

## **COMMUTING FACTS**

### **Facts from Alan Pisarski's *Commuting in America III* study.**

**The study provides a comprehensive examination of recent commuting patterns based on U.S. Census data from 1990 - 2004. The study was published by the Transportation Research Board on Oct. 16, 2006.**

### **GENERAL FACTS FROM THE STUDY** **UNDERSTANDING COMMUTING PATTERNS AND TRENDS**

- Although commuting often dominates public discussion about transportation, it is crucial to recognize that it is just part of the demands that we make on our transportation systems.
- Work travel now only constitutes about 16% of travel but that is attributable to the dramatic growth in other activities rather than diminished work travel.
- Commuting is the major factor in determining peak travel demand and therefore serves to define the high cost peak capacity and service requirements of our transportation systems far more than other travel purposes.
- Workers are the major part of the population and their travel activities constitute the major part of all travel. Much of that travel is wrapped around, intertwined with, or otherwise affected by their work travel activities, whether the location, route, time, or mode of travel.
- Trips to work with stops are increasing, both in numbers making stops and number of stops per worker. This “trip chain” increases the efficiency of overall travel but has the effect of increasing the number of non-work related trips occurring in the peak period.

### **CHAPTER 3** **POPULATION AND WORKER GROWTH**

- An immigration surprise added about 6 million to the expected population in the 2000 census, a rise of about 31 million over 1990 to reach 281 million.
- Immigration matters to commuting. Had population grown because of newborns it would not matter for 20 years or so; or if by increased longevity of older Americans it would have virtually no effect; but immigrants are almost instant additions to the workforce.
- Over 80% of immigrants arriving in the five years prior to the census were in the age group of 16-64 the main working age group, with very few older than 65.
- The number of workers age 65 and over rose by over 21% in the period while the population in that group only rose about 12%. As that group's share of the population increases sharply after 2010 a key question for commuting will be the extent to which persons in that age group continue to work.
- Roughly 70% of the workers in America live in households with at least one other worker. This affects their options and choices in commuting behavior in many ways. 24 million workers live in households of three or more workers.

- In each decade the gap between the census and other sources of employment statistics, primarily the BLS, had declined over time, but in 2000 the difference was three times the previous census and was exceeded only by the difference observed in 1950.
- Problems in Group Quarters statistics led to overstatements in unemployment in the census especially in college towns.
- In the case of the African-American and Hispanic populations, the gaps between the decennial and the BLS statistics as measured by employment/population ratio statistics were greater than for the population in general. Another important facet of the differences is that although the national levels are stable, the volatility in individual states can be great. In no state is the Continuing Population Survey of the BLS lower than the census. In 32 states the two estimates were not statistically significant in their difference. But some states saw substantial scale differences in total employment such as California, Florida, and Texas. The significant undercount of Hispanics may have affected these states particularly.

#### **CHAPTER 4**

#### **POPULATION AND HOUSEHOLD TRENDS**

- Current population has been growing at about 1% per year putting the United States at over an estimated 296 million by June of 2005, an addition of almost 15 million since the 2000 census, and with the prospect of crossing 300 million sometime in 2006. This rate will not produce as many additions to population as did the past decade.
- Regional population patterns continue their sharp growth in the South and West and stability or decline in share in the Northeast and Midwest up through available data as of 2004. The South is at 100 million population or 36% of national population.
- In round numbers the nation is half suburban; 30% live in central cities and the remaining 20% in non-metro areas.
- The moving rates between metro and non-metro areas show that non-metro areas are gaining population from metro areas.
- Adjustments for changes in geography show that suburban growth is still predominant and that central cities are showing real growth but not enough to retain share of population.
- The strongest outbound moving rates are in the largest metropolitan areas over 5 million – precisely where foreign immigrant inward migration is greatest.
- The nine areas of the US over 5 million in population account for more than a third of all metropolitan population. Two of the areas actually exceed 10 million; one of which is over 20 million.
- Gaining workers from the older population will need to focus on women who outnumber men by 12 to 10 in the 65-74 age group and 16 to 10 over 75.
- Working women have stabilized at about 46% of the workforce.
- Households have grown at twice the rate of population over the last 40 years resulting in a sharply declining household size in 2000 of 2.59 persons per hh.
- The focus on smaller households can be misleading; the one person household comprises 26% of the households but only 10% of the population. Households of six persons and above, comprising 4% of households, account for a greater population than do all the one person households.

- Of the 105.5 million households in America, two-thirds live in their own homes, approximately 70 million households, representing roughly three-fourths of the population. In each of the four census regions more than 60% of households owned their own homes.
- About 70 million among the 116 million housing units in the nation are single family detached units and another 6.5 million are single family attached units. Even in central cities they are the majority. Suburban single family units exceed the number of all central city housing units.
- An extraordinary fact is that the number of persons living in mobile homes exceeds the number living in apartment dwellings of 50 units or larger.

## **CHAPTER 5**

### **VEHICLE AVAILABILITY**

- Holding of a driver's license has become close to pervasive in adult America today; but women still lag in licensing – about 89% of men and 84% of women have a driver's license, for an overall average of 86%. On an age basis, 80% of those early in the licensing years (16-24) or late (65+) have licenses, with the averages well over 90% for the age groups in between.
- The baby-boomers in the 35-54 age group represent the peak of ownership of a license at about 95%.
- One key to the future is the immense gap in licenses between women over 65 and those approaching 65 – an 18 percentage point difference; this bodes for a dramatic surge in older women driving. It is unclear whether this will affect commuting.
- The central issue for commuting with respect to driver's licensing patterns remains the levels of licensing of minorities. The apparent ubiquity in licensing does not yet fully apply among certain racial and ethnic groups, and particularly among the women in those groups. Although the White population averages over 90%, the Asian population is at 82% and the African-American population is at 74%.
- Licensing by White and Black women are relatively close to men's (3-6 percentage points difference) reflecting native-born characteristics, but the Asian and Other races show disparities greater than 10 percentage points.
- One-vehicle households and zero-vehicle households had remained roughly constant for 30 years. The group of households without vehicles has continued to remain roughly constant at between 10 million and 11 million households for the entire 40 year period of the baby boom, of course dropping sharply as a percentage of all households.
- Of the roughly 30 million vehicles added between 1990 and 2000, more than 13 million were added in households that already had 2 or more vehicles; about 12 million were added in one vehicle households becoming two vehicle households; and 5 million were in households of first-time vehicle owners.
- There had been about 30 million one vehicle households for 30 years prior to a very substantial jump of over 5 million in the last census decade, almost certainly attributable to minority and immigrant households obtaining vehicles for the first time.
- ACS Data indicate continued stability in rates of ownership through 2003, with only slight declines in share among zero vehicle households and slight gains by

- households with over three vehicles. This continuing stability for over 20 years suggests that future vehicle growth will be largely a function of household growth.
- At the \$25,000 per household threshold, households without vehicles drop to less than 10%, and continue to decline thereafter, until the highest income levels where slight increases in households without vehicles are noted. In fact, almost two-thirds of the households without vehicles have incomes that lie below \$25,000 per year. After \$35,000 per year in household income, the one-vehicle household shifts to two vehicles, and remains in that mode up to the highest levels of income.
  - To be sure there are high income households without vehicles; high income households with annual incomes above \$100,000 comprise roughly 4% of households without vehicles.
  - There is a close linkage between workers and vehicles. It continues to be true that, on average, the majority of households have access to a number of vehicles equal to or greater than the number of workers in the household. About 93% of one worker households have one or more vehicles; 87% of two worker households have two or more vehicles; 73% of three worker household and 55% of four worker households.
  - Roughly 4% of workers live in households with no vehicles and another 12% in households where there are more workers than vehicles. Thus there are roughly 23 million workers, about 16% of all workers, in households where vehicles are not directly available to them, at least numerically. Almost half of all workers are in households where they have the same number of workers as vehicles and, finally, there are 35% of workers where vehicles available exceed the number of workers.
  - Of the 10.9 million households that are vehicle-less, more than a third are in the Northeast region of the country, although it has less than 20% of the nation's households.
  - The key is that the New York metropolitan area with 2.2 million households without vehicles, more than the entire West region of the nation and equal to the Midwest, totally distorts the Northeast picture. New York has about 20% of the nation's vehicle-less households and the rest of the Northeast the other 14%. Without New York the Northeast shares, with more like 7% of households without vehicles, look very much like or are even lower than the other regions of the country.
  - The nation has added slightly more than a quarter million households without vehicles in the decade. Of the 50 metro areas over one million in America, 30 saw increases in the numbers of households without vehicles. Although only two, Los Angeles and Las Vegas, actually incurred increases in share, both about a one percentage point increase.
  - The most significant event regarding auto ownership is the sharp drop in the percentage of African-American, households without vehicles. While still at the highest level of households without vehicles, almost 24%, that represents a sharp decline from the almost 31% that held in 1990.
  - American Indian households without vehicles decreased from 17% to below 15%. Hispanic households decreased from 19% to 17%, but Asian households changed little.

**CHAPTER 6**  
**COMMUTER FLOW PATTERNS**

- Of the 128 million commuters in 2000, almost 100 million were in metropolitan areas and the remaining 29 million in non-metro areas.
- The 97 million commuters who both live and work in any metropolitan area represent an increase of 60 million over the number of metropolitan commuters in 1960.
- Commuting from suburb to suburb, with 46% of metropolitan commuting, obtained more than 64% of the growth in jobs.
- Commuting from central city to suburb, so-called “reverse commuting” with a 9 percent share in 1990, accommodated a 20% share of growth in commuting.
- the “traditional” commute obtained about a 14% share of growth considerably below its present share of 19%.
- More than 94 million commuters, 73% of all commuters, work within their county of residence, but that leaves more than 34 million who are exported each day from their home county to work, compared to an estimated 20 million in 1980, an 85% increase in that period, and more than 3 and a half times the number in 1960.
- Of the new workers added in the decade, 51% worked outside their home county, an extraordinary change.
- The tendency to work within one’s home county declines as the size of the metropolitan area increases
- Outbound flows to other metropolitan areas and to non-metro areas amounted to about 5.4 percent of all commuting in 1980, rose to over 7.5 percent in 1990 and are now at 8.3%. Inter-metropolitan commuting increased at a rate almost three times that of internal metropolitan growth.
- Since 1980 the dominant pattern of inter-metropolitan commuting has been “cross suburb commuting,” that is commuting from one suburb to a suburb of a different metropolitan area. It amounted to about 31 percent of all inter-metropolitan commuting in 1980 rising to almost 39 percent in 1990 and falling slightly to 38% in 2000.
- Contrary to what some might expect, it is the smaller metropolitan areas that show strong center city dominance. In areas below 100,000 population, The internal center city flows alone are about half of all flows, but drop to below 24% at the highest metro size levels
- About 11 percent of work trips to the center city arrive from outside the metropolitan area
- Small-town America has the greatest tendency to work and reside in the same county; at 80% compared to the below 67% in rural areas in general.
- All areas are showing a greater balance of workers and jobs. Overall central cities have 134 jobs for every 100 workers, down from 136 in 1990. For suburbs the rate is 85 jobs per 100, up from 83 in 1990.

## **CHAPTER 7**

### **BROAD MODAL USAGE PATTERNS**

- Over its 40 year span the baby-boom generations coming of age and entry into the work force, accompanied by the surge of women into the work force, has been fundamentally served by the auto
- The national pattern for the 1990s presents a far more variable picture than the monolithic patterns of the 1970’s and 1980’s and tells us less than it has in the

past. There have been gains and losses in carpooling; gains and losses in transit. These shifts in patterns make the national trend less of a template for individual local trends.

- In reporting on the eighties the value of regional analysis was primarily in demonstrating how uniform the national patterns were. All of that changes for the nineties. In 2000, regional patterns are in many respects the key to the commuting story.
- The single occupant vehicle gained about 11 percentage points over 20 years; but when coupled with carpooling losses the private vehicle shift has only been about 4 percentage points, indicating that it was not so much a shift to the auto but a shift within the private auto group that we have witnessed. We have not added auto users so much as added the number of autos serving auto users.
- Carpooling shares have dropped from 20% in 1980 to about 12% in 2000.
- Perhaps the most significant trend is the sharp decline in walking to about half its share in 1980
- At least in the major modes men's and women's work travel are very similar.
- Women are still more likely to use transit and cabs and to work at home.
- Motorcycle and bicycle are two modes where men have sharply greater usage.
- Women favor more small carpools while men predominate in the large pools.
- At present workers over 55 constitute only 14% of all workers but 26% of those working at home. Working at home will be a key factor in the future among the aging population.
- At present the work force can be almost perfectly divided into four equal age-based quadrants" 16 to 29; 30 to 39; 40 to 49; and 50 plus
- The number of workers over 65 rose by over 21% in the period while the population in that group only rose about 12%. As that group's share of the population increases sharply after 2010 a key question for commuting will be the extent to which persons in that age group continue to work. One-half of all workers 55 and older are in the 55-60 age group.
- The orientation of the older worker shifts away from the single occupant vehicle significantly with age, with slight gains in car-pooling but with the major shift to walking and working at home
- The overall effects of multiple jobs on mode use are relatively minor, but to the extent they have any effect it is toward greater use of the private vehicle. This is understandable given that those with more than one job may have very diverse locations to reach and limited time in which to do it
- Aside from Alaskan natives where walking predominates, the variation in the share of privately operated vehicles among all racial and ethnic groups is between 83% and 90%.
- There is significant variation between single occupant vehicles and carpooling within ethnic and racial groups with very strong carpooling tendencies among all groups except White Non-Hispanics.
- Perhaps the most outstanding variation evident is within the transit area where, for example, the African American population shows levels of transit use four times that of the White Non-Hispanic population. Asians also show a strong tendency for transit as do the "Other Race" categories.
- Examination of the Hispanic/Non-Hispanic division indicates strong differences in transit where Hispanic's use transit (8.6%) at more than double the rate of Non-Hispanics (4.1%)
- Overall private vehicle use numbers are close among Hispanics and Non-Hispanics, but that masks tremendous differences between carpooling and solo

- driving. Driving Alone among Non-Hispanics is about 17 percentage points greater than for Hispanics.
- It is Hispanic carpooling that is extraordinary – it is double Non-Hispanic patterns (23% vs 11%) with very strong carpooling tendencies in the larger pools. In fact carpooling in groups greater than two is 8% of commuting among Hispanics four times the Non-Hispanic rate. In fact, carpooling in groups greater than two is 8% of commuting among Hispanics, four times the non-Hispanic rate.
  - It may very well be the 3 million Hispanic carpoolers that effected the turn-around in US carpooling.
  - Immigrants who were not resident in 1995 show a marked tendency for carpooling reaching an almost 26% share with Driving Alone at only 49%. At almost 13%, transit also enjoys a huge market among this group of those who have arrived in the US no more than five years ago. Similarly, walking and biking also have strong utilization
  - Geographic patterns of usage are patchy. Sharp drops in the carpooling rates in the Middle-Atlantic states centered around Virginia; growth in transit and carpooling in the West.
  - Zero-vehicle households is the one group where private vehicle usage of less than 50% has been registered
  - Transit usage displays a rather special variation declining with income except for the shift to commuter rail which becomes apparent in the higher income strata.
  - The similarity between suburban and non-metropolitan is striking. Their use of the personal vehicle is identical, with some greater emphasis on carpooling in the non-metropolitan sector. Among the other alternatives the differences are mostly in that in the suburbs transit use substitutes for walking in non-metropolitan areas along with some greater tendency toward working at home in non-metropolitan areas.
  - The real distinctions are between cities and suburbs. Personal vehicle uses varies by ten percentage points 81% to 91%; about 70 percent of that difference is addressed by transit and the remainder is attributable to walking.
  - Interestingly there is some greater tendency toward car-pooling in central cities more akin to non-metropolitan than suburban patterns; all of the larger carpools are more typical in cities and non-metropolitan areas
  - Annual data for 2000 thru 2004 from the new ACS show decreases in all modes except driving alone and working at home. This suggests that the new patterns are more typical of the 1980s than the 1990s.

## **CHAPTER 8**

### **DETAILED MODAL PATTERNS**

- While all of the changes observed here are quite small, the fact that they are happening at all is quite significant and even the fact that changes, whether positive or negative, tend to be quite small is cause for interest. It all suggests a stabilization of trends as had been expected to some degree.
- Immigrant patterns of usage are key with high levels of usage in auto alternatives among early arrivals diminishing with increased time in the United States
- Driving Alone continues to increase. Private vehicle shares were over 80% for 14 states with Michigan highest at over 83%. There were 33 states between 70% and 80%. New York is in a class by itself at 56%.

- With the exception of the group of 9 areas above 5 million in population, which stand at closer to 80%, all other metropolitan area groups and the non-metropolitan population are fundamentally identical in their shares of private vehicle use at around 90%. The ten percentage points difference in auto use between metropolitan areas over 5 million and all others are made up by increases in transit of about nine percentage points and walking at one percentage point, given the major role of New York.
- There are signs of saturation in the use of the private vehicle. The greatest gains were achieved in the 1980s. The differences between 2000 and 1990 are far less significant. Most current gains are in the East among areas of traditionally low usage.
- Whereas there was almost no case where 1980 and 1990 shares were very much alike; that is more true than not in the 1990 to 2000 period. There are five metro areas where drive-alone shares actually declined from 1990, whereas there were none in the 1980-1990 period. These five were heavily distributed on the West coast. All of the losses were quite small, under one percentage point, with the exception of Seattle with a decline of about 1.5 percentage points.
- In Carpooling all states operate in a range between 9% and 15% share (with Hawaii the exception at 19%); Only 6 states gained in carpooling share; all west of the Mississippi, all minor gains; Washington gained just over a half a percentage point.
- Carpooling shares are amazingly stable among metropolitan size groups within a range of 12% to 14%. Highest usage is in the West (Phoenix 15.3%) and lowest in the East (Cleveland 8.7%)
- The joint shares of carpooling and transit is an important measure to monitor. Few areas are above 20%. Eastern areas tend to make it into the group because of transit whereas western areas because of carpooling.
- In Transit the vast majority of states had only limited swings of within one percentage point of their 1990 shares. There are only 10 states that exceed the national average transit share. There are two significant transit users; NY at 24% share and DC at 33%; otherwise the range in transit share operates between just below 10% (New Jersey) to below 1% (17 states)
- The New York metropolitan area obtained a 38% share of national commuting on transit, up from 37% in 1990.
- Inspection of gains and losses in transit use suggest that there are substantial swings at both ends of the spectrum and a large middle ground of little change. The transit gains typically are in the West and losses in the East; the share of the nation's transit has jumped from 17% in 1990 to 19% in 2000 in the West. Areas of low transit usage are gaining whereas losses tend to be among high transit usage areas.
- Analysis of downtown commuting shares demonstrates the immense importance of transit to those areas, with shares over 50% in several areas.
- Job density and population density are significant factors in transit. About 32% of commuting occurs in areas over 4,000 persons per square mile but 80% of transit occurs in that range.
- Transit industry statistics indicate that since the mid-nineties transit patronage had increased substantially. What proportion of that ridership gain may be work commuting is not known.
- Among the 50 metropolitan areas of over a million population only three showed declines in Working at Home; this appears related to heavy orientation to military workers in those areas.

- The Work at Home group can be characterized as comprised of younger women in service occupations and older men in professional activities.
- Walking as a work mode continues its decline. All metropolitan areas over a million lost share. It is now lower in share than working at home.
- Taxi usage shows higher levels of usage among the lower and higher income groups
- All non-motorized modes of work travel (walk, bicycle, work at home) showed a small gain in numbers but declines in share of usage from 1990 to 2000.

## **CHAPTER 9**

### **COMMUTER TRAVEL TIMES**

- In short, average national travel times grew about 40 seconds from 21.7 minutes in 1980 to 22.4 minutes in 1990, with more than 22 million single occupant drivers added. This was followed by a gain of a nominal three minutes to 25.5 minutes from 1990 to 2000, despite an increase of on the order of only 13 million new SOV users.
- Actual differences between 1990 and 2000 were closer to two minutes as 1990 data have been revised upward.
- All Census Regions were below 25 minutes in travel time except for the Northeast at over 27 minutes. The entire nation's average is affected by New York.
- Distributional patterns are frequently more useful than averages in travel time.
- After hovering around 50% for many decades the percentage of workers reaching work in under 20 minutes was at 47% in 2000. Non-metropolitan workers average 58%; contrasted to between 42% and 49% in metropolitan areas.
- Forty of the states increased between 2 and 4 minutes in travel time with Kansas the only state that increased less than two minutes. No state lost travel time. Those gaining more than 4 minutes were all in the East.
- Georgia and West Virginia led all states with gains greater than five minutes.
- Only New York State had more than 10% of workers traveling over 60 minutes in 1990, but New Jersey, Maryland, Illinois joined the group in 2000 – and California came close. Extreme commutes (those more than 90 minutes) were typical in the same set of States.
- Driving Alone remains the lowest in average travel time of the major modes; Commuter Rail the longest. Average transit travel times remain roughly double that of driving alone.
- Central city travel times are lower than suburban times in all metro size classes with the exception of the largest group over 5 million in population.

## **CHAPTER 10**

### **TIME LEFT HOME**

- The 2000 census data provide the first opportunity to examine trends in Time Left Home (TLH). The data indicate that the peak is spreading out both before and after the “peak periods” of the past.
- Those starting for work before 5 am were only 2.4% of travel in 1990 but gained over 11% of the growth from 1990 to 2000.

- Those starting from 5 to 6:30 which constituted under 15% of travel, gained about 25% of the growth in the decade.
- On the later side the start times from 9 to 11 am gained over 12% contrasted to a share in 1990 of under 7%.
- The distinctions between TLH patterns for men and women in regard to in the eighties remain. Women start their work travel later than men. Women are a small share of work travel before 7:30 am but comprise about half of all work travel thereafter.
- The youngest and oldest age groups tend more to travel in the off-peak periods. This is linked to the tendency to work shorter hours.
- The one significant factor in racial variations in TLH is the significantly later start times of Asians.
- Also later in the day start times are more a factor among African-Americans and Hispanics.
- The private vehicle is predominant in off-hours travel at about 92% from midnight to 8am and 90% after noon. Walking and transit play a bigger role from 8 am to noon when non-auto shares rise to between 10% and 12% of travel.
- Big carpools are major factors in the early hours – the bigger the earlier, comprising 16% of travel before 8, dropping to less than 10% and rising again to around 14% after the peak.
- Individual modes exhibit separate signature patterns with respect to start times.

## **CHAPTER 11**

### **CONGESTION**

- The subject of travel times and congestion are obviously related but really measure different things. Travel times are people measures; congestion is a facility measure.
- Congestion statistics are getting worse in all three dimensions: intensity; extent; and duration.
- Congestion is rising not only in the largest areas but is now a factor in the smaller metros as well.
- Recurring and non-recurring congestion have now become separate key measures of congestion characteristics.
- Measurement of the elements of congestion, especially non-recurring such as accidents and work zones is in its infancy.
- One of the central findings of research in this area is that many of the congestion problems we face are a product of vehicle breakdowns, construction and repair activities on the roadway, weather, and poor signal timing – all of which have ameliorative solutions which do not involve having to build new facilities.
- It is this that has given rise to efforts at better management of facilities, better information, and more rapid response to unexpected events.
- It is clear that the effects of non-recurring events are exacerbated by congestion of a recurring nature. A breakdown on an empty road makes little contribution to congestion contrasted to the same breakdown on a center city bridge at 7am in the morning.
- It may be critical to recognize that in the new world of high-speed, high-volume travel that each traveler has made an implicit compact with the other vehicle operators that his vehicle is appropriately equipped to be on that facility in terms of fuel, tires, state of repair, etc.

- Congestion, while growing, is still a relatively small part of work travel. Many workers suggest that they enjoy their work travel.

## **CHAPTER 12** **COMMUTING COSTS**

- The share of transportation spending of total consumer spending has ranged between 18% and 19% for 20 years. This goes well beyond the spending for work travel alone, but is strongly related to it.
- Total spending amounted to \$7,781 per household in 2003 – the range is between \$3300 to \$13,800 across the lowest to the highest income groups.
- Transportation spending rises with income in both amount and in the percentage of spending. Lower income groups spend about 17% of income rising to almost 21% to the next to highest income level, before dropping off among the highest income groups.
- The ratio of spending between the highest income groups to the lowest is the same for transportation as it is for spending for all purposes.
- The dominant transportation expenditure, 95%, is concerned with the acquisition, use and upkeep of vehicles.
- Vehicle prices have dropped to below the value of 20 weeks average pay, lowest in about 25 years
- Incomes in the US are worker related; the households in the highest income fifth of the population have three times as many workers as a household in the lowest income fifth
- The number of household workers, vehicle ownership and transportation expenditures all rise together with income.
- Working single persons spend about \$10,000 more per year than single non-workers and 27% of it is for transportation.
- Multi-worker households spend a base of about \$5,300 per year on transportation and an extra \$2300-\$2700 per additional worker
- According to the BLS spending on tolls, non-residential parking, transit and taxis for all purposes average slightly above \$100 per year or slightly more than 1% of average spending.

### **CLOSING PERSPECTIVES** **PATTERNS TO WATCH**

**The 1996 Commuting in America II produced a list of patterns to watch. They are still relevant questions for the coming decade.**

#### **PAST PATTERNS TO CONTINUE TO MONITOR**

1. Will the force of immigration continue or taper off?
2. Will immigrants join the typical patterns of vehicle ownership and travel behavior or will new patterns emerge?
3. Will greater suburban jobs/worker balance occur or will things stabilize at present levels?
4. Will racial and ethnic minorities fully join the mainstream car-owning classes?

5. Will technological fixes continue to be effective in responding to environmental concerns?
6. Will telecommunications and the growth of working at home abet dispersal and take the edge off commuting problems in many areas?
7. Will ITS technologies begin to assert an influence on travel times or other factors of commuting?
8. Will aging commuters generate shifts in the style of commuting?
9. Will population growth shift toward the lower end of the metropolitan size spectrum?
10. Will the public find the new, higher density communities attractive alternatives?

**Are these still the 10 questions about which we will be concerned 10 years from now or will they simply be among many such questions? What new, perhaps more important, questions need to be examined?**

#### **EMERGING PATTERNS TO CONSIDER**

Who, Where will the workers be?

Will long distance commuting continue to expand?

Will the role of the work trip decline, grow, or evolve?

Will the value of time in an affluent society be the major force guiding decisions?

Will the value of mobility in our society be recognized?