2 percent), followed by Latinos (5.0 percent). The poor had a high rate of undercount at 6.1 percent, and those in predominantly minority communities (75 percent+ minority) had a rate of 5.8 percent.

Solo drivers were predominantly NH white (72 percent) and 18 percent African-American. More than half had high incomes (56 percent had family incomes 500 percent+ of the federal poverty threshold). Over 81 percent of solo car drivers lived in predominantly white communities: (56 percent lived in PUMAs with no more than a 25 percent minority population). African-American drivers had the highest undercount rate of 5.0 percent, followed by Latinos at 4.0 percent. The poor had an undercount rate a high of 3.4 percent, and residents of predominantly minority communities had an undercount rate a high of 4.4 percent.

PHILADELPHIA, PENNSYLVANIA

Demographic Profile of Commuters:

A large majority of Philadelphia's commuters were non-Hispanic whites (79 percent), and African Americans comprised the largest minority group (16 percent). Forty-one percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the 21 metropolitan area average), and 13 percent had family incomes less than 200 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average). Twenty-two percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 71 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while 8 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Philadelphia ranked #6 in the percent of commuters who were mass transit users and #15 in the percent of commuters who were solo car drivers. For the other two modes, Philadelphia was #15 in the percent of commuters who were in carpools, and #5 in the percent of commuters who used alternative modes of transportation. Eighty percent of Philadelphia's commuters were automobile drivers: 68 percent were solo drivers and 12 percent were in carpools, while 11 percent were mass transit users and 9 percent were users of alternative modes of transportation.

Estimated Undercount:

Philadelphia ranks #19 in the highest undercount rate for mass transit users and #20 in the highest undercount rate for solo-car drivers. The estimated undercount rates in Philadelphia were 1.5 percent for mass transit users and -0.9 percent for solo drivers (much lower than the 21 metropolitan average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Philadelphia's mass transit users were very diverse: 49 percent were non-Hispanic Whites, and 46 percent were African-Americans. There was a bimodal income distribution. The largest group, 28 percent, was comprised of higher income (persons with family incomes 500 percent+ of the federal poverty threshold), but at the same time, 22 percent were poor (family incomes <200 percent of the federal poverty threshold). Philadelphia's mass transit users lived in a very diverse range of neighborhoods. Among the racial/ethnic groups, the undercount was highest for African-Americans (4.4 percent), followed by Latinos (3.3 percent). The undercount rate for the poor was a high of 3.8 percent, and the undercount rate for residents of predominantly minority communities was a high of 3.5 percent.

Solo drivers were overwhelmingly NH white (86 percent) and 11 percent African-American. Close to half had high incomes (46 percent had family incomes 500 percent+ of the federal poverty threshold) and 80 percent lived predominantly non-Hispanic white communities. Among the racial/ethnic groups, African-Americans had the highest undercount rate of 3.6 percent, followed by Latinos at 2.8 percent. The poor had an undercount rate a high of 0.8 percent, and residents of predominantly minority communities had an undercount rate a high of 2.0 percent.

PHOENIX, ARIZONA

Demographic Profile of Commuters:

A large majority of Phoenix's commuters were non-Hispanic whites (80 percent), and Latinos comprised the largest minority group (14 percent). Twenty-nine percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (the second lowest percentage of all 21 metropolitan areas), and 22 percent had family incomes less than 200 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average). Nineteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 81 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while 0 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Phoenix ranked #21 in the percent of commuters who were mass transit users and #8 in the percent of commuters who were solo car drivers. For the other two modes, Phoenix was #6 in the percent of commuters who were in carpools, and #6 in the percent of commuters who used alternative modes of transportation. Eighty-nine percent of Phoenix's commuters were automobile drivers: 75 percent were solo drivers and 14 percent were in carpools, while only 2 percent were mass transit users and 9 percent were users of alternative modes of transportation.

Estimated Undercount:

Phoenix ranks #8 in the highest undercount rate for mass transit users and #11 in the highest undercount rate for solo car drivers. The estimated undercount rates in Phoenix were 3.6 percent for mass transit users and 1.3 percent for solo drivers (higher than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Phoenix's mass transit users were very diverse: 51 percent non-Hispanic white, 28 percent Latino, and 12 percent African-American. Nearly half, 48 percent, were poor (with family incomes <200 percent of the federal poverty threshold). Sixty percent lived in predominantly white communities, and 32 percent lived in communities that were 51-75 percent minority. Among the racial/ethnic groups, the undercount was highest for African-Americans (9.1 percent), followed by Latinos (5.0 percent). The undercount rate was a high of 4.9 percent for the poor, and a high of 4.9 percent for residents who lived in communities that were 51-75 percent minority.

Solo drivers were 83 percent non-Hispanic white and 12 percent Latino. A third were higher income, 33 percent had family incomes 500 percent+ of the federal poverty threshold, and 83 percent lived in predominantly NH white communities (PUMAs with a 0-25 percent minority population). Among the racial/ethnic groups, African-Americans had the highest rate of undercount, 7.8 percent, followed by Latinos at 4.0 percent. The undercount rate for the poor was a high of 2.7 percent, and the undercount rate for communities that were 51-75 percent minority was a high of 2.9 percent.

PITTSBURGH, PENNSYLVANIA

Demographic Profile of Commuters:

Pittsburgh's commuters were predominantly non-Hispanic whites (92 percent), and African Americans comprised the largest minority group (7 percent). Thirty-two percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (a lower percentage than for all metropolitan areas), and 17 percent had family incomes less than 200 percent of the federal poverty threshold (roughly equal to the percentage for all metropolitan areas). Twelve percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 88 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white).

Modal Split:

Among the 21 metropolitan areas under study, Pittsburgh ranked #9 in the percent of commuters who were mass transit users and #12 in the percent of commuters who were solo car drivers. For the other two modes, Pittsburgh was #9 in the percent of commuters who were in carpools, and #8 in the percent of commuters who used alternative modes of transportation. Eighty-three percent of Pittsburgh's commuters were automobile drivers: 70 percent were solo drivers and 13 percent were in carpools, while 9 percent were mass transit users and 8 percent were users of alternative modes of transportation.

Estimated Undercount:

Pittsburgh ranks #1 in the lowest undercount rate for mass transit users and #1 in the lowest undercount rate for solo car drivers. The estimated undercount rates in Pittsburgh were 0.8 percent for mass transit users and 1.2 percent for solo drivers, compared to the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers.

Pittsburgh's mass transit users were predominantly NH white (73 percent), and 26 percent African-American. Mass transit users came from the full range of the income spectrum: 25 percent were poor (<200 percent of the federal poverty threshold), while 23 percent had high incomes (500 percent+ of the federal poverty threshold). Mass transit users were fairly evenly distributed across predominantly white communities. Among the racial/ethnic groups, the undercount was highest for African-Americans (5.6 percent), followed by Latinos at 4.6 percent. The undercount rate was a high of 3.1 percent for the poor, and the undercount rate was a high of 3.1 percent for residents of "ethnically/racially mixed communities" that were between 26-50 percent minority. There were no mass transit users who lived in majority minority communities.

Solo drivers were nearly all NH white (95 percent). Not all were higher income (only 35 percent had family incomes 500 percent+ of the federal poverty threshold, but more than 92 percent lived in predominantly non-Hispanic white communities (PUMAs where no more than a tenth of the population was minority). Among the racial/ethnic groups, African-Americans were the most adversely affected with a 4.1 percent undercount rate, followed by Latinos at 2.1 percent. Non-Hispanic whites, on the other hand, may be over-counted.

ST. LOUIS, ILLINOIS

Demographic Profile of Commuters:

A large majority of St. Louis' commuters were non-Hispanic whites (84 percent), and African Americans comprised the largest minority group (14 percent). Thirty-four percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average), and 15 percent had family incomes less than 200 percent of the federal poverty threshold (which is roughly equal to the 21 metropolitan area average). Nineteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 77 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while only 4 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, St. Louis ranked #19 in the percent of commuters who were mass transit users and #2 in the percent of commuters who were solo car drivers. For the other two modes, St. Louis was #16 in the percent of commuters who were in carpools, and #19 in the percent of commuters who used alternative modes of transportation. Ninety-two percent of St. Louis's commuters were automobile drivers: 80 percent were solo drivers and 12 percent were in carpools, while 3 percent were mass transit users and 5 percent were users of alternative modes of transportation.

Estimated Undercount:

St. Louis ranks #14 in the highest undercount rate for mass transit users and #16 in the highest undercount rate for solo car drivers. The estimated undercount rates in St. Louis were 2.9 percent for mass transit users and 0.6 percent for solo drivers (lower than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

St. Louis' mass transit users were predominantly African-American (64 percent) and 34 percent non-Hispanic white. Over two-fifths, 43 percent, were poor (had family incomes <200 percent of the federal poverty threshold). On the other hand, they were widely distributed across the range of communities, from predominantly NH white to predominantly minority areas. Among the racial/ethnic groups, the undercount was highest for Asian Pacific Americans (6.3 percent), followed by African-Americans (4.0 percent). The undercount rate was a high of 4.0 percent for the poor, and a high of 4.4 percent for persons who not accurately assessed by the State Licensing Board.

Solo drivers were overwhelmingly NH white (87 percent), over a third had relatively high incomes (36 percent had family incomes 500 percent+ of the federal poverty threshold), and 79 percent lived in predominantly white communities. African-Americans were the most adversely affected by the undercount with a 2.8 percent undercount rate. The undercount for the poor was a high of 1.7 percent for the poor, and 2.3 percent for those in predominantly minority communities.

SAN FRANCISCO – OAKLAND, CALIFORNIA

Demographic Profile of Commuters:

A large majority of San Francisco-Oakland's commuters were non-Hispanic whites (63 percent), and Asians and Pacific Islanders comprised the largest minority group (15 percent). Forty-six percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold, while 14 percent of the commuters had family incomes less than 200 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average). Seventy-two percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More commuters lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) than in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, San Francisco-Oakland ranked #18 in the percent of commuters who were solo car drivers, and #5 in the percent of commuters who were mass transit users. For the other two modes, San Francisco-Oakland was #11 in the percent of commuters who were in carpools, and #4 in the percent of commuters who used alternative modes of transportation. Seventy-six percent of San Francisco-Oakland's commuters were automobile drivers: 63 percent were solo drivers and 13 percent were in carpools, while 16 percent were mass transit users and 11 percent were users of alternative modes of transportation.

Estimated Undercount:

San Francisco – Oakland ranks #6 in the highest undercount rate for solo car drivers and #10 in the highest undercount rate for mass transit users. The estimated undercount rates in San Francisco – Oakland were 3.4 percent for mass transit users and 1.9 percent for solo drivers, compared to the 21 "MSA" average of 3.2 percent among mass transit users and 1.3 percent among solo drivers.

San Francisco-Oakland's mass transit users were very diverse: 49 percent non-Hispanic White, 23 percent Asian Pacific American, 14 percent were African-American, and 13 percent Latino. Over a third had relatively high income (35 percent had family incomes 500 percent+ of the federal poverty threshold), and a fifth were poor (family incomes <200 percent of the federal poverty threshold). The majority, 60 percent lived in "racially/ethnically mixed" communities (PUMAs with a 26-50 percent minority population). Among racial/ethnic groups, the undercount was highest for African-Americans (8.7 percent), followed by Latinos (5.1 percent). The poor had a high rate of undercount at 5.1 percent.

Solo drivers were largely NH white (68 percent), over half had relatively a high income (52 percent had family incomes 500 percent+ of the federal poverty threshold), and the majority (58 percent) lived in predominantly white "mixed" communities (26-50 percent minority). African-Americans were the most adversely affected by the undercount with an 8.0 percent rate, followed by Latinos at 4.3 percent. The poor had an undercount rate of 3.8 percent, and those in predominantly minority communities had a 5.7 percent undercount rate.

SEATTLE, WASHINGTON

Demographic Profile of Commuters:

Seattle's commuters were predominantly non-Hispanic whites (87 percent), and Asians and Pacific Islanders comprised the largest minority group (6 percent). Thirty-eight percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (roughly equal to the percentage for all metropolitan areas), and 14 percent had family incomes less than 200 percent of the federal poverty threshold (a lower percent than for all metropolitan areas). Fifteen percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). Most commuters, 85 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while none lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Seattle ranked #9 in the percent of commuters who were solo car drivers, and #11 in the percent of commuters who were mass transit users. For the other two modes, Seattle was #17 in the percent of commuters who were in carpools, and #7 in the percent of commuters who used alternative modes of transportation. Eighty-four percent of Seattle's commuters were automobile drivers: 73 percent were solo drivers and 11 percent were in carpools, while 7 percent were mass transit users and 8 percent were users of alternative modes of transportation.

Estimated Undercount:

Seattle ranks #16 in the highest undercount rate for mass transit users and #12 in the highest undercount rate for solo drivers. The estimated undercount rates in Seattle were 2.5 percent for mass transit users and 1.1 percent for solo drivers (lower than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

Seattle's mass transit users were 75 percent non-Hispanic white, 11 percent African-American and 10 percent Asian Pacific American. Mass transit users were from both ends of the income spectrum: 26 percent had family incomes <200 percent of the federal poverty threshold, while 25 percent had family incomes 500 percent+ of the federal poverty threshold. Nearly two-thirds, 66 percent, lived in predominantly non-Hispanic white communities, while the remainder, 34 percent, lived in "racially/ethnically mixed" communities (26-50 percent minority). Among the racial/ethnic groups, the undercount was highest for African-Americans (8.7 percent), followed by Latinos (5.1 percent). The undercount rate was a high of 4.2 percent for the poor, and a high of 3.8 percent for those living in Seattle's "racially/ethnically mixed" communities (PUMAs with a 26-50 percent minority population).

Seattle's solo drivers were overwhelmingly NH white (89 percent). A sizeable percent (41 percent) had high incomes (family incomes 500 percent+ of the federal poverty threshold), and 88 percent lived in predominantly white communities. The rate of undercount was highest among minorities, the poor, and residents of majority-minority communities. Among racial/ethnic groups, African-Americans were the most adversely affected with a 7.9 percent undercount rate, followed by Latinos at 4.3 percent. The undercount was a high of 2.6 percent for the poor, and a high of 2.0 percent for those living in "racially/ethnically mixed" communities (26-50 percent minority).

WASHINGTON, D.C.

Demographic Profile of Commuters:

A large majority of Washington, D.C.'s commuters were non-Hispanic whites (64 percent), and African Americans comprised the largest minority group (25 percent). Fifty percent of the commuters had family incomes equal to or more than 500 percent of the federal poverty threshold (which is higher than the 21 metropolitan area average), and only 11 percent had family incomes less than 200 percent of the federal poverty threshold (which is lower than the 21 metropolitan area average). Thirty-nine percent lived in a community that was neither predominantly NH white nor predominantly minority (PUMAs where non-Hispanic whites made up 26 percent to 75 percent of the population). More commuters, 47 percent, lived in predominantly NH-white communities (PUMAs where at least three-quarters of the population were NH white) while only 14 percent lived in predominantly minority communities (PUMAs where over three-quarters of the population were minorities).

Modal Split:

Among the 21 metropolitan areas under study, Washington, D.C. ranked #4 in the percent of commuters who were mass transit users and #19 in the percent of commuters who were solo car drivers. For the other two modes, Washington, D.C. was #4 in the percent of commuters who were in carpools, and #9 in the percent of commuters who used alternative modes of transportation. Seventy-nine percent of Washington, D.C.'s commuters were automobile drivers: 63 percent were solo drivers and 16 percent were in carpools, while 14 percent were mass transit users and 8 percent were users of alternative modes of transportation.

Estimated Undercount:

Washington, D.C. ranks #7 in the highest undercount rate for mass transit users and #7 in the highest undercount rate for solo drivers. The estimated undercount rates in Washington, D.C. were 3.6 percent for mass transit users and 1.9 percent for solo drivers (higher than the 21 metropolitan area average undercount rate of 3.2 percent for mass transit users and 1.3 percent for solo drivers).

The District's mass transit users were very diverse: 44 percent African-American, 43 percent non-Hispanic White and 9 percent Latino. Thirty-seven percent had family incomes 500 percent+ of the federal poverty threshold), at the same time, 18 percent were poor (family incomes <200 percent of the federal poverty threshold.) Those who use mass transit came from a diverse range of communities. Among racial/ethnic groups, the undercount was highest for African-Americans (8.0 percent), followed by Latinos (4.9 percent). The undercount rate was a high of 5.6 percent for the poor, and a high of 4.6 percent for residents who lived in predominantly minority communities.

Solo drivers were 70 percent non-Hispanic white and 21 percent African-American. Over half, 56 percent, had high incomes (family incomes 500 percent+ of the federal poverty threshold), and 87 percent lived in predominantly white communities. Latinos were the most adversely affected with a 5.9 percent undercount rate, followed by African-Americans at 4.0 percent. The undercount rate for the poor was a high of 3.6 percent, and the undercount rate for residents of predominantly minority communities was a high of 3.5 percent.

**TABLE C1:
Racial/Ethnic of Commuters by MSAs**

PMSA	NH Whites	Blacks	Latinos	APAs	Others
Atlanta	71%	25%	2%	2%	<1%
Baltimore	75%	22%	1%	2%	<1%
Boston	86%	7%	3%	3%	<1%
Chicago	69%	17%	10%	4%	<1%
Cleveland	81%	16%	1%	1%	<1%
Dallas	70%	14%	13%	3%	1%
Denver	81%	5%	11%	2%	1%
Detroit	81%	16%	1%	1%	<1%
Honolulu	33%	4%	3%	60%	1%
Houston	61%	16%	19%	4%	<1%
Los Angeles	45%	10%	33%	11%	1%
Miami	30%	18%	50%	1%	<1%
New York	51%	25%	16%	7%	<1%
Newark	64%	23%	9%	3%	<1%
Philadelphia	79%	16%	2%	2%	<1%
Phoenix	80%	3%	14%	2%	2%
Pittsburgh	92%	7%	0%	1%	<1%
St Louis	84%	14%	1%	1%	<1%
SF-Oakland	63%	9%	12%	15%	1%
Seattle	87%	4%	2%	6%	1%
Washington, DC	64%	25%	5%	5%	<1%
All MSAs	62%	15%	12%	6%	<1%

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

TABLE C2:
Economic Composition of Commuters, (Percent of Poverty Threshold)

PMSA	Below 200%	200%- 299%	300%- 399%	400%- 499%	500% & Over
Atlanta	14%	15%	17%	15%	39%
Baltimore	13%	14%	17%	15%	41%
Boston	12%	11%	15%	14%	49%
Chicago	14%	15%	16%	15%	40%
Cleveland	14%	17%	19%	16%	34%
Dallas	20%	17%	16%	13%	34%
Denver	17%	17%	18%	15%	34%
Detroit	12%	13%	16%	16%	43%
Honolulu	18%	15%	17%	14%	37%
Houston	23%	16%	16%	13%	32%
Los Angeles	23%	15%	14%	12%	35%
Miami	27%	19%	16%	12%	27%
New York	17%	14%	15%	13%	41%
Newark	11%	11%	14%	13%	51%
Philadelphia	13%	14%	17%	15%	41%
Phoenix	22%	18%	17%	13%	29%
Pittsburgh	17%	18%	19%	15%	32%
St Louis	15%	17%	19%	15%	34%
SF-Oakland	14%	12%	14%	14%	46%
Seattle	14%	15%	17%	15%	38%
Washington, DC	11%	11%	14%	14%	50%
All MSAs	16%	14%	16%	14%	39%

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

Table C3:
Distribution of Commuters by PUMA Composition (Percent Minority)

PMSA	0-10%	11-25%	26-50%	51-75%	76-100%
Atlanta	32%	33%	13%	10%	13%
Baltimore	31%	37%	15%	12%	5%
Boston	59%	25%	13%	0%	3%
Chicago	17%	40%	19%	12%	12%
Cleveland	51%	19%	16%	8%	5%
Dallas	0%	48%	34%	8%	10%
Denver	33%	48%	7%	12%	0%
Detroit	63%	16%	4%	9%	9%
Honolulu	0%	0%	0%	84%	16%
Houston	0%	21%	52%	19%	7%
Los Angeles	0%	9%	30%	36%	26%
Miami	0%	0%	23%	24%	53%
New York	3%	25%	33%	13%	26%
Newark	6%	43%	25%	13%	13%
Philadelphia	43%	28%	17%	5%	8%
Phoenix	35%	46%	9%	10%	0%
Pittsburgh	65%	23%	12%	0%	0%
St Louis	61%	16%	15%	4%	4%
SF-Oakland	0%	22%	58%	14%	5%
Seattle	33%	52%	15%	0%	0%
Washington, DC	4%	43%	33%	6%	14%
All MSAs	21%	27%	25%	14%	13%

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

**TABLE C4:
Modal Split for MSAs**

	Solo Drivers	Car Pool	Mass Transit	Other Modes
Atlanta	78%	12%	5%	5%
Baltimore	71%	14%	8%	8%
Boston	64%	10%	15%	11%
Chicago	64%	12%	17%	7%
Cleveland	77%	11%	7%	6%
Dallas	77%	14%	3%	6%
Denver	75%	13%	5%	7%
Detroit	84%	10%	2%	4%
Honolulu	57%	21%	9%	13%
Houston	76%	15%	4%	6%
Los Angeles	70%	16%	7%	8%
Miami	72%	16%	6%	6%
New York	30%	9%	46%	15%
Newark	69%	13%	11%	7%
Philadelphia	68%	12%	11%	9%
Phoenix	75%	14%	2%	9%
Pittsburgh	70%	13%	9%	8%
Seattle	73%	11%	7%	8%
St Louis	80%	12%	3%	5%
Wash. DC	63%	16%	14%	8%
S.F.-Oakland	63%	13%	16%	11%
All MSAs	66%	13%	13%	8%

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

TABLE C5:
Estimated Undercount Rate by Transportation Mode for MSAs

	Solo Drivers	Car Pool	Mass Transit	Other Modes
Atlanta	1.9%	2.8%	4.4%	2.3%
Baltimore	1.6%	2.1%	3.9%	2.5%
Boston	-0.7%	0.2%	1.4%	0.6%
Chicago	0.7%	1.5%	2.2%	1.8%
Cleveland	0.6%	1.1%	2.2%	1.2%
Dallas	2.2%	3.5%	4.5%	3.1%
Denver	1.4%	2.0%	3.3%	1.9%
Detroit	0.5%	1.0%	3.0%	1.1%
Honolulu	1.6%	1.8%	3.0%	3.6%
Houston	2.4%	3.9%	4.7%	3.6%
Los Angeles	2.8%	3.7%	5.4%	3.6%
Miami	3.6%	4.6%	5.6%	4.8%
New York	1.0%	2.0%	3.5%	2.4%
Newark	0.2%	2.0%	2.9%	1.7%
Philadelphia	-0.9%	-0.1%	1.5%	0.5%
Phoenix	1.3%	2.1%	3.6%	2.0%
Pittsburgh	-1.2%	-0.9%	0.8%	-0.1%
Seattle	1.1%	1.4%	2.5%	1.9%
SF-Oakland	1.9%	2.4%	3.4%	2.9%
St Louis	0.6%	1.0%	2.9%	1.1%
Wash. DC	1.9%	2.5%	3.6%	2.7%
All MSAs	1.3%	2.2%	3.2%	2.3%

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

**TABLE C6:
MSAs Ranked by Modal Split**

Rank	Solo Drivers	Car Poolers	Mass Transit Users	Other Mode Users
1	Detroit	Honolulu	New York	New York
2	St Louis	Los Angeles	Chicago	Honolulu
3	Atlanta	Miami	Boston	Boston
4	Cleveland	Wash. DC	Wash. DC	SF-Oakland
5	Dallas	Houston	SF-Oakland	Philadelphia
6	Houston	Phoenix	Philadelphia	Phoenix
7	Denver	Dallas	Newark	Seattle
8	Phoenix	Baltimore	Honolulu	Pittsburgh
9	Seattle	Pittsburgh	Pittsburgh	Wash. DC
10	Miami	Denver	Baltimore	Los Angeles
11	Baltimore	SF-Oakland	Seattle	Baltimore
12	Pittsburgh	Newark	Cleveland	Denver
13	Los Angeles	Atlanta	Los Angeles	Chicago
14	Newark	Chicago	Miami	Newark
15	Philadelphia	Philadelphia	Atlanta	Miami
16	Boston	St Louis	Denver	Cleveland
17	Chicago	Seattle	Houston	Dallas
18	SF-Oakland	Cleveland	Dallas	Houston
19	Wash. DC	Detroit	St Louis	St Louis
20	Honolulu	Boston	Detroit	Atlanta
21	New York	New York	Phoenix	Detroit

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

TABLE C7: MSAs Ranked by Undercount Rate

Rank	Solo Drivers	Car Poolers	Mass Transit Users	Other Mode Users
1	Miami	Miami	Miami	Miami
2	Los Angeles	Houston	Los Angeles	Los Angeles
3	Houston	Los Angeles	Houston	Houston
4	Dallas	Dallas	Dallas	Honolulu
5	Atlanta	Atlanta	Atlanta	Dallas
6	SF-Oakland	Wash. DC	Baltimore	SF-Oakland
7	Wash. DC	SF-Oakland	Wash. DC	Wash. DC
8	Baltimore	Baltimore	Phoenix	Baltimore
9	Honolulu	Phoenix	New York	New York
10	Denver	Denver	SF-Oakland	Atlanta
11	Phoenix	New York	Denver	Phoenix
12	Seattle	Newark	Honolulu	Denver
13	New York	Honolulu	Detroit	Seattle
14	Chicago	Chicago	St Louis	Chicago
15	Cleveland	Seattle	Newark	Newark
16	St Louis	Cleveland	Seattle	Cleveland
17	Detroit	St Louis	Chicago	Detroit
18	Newark	Detroit	Cleveland	St Louis
19	Boston	Boston	Philadelphia	Boston
20	Philadelphia	Philadelphia	Boston	Philadelphia
21	Pittsburgh	Pittsburgh	Pittsburgh	Pittsburgh

The San Francisco and Oakland MSAs are combined because they are adjacent to each other and because prior to 1990 they had formed a single metropolitan area.

TABLE C8:

Atlanta

Socioeconomic Characteristics

Estimated Under Count Rate

	Solo Drivers	Car Poolers	Mass Transit	Other Modes		Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%		1.9%	2.8%	4.4%	2.3%
Race/Ethnicity									
NH Whites	76%	58%	22%	73%		1.2%	1.3%	1.7%	1.3%
African Americans	20%	34%	74%	22%		4.0%	4.6%	5.1%	5.0%
Latinos	2%	4%	3%	2%		5.9%	7.9%	8.6%	7.8%
APIs	2%	4%	1%	2%		2.1%	2.9%	3.4%	2.9%
Other	0%	0%	0%	0%		1.4%	2.1%	1.9%	1.6%
Household Poverty Level									
Below 200%	10%	22%	41%	24%		3.3%	4.1%	5.4%	3.6%
200%-299%	14%	20%	23%	17%		2.6%	3.5%	4.7%	3.0%
300%-399%	17%	19%	14%	13%		2.1%	2.7%	3.9%	2.0%
400%-499%	16%	13%	9%	11%		1.8%	2.3%	3.2%	1.8%
500% plus	43%	27%	14%	35%		1.2%	1.4%	2.2%	1.1%
PUMA Minority Percentage									
0%-10%	34%	27%	5%	32%		1.2%	1.7%	2.5%	1.3%
11%-25%	34%	29%	22%	37%		1.9%	2.8%	4.0%	2.4%
26%-50%	13%	14%	7%	9%		2.1%	2.8%	4.1%	2.6%
51%-75%	9%	13%	16%	8%		2.5%	3.3%	4.5%	2.5%
75% plus	10%	16%	50%	14%		3.2%	4.1%	4.8%	4.1%

TABLE C9:
Baltimore

	Socioeconomic Characteristics				Estimated Under Count Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.6%	2.1%	3.9%	2.5%
Race/Ethnicity								
NH Whites	81%	69%	29%	73%	1.1%	1.2%	1.4%	1.5%
African Americans	16%	27%	69%	23%	3.9%	4.4%	4.9%	5.0%
Latinos	1%	1%	1%	2%	5.1%	6.5%	6.4%	6.9%
APIs	2%	3%	1%	2%	1.1%	1.7%	2.7%	3.8%
Other	0%	0%	0%	0%	1.2%	2.0%	2.1%	1.8%
Household Poverty Level								
Below 200%	8%	15%	32%	27%	2.9%	3.6%	5.0%	3.5%
200%-299%	12%	16%	23%	19%	2.2%	2.9%	4.3%	2.6%
300%-399%	17%	17%	17%	16%	1.8%	2.3%	3.6%	2.1%
400%-499%	17%	15%	10%	12%	1.6%	1.9%	3.1%	1.7%
500% plus	47%	37%	17%	26%	1.1%	1.3%	2.0%	1.3%
PUMA Minority Percentage								
0%-10%	35%	29%	10%	23%	1.2%	1.5%	2.4%	1.6%
11%-25%	40%	35%	9%	36%	1.4%	1.8%	2.3%	2.3%
26%-50%	14%	16%	25%	14%	2.1%	2.4%	3.7%	2.7%
51%-75%	8%	15%	38%	23%	2.5%	3.2%	4.5%	3.2%
75% plus	4%	6%	18%	4%	3.1%	3.9%	4.5%	3.8%

TABLE C10:
Boston

	Socioeconomic Characteristics				Estimated Under Count Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	-0.7%	0.2%	1.4%	0.6%
Race/Ethnicity								
NH Whites	91%	80%	73%	84%	-1.2%	-1.0%	-0.3%	-0.4%
African Americans	4%	8%	15%	6%	5.4%	6.3%	6.7%	6.9%
Latinos	2%	6%	6%	4%	4.6%	5.2%	5.8%	5.7%
APIs	2%	5%	5%	5%	2.2%	2.3%	3.9%	4.9%
Other	0%	1%	1%	1%	-0.4%	-0.4%	0.1%	0.6%
Household Poverty Level								
Below 200%	7%	11%	17%	21%	1.3%	2.3%	3.3%	1.8%
200%-299%	9%	14%	15%	13%	0.3%	1.7%	2.9%	1.2%
300%-399%	14%	16%	17%	15%	-0.1%	0.8%	1.7%	0.6%
400%-499%	15%	15%	15%	12%	-0.6%	-0.1%	1.3%	0.1%
500% plus	55%	44%	37%	39%	-1.3%	-1.1%	-0.4%	-0.8%
PUMA Minority Percentage								
0%-10%	69%	56%	30%	37%	-1.2%	-0.7%	-0.3%	-0.5%
11%-25%	22%	27%	34%	31%	-0.3%	0.3%	1.2%	1.0%
26%-50%	7%	12%	27%	30%	1.0%	1.8%	2.1%	1.4%
51%-75%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
75% plus	2%	5%	9%	3%	4.6%	5.1%	5.5%	3.6%

TABLE C11:

Chicago

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	0.7%	1.5%	2.2%	1.8%
Race/Ethnicity								
NH Whites	76%	52%	52%	70%	0.3%	0.5%	0.9%	0.9%
African Americans	13%	19%	31%	13%	2.8%	3.1%	3.9%	4.2%
Latinos	7%	22%	13%	13%	1.1%	2.5%	3.1%	3.5%
APIs	4%	6%	4%	5%	1.3%	1.8%	3.0%	4.0%
Other	0%	0%	0%	0%	0.9%	0.7%	1.3%	1.2%
Household Poverty Level								
Below 200%	9%	19%	22%	25%	2.3%	3.5%	4.0%	3.3%
200%-299%	13%	19%	18%	17%	1.4%	2.0%	2.9%	2.0%
300%-399%	17%	17%	16%	15%	0.9%	1.2%	2.1%	1.5%
400%-499%	16%	14%	13%	11%	0.6%	0.7%	1.6%	1.0%
500% plus	45%	32%	31%	32%	0.2%	0.5%	0.7%	0.6%
PUMA Minority Percentage								
0%-10%	20%	13%	8%	13%	0.2%	0.5%	0.3%	0.7%
11%-25%	44%	33%	29%	35%	0.5%	0.9%	1.2%	1.3%
26%-50%	19%	21%	18%	15%	0.7%	1.0%	1.6%	1.4%
51%-75%	8%	15%	22%	24%	1.8%	2.6%	3.0%	2.4%
75% plus	8%	17%	23%	13%	2.6%	2.9%	3.7%	3.4%

TABLE C12:
Cleveland

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	0.6%	1.1%	2.2%	1.2%
Race/Ethnicity								
NH Whites	85%	73%	50%	81%	0.3%	0.5%	0.7%	0.7%
African Americans	13%	22%	47%	15%	2.7%	3.1%	3.8%	3.9%
Latinos	1%	2%	2%	2%	0.5%	1.3%	1.8%	2.8%
APIs	1%	2%	1%	2%	2.1%	1.5%	0.7%	2.7%
Other	0%	1%	0%	0%	0.8%	1.0%	1.9%	2.0%
Household Poverty Level								
Below 200%	11%	18%	29%	29%	1.8%	2.2%	3.6%	2.3%
200%-299%	16%	19%	22%	21%	1.0%	1.7%	2.4%	1.4%
300%-399%	19%	20%	20%	14%	0.6%	1.1%	1.8%	0.6%
400%-499%	17%	15%	12%	13%	0.5%	0.7%	1.4%	0.6%
500% plus	37%	28%	17%	24%	0.2%	0.2%	0.4%	0.3%
PUMA Minority Percentage								
0%-10%	55%	45%	26%	44%	0.3%	0.5%	0.7%	0.6%
11%-25%	19%	21%	20%	20%	0.6%	1.0%	1.8%	1.1%
26%-50%	16%	16%	18%	18%	1.0%	1.5%	2.4%	1.4%
51%-75%	6%	11%	20%	15%	2.0%	2.5%	3.5%	2.7%
75% plus	4%	6%	16%	3%	2.1%	2.7%	3.1%	3.1%

TABLE C13:

Dallas

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	2.2%	3.5%	4.5%	3.1%
Race/Ethnicity								
NH Whites	75%	53%	32%	67%	1.3%	1.4%	1.6%	1.5%
African Americans	12%	17%	47%	13%	4.3%	4.6%	5.1%	5.3%
Latinos	10%	25%	20%	17%	6.3%	7.2%	7.9%	7.8%
APIs	3%	3%	1%	2%	2.4%	3.3%	0.5%	4.1%
Other	1%	1%	0%	0%	1.6%	2.2%	2.1%	1.8%
Household Poverty Level								
Below 200%	15%	30%	42%	36%	4.1%	5.3%	5.8%	4.8%
200%-299%	16%	21%	22%	17%	2.9%	4.1%	4.7%	3.4%
300%-399%	17%	16%	14%	13%	2.3%	2.9%	3.9%	2.4%
400%-499%	14%	11%	7%	9%	1.8%	2.4%	2.8%	1.8%
500% plus	38%	22%	15%	25%	1.3%	1.5%	1.6%	1.3%
PUMA Minority Percentage								
0%-10%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
11%-25%	51%	43%	16%	45%	1.6%	2.4%	2.1%	2.4%
26%-50%	35%	30%	27%	35%	2.5%	3.9%	4.1%	3.3%
51%-75%	7%	11%	25%	10%	3.3%	5.1%	5.5%	4.5%
75% plus	8%	15%	32%	9%	3.6%	4.9%	5.1%	4.4%

TABLE C14:

Denver

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.4%	2.0%	3.3%	1.9%
Race/Ethnicity								
NH Whites	83%	72%	63%	81%	0.7%	0.9%	1.5%	1.2%
African Americans	5%	7%	17%	5%	7.8%	8.2%	8.9%	8.7%
Latinos	10%	16%	16%	11%	4.0%	4.4%	4.7%	4.6%
APIs	2%	4%	2%	2%	1.5%	1.8%	2.7%	2.0%
Other	1%	1%	1%	1%	1.2%	1.7%	2.3%	2.1%
Household Poverty Level								
Below 200%	14%	21%	32%	29%	3.0%	3.7%	5.0%	3.2%
200%-299%	16%	19%	21%	18%	2.1%	2.7%	3.8%	2.2%
300%-399%	18%	19%	17%	16%	1.5%	2.0%	2.9%	1.6%
400%-499%	16%	13%	11%	11%	1.1%	1.3%	1.9%	0.9%
500% plus	36%	28%	20%	25%	0.5%	0.6%	1.1%	0.6%
PUMA Minority Percentage								
0%-10%	35%	28%	20%	29%	0.6%	0.9%	1.3%	1.1%
11%-25%	49%	47%	44%	47%	1.4%	1.8%	2.8%	1.7%
26%-50%	6%	8%	10%	7%	2.4%	2.7%	5.4%	3.3%
51%-75%	10%	17%	26%	17%	3.2%	4.0%	4.9%	3.5%
75% plus	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%

TABLE C15:

Detroit

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	0.5%	1.0%	3.0%	1.1%
Race/Ethnicity								
NH Whites	84%	70%	23%	78%	0.2%	0.3%	0.7%	0.5%
African Americans	13%	26%	74%	18%	2.5%	2.9%	3.8%	3.7%
Latinos	1%	2%	2%	2%	-1.1%	0.6%	2.0%	2.5%
APIs	1%	2%	1%	2%	0.8%	1.2%	4.2%	3.6%
Other	0%	0%	1%	1%	0.5%	0.5%	0.2%	1.1%
Household Poverty Level								
Below 200%	9%	19%	39%	26%	1.6%	2.3%	4.0%	2.4%
200%-299%	13%	17%	22%	17%	1.0%	1.3%	3.1%	1.3%
300%-399%	16%	17%	15%	14%	0.6%	0.9%	2.5%	0.8%
400%-499%	16%	15%	10%	13%	0.5%	0.8%	2.3%	0.6%
500% plus	46%	32%	14%	30%	0.2%	0.3%	1.1%	0.3%
PUMA Minority Percentage								
0%-10%	65%	53%	13%	56%	0.2%	0.4%	0.5%	0.4%
11%-25%	17%	15%	10%	16%	0.6%	0.8%	2.2%	0.8%
26%-50%	4%	4%	1%	5%	0.8%	1.5%	2.9%	2.1%
51%-75%	7%	15%	34%	10%	1.5%	2.1%	3.4%	2.5%
75% plus	7%	13%	42%	12%	2.2%	2.6%	3.7%	3.2%

TABLE C16:
Honolulu

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.6%	1.8%	3.0%	3.6%
Race/Ethnicity								
NH Whites	33%	26%	22%	51%	1.6%	1.8%	2.2%	2.6%
African Americans	3%	3%	2%	8%	9.5%	9.5%	9.4%	9.9%
Latinos	3%	2%	3%	4%	4.9%	4.9%	5.1%	5.6%
APIs	60%	68%	72%	37%	1.0%	1.3%	3.0%	3.5%
Other	1%	1%	1%	1%	2.1%	2.3%	2.6%	2.5%
Household Poverty Level								
Below 200%	10%	12%	24%	23%	4.2%	4.0%	4.3%	4.4%
200%-299%	14%	16%	22%	20%	3.3%	3.7%	4.2%	3.9%
300%-399%	17%	18%	20%	18%	2.2%	2.2%	3.0%	3.3%
400%-499%	15%	15%	13%	11%	1.3%	1.1%	1.9%	2.1%
500% plus	44%	39%	20%	27%	0.2%	0.1%	0.7%	1.5%
PUMA Minority Percentage								
0%-10%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
11%-25%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
26%-50%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
51%-75%	85%	84%	74%	87%	1.4%	1.6%	2.7%	3.6%
75% plus	15%	16%	26%	13%	2.6%	2.9%	3.9%	3.9%

TABLE C17:
Houston

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	2.4%	3.9%	4.7%	3.6%
Race/Ethnicity								
NH Whites	66%	44%	31%	56%	1.3%	1.4%	1.4%	1.5%
African Americans	14%	18%	37%	16%	4.1%	4.5%	5.2%	5.1%
Latinos	15%	33%	29%	24%	6.0%	7.0%	7.9%	7.6%
APIs	4%	4%	3%	4%	1.5%	1.8%	2.4%	3.3%
Other	0%	1%	1%	1%	1.6%	1.8%	2.2%	2.0%
Household Poverty Level								
Below 200%	18%	35%	45%	40%	4.4%	5.7%	6.5%	5.2%
200%-299%	16%	20%	17%	20%	3.1%	4.2%	4.8%	4.0%
300%-399%	16%	15%	11%	11%	2.5%	3.3%	4.0%	2.4%
400%-499%	14%	10%	8%	9%	2.0%	2.5%	2.8%	1.8%
500% plus	36%	20%	18%	21%	1.4%	1.6%	1.4%	1.4%
PUMA Minority Percentage								
0%-10%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
11%-25%	22%	18%	10%	18%	1.5%	2.1%	1.3%	1.9%
26%-50%	54%	48%	41%	47%	2.4%	3.8%	4.7%	3.6%
51%-75%	18%	22%	31%	26%	3.3%	4.7%	5.5%	4.4%
75% plus	6%	12%	19%	8%	3.8%	5.2%	5.4%	4.9%

TABLE C18:
Los Angeles

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	2.8%	3.7%	5.4%	3.6%
Race/Ethnicity								
NH Whites	52%	29%	14%	47%	1.0%	1.2%	2.1%	1.6%
African Americans	10%	9%	14%	7%	8.1%	8.4%	9.1%	8.8%
Latinos	26%	48%	62%	36%	4.5%	4.9%	5.5%	5.1%
APIs	11%	13%	9%	9%	1.8%	2.0%	4.0%	3.7%
Other	1%	1%	1%	1%	1.4%	1.9%	2.5%	2.1%
Household Poverty Level								
Below 200%	16%	31%	55%	38%	4.7%	5.1%	5.9%	4.9%
200%-299%	14%	19%	19%	17%	3.9%	4.4%	5.4%	4.1%
300%-399%	15%	15%	11%	12%	3.2%	3.6%	5.1%	3.4%
400%-499%	13%	10%	6%	8%	2.7%	2.9%	4.4%	2.6%
500% plus	42%	25%	9%	25%	1.5%	1.7%	3.2%	1.5%
PUMA Minority Percentage								
0%-10%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
11%-25%	10%	5%	2%	10%	1.4%	1.7%	3.4%	2.0%
26%-50%	32%	25%	14%	30%	1.9%	2.6%	4.2%	2.8%
51%-75%	36%	36%	36%	35%	2.8%	3.6%	5.4%	3.7%
75% plus	22%	34%	48%	25%	4.6%	4.9%	5.8%	5.0%

TABLE C19:
Miami

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	3.6%	4.6%	5.6%	4.8%
Race/Ethnicity								
NH Whites	34%	21%	14%	33%	1.2%	1.4%	1.6%	1.5%
African Americans	16%	20%	41%	16%	3.8%	4.2%	4.9%	4.8%
Latinos	49%	57%	44%	49%	5.3%	6.1%	7.6%	6.9%
APIs	1%	2%	1%	2%	1.7%	0.8%	3.2%	2.9%
Other	0%	0%	0%	0%	1.4%	2.0%	2.6%	2.1%
Household Poverty Level								
Below 200%	21%	34%	55%	45%	5.5%	6.1%	6.5%	6.3%
200%-299%	18%	22%	20%	18%	4.4%	5.1%	5.3%	4.9%
300%-399%	17%	17%	11%	12%	3.6%	3.9%	4.6%	3.9%
400%-499%	13%	10%	5%	7%	2.9%	3.4%	3.9%	2.8%
500% plus	31%	18%	9%	19%	2.1%	2.6%	2.6%	2.2%
PUMA Minority Percentage								
0%-10%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
11%-25%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
26%-50%	23%	18%	25%	32%	2.8%	3.7%	5.1%	3.9%
51%-75%	26%	23%	12%	21%	2.7%	3.8%	3.6%	3.7%
75% plus	51%	59%	63%	47%	4.4%	5.3%	6.2%	5.8%

TABLE C20:

New York

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.0%	2.0%	3.5%	2.4%
Race/Ethnicity								
NH Whites	64%	51%	41%	59%	-1.1%	-0.9%	-0.2%	-0.1%
African Americans	19%	22%	32%	16%	5.3%	5.8%	6.7%	7.0%
Latinos	12%	18%	19%	16%	4.9%	5.1%	5.9%	5.9%
APIs	5%	9%	8%	9%	2.6%	2.7%	4.0%	5.1%
Other	0%	0%	0%	0%	-0.4%	0.1%	0.5%	0.6%
Household Poverty Level								
Below 200%	10%	15%	20%	23%	3.7%	4.5%	5.7%	4.5%
200%-299%	11%	13%	16%	14%	2.8%	3.7%	5.1%	3.7%
300%-399%	14%	16%	16%	14%	1.8%	3.0%	4.1%	3.0%
400%-499%	14%	14%	13%	11%	1.2%	1.9%	3.3%	2.2%
500% plus	51%	43%	35%	40%	-0.2%	0.2%	1.2%	0.6%
PUMA Minority Percentage								
0%-10%	7%	4%	1%	2%	-1.4%	-1.1%	-1.5%	-1.0%
11%-25%	30%	26%	18%	34%	-0.4%	0.2%	0.9%	1.0%
26%-50%	37%	34%	31%	33%	0.6%	1.3%	2.2%	1.8%
51%-75%	10%	12%	15%	12%	2.1%	2.8%	3.8%	3.8%
75% plus	16%	23%	35%	19%	4.8%	5.1%	6.0%	5.3%

TABLE C21:
Newark

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	0.2%	2.0%	2.9%	1.7%
Race/Ethnicity								
NH Whites	72%	47%	40%	58%	-1.4%	-1.2%	-1.2%	-0.9%
African Americans	18%	29%	46%	23%	5.0%	5.6%	6.2%	6.1%
Latinos	7%	18%	10%	14%	4.0%	4.8%	5.0%	5.3%
APIs	3%	5%	3%	4%	1.0%	1.7%	2.2%	3.0%
Other	0%	1%	0%	1%	-0.6%	0.2%	0.4%	0.1%
Household Poverty Level								
Below 200%	7%	15%	18%	22%	3.4%	4.7%	6.1%	4.0%
200%-299%	9%	16%	14%	16%	2.3%	4.1%	5.3%	3.3%
300%-399%	14%	17%	14%	16%	1.1%	2.8%	4.5%	2.2%
400%-499%	14%	13%	11%	12%	0.5%	1.7%	3.3%	0.7%
500% plus	56%	39%	42%	34%	-0.9%	-0.1%	0.1%	-0.5%
PUMA Minority Percentage								
0%-10%	8%	6%	1%	4%	-1.1%	-0.5%	-1.3%	-1.2%
11%-25%	48%	33%	26%	36%	-1.0%	-0.1%	-0.3%	0.0%
26%-50%	25%	25%	24%	23%	0.3%	2.0%	1.7%	1.1%
51%-75%	10%	19%	18%	22%	2.8%	3.6%	4.8%	3.8%
75% plus	9%	17%	30%	15%	4.4%	5.4%	5.8%	4.7%

TABLE C22:
Philadelphia

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	-0.9%	-0.1%	1.5%	0.5%
Race/Ethnicity								
NH Whites	86%	74%	49%	76%	-1.5%	-1.4%	-1.2%	-0.9%
African Americans	11%	18%	46%	17%	3.6%	4.0%	4.4%	5.2%
Latinos	2%	4%	3%	4%	2.8%	3.7%	3.3%	4.6%
APIs	2%	3%	2%	2%	0.6%	0.9%	1.2%	4.0%
Other	0%	0%	0%	0%	-1.2%	-0.5%	-1.0%	0.1%
Household Poverty Level								
Below 200%	8%	15%	22%	26%	0.8%	2.0%	3.8%	2.0%
200%-299%	12%	16%	18%	16%	-0.2%	0.5%	2.5%	0.9%
300%-399%	17%	19%	19%	16%	-0.7%	0.0%	1.5%	0.1%
400%-499%	16%	16%	13%	12%	-0.9%	-0.7%	0.7%	-0.5%
500% plus	46%	36%	28%	29%	-1.4%	-1.1%	-0.6%	-1.1%
PUMA Minority Percentage								
0%-10%	49%	38%	21%	33%	-1.3%	-0.9%	-0.8%	-0.6%
11%-25%	31%	28%	14%	22%	-1.0%	-0.3%	-0.1%	0.2%
26%-50%	13%	19%	28%	29%	-0.3%	0.4%	1.6%	0.7%
51%-75%	4%	6%	12%	8%	0.9%	1.8%	3.1%	2.5%
75% plus	4%	8%	24%	8%	2.0%	1.9%	3.5%	2.8%

TABLE C23:
Phoenix

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.3%	2.1%	3.6%	2.0%
Race/Ethnicity								
NH Whites	83%	69%	51%	78%	0.7%	1.0%	1.7%	1.2%
African Americans	3%	4%	12%	3%	7.8%	8.4%	9.1%	9.2%
Latinos	12%	23%	28%	15%	4.0%	4.5%	5.0%	4.9%
APIs	2%	2%	2%	2%	1.0%	2.2%	2.3%	4.0%
Other	1%	3%	7%	2%	1.4%	1.9%	2.5%	2.2%
Household Poverty Level								
Below 200%	17%	30%	48%	35%	2.7%	3.7%	4.9%	3.2%
200%-299%	18%	21%	21%	20%	1.8%	2.5%	3.3%	2.1%
300%-399%	18%	15%	13%	15%	1.4%	1.5%	2.2%	1.5%
400%-499%	14%	12%	7%	9%	0.9%	1.1%	1.7%	1.0%
500% plus	33%	22%	11%	20%	0.4%	0.5%	1.3%	0.5%
PUMA Minority Percentage								
0%-10%	37%	28%	16%	30%	0.8%	1.1%	1.7%	1.1%
11%-25%	46%	45%	44%	49%	1.4%	2.2%	3.3%	2.2%
26%-50%	9%	12%	8%	9%	1.5%	2.1%	3.6%	2.2%
51%-75%	8%	16%	32%	11%	2.9%	3.8%	4.9%	3.3%
75% plus	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%

TABLE C24:
Pittsburgh

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	-1.2%	-0.9%	0.8%	-0.1%
Race/Ethnicity								
NH Whites	95%	92%	73%	89%	-1.5%	-1.4%	-1.0%	-0.8%
African Americans	4%	7%	26%	7%	4.1%	4.7%	5.6%	5.7%
Latinos	0%	1%	0%	1%	2.1%	2.4%	4.6%	5.3%
APIs	1%	1%	1%	3%	0.6%	1.9%	1.9%	6.1%
Other	0%	0%	0%	0%	-1.2%	0.2%	0.2%	0.0%
Household Poverty Level								
Below 200%	13%	17%	25%	32%	-0.3%	0.4%	3.1%	1.0%
200%-299%	17%	19%	21%	20%	-1.0%	-0.7%	1.2%	-0.2%
300%-399%	19%	18%	18%	16%	-1.3%	-1.0%	0.2%	-0.9%
400%-499%	16%	16%	13%	11%	-1.4%	-1.2%	-0.4%	-1.0%
500% plus	35%	30%	23%	21%	-1.6%	-1.5%	-0.9%	-1.3%
PUMA Minority Percentage								
0%-10%	70%	64%	35%	53%	-1.5%	-1.3%	-0.9%	-0.8%
11%-25%	22%	24%	32%	17%	-1.0%	-0.7%	0.7%	-0.5%
26%-50%	8%	12%	32%	30%	0.2%	0.7%	2.7%	1.5%
51%-75%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
75% plus	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%

TABLE C25:

St. Louis

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	0.6%	1.0%	2.9%	1.1%
Race/Ethnicity								
NH Whites	87%	77%	34%	83%	0.3%	0.4%	0.8%	0.6%
African Americans	11%	20%	64%	14%	2.8%	3.2%	4.0%	3.9%
Latinos	1%	1%	1%	1%	-1.1%	0.0%	2.9%	1.3%
APIs	1%	1%	1%	1%	1.7%	2.4%	6.3%	4.5%
Other	0%	0%	0%	0%	0.9%	1.4%	0.8%	1.3%
Household Poverty Level								
Below 200%	12%	19%	43%	28%	1.7%	2.4%	4.0%	2.1%
200%-299%	16%	19%	23%	21%	0.9%	1.3%	2.8%	1.1%
300%-399%	19%	18%	14%	15%	0.6%	0.8%	1.8%	0.8%
400%-499%	16%	14%	9%	12%	0.4%	0.6%	1.8%	0.8%
500% plus	36%	29%	11%	24%	0.1%	0.1%	0.9%	0.1%
PUMA Minority Percentage								
0%-10%	63%	60%	26%	56%	0.3%	0.5%	1.4%	0.6%
11%-25%	16%	16%	8%	12%	0.6%	1.1%	1.8%	0.9%
26%-50%	15%	13%	19%	19%	0.9%	1.6%	3.0%	1.6%
51%-75%	3%	5%	20%	9%	2.4%	3.0%	4.4%	3.0%
75% plus	3%	5%	27%	4%	2.3%	2.6%	3.4%	3.0%

TABLE C26:

San Francisco-Oakland

Socioeconomic Characteristics

Estimated UnderCount Rate

	Solo Drivers	Car Poolers	Mass Transit	Other Modes		Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%		1.9%	2.4%	3.4%	2.9%
Race/Ethnicity									
NH Whites	68%	51%	49%	66%		0.9%	1.0%	1.7%	1.7%
African Americans	8%	9%	14%	8%		8.0%	8.3%	8.7%	8.9%
Latinos	11%	17%	13%	11%		4.3%	4.6%	5.1%	5.0%
APIs	13%	22%	23%	14%		1.3%	1.4%	2.7%	3.8%
Other	1%	1%	1%	1%		1.5%	1.8%	2.5%	1.8%
Household Poverty Level									
Below 200%	10%	15%	20%	24%		3.8%	4.5%	5.1%	4.3%
200%-299%	11%	14%	15%	15%		3.2%	3.8%	4.4%	3.8%
300%-399%	14%	15%	16%	14%		2.6%	2.9%	3.8%	3.2%
400%-499%	14%	14%	14%	12%		2.1%	2.3%	3.3%	2.4%
500% plus	52%	43%	35%	35%		1.0%	1.1%	1.7%	1.3%
PUMA Minority Percentage									
0%-10%	0%	0%	0%	0%		0.0%	0.0%	0.0%	0.0%
11%-25%	26%	20%	11%	20%		1.0%	1.4%	1.4%	1.6%
26%-50%	58%	56%	60%	62%		1.9%	2.3%	3.2%	3.0%
51%-75%	12%	18%	22%	13%		2.5%	2.7%	3.8%	3.8%
75% plus	4%	6%	7%	5%		5.7%	5.7%	6.4%	5.6%

TABLE C27:
Seattle

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.1%	1.4%	2.5%	1.9%
Race/Ethnicity								
NH Whites	89%	81%	75%	87%	0.8%	1.0%	1.6%	1.4%
African Americans	3%	4%	11%	3%	7.9%	8.4%	8.7%	9.0%
Latinos	2%	3%	3%	3%	4.3%	4.6%	5.1%	4.8%
APIs	5%	10%	10%	5%	1.3%	1.4%	2.1%	4.2%
Other	1%	2%	1%	1%	1.2%	1.8%	1.6%	2.1%
Household Poverty Level								
Below 200%	11%	16%	26%	25%	2.6%	3.0%	4.2%	3.2%
200%-299%	14%	16%	20%	18%	1.8%	2.2%	3.2%	2.3%
300%-399%	18%	17%	17%	16%	1.3%	1.6%	2.2%	1.6%
400%-499%	16%	15%	12%	12%	1.0%	1.0%	1.6%	1.3%
500% plus	41%	36%	25%	29%	0.4%	0.5%	0.8%	0.6%
PUMA Minority Percentage								
0%-10%	35%	33%	14%	27%	0.8%	1.0%	1.0%	0.9%
11%-25%	53%	51%	52%	47%	1.1%	1.5%	2.1%	1.9%
26%-50%	12%	16%	34%	26%	2.0%	2.2%	3.8%	2.8%
51%-75%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%
75% plus	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%

TABLE C28:
Washington D.C.

	Socioeconomic Characteristics				Estimated UnderCount Rate			
	Solo Drivers	Car Poolers	Mass Transit	Other Modes	Solo Drivers	Car Poolers	Mass Transit	Other Modes
All Commuters	100%	100%	100%	100%	1.9%	2.5%	3.6%	2.7%
Race/Ethnicity								
NH Whites	70%	57%	43%	66%	1.2%	1.2%	1.6%	1.5%
African Americans	21%	28%	44%	21%	4.0%	4.3%	4.9%	5.0%
Latinos	4%	7%	9%	7%	5.9%	7.0%	8.0%	7.2%
APIs	5%	7%	4%	5%	0.9%	1.1%	2.6%	3.2%
Other	0%	0%	0%	0%	1.4%	1.4%	1.9%	1.8%
Household Poverty Level								
Below 200%	7%	10%	18%	21%	3.6%	4.7%	5.6%	4.1%
200%-299%	9%	12%	16%	13%	3.1%	3.9%	4.9%	3.6%
300%-399%	14%	15%	16%	15%	2.6%	3.2%	4.1%	3.0%
400%-499%	15%	14%	13%	12%	2.1%	2.5%	3.5%	2.3%
500% plus	56%	49%	37%	39%	1.3%	1.5%	2.0%	1.5%
PUMA Minority Percentage								
0%-10%	4%	4%	1%	4%	1.3%	1.5%	1.8%	2.1%
11%-25%	48%	44%	24%	39%	1.5%	1.8%	2.3%	2.1%
26%-50%	35%	32%	33%	29%	2.0%	2.6%	3.4%	2.7%
51%-75%	3%	4%	12%	17%	3.3%	3.9%	4.6%	3.5%
75% plus	10%	16%	30%	12%	3.5%	4.0%	4.6%	4.1%

BIOGRAPHIES OF AUTHORS

Elena Soohoo Ong, S.M., is a public affairs and public policy consultant who specializes in strategic planning, and develops presentations for senior management and public boards and commissions. She earned her Masters of Science in Policy and Management from the Harvard School of Public Health while cross enrolling at the Kennedy School of Government.

Paul Ong, Ph.D., is a full professor at the UCLA School of Public Policy and Social Research. He has done extensive research on disadvantaged populations and transportation. He earned his Masters in Urban Planning from the University of Washington and his Doctorate in Economics from the University of California, Berkeley.