About the AASHTO Census Transportation Planning Products Program

Established by the American Association of State Highway and Transportation Officials (AASHTO) and the U.S. Department of Transportation (U.S. DOT), the AASHTO Census Transportation Planning Products Program (CTPP) compiles census data on demographic characteristics, home and work locations, and journey-to-work travel flows to assist with a variety of state, regional, and local transportation policy and planning efforts. CTPP also supports corridor and project studies, environmental analyses, and emergency operations management.

In 1990, 2000, and again in 2006, AASHTO partnered with all of the states on pooled-fund projects to support the development of special census products and data tabulations for transportation. These census transportation data packages have proved invaluable in understanding characteristics about where people live and work, their journey-to-work commuting patterns, and the modes they use for getting to work. In 2012, the CTPP was established as an ongoing technical service program of AASHTO.

CTPP provides a number of primary services:

- **Special Data Tabulation from the U.S. Census Bureau**—CTPP oversees the specification, purchase, and delivery of this special tabulation designed by and for transportation planners.

- **Outreach and Training**—The CTPP team provides training on data and data issues in many formats, from live briefings and presentations to hands-on, full-day courses. The team has also created a number of electronic sources of training, from e-learning to recorded webinars to downloadable presentations.

- **Technical Support**—CTPP provides limited direct technical support for solving data issues; the program also maintains a robust listserv where many issues are discussed, dissected, and resolved by the CTPP community.

- **Research**—CTPP staff and board members routinely generate problem statements to solicit research on data issues; additionally, CTPP has funded its own research efforts. Total research generated or funded by the current CTPP since 2006 is in excess of $1 million.

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CIA 2013. Executive Summary

Foreword

History and Context

This document is an executive summary of a series of 16 briefs that collectively describe commuting in America. This body of work, sponsored by the American Association of State Highway and Transportation Officials (AASHTO) and carried out in conjunction with a National Cooperative Highway Research Program (NCHRP) project that provided supporting data, builds on three prior Commuting in America (CIA) documents that were issued over the past three decades. Unlike the prior reports that were single volumes, this effort consists of a series of briefs, each of which addresses a critical aspect of commuting in America. The briefs, this Executive Summary, and accompanying data tables complete the body of information known as Commuting in America 2013 (CIA 2013). AASHTO makes these items available via its website (traveltrends.transportation.org).

The Commuting in America series of reports describing travelers and their commute to work began in April 1984, using Census data to describe the emerging patterns of commuting. The original intent of CIA, well-stated by Frank François, former executive director of AASHTO, was “to serve as a common resource of factual information upon which policymakers can draw in shaping transportation development actions and policies over the coming years…. It does not purport to reflect the policy positions of any of the sponsoring organizations and should not be interpreted in this manner.” CIA 2013 continues to adhere to this original intent and philosophy.

This report is supported as part of the AASHTO Census Transportation Planning Products (CTPP) program. This multi-year initiative, of which CIA 2013 is part, provides data and analysis on commuting to support the information needs of the state and metropolitan transportation planning and policy community.
CIA 2013 includes several changes in the data sources that support the technical analysis reported in CIA products. The replacement of the decennial Census long-form survey with the American Community Survey (ACS) has resulted in a significant difference in one of the major data sources available to support these documents. The ACS significantly shortens the time lag between data releases compared to long-form census commuting data, and the continuous collection of ACS data enables more frequent updating.

Coupled with changes in delivery format, sponsorship, and principal data sources, this analysis is carried out at a point in time when there is growing evidence of significant changes in travel behavior associated with demographic, economic, technological, and social-cultural changes. These changes are affecting work trip commuting and travel in general, thus increasing the importance and significance of the information in these documents.

The series of briefs summarized in this Executive Summary include the following:

1. Commuting in America 2013 Overview
2. The Role of Commuting in Overall Travel
3. Population and Worker Trends
4. Population and Worker Dynamics
5. The Nature and Pattern of Jobs
6. Job Dynamics
7. Vehicle and Transit Availability
8. Consumer Spending on Transportation
9. How Commuting Influences Travel
10. Commuting Mode Choice
11. Commuting Departure Time and Trip Time
12. Auto Commuting
13. Transit Commuting
14. Bicycling and Walk Commuting
15. Commuting Flow Patterns
16. The Evolving Role of Commuting
**CIA 2013 Project Team**

CIA 2013 was developed by a project team selected in response to a request for proposals issued by AASHTO. This team, led by Dr. Steven Polzin of the Center for Urban Transportation Research at the University of South Florida (USF), includes the principal author of prior Commuting in America reports, Alan Pisarski. In addition, this project is being closely coordinated with NCHRP 8-36, Task 111, “U. S. Commuting and Travel Patterns: Data Development and Analysis,” a project led by Cambridge Systematics (CS), which was responsible for much of the data preparation and structuring for CIA 2013. The CS team is led by Dr. Bruce Spear and Dr. Liang Long, with USF as a subcontractor and Alan Pisarski and Nancy McGuckin serving as consultants.

Numerous other professionals, including AASHTO and NCHRP program staff, have collaborated to enable this work to be created. In addition, AASHTO established an oversight committee to provide review of the deliverables associated with CIA 2013. Directed by Dr. Matthew Hardy of AASHTO, the oversight committee includes Ken Cervenka, Federal Transit Administration (FTA); Susan Gorski, Michigan Department of Transportation; Tim Henkel, Minnesota Department of Transportation; Mark Freedman, consultant; Phil Mescher, Iowa Department of Transportation; Guy Rousseau, Atlanta Regional Commission; Greg Slater, Maryland State Highway Administration; and Mary Lynn Tischer, FHWA Office of Transportation Policy Studies.

**Principal Data Sources for CIA**

To the extent possible, the CIA products rely on nationally-standardized and nationally-collected data. This consistency in data ensures that they can be aggregated to represent national totals and that geographies can be compared consistently. The team used several major data sources as well as supplemental data that more fully explore some aspects of commuting. The two single largest sources of data are materials collected by the Census Bureau through the ACS program and subsequently analyzed through the CTPP and the data collected by the U. S. Department of Transportation (USDOT) through the National Household Travel Survey (NHTS). These national efforts have been under way for a number of decades, enabling both trends over time and peer comparisons across geography to enrich our understanding of commuting. Other data sources that were used include the American Housing Survey of the U.S. Department of Housing and Urban Development (HUD) and the Consumer Expenditure Survey of the Bureau of Labor Statistics, both conducted by the Bureau of the Census; the Transportation Energy Data Book of the Oak Ridge National Laboratory; and the National Transit Database (NTD) from the Federal Transit Administration (FTA).
The Importance of Commuting

Commuting defines an important share of a household’s total trip-making. Work trips are slightly longer in distance than trips for other purposes and occur during congested time periods. Commuters are large contributors to congestion. Schedule-dependent work trips are sensitive to travel delay and poor travel time reliability.

Although commuting is a modest and declining share of trips as Americans have expanded their trip-making, it has influence beyond its share. Work trips comprise a larger share of vehicle miles of travel because of their lower occupancy rates and are an important anchor in travel for other purposes. Work trips are more likely than other local trips to use limited-access facilities.

Commuting significantly influences the temporal and geographic distributions of non-commuting travel, as trips to and from work often define an individual’s or household’s travel schedule. The geography between an individual’s home and work is often the area where workers carry out other activities, as awareness of the opportunities and the convenience of linking trips to work trips influences activity destination choices. Work trips shape peak transportation service and infrastructure capacity needs that define the design capacity requirements of road and transit system investments. Transit, in particular, often is targeted to meeting commuter needs.

Commuting to work also underpins the economic health of households and communities by determining access to workers and customers. The home-based work trip remains the most critical consideration in transportation planning and in transportation and land-use modeling and analysis. The regularity and stability of the work-trip commute results in it being important in influencing both household and business location decisions.

The importance of understanding commuting is heightened in the current era of change. In many respects, the Commuting in America series has served to document the era of the baby boom generation’s working years. As that group moves off stage, new concerns and new realities modify the multi-decade patterns. The keys today are more disparate, with multiple factors at play. Instead of a single dominant pattern, demographic, technological, economic, and cultural changes are interacting to push patterns in diverse directions—sometimes counteracting and sometimes reinforcing each other. At this time, discerning...
the patterns and trends is challenged further by the need to discriminate between behaviors attributable to the recent recession and current recovery and those that are part of structural changes that will endure.

Among the dynamic considerations being monitored are:

- Women's roles in the work force and work travel
- Older workers remaining at work
- Immigrant population work roles
- Shifting skills requirements and mismatches with the work force
- Shifting work environments and schedules
- Dispersion effects of ubiquitous communication capabilities

The need for high-quality data on commuting has never been more critical. Multi-decade trends that have been relatively stable appear to be changing. The historical multi-decade declines in bicycle, pedestrian, and transit travel appear to have ended and are showing evidence of some rebound. Non-work travel appears to have stabilized or declined. Auto availability may have peaked and reversed. Analysts are closely watching the relative pace of suburban growth as home ownership levels appear to have peaked and multi-family housing is showing relative strength. Policymakers are anxious to understand the consequences of emerging trends, such as young people with more modest auto availability and older adults who more often are choosing or being forced for financial reasons to remain in the workforce longer.
The Role of Commuting in Overall Travel

America’s transportation infrastructure and services address the needs of individuals for all their travel purposes and serve the travel needs of commerce and government. Commuter vehicles share the roadways with vehicles carrying persons who are traveling for school, shopping, personal business, recreation, and other purposes, and they also share the road with vehicles transporting freight and providing various services, from goods delivery to emergency response to service workers visiting customers. Visitors and tourists from other communities and countries also share the transportation facilities. Similarly, transit services transport work commuters but also travelers pursuing other activities.

Over the past several decades, the economic growth enabled by a productive working population has contributed to rapid growth in travel for other purposes. Social activities, education, health care, shopping, personal business, vacation, and other activities increasingly are carried out away from home and require travel. Thus, the share of travel for commuting and the nature of that travel have evolved and continue to do so.

Defining Work Travel—What’s In and What’s Out

In Commuting in America, work travel (sometimes referred to in the technical literature as the Journey to Work) consists of the travel from a residence to and from a workplace. In U.S. statistics, it does not include trips to school by students, as is the case in some countries. It also does not include workers going to a business meeting or trips by a worker to provide services to customers or any of the workday travel by those who travel as an essential part of their jobs, such as taxi, bus, or truck drivers. Although those who work at home technically are not making a journey, they constitute a rapidly-growing segment of workers and are included in statistical treatments of work travel for completeness and comprehensiveness.

Work travel used to be a relatively simple activity to describe. The geographic destinations have dispersed, as has the temporal pattern of trip departure times. Work hours typically start later than in the former factory-worker domain, and they are more variable—and, importantly, more flexible. Both the number of hours worked in the week and the work schedules may vary. Other aspects of commuting are changing in ways that affect other types of travel and the transportation system. One of these changes is the tendency for many commuters to make some of their work trips as part of a trip chain—dropping off children, picking up necessities, and conducting household errands on the way to and from work.
Table ES-1. Auto Commuting in Perspective

<table>
<thead>
<tr>
<th></th>
<th>Percent of VMT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household Travel</strong></td>
<td></td>
</tr>
<tr>
<td>Commuting</td>
<td>21.1%&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Work-Related/Business Travel</td>
<td>6.8%&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Other Resident Travel</td>
<td>48.1%&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Public and Commercial Travel</strong></td>
<td></td>
</tr>
<tr>
<td>Public Vehicle Travel</td>
<td>2.0%&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Utility/Service Travel</td>
<td>12.0%&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Freight and Goods Movement Travel</strong></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Sources: NHTS 2009, FHWA State Statistical Abstracts, FHWA

<sup>a</sup> FHWA estimate based on NHTS data.
<sup>b</sup> FHWA estimate using vehicle registration data.
<sup>c</sup> FHWA estimate based on HPMS data and NHTS.
<sup>d</sup> FHWA estimate based on HPMS data.

Tables ES-1 provided a sense of scale by showing the share of work travel of total roadway travel by using vehicle miles of travel (VMT).

The best available data from the National Household Travel Survey (NHTS) are used in conjunction with industry-derived count data to develop the estimates shown in Table ES-1. Based on NHTS estimates, household-based person travel constitutes approximately 76 percent of total roadway vehicle volumes. The remaining approximately 24 percent comprises freight and commercial travel, public vehicle travel, and some person travel, such as tourist and visitor travel, that may not be captured in NHTS. Thus, commuting constitutes 27.8 percent of person vehicle travel, or approximately 21.1 percent of total roadway vehicle travel volumes.<sup>1</sup>

Table ES-2 presents similar information for public transit travel. These data are reported in person miles of travel (PMT) and represent public transportation capacity use by trip purpose.<sup>2</sup> Commuting is a less critical purpose for walk and bike travel, with the percent of walking and bike trips that are to and from work being 4.5 and 10.9 percent, respectively.

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<sup>1</sup> Enumerating trips, miles of travel, and travel time for chained work trips requires assigning work as the principal purpose for these trip chains. Thus, estimates of travel time and distance are based on and include the circuitry associated with accomplishing other activities as part of the work commute.

<sup>2</sup> For purposes of tabulation of work trip mileage and travel time, the time and distance are determined for trips whose “main purpose” was work. For trip purpose, each trip or trip tour segment is counted and attributed to its non-home end or destination activity.
Table ES-2. Transit Commuting in Perspective

<table>
<thead>
<tr>
<th>Household Travel</th>
<th>Percent of Total Annual Transit PMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuting</td>
<td>39.0%</td>
</tr>
<tr>
<td>Work-Related/Business Travel</td>
<td>4.5%</td>
</tr>
<tr>
<td>Other Purpose Household and Tourist/Visitor Travel</td>
<td>56.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Source: NHTS 2009

With respect to public transportation, annual NHTS data indicate that approximately 30 percent of trips on transit and 39 percent of all passenger miles of travel on transit are to and from work. In addition, approximately 3.5 percent of transit trips are work-related business, or 4.5 percent of transit passenger miles.

In terms of trips, based on the NHTS purpose delineation, work constitutes roughly 16 percent of all trips (by any mode of travel) made each day. Because work trip lengths, with an average of more than 13 miles, tend to be longer than the average for all trips, just below 10 miles, the work share of passenger miles of travel is a little greater at 19 percent. In both cases, this excludes the work-connected business trip category provided by the NHTS, consisting of people traveling as part of their daily job for meetings, deliveries, visits to clients, etc. Figure ES-1 provides detail on the purpose distribution for 2009, the most recent year of the NHTS.
Population and Worker Trends

Commuting travel demand is highly influenced by the population and workforce size. In general, demographic change moves at a slow and predictable pace. Starting in about 1950, the nation added roughly 25 million persons per decade. The 1990s exhibited an unexpected surge in population beyond Census Bureau projections, caused by a boom in the number of immigrants and high immigrant fertility. The 2000s saw a sharp reversal in those same patterns, with a population increase similar to that of the 1950–1960 decade. More recently, changes in both immigration and fertility rates have led demographers to moderate future forecasts to below the approximate 1 percent per year, or 30 million new residents per decade growth, seen in the recent past.

Equally relevant to understanding workforce size is the expected arrival of the first large wave of retirees. In 2010, the first of the baby boomers reached age 65. However, this expectation has moderated; difficult economic times and changes in lifestyle appear to be producing a greater tendency for workers to remain in the workforce after reaching age 65. In addition, rapid growth in disability rates and evidence that chronic long-term unemployment may be removing some adults from the workforce are adding more uncertainty.
Consequently, separating the cyclical from the structural trends in workforce size is among the great challenges in understanding future workforce trends. The relatively stable past may not be as effective a guide to the future as it has been.

Tracing the long-term trend of the potential workforce (ages 16–64) and the actual workforce yields important observations for understanding commuting trends. Figure ES-2 documents that we have come through an extraordinary period in our history, with an explosion in workers for which the economy was able to generate jobs.

![Figure ES-2. Worker Increase Trends by Decade](image)

Source: U.S. Census Bureau

From 1950–1980, the working-age population grew rapidly. At the same time, the actual civilian labor force grew even faster, as baby boomers joined the labor force and, at least as significantly, women joined the labor force in extraordinary numbers. By 1990, that surge had declined—first with the working-age group reaching levels of increase no greater than the general population, and then with the actual labor force group declining in growth to levels lower than population growth. It is clear, at least in this period, that the exceptional surge of women into the labor force, which solely accounted for the different growth rates in the civilian labor force from that of the general population, had reached a stable level, no longer particularly different from the general population’s growth, but still greater than male population growth rates.

Figure ES-3 lays out the basics of the household and worker story. America’s 138 million workers in 2011 are dispersed among 72 percent of the country’s 115 million households; 28 percent of households have no workers. These no-worker households’ residential locations and travel decisions are not necessarily influenced by access to work or commuting.
patterns. Roughly 45 million households (39 percent) have only one worker, of which about 16 million are single-person households and another 30 million are households of greater size. As a result, approximately 93 million—just above two-thirds of all workers—live in households with other workers. This affects their schedules, car ownership, propensity to carpool, and household location decisions.

Figure ES-3. Worker Distribution by Household
Source: ACS 2011

The trends in population and employment in a given location may not mirror national trends. The population and workforce are dynamic. Of the 308 million persons in households in 2011, 47 million moved, with more than 28 million moving within the same county, 12 million moving to another county, and approximately 7 million leaving their home state.

Figure ES-4 presents the long-term trend in the national population distribution between rural and metropolitan populations, with the metro populations separated between central city (the largest incorporated city based on population within the metro area) and suburban groupings. The remaining cities in a metropolitan area, designated as Other Principal Cities, are included as part of the suburban component.
Growth dynamics are apparent at the county level as well; 34 percent of counties (1,095) lost population between 2000 and 2010. Only 14 percent of those counties were in metro areas in 2010, but those counties accounted for nearly two-thirds of the total losses. More than 2,000 counties gained population. More than 1,056 non-metro counties gained 2.2 million in population, and the 992 metro counties gained 27.3 million. Thus, less than one-third of U.S. counties accounted for 93 percent of the national population growth between 2000 and 2010.

Figure ES-5 presents the change in daytime population due to commuting for 2010. This change represents the net effect on each county’s population associated with workers being assigned to their county of employment for enumeration. Expressed as a percent, positive numbers indicate a net inflow of workers to the county.

Different transportation challenges are obvious when noting that 1,095 counties lost population between 2000 and 2010, and 992 metropolitan area counties account for 93% of national population growth.
As indicated by the blue- and green-shaded counties, the vast majority of counties have lower daytime population as their workers commute to generally urban jobs in adjacent counties. Yellow, orange, and red-shaded counties are net importers of workers.

Changes in employment tenure, residential location tenure, employment opportunity availability, and multi-worker household status all influence commute patterns. Yet, the large fixed-asset base of housing and workplace locations mitigate against rapid change in commuting patterns. The commute trip travel time and pattern of commute traveling have remained remarkably stable. However, employment conditions and, consequently, the nature of commuting continue to be in a dynamic period. Over time, these changes may continue to alter work-trip commuting trends.
The following sections describe more specifically the trends in travel behavior for commuting.

**Means of Commuting**

A key factor in understanding how commuters select the mode of transportation they use to get to work is their access and ability to use the various modes of travel. In particular, auto and transit availability and cost are important factors in commute trip mode choice.

The data in Figure ES-6 indicate that among the working-age population in America, having a driver’s license is nearly ubiquitous. The highest licensure levels tend to occur between ages 30 and 60, with steep declines after approximately age 75. The lower level of female licensure in older age cohorts is partially attributable to the lower licensure attainment levels of females in prior generations rather than different levels of license relinquishing.

When stratified by race and ethnicity, a clearer picture emerges. Lower licensure levels among minorities over the age of approximately 60 bring down the overall licensure levels for older-age cohorts. Hispanics, in particular, show low licensure levels for persons over age 55. In addition, gender disparity is far lower among the White Non-Hispanic segments. For the White Non-Hispanic population, there is a 3 percentage point disparity between men and women; that difference rises to 6 percentage points among African-Americans, 8 points among Asians, and 20 points among Hispanics. These differences often reflect the cultural traditions of the various demographic segments.
In addition to having a license, having access to a vehicle critically influences the choice of auto commuting. Figure ES-7 shows the long-term trend in zero-vehicle households by racial/ethnic group, which raises the question of how many years in the future might all these measures converge on a common value.

![Figure ES-7](image)

**Figure ES-7.** Long-Term Trend in Households with Zero Vehicles by Racial/Ethnic Group

*Source: Decennial Census, ACS 2010*

It is important to understand vehicle availability in households with workers. While 9 percent of all households have no vehicles, only 4 percent of households with workers have no vehicles, indicating that many of the households without vehicles are older single-person households usually out of the labor force.

A critical consideration in the use of transit for commuting is the presence of transit service connecting a traveler’s place of residence and workplace. The availability of transit for a work trip is dependent upon the network and schedule of services and is beyond the immediate control of travelers, absent their willingness to change residence and/or work locations to ensure that they live and work on a transit line. Discussions regarding the extent of the use of public transportation need to be informed by an understanding of the availability of transit to carry out trips. As is the case with other non-personal vehicle modes, measures of availability are not readily available for public transportation at an aggregate national level. However, some information can shed light on and provide perspective regarding availability of public transportation.

Various communities do have measures of the share of work trip commutes for which public transportation is available. Other studies—for example, a 2012 Brookings
Institute analysis of accessibility of public transportation\(^3\)—explored various measures of employment accessibility for large metro areas in the U.S. The findings from 371 transit providers in the nation’s 100 largest metropolitan areas reveal that more than three-quarters of all jobs in the 100 largest metropolitan areas are in neighborhoods with transit service, and the typical job is accessible to only about 27 percent of its metropolitan workforce by transit in 90 minutes or less.

Other analysis carried out at the Center for Urban Transportation Research also focused on walk access. This work used 2001 NHTS data and a national geocoded transit route network structure representing conditions in the mid-1990s. The results provided a comprehensive national measure of transit availability and indicated that approximately 50 percent of U.S. households were within approximately 0.7 miles of a transit route. Approximately 50 percent of employee places of work were within 0.2 miles of a transit route. As workplaces typically are denser and a target market for transit, they are more accessible to transit. That same research reported that only 30 percent of commuters outside of the New York metropolitan area had both their work and home locations within 0.45 miles of a bus route.\(^4\)

The cost of transportation is an additional factor influencing mode choice as well as the extent of travel. Figure ES-8 shows the comparison in transportation spending as a percent of all household spending by urban area size. As shown, transportation spending in dollar terms is relatively constant across metro area sizes but decreases modestly as a share of all household spending.

\[\text{Figure ES-8. Annual Average Transportation Spending per Household by Metro Area Size} \]

\[\text{Source: Consumer Expenditure Survey, 2011}\]


Housing and associated costs are so great—exceeding one-third of all spending—that they dwarf other spending. If transportation and housing are viewed as a total share of spending, the sum of housing and transportation spending varies slightly across metro area types, with suburban totals being slightly less than central cities. The national average for the total has hovered around 50 percent for many years. Both housing and transportation costs rise with the size of the metro area. For metro areas of 5 million or more, housing costs constitute almost 40 percent of spending; despite transportation spending decreasing to about 14 percent, the sum still yields the highest total housing and transportation share, about 54 percent.

No aspect of commuting has more public policy interest than does the means of travel or mode chosen by workers to get to their work locations. The desire to understand which modes are used and in what ways they are used as part of the need to supply public infrastructure and services remains important, but today, there are also concerns about energy use, emissions, and safety of each mode and other direct and indirect economic, social, and environmental factors that are of public policy concern. Transportation analysts know that mode use varies as a function of the socio-demographic characteristics of commuters, the geographic distribution of residence and work places, and the quality and availability of various modal options.

Over the last 50 years, American commuting patterns have followed the seemingly straightforward trends shown in Figure ES-9. Almost all of the growth in travel to work has been met by auto use, either by those driving alone or in carpool. The recent slowing in the growth of private vehicle use is due predominantly to the decline in the growth of the total number of commuters. There are many other factors at play here; the details of individual modes, the geographic patterns and trends, the influence of an aging population, the influx of immigrants, and the changing character of the overall economy all have some effect. In addition, the supply of facilities and services, market costs, and changes in societal interests and concerns are interwoven in the patterns and trends as well.

The slowing growth of auto commuting is predominantly a result of slowing growth in total commuting but also reflects growth in work at home and in public transit commuting.

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5 The mode categories employed here primarily are those used by the Bureau of the Census in its American Community Survey (ACS) based on modes “usually used” last week.
Figure ES-9. Long-Term Commuter Mode Trend

Source: Census, ACS 2010

When the trend line for Private Vehicle is disaggregated into its two components—Single Occupant Vehicle (SOV) (a person driving alone) and Carpool (groups of two or more workers sharing a vehicle)—the pattern is more clear, as shown in Figure ES-10. Drive Alone continues to grow in share of total commuting, while the share of Carpool has declined continuously since measurements began. As a result, the numbers of car users has grown over the period, but the number of cars they use has grown even faster, with 86.3 percent of all workers in private vehicles. Vehicle occupancy for commuting has declined.

Drive Alone continues to grow in share of total commuting, while the share of Carpool has declined continuously since 1980.
Trends in the modes of travel other than private vehicle travel are shown in greater detail in Figure ES-11. These other modes are separated from private vehicles so that the detailed patterns are not masked by the magnitude of the differences between them. Three trends are worth noting:

- The multi-decade decline in transit use has reversed, with a modest rebound since 2000.
- There is a continuing but slowing decline in walking to work.
- There is a trend of increases in working at home that accelerated in the last decade.

Figure ES-11. Detailed Mode Use Share Trend (Private Vehicles Excluded)
Source: Census, ACS 2010
It may be most helpful to consider commuting shares as having three categories. The dramatically dominant share is Private Vehicle commuting. A second category consists of Transit, Work at Home⁶, and Walk—which have similar share values—and a third category consists of Bicycle, Motorcycle, Taxi, and Other modes, each of which is used by fewer than 1 percent of workers.

A clearer way to see what has happened in the last decade is the identification of the net changes in the modes, as shown in Figure ES-12. It can be seen that only 8.7 million workers were added from 2000–2010, according to the ACS. SOV gained 7.8 million, whereas Carpool lost significant users and Transit improved. Work at Home gained appreciably in the decade, almost double Transit. Whereas the SOV increase from 2000 to 2010 accounts for 90 percent of the growth in workers, this share is actually a decline from prior decades in which SOV growth was sufficient to capture all new workers and absorb workers who were abandoning other modes.

Figure ES-12. Net Change in Workers, 2000–2010
Source: Census, ACS 2010

The data indicate a trend reversal in both levels of transit commuting and transit commuting mode share. Based on decennial data, absolute transit commuting hit a low in 2000, as did transit mode share. Between 2000 and 2010, transit commuters increased by 900,000, more than 15 percent. However, the constraint of decennial data potentially distorts the actual inflection point in transit commuting trends. To provide additional insight on these

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⁶ Work at Home is not actually a mode of travel; rather, it is the absence of travel. However, it often is shown in analyses for completeness so that all workers are represented. In comparing commuting data, readers should use caution as to whether or not Work at Home is included in the commuting population (denominator) when shares are calculated.
trends, both household travel survey data and individual year ACS data were reviewed and are displayed in Figure ES-13.

**Figure ES-13.** Long-Term Trend in Transit Mode Share

*Note:* Data from NHTS 2009 are plotted for 2008 since the majority of data collection occurred in 2008.

*Source:* U.S. Census, ACS, NHTS series

Changes in the country’s socio-demographic make-up contributed to changes in mode use. Matters of race and ethnicity in transportation often are found to be co-mingled with matters of income, occupation, geographic residence, stage in the life cycle, and other socio-economic factors.

As indicated in Table ES-3, the Hispanic and Black populations have about the same orientation to the private vehicle (about 84%) but with a sharply different use of Driving Alone and Carpooling. Transit share is greatest among the Black population, and the Hispanic group leads in biking. The Asian population, which has characteristics more similar to the Hispanic group in regard to private vehicles, has Transit share characteristics closer to the Black population. Asians lead substantially in Walk among all groups and are second in Work at Home.
In terms of trends, Hispanic travel patterns have changed from 2000; the most significant change has been in Drive Alone, which rose from 60.6 percent to 67.8 percent, with Carpool dropping substantially, from 22.7 percent registered in 2000 to below 16.0 percent in 2010. Transit usage declined slightly in share, from 8.6 percent to 7.8 percent. Walk and Bicycle also declined slightly. Consistent with the pattern of moving toward White Non-Hispanic patterns, Work at Home also rose.

Patterns for the Black population showed similar changes, with sharp increases in Driving Alone, from 67 percent in 2000 to above 72 percent in 2010. As expected, Carpool showed sharp declines, from 16 percent to less than 10 percent of Black commuters. Transit showed a small decrease in share of about 1 percentage point. Most notable was that Work at Home had a significant rise, from 1 percent to between 2 and 3 percent.

Patterns for the Asian group showed little change from 2000 to 2010, with the exception of sharp declines in Carpool, as with other groups. It is worth noting that Carpooling declined in all racial and ethnic groups. Again, convergence toward an all races and ethnicities norm might be worth speculating on.

At one time, income was a crucial determinant of mode usage; it is less so today. Although there is still sharp variation in some modes at some levels of income, the overall pattern is more homogeneous than in the past. At the lowest income level, 65 percent of workers Drive Alone to work, rising with household income and peaking at roughly 80 percent at incomes between $60,000 and $120,000, and then dropping off at the highest income levels, where Work at Home, Taxi, and Rail become significant. Carpool accounts

<table>
<thead>
<tr>
<th>Table ES-3. Mode Shares by Race and Ethnicity</th>
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<tbody>
<tr>
<td>White (Non-Hispanic)</td>
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<tr>
<td>Drive Alone</td>
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<tr>
<td>Carpool</td>
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<tr>
<td>Public Transportation</td>
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<tr>
<td>Bicycle</td>
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<tr>
<td>Walk</td>
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<tr>
<td>Work at Home</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>Total Workers</strong></td>
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Source: ACS 2010
for above 10 percent of commutes among the lower income categories, dropping below that share at the $60,000 level. Below a household income of $15,000, Transit is in the range of 8 percent, dropping below 6 percent at $25,000, and rising above 6 percent again at the highest income levels.

Vehicle availability is a critical factor in the choice of personal vehicle commuting. Historically, income and vehicle availability were highly correlated; however, the more universal level of vehicle ownership in recent decades has resulted in vehicle availability being relatively high throughout the income spectrum. More recently, a growing segment of carless-by-choice households has altered this historical relationship. Only 4 percent of workers live in a household without vehicles; another 22 percent live in a household with one car. Nearly three-quarters of all workers live in multi-vehicle households.

Part of the historical growth in driving resulted from shifts from other modes to driving. Use of these modes has now stabilized and/or shown some recovery and the magnitude of their use is now sufficiently modest to preclude them being a significant source of potential new drivers. Rebounds in shares for these modes could undermine growth of auto commuting due to growth in the size of the workforce. While changes in mode shares are important indicators of future market needs and preferences, understanding the total demand for commuter travel for the various modes is more significant as the overall commuter workforce grows at what is forecast to be a much more moderate rate going forward.

While the collective body of evidence suggests that there are some meaningful changes in commuter mode choice trends, it is important to recognize that these changes are relatively moderate. Economic, demographic, technological, and generational changes in values are all intertwined as potential causal factors in influencing commuting mode choice decisions. Each of these changes contributes to the resultant travel behaviors. As one might expect, existing transportation infrastructure and service investments, current land use patterns, and core values of the population with respect to such things as value of time, convenience, safety, environmental sensitivity, flexibility, etc., are likely to mitigate against all but modest changes in overall mode choice shares over the short term. However, the half-century trend of rapid growth in auto commuting appears to be behind us.

At the lowest income level, 65% of workers drive alone to work, rising with income and peaking at roughly 80% at incomes above $60,000, and then dropping off at the highest income levels, where working at home, taxis, and commuter rail become significant.
Commuting Departure Time, Trip Time, and Flow Pattern

One of the important characteristics of commuting is that it is a relatively high-frequency trip taken by travelers at similar times. Historically, commuting has defined peak travel periods, which traditionally take place during weekday mornings and evenings. These peak periods for travel define the transportation infrastructure and service needs for roads and transit systems. Understanding these peak periods and the distribution of commuting over time is important to transportation planning and forecasting.

The time spent traveling to work is another important measure of commuting. The commute trip length in time is impacted by the trip length in distance and the trip speed. Thus, this measure reflects workers’ decisions related to residential and workplace location, as well as their travel mode choice and the congestion levels they encounter in their travels. With work being such an important trip, commute travel time becomes a significant indicator of the public’s value of time for commuting to work. The following discussion provides quantitative data regarding work-trip departure times and trip travel times.

Figure ES-14 shows the travel departure time distribution based on data collected in the 2011 ACS. Recognizing that the mean trip length is approximately 25 minutes, the peak roadway volumes of commuters will occur approximately one half hour later than the distribution shown.

![Figure ES-14. Distribution of Workers by Trip Departure Times](image)

Source: ACS 2011

Males dominate in the early hour commutes—27 percent of men leave before 6:30 a.m. vs. 15 percent for women, with a crossover point reached between 7:00 and 7:30 a.m., after which females are in the majority until the evening hours. Differences may be the result
of different trip lengths, involvement in different industry classes (that have different start times), different trip timing related to parenting responsibilities (getting children off to school), and/or differences in travel location relative to congestion levels.

The private vehicle is dominant in the early morning hours and tapers off in the later parts of the early morning commuting period, starting around 8:00 a.m. This is the period that shows a sharp drop-off in commuters starting their travel by roughly half from 7:00–8:00 a.m., and then volumes drop even more sharply to one-third or one-quarter of that before noon.

A frequently-used barometer of commuting is the amount of time people report spending for traveling to work. The average travel time to work for those who commute to an employment location was 25.5 minutes in 2011, exactly what it was in 2000. After years of increases in travel times, averaging 1–2 minutes of increase per decade, as seen in Figure ES-15, the first years of the new century have seen stability. Average travel times did not change at all from 2000 to 2011, with annual variations in the period bounded by a half-minute range from 25 to 25.5 minutes. This plateauing of commute travel time is generally attributed to moderating congestion levels associated with softening overall travel demand and, specifically, slowing growth in workforce size. Other considerations such as workplace and household location decisions also factor into the resultant commute travel time.

![Figure ES-15. Travel Time Trends](image)

Source: U.S. Census, ACS

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7 There was conjecture in 2000 about the accuracy of the 1990 travel time value because of data entry procedures cutting off the highest reported travel times at 99 minutes. For a fuller discussion, see *Commuting in America III*, page 101. This report adopts the higher estimated figure.
Overall, 28 states are within 10 percent of the national average—22.8 to 27.8 minutes—indicating the high degree of homogeneity in the national system. Twenty-six states (and Washington, D.C.) saw reductions in their travel times from 2000 to 2010, and 24 realized increases. Most of the shifts were minor.

Today, about 44 percent of the workers makes it to work in less than 20 minutes, compared to 47 percent in 2000. On a regional basis, the Midwest is at 48 percent in the under-20-minutes category, and the Northeast is at the other end of the spectrum, at 39 percent; both the South and West are close to the national average, at 43 and 44 percent, respectively.

On the other end of the spectrum is the 60-minutes-or-longer commute time. While still relatively rare, only 8.1 percent of commuters take 60 minutes or longer to reach their workplace; commutes of more than 60 minutes constitute 25.5 percent of all commuting time. Six states are at or over 10 percent, and two are very close, and all are high-population-density states. In 2000, the Census Bureau began the use of the notion of “extreme commutes,” referring to those with over-90-minute commutes. In 2010, that group was at 2.4 percent. One of the attributes of the period is the stabilization of very long trips. Both 2000 and 2011 showed 8 percent at over 60 minutes, and the share over 90 minutes actually declined from the 2000 value of 2.8 percent. Much of this stability appears to be attributable to the set of demographic and economic conditions that resulted in declines in overall roadway travel, hence lessening congestion.

Some might be surprised that high-income people who presumably have the option to live closer to work are in the high-travel-time group. A number of factors are at play here, not the least of which is that high-income workers are freer to choose where they would like to live and may opt to live in areas that are attractive to them for a number of reasons, not
just that they are close to work. Other practical factors also apply. Higher-income jobs often will tend to be highly specialized and thus more scarce and selective, so one might expect to have to travel a longer distance to find a suitable employment opportunity for a high income. Similarly, higher-income individuals have the opportunity to afford housing in select locations. Moreover, when there are multiple workers in the household, it is unlikely that each can optimize his/her work trip. Thus, in general, one would expect longer-distance commutes for higher-income workers. Numerous other factors, however, such as housing availability/affordability, also influence commute patterns and trip length and can confound clear relationships between trip length and income.

The White Non-Hispanic work force has the highest percentage of workers that commute under 20 minutes (45%) and the lowest percentage commuting over 60 minutes (7.4%). By comparison, Hispanics are at 40.5 and 9.2 percent, respectively. What is notable is that African-American Non-Hispanics and Asian Non-Hispanics have very low percentages in the under-20-minute category and very high percentages in the over-60-minutes category; they are very similar to each other despite the fact that their income and job characteristics are sharply different. Part of this may be due to both groups having higher-than-average transit use tendencies.

A rather self-evident but still important distinction in travel time is the difference among modes of travel. The substantial distinctions in the distribution are most apparent among transit modes. Transit’s share of the market is greatest in the 90–120-minute time market segment, in which transit modes comprise more than 35 percent of commutes. Bike, walk, and taxi exhibit very strong elements in the shorter travel time groupings, as might be expected. The overall private vehicle category, because of its dominant scale, largely defines—and thus mirrors—the overall total travel time distribution.

Commute times are distinctly different across modes. Average times increase with vehicle occupancy for carpools and are noticeably higher for transit.
Commuting travel time is the most-referenced attribute of commuting that affects public and policymaker’s perceptions of the state of commuting in America. Travel time “cost” has been central to our understanding and modeling of travel behavior and is the most common metric for describing the health of the transportation system. Multi-decade data indicate that commuting times, on average, change relatively slowly as individuals have a variety of strategies to adapt to increasing travel. Changes in workforce size, combined with commuter decisions on workplace location, residential location, mode preference, and departure time, are among the factors that influence commute times. In addition to the demand for commuting, the supply of transportation capacity and its performance (speed) lead to the resulting average commute time.

A fundamental element of commuting flows is simply the typical distance of work trips. Data are limited in this area, available only intermittently via the NHTS. Figure ES-16 presents the average one-way trip lengths for the periods in which NHTS data are available. By and large, the pattern for work trips, and for trips of all purposes, has been slowly increasing in length over time, with a small dip in 2009, presumed to be attributable to the slow economy, but which is not statistically significant at the 95% confidence level. The next NHTS, scheduled for 2015–2016, may help resolve whether this is a pattern change or a cyclical phenomenon.
**Figure ES-16.** Trip Length Trends  
*Source: NHTS*

Figure ES-17 presents the trip length distribution for commute trips based on 2009 NHTS. These data indicate that more than 12 percent of trips are less than 1 mile, 60 percent are 10 miles or less, and more than 80 percent are less than 20 miles.

**Figure ES-17.** Work Trip Length Distribution  
*Source: 2009 NHTS*
Figure ES-18 shows work trip flow patterns across residential location categories. This graphic portrays the volumes of commuting flows between various geographic area classifications. Several observations are relevant:

- Within-suburb or suburb-to-suburb commute trips remain the largest category, capturing 42.4 million commuters or more than 30 percent of commute trips.
- The second largest share of commuting occurs within or between principal cities, at nearly 25 percent.
- Third in significance is suburb-to-city commuting, at more than 16 percent of commuting.
- Fourth in significance is non-metro-to-non-metro commuting, at more than 12 percent.
- Next is principal-city-to-suburb commuting, at more than 6 percent.
- Remaining flows to and from other metros and non-metro areas are modest, the largest being suburb-to-suburb in other metro, at 2 percent.
- There are roughly 2.5 million more jobs than workers in metropolitan areas, meaning there is a net flow into metro areas each day of non-metro workers.
- There is a net deficit of jobs in suburbs of 14 million (about 20 percent of workers), but actual departures are closer to 30 million (42%), thus generating substantial outbound and necessitating substantial inbound flows of workers. Even though cities typically have more jobs than workers, there are still substantial outbound flows each day.
The orientation of commuting patterns is a critical transportation information need as local areas plan specific transportation investments and services to meet the critical needs of commuters. At the national level, the interest in aggregate patterns of flow over the past several decades has been focused on understanding general patterns of commuting. The data reveal that as employment has dispersed and monocentric urban areas have tended to add additional concentrations of employment, commuting flow patterns have become much more diverse and diffused. Recent data also confirm the ongoing dispersion of employment and, with that, the more complex pattern of commute flows.

As metropolitan areas have continued to grow, jurisdictional boundaries become less meaningful as mechanisms to understand commuting flow patterns. Metropolitan areas often encompass several counties with cross-county trips no longer being indicative of lengthy metropolitan-destined commuting flows. In addition, new classification nomenclatures further complicate aggregate measures of commuting flow.

Metropolitan areas remain the dominant destination for commuting flows and, as home to the majority of the labor force, are the origin for most commute trips.
Summary Observations

In spite of some rather significant changes in demographics, the economy, technology, and the culture and values of residents, commuting behaviors have changed modestly. The fact that commuting behaviors are affected by a large number of factors in competing and complementary ways that are not fully understood results in actual changes in travel behavior with respect to commuting that are quite modest. It may be the hallmark of this period that, instead of a few dominant trends that define the future of commuting, the coming decade will be influenced by myriad, sometimes conflicting pressures, making for varying and counteracting changes. The extent of fixed infrastructure in housing, employment, and transportation mitigates against dramatic changes in commuting behavior. There is a great tendency for people to assume the present trends will persist into the future despite forces of change. In addition, fundamental elements of human behavior—for example, how people value travel time, residential preferences, and employment aspirations and opportunities—remain relatively consistent over time, particularly at the national level.

In several ways, the past decade has seen the most dramatic changes in historical trends influencing travel that have been witnessed in a couple of generations. The demographic changes are quite pronounced:

- Boomers are at or nearing the end of their working lives.
- A multi-decade diverse flow of immigrants is a well-established component of the U.S. workforce.
- The population is more urban (suburban) and less rural, and more in large metros than small.
• The population has shifted to the West and South.
• There is a growing disconnect between historically-important physical attributes of a place (access to minerals, agricultural land, natural resources, waterways, etc.) and the location of employment and population, as knowledge and service industries comprise a larger share of the economy and have greater location discretion.

America may be seeing the most dramatic demographic changes in a century. In addition to these demographic trends, the economy has changed, with impacts on commuting. These include a stressed economy with slow employment growth, concerns about limited upward mobility, prospects for low-skilled workers being replaced by technology, growing personal and government debt levels, and increased polarization in income, particularly at the household level. This is coupled with a growing recognition that mobility is critical to enabling economic opportunity and capturing the benefits of economies of scale and agglomeration.

Commuting in the last half of the 20th century was dominated by three key trends:

• The distinct demographic phenomenon of the large baby-boom generation coupled with culture and value changes, leading to extensive female labor force participation
• Economic and technology trends that enabled widespread auto ownership and the growth in single-occupant vehicle commuting
• The suburbanization boom, enabled by the factors noted above
These distinct and significant trends have given way to an era that is best characterized by a multitude of factors that influence commuting, but with more variability across contexts and greater uncertainty as to the magnitude and duration of consequences and their influence on commuting. There are several issues whose uncertainty has been acknowledged in both professional and popular media.

Uncertainty at all levels of government regarding transportation funding will impact the availability and performance of travel options. The availability and competitiveness of public transit, the performance of the roadway system, and the viability of other options remain uncertain, with no clear picture of future investment.

Development trends and potential changes in preferences—for example, millennial and retiring baby boomer settlement preferences—could alter geographic settlement and travel patterns. Growing domestic energy production, the prospect of strengthening manufacturing competitiveness, and the dynamic growth and locational flexibility of knowledge-based industries can influence development patterns. Even climate, man-made or other natural events, can influence development patterns.

Uncertainty about labor force participation, immigration, and migration will impact national and local workforce growth. The growth rate of the new economy and the distribution of income will impact overall demand for travel, including commuting. Economic conditions also influence location decisions and the mode choice for commuting.

Similarly, technology is changing at a record pace. In a multitude of ways, this is directly impacting transportation, from significant changes in environmental impacts, safety, and energy consumption of transportation to the growing substitution of communications for transportation and the prospect that technology will enable autonomous vehicle operation, fundamentally changing the cost, performance, and impact profile of transportation modes. Technology advances can influence the relative appeal of various modes for commuting and all travel by increasing the knowledge of alternative choices, changing the convenience and cost of travel for various modes, mitigating the onerousness of the value of time spent traveling, and reducing the angst and uncertainty of travel schedule determination and direction finding. New materials and technology can improve the accessibility of various modes for able-bodied and disadvantaged travelers, change the aesthetics of various modes, and impact how they can be integrated into communities. New

It may be the hallmark of this period that instead of a few dominant factors that define the future of commuting, the coming decade will be influenced by myriad, sometimes conflicting, pressures, making for varying and countervailing changes.
propulsion technologies, new fuels, and new materials can alter the relative environmental and energy impact of the modes, perhaps altering their relative attractiveness and cost.

Simultaneously, there is some evidence that fundamental values of the public might be changing in ways that can affect travel. For example, sensitivity to environmental impacts, safety, physical activity, and aesthetics may have different importance than in the past. Perhaps even more important, changes in values that influence household composition and residential location preferences as well as time-use preferences can influence travel, including commuting.

One consequence of these composite changes—in spite of the fact that the aggregate change in commuting remains quite modest to date—is that there can be much greater variation in commuting behaviors across places. National measures of commuting remain relevant to understanding travel and policy formation, but an appreciation for the variation in travel and, hence, the variation in transportation needs across places is critically important as we move into the future. We may be at a point where the variation in conditions and transportation needs and preferences across places will require different transportation strategies and investments. This might suggest more flexibility in both planning and investment strategies to best meet local transportation needs. Differences in rates of growth, fundamental geographic conditions and development patterns, socio-demographic and cultural conditions, and existing transportation infrastructure networks might merit different planning processes and investment strategies across states or metropolitan areas. The portfolio of infrastructure investments and services might vary substantially across areas based on market conditions and policy preferences and priorities.

The State of Transportation Data and Knowledge
CIA 2013 has been dependent on numerous sources of data, as referenced in Brief 1. Of particular note is that this was the first analysis of commuting in America to take advantage of the annual American Community Survey (ACS) data resource. In general, numerous data sources have been integrated in an effort to discern a comprehensive picture of
For more detail see Brief 16

Commuting in America 2013: The National Report on Commuting Patterns and Trends

These data are adequate to provide a rich description of national commuting trends and are sufficient to shed insight on variations across states and metropolitan areas. However, the nature of the data and sample sizes often are not sufficient to enable a comprehensive analysis of variations in travel behavior at smaller geographic scales. Similarly, these data sets are insufficient to account fully for the level of service/availability of travel options and the influence of the built environment or natural environment on travel behavior. The substantial changes in geographic population distributions and jurisdictional/locational classification of population often challenge the structures and definitions employed to describe metropolitan phenomena. This seriously challenges the ability to convey properly what geographic changes are occurring and to interpret their significance.

This analysis also reaffirms the weaknesses of the transportation planning professions’ understanding of travel behavior. The theory and knowledge of travel behavior is not sufficiently well-developed to confidently predict how travel behaviors might respond to the myriad potential scenarios of future conditions. In particular, changes in values, the introduction of new technologies, changing economic conditions, and other factors result in significant uncertainty in future travel behavior. While uncertainty about the future is not unique to transportation, its significance could be more important in the future. The magnitudes of change and variation in behaviors across places appear to be growing, while the ability to respond appears to be economically constrained. Furthermore, uncertainty about the future introduces risks when the lead time for transportation project implementation has become very long and many investments depend upon a half century or more of utilization to amortize often massive investments. Collectively, these conditions favor strategies and investments that offer quicker responses to evident needs, incremental deployment of investment subject to feedback on market response, and flexibility to accommodate evolving technologies and market conditions.

Hopefully, the changing demographics, economic conditions, and technologies and the values and culture that are making predicting the future uncertain will also produce unanticipated strategies and technologies to address the inevitable transportation challenges.
Commuting in America 2013 Briefs Series

The CIA 2013 series will include the briefs listed below as well as a CIA 2013 Executive Summary and supporting data files, all available at the CIA 2013 website traveltrends.transportation.org. The website also includes a glossary of terms, documentation of data sources, and additional resources. The series of briefs included in CIA 2013 are:

1. **Overview**—establishes institutional context, objectives, importance, data sources, and products to be produced.

2. **The Role of Commuting in Overall Travel**—presents national trend data on the relative role of commuting in overall person travel; explores commuting as a share of trips, miles of travel, and travel time at the national level.

3. **Population and Worker Trends**—provides very basic and key national demographic data.

4. **Population and Worker Dynamics**—focuses on the dynamics of the population and workforce, including data on migration, immigration, and differential rates of growth.

5. **The Nature and Pattern of Jobs**—defines employment and describes it in terms of its temporal, geographic, and other features.

6. **Job Dynamics**—looks at trends as they relate to jobs, including work at home, full-time versus part-time, job mobility, and changes in the nature and distribution of job types.

7. **Vehicle and Transit Availability**—reports on vehicle ownership and licensure levels and the availability of transit services. It also references factors influencing the availability of bike, walk, and carpool commute options.

8. **Consumer Spending on Transportation**—reports on various trends related to household spending on transportation.

9. **How Commuting Influences Travel**—explores how commuting travel influences overall travel trends temporally and geographically.

10. **Commuting Mode Choice**—provides a summary of mode choice for commuting (including work at home).

11. **Commuting Departure Time and Trip Time**—reports descriptive information on travel time and time left home, including national and selected additional data for metro area sizes.

12. **Auto Commuting**—addresses trends in privately-owned vehicle (POV) and shared-ride commuting.

13. **Transit Commuting**—addresses transit commuting.

14. **Bicycling and Walking Commuting**—addresses bicycling and walking as commuting modes.

15. **Commuting Flow Patterns**—addresses commuting flow patterns for metro area geographic classifications.

16. **The Evolving Role of Commuting**—synthesizes and interprets materials developed in the prior briefs to paint a picture of the current role of commuting in overall travel and evolving trends to watch going forward.

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ES. CIA 2013 Executive Summary