A Quick Review of Commuting in America III

THE TOP TEN

Alan E. Pisarski
A couple of ways to examine the topic

- Short Overview – AASHTO Journal
- Factlets TRB.org/ciaiii
- Dichotomies - Exec Summary
- My top ten tidbits TRB.org/ciaiii
  - Demographic Overview
  - Role of commuting
- OR YOU COULD BUY THE BOOK!

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The Demographic Story

1. The Commuting in America series has been the history of the working years of the baby boom generation
2. The Boomers are now moving off stage creating a new phase in American commuting.
3. The key question will be where will the workers come from?
4. Advent of the immigrant workforce will be just one of the challenging concerns

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END OF THE BOOM

1980-90
- 18.5 MILLION WORKERS
- 1990-2000
- 13.3 MILLION WORKERS

Our problem may be too few commuters not too many!

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The Role of Commuting Today

WORK TRIP SHARE OF TRAVEL BY DAY OF WEEK

Sunday: 4.7%
Monday: 18.9%
Tuesday: 19.3%
Wednesday: 18.7%
Thursday: 18.8%
Friday: 16.5%
Saturday: 6.4%
5 DAY: 18.4%
7 DAY: 14.9%
But the work trip still defines much of what we need to know about travel to make our transportation systems work better.

The home and workplace are the two anchors for many of those other trips that now claim increasing prominence—trips to the gym and market, drop-offs/pick-ups, etc.—are as likely to start from work as home in many households. Thus, for the majority of adults who work, the workplace location is a major force in the stimulus for travel, the direction, location, and time of travel and—often—the mode of travel as well.
Four key Dichotomies

• Over/under 20 minutes commute
• In/out of metro area over 5 million (12 metros in 2005)
• Before/after 8 am
• Over/under age 55
#10 – SOV GROWTH SLOWS

Drive Alone Growth 1980-2000

- Drove Alone -1980
Metro Stability re Driving Alone?

Drive Alone Growth 1980-2000

- Drove Alone -1980
- Drove Alone - 1990
Metro Stability re Driving Alone?

Drive Alone Growth 1980-2000

- Drove Alone -1980
- Drove Alone - 1990
- Drove Alone - 2000
DECLINES IN DRIVE ALONE! A FIRST

• Actual declines in share of Driving Alone – mostly in West
• Seattle down 1.5 percentage points
• 4 under a point
  – San Francisco; Portland; Phoenix; Atlanta
• Constant share or small increase:
  – LA; DFW; Sac; LV
  – Den; Tampa; SLC; West Palm; NY

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#9 REGIONAL SWINGS IN CARPOOLING AND TRANSIT 1990-2000

Carpooled Public transportation:
- Northeast Region
- Midwest Region
- South Region
- West Region

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The Focus will be on Big Metros

-metros over a million
  - 1960 34 areas
  - 1990 39 areas
  - 2000 50 areas
  - 2005 53 areas
  - Probably 60 areas by 2020
  - 60% of population

- 12 areas with more than 5 meg.
  - 1/3 of national pop.; 100 meg.

- Growth is in exurb areas
## Special Transit Study of Trips Downtown

<table>
<thead>
<tr>
<th>City</th>
<th>% metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash DC</td>
<td>9%</td>
</tr>
<tr>
<td>New York</td>
<td>25%</td>
</tr>
<tr>
<td>Seattle</td>
<td>7%</td>
</tr>
<tr>
<td>Dallas Ft W</td>
<td>1.8%</td>
</tr>
</tbody>
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### Special Transit Study of Trips Downtown

<table>
<thead>
<tr>
<th>City</th>
<th>% metro</th>
<th>% cc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash DC</td>
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<td>21%</td>
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<tr>
<td>New York</td>
<td>25%</td>
<td>45%</td>
</tr>
<tr>
<td>Seattle</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>Dallas Ft W</td>
<td>1.8%</td>
<td>2.6%</td>
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</table>
### Special Transit Study of Trips Downtown

<table>
<thead>
<tr>
<th>City</th>
<th>% metro</th>
<th>% cc</th>
<th>% “Downtown”</th>
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<tr>
<td>Wash DC</td>
<td>9%</td>
<td>21%</td>
<td>38%</td>
</tr>
<tr>
<td>New York</td>
<td>25%</td>
<td>45%</td>
<td>77%</td>
</tr>
<tr>
<td>Seattle</td>
<td>7%</td>
<td>12%</td>
<td>37%</td>
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<tr>
<td>Dallas Ft W</td>
<td>1.8%</td>
<td>2.6%</td>
<td>14%</td>
</tr>
</tbody>
</table>
zero vehicle households by Race and Ethnicity

#8 AFRICAN-AMERICAN VEHICLE OWNERSHIP SURGES
% HH without vehicles in central cities by metro area size

2000

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Another key

Foreign-born persons in households without Vehicles
by Year of Arrival

ARRIVED BETWEEN 1996-2000
ARRIVED BETWEEN 1991-1995
ARRIVED BETWEEN 1980-1990
ARRIVED 1980 AND BEFORE
NOT FOREIGN BORN
Cars per Household – 40 year trend

NUMBER OF HH BY VEHICLES OWNED

- 0 VEHICLES
- 1 VEHICLE
- 2 VEHICLES
- 3+ VEHICLES

0 10000 20000 30000 40000 50000


O O.O'S
Why Vehicle Ownership Matters

- Other method
- worked at home
- walked
- Bicycle
- Motorcycle
- Taxicab
- Ferryboat
- Railroad
- Subway or Elevated
- Streetcar or Trollley car
- bus or trolley bus
- Car Truck or Van
immigrants are only 13.5% of workers but are significant part of usage in some modes
Mode Use by Years in US

- Other
- Worked at home
- Walked
- Bicycle
- Transit
- Carpool
- Drove alone

- < 5 yrs
- 5-<10 yrs
- 10-<15 yrs
- 15-<20 yrs
- >20 yrs
- Born US
#7 IMMIGRANT ROLES AND PATTERNS - 3

Carpool Use by Yrs in US

- < 5 yrs
- 5-10 yrs
- 10-15 yrs
- 15-20 yrs
- >20 yrs
- BORN US

- carpool 3
- carpool 4
- carpool 5 or 6
- carpool 7&+
Aging out of the Boomers

SHARES OF OVER 55 WORKERS BY AGE GROUP

- 55-59: 49%
- 60-64: 27%
- 65-69: 12%
- 70-74: 7%
- 75+: 5%
Over 55
Aging out of the Boomers - 1

Car, truck, or van

70.00% 72.00% 74.00% 76.00% 78.00% 80.00% 82.00% 84.00% 86.00% 88.00% 90.00%

55-59 60-64 65-69 70-74 75+
Over 55
Aging out of the Boomers - 2

Over 55 patterns in mode use of private vehicles

- 2 people
- 3 people
- 4 people
- 5 or 6 people
- 7 or more people

Age groups: 55-64, 65-74, 75+
Over 55 patterns in mode use of other modes

- **bus or trolley bus**
- **Streetcar or Trolley car**
- **Subway or Elevated**
- **Railroad**
- **Ferryboat**
- **Taxicab**
- **Motorcycle**
- **Bicycle**
- **walked**
- **worked at home**
- **Other method**
Over 55
Aging out of the Boomers - 4

![Graph showing the percentage of males and females exercising under 20 minutes and over 60 minutes in different age groups.](image)
# THE SHIFT HAS BEGUN

<table>
<thead>
<tr>
<th>OVER 65</th>
<th>1990</th>
<th>2000</th>
<th>%</th>
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<tbody>
<tr>
<td>POPULATION (millions)</td>
<td>31.2</td>
<td>35.0</td>
<td>12.2%</td>
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<td>WORKERS (millions)</td>
<td>3.5</td>
<td>4.25</td>
<td>21.4%</td>
</tr>
<tr>
<td>SHARE AT WORK</td>
<td>11.2%</td>
<td>12.1%</td>
<td></td>
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</table>
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<th>%</th>
<th>2005</th>
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</thead>
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<td>POPULATION (millions)</td>
<td>31.2</td>
<td>35.0</td>
<td>12.2%</td>
<td>36.8*</td>
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<tr>
<td>WORKERS (millions)</td>
<td>3.5</td>
<td>4.25</td>
<td>21.4%</td>
<td>4.66</td>
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<tr>
<td>SHARE AT WORK</td>
<td>11.2%</td>
<td>12.1%</td>
<td></td>
<td>12.7%</td>
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</tbody>
</table>

* Census estimate 2005

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# THE SHIFT HAS BEGUN

<table>
<thead>
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<th>OVER 65</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
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<td>POPULATION</td>
<td>31.2</td>
<td>35.0</td>
<td>40.2</td>
<td>54.6</td>
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<tr>
<td>WORKERS</td>
<td>3.5</td>
<td>4.25</td>
<td>5.1</td>
<td>6.9</td>
</tr>
<tr>
<td>SHARE AT WORK</td>
<td>11.2%</td>
<td>12.1%</td>
<td>12.7%</td>
<td>12.7%</td>
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</tbody>
</table>

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#5 INCREASES IN EXTREME COMMUTES

![Graph showing increases in extreme commutes from 1980 to 2000. The graph illustrates a significant rise, with the National and Adj National lines trending upwards.](image)
My keys on travel time
% under 20 mins / % over 60 mins

Percent of workers commuting over 60 minutes and under 20 minutes by metro size
Extreme Commutes

- 2005 10 million over 60 min; 1/3 90+; av 80 min
- 60-90 minute commute grew 2x average
- 90+ minute commute grew 5x average

Percent of workers commuting over 60 minutes and under 20 minutes by metro size
Travel times over 5 million

TRAVEL TIME BY METRO SIZE

<table>
<thead>
<tr>
<th></th>
<th>CC</th>
<th>SUB</th>
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</thead>
<tbody>
<tr>
<td>5,000,000 to</td>
<td>31.5</td>
<td>29.7</td>
</tr>
<tr>
<td>2,500,000 to</td>
<td>24.9</td>
<td>28</td>
</tr>
<tr>
<td>1,000,000 to</td>
<td>22.7</td>
<td>25</td>
</tr>
<tr>
<td>500,000 to</td>
<td>20.6</td>
<td>24.2</td>
</tr>
<tr>
<td>250,000 to</td>
<td>19.4</td>
<td>23.6</td>
</tr>
<tr>
<td>100,000 to</td>
<td>17.3</td>
<td>22.8</td>
</tr>
<tr>
<td>50,000 to 99,999</td>
<td>16.2</td>
<td>21.2</td>
</tr>
</tbody>
</table>
Male/female split by travel time

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### STATES “Extreme Commutes”

**2000**  
(only minor changes 2000-2005)

<table>
<thead>
<tr>
<th>State</th>
<th>&gt; 90 min</th>
<th>60-89 min</th>
<th>&gt;60 min</th>
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<tbody>
<tr>
<td>New York</td>
<td>5.24%</td>
<td>10.65%</td>
<td>15.89%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>4.65%</td>
<td>8.91%</td>
<td>13.55%</td>
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<tr>
<td>West Virginia</td>
<td>3.99%</td>
<td>5.03%</td>
<td>9.02%</td>
</tr>
<tr>
<td>Maryland</td>
<td>3.72%</td>
<td>8.93%</td>
<td>12.65%</td>
</tr>
<tr>
<td>California</td>
<td>3.46%</td>
<td>6.68%</td>
<td>10.14%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>3.34%</td>
<td>4.26%</td>
<td>7.60%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>3.19%</td>
<td>3.68%</td>
<td>6.87%</td>
</tr>
<tr>
<td>Illinois</td>
<td>3.03%</td>
<td>7.77%</td>
<td>10.80%</td>
</tr>
<tr>
<td>Georgia</td>
<td>3.02%</td>
<td>6.30%</td>
<td>9.32%</td>
</tr>
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</table>
#4 The “Donut” Metro

- Jobs and workers centered in suburbs
- 46% of commutes;
- 64% of growth 90-00
- 7.5 million coming in to the subs from exurbs and other metros each day
- 7.5 million going out to the subs from central cities
- CC to subs > Subs to CC in share of growth

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Suburban Flows grow with metro size

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Share of Increase in Commuting Flows 1990-2000

- 64% Suburbs to Cent City
- 19% Cent City to Suburbs
- 14% Suburbs to Suburbs
- 3% Cent City to Cent City

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National commuting flows

- Living in CC and work in same CC
- Living in CC and work in suburbs of MSA
- Living in CC and work in suburbs of other MSA
- Living in CC and work in suburbs, work in CC of other MSA
- Living in CC and work in suburbs, working non-met
- Not in MSA and working in a CC
- Not in MSA and working in a non-met

[Bar chart showing commuting flows]
## Top Ten Commuting Markets

<table>
<thead>
<tr>
<th>RANK</th>
<th>FLOW TYPE</th>
<th>AREA SIZE</th>
<th>millions</th>
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<tbody>
<tr>
<td>1</td>
<td>SUB SUB</td>
<td>5 PLUS</td>
<td>16.3</td>
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<tr>
<td>2</td>
<td>CC-CC</td>
<td>5 PLUS</td>
<td>9.1</td>
</tr>
<tr>
<td>3</td>
<td>SUB-SUB</td>
<td>1-2.5</td>
<td>8.1</td>
</tr>
<tr>
<td>4</td>
<td>SUB-SUB</td>
<td>2.5-5</td>
<td>7.2</td>
</tr>
<tr>
<td>5</td>
<td>CC-CC</td>
<td>1-2.5</td>
<td>5.7</td>
</tr>
<tr>
<td>6</td>
<td>SUB-CC</td>
<td>5 PLUS</td>
<td>4.7</td>
</tr>
<tr>
<td>7</td>
<td>SUB-CC</td>
<td>1-2.5</td>
<td>4.2</td>
</tr>
<tr>
<td>8</td>
<td>SUBS TO XMSA</td>
<td>5 PLUS</td>
<td>4.1</td>
</tr>
<tr>
<td>9</td>
<td>SUB-SUB</td>
<td>.5-1</td>
<td>3.6</td>
</tr>
<tr>
<td>10</td>
<td>CC-CC</td>
<td>2.5-5</td>
<td>3.5</td>
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</table>
#3 CONTINUING GROWTH IN WORKING AT HOME

- Only work “mode” with Driving Alone to see continuous growth since 1980
- ALL Metros over a million saw increases except three with heavy military components
- Work at home added 2 million from 1980 to 2000 – almost doubling
- Added another 600,000 by 2005
- 2005 share 3.6%

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In met area -- 5,000,000 +
In met area -- 2,500,000 to 4,999,999
In met area -- 1,000,000 to 2,499,999
In met area -- 500,000 to 999,999
In met area -- 250,000 to 499,999
In met area -- 100,000 to 249,999
In met area -- 50,000 to 99,999
Not in metro area

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#2 WORKERS OUT BEFORE 6AM

- 5-6am rose from 6.4% in 1990 to 7.6% in 2000 (8.5% in 2005)
- Those starting before 5 AM were only 2.4% of travel in 1990 but gained 11% of all growth 1990-2000
- Peak period (6-9 AM) decline continues: 69% in 1990; 66% in 2000; 64% in 2005

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START TIME CHANGES IN SHARE 1990-2000

- 5-6:30am: 24.9% increase
- 9-11am: 12.4% increase
- WAH: 5.9% increase

Comparison of share percentages pre 5am and 5-6:30am with changes in share.
Before 8 it’s a guy-thing!

![Male-Female Commuting Distribution by Hour of the Day](chart.png)
8 O’clock and all’s well
#1 GREAT INCREASES IN WORKERS LEAVING HOME COUNTIES TO WORK

- **1990** 23.9% of workers left home county
- **2000** 26.7% (2005 almost 28%)
- **90’s** - 13.2 meg. new Workers 51% Left home county (6.7 Meg.)
- **00’s** - Of 5 meg. new workers 55% left home county (2.6 Meg.)
- **ONLY 3 STATES DOWN !**
- **Wash DC Area leads nation!**

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County-to-County Worker Flow Percentage: 2000

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CIA II – Unresolved Questions

• Force of Immig. Persist?
• Immig. trend to mainstream?
• Job/worker balance?
• Minorities typical?
• Will tech fixes work?

• WAH & telecom impact?
• ITS influence?
• Aging commuters change the trend?
• Growth in smaller metro areas?
• Higher densities?
New Patterns to Watch
– Who, where will the workers be?
– Will long distance commute expand further?
– Will role of commuting decline/grow or just change?
– Will value of time still be the guiding factor?
– Value of mobility recognized?
Thank you

- Copies of Commuting in America III are available from the Transportation Research Board; tel. 202-334-3214 or on the Internet at [http://www.TRB.org/CIAIII](http://www.TRB.org/CIAIII)

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 703 941-4257
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<tbody>
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<td>United States</td>
<td>96617296</td>
<td>115070274</td>
<td>128279228</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Car, truck, or van:</td>
<td>81258496</td>
<td>99592932</td>
<td>112736101</td>
<td>84.10%</td>
<td>86.55%</td>
<td>87.88%</td>
</tr>
<tr>
<td>Drive alone</td>
<td>62193449</td>
<td>84215298</td>
<td>97102050</td>
<td>64.37%</td>
<td>73.19%</td>
<td>75.70%</td>
</tr>
<tr>
<td>Carpool</td>
<td>19065047</td>
<td>15377634</td>
<td>15634051</td>
<td>19.73%</td>
<td>13.36%</td>
<td>12.19%</td>
</tr>
<tr>
<td>2-person</td>
<td>13303701</td>
<td>12078175</td>
<td>12097346</td>
<td>13.77%</td>
<td>10.50%</td>
<td>9.43%</td>
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<tr>
<td>3-person carpool</td>
<td>3360781</td>
<td>2001378</td>
<td>2159151</td>
<td>3.48%</td>
<td>1.74%</td>
<td>1.68%</td>
</tr>
<tr>
<td>4-person carpool</td>
<td>1400527</td>
<td>702222</td>
<td>766012</td>
<td>1.45%</td>
<td>0.61%</td>
<td>0.60%</td>
</tr>
<tr>
<td>5-person+ carpool</td>
<td>1000038</td>
<td>595859</td>
<td>611542</td>
<td>1.04%</td>
<td>0.52%</td>
<td>0.48%</td>
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<td>Transit</td>
<td>6007728</td>
<td>5890155</td>
<td>5867559</td>
<td>6.22%</td>
<td>5.12%</td>
<td>4.57%</td>
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<tr>
<td>Bus</td>
<td>3924787</td>
<td>3445000</td>
<td>3206682</td>
<td>4.06%</td>
<td>2.99%</td>
<td>2.50%</td>
</tr>
<tr>
<td>Streetcar, LRT</td>
<td>***</td>
<td>78130</td>
<td>72713</td>
<td>***</td>
<td>0.07%</td>
<td>0.06%</td>
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<tr>
<td>Subway</td>
<td>1528852</td>
<td>1755476</td>
<td>1885961</td>
<td>1.58%</td>
<td>1.53%</td>
<td>1.47%</td>
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<tr>
<td>Railroad</td>
<td>554089</td>
<td>574052</td>
<td>658097</td>
<td>0.57%</td>
<td>0.50%</td>
<td>0.51%</td>
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<tr>
<td>Ferry</td>
<td>***</td>
<td>37497</td>
<td>44106</td>
<td>***</td>
<td>0.03%</td>
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<td>Taxi</td>
<td>167333</td>
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<td>200144</td>
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<td>Motorcycle</td>
<td>419007</td>
<td>237404</td>
<td>142424</td>
<td>0.43%</td>
<td>0.21%</td>
<td>0.11%</td>
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<td>Bike</td>
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<td>466856</td>
<td>488497</td>
<td>0.48%</td>
<td>0.41%</td>
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<td>Walk</td>
<td>5413248</td>
<td>4488886</td>
<td>3758982</td>
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<td>3.90%</td>
<td>2.93%</td>
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<td>Other</td>
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<td>808582</td>
<td>901298</td>
<td>0.73%</td>
<td>0.70%</td>
<td>0.70%</td>
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<td>Work at home</td>
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<td>3406025</td>
<td>4184223</td>
<td>2.26%</td>
<td>2.96%</td>
<td>3.26%</td>
</tr>
</tbody>
</table>

Alan E. Pisarski
2000-2005 CHANGE

BROAD MODE NET CHANGE 2000-2005

Drove alone: $5,000,000$
Carpooled: $5,000,000$
Public transportation: $1,000,000$
Walked: $0$
Other means: $0$
Worked at home: $200,000$

Total: $11,000,000$
BROAD MODAL TREND 2000-2005

- Public transportation
- Walked
- Other means
- Worked at home
2000-2005 CHANGE

ACS survey transit share trend

Alan E. Pisarski
State Travel Times

STATE TRAVEL TIME TRENDS.

1990 time  2000  90-00 diff