Summary of Travel Trends
Findings from the 2017 NHTS

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• Janice Machado
• Shawn McCloskey
• Shelly Brock

*STT is a Better Document Because of You!*
Critical Method Differences:

2009 NHTS

• RDD Landline Sample Frame
• Mail-out/Telephone Recruit
• ‘Usable’ household requires 50% of adults to complete
• Self-reported trip distances
• Computer Assisted Telephone Interviewing only (CATI)

2017 NHTS

• Address-based Sample Frame
• Mail-out/Mail-back Recruit
• ‘Usable’ household requires 100% of members 5+ to complete
• Network-coded shortest path rip distances
• Self-report on a Web-based Retrieval with CATI option
Short story on method effects (so far):

• Trip *rates* by age, sex, urban/rural, income, purpose, etc. all seem to track with previous trends—they continue to decline. There may be some effect here due to self-reporting—more research is needed.

• *Trip distance* was collected differently and may need an adjustment to be comparable. This effects VMT and PMT trends. More research is needed.

• *Transit* is a bit high while *vehicle trip* rates are a bit low—we don’t know why yet. FHWA has funded research on this.

• *Walk and bike* may have a break in trends analysis due to a change in trip definition, and possibly under-reporting of short non-purposeful trips. More research is needed.
Overview of Possible Methods Effects

- Trip Rates
- Immobile Rates/Zero Trip Reports
- Trips per Traveling Person
- Trip Distance
- Transit & Walk
**Trip rates** by age, sex, urban/rural, income, purpose, etc. all seem to track with previous trends--they continue to decline. The declines are from trips for shopping and errands.

Trends in Person Trips by Purpose, 1990 to 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Shopping and Errands</th>
<th>Social and Recreational</th>
<th>School/Church</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1.7</td>
<td>1.0</td>
<td>0.4</td>
<td>0.4</td>
<td>3.8</td>
</tr>
<tr>
<td>1995</td>
<td>2.0</td>
<td>1.1</td>
<td>0.4</td>
<td>0.4</td>
<td>4.3</td>
</tr>
<tr>
<td>2001</td>
<td>1.8</td>
<td>1.1</td>
<td>0.4</td>
<td>0.4</td>
<td>4.1</td>
</tr>
<tr>
<td>2009</td>
<td>1.6</td>
<td>1.0</td>
<td>0.4</td>
<td>0.4</td>
<td>3.8</td>
</tr>
<tr>
<td>2017</td>
<td>1.3</td>
<td>0.9</td>
<td>0.4</td>
<td>0.4</td>
<td>3.4</td>
</tr>
</tbody>
</table>

0.0 Daily Trip Rate Estimate

- **Other**
- **Social and Recreational**
- **School/Church**
- **Shopping and Errands**
- **To or From Work**
Immobile Rates are high: Many more people are reporting no travel on the travel day. There may be some effect here due to self-reporting—more research is needed.
Zero Trip Reports are significantly different by method:

Trends in Immobile Rates by Age and Method of Retrieval

- CPO_Web
- LL_Web
- CPO_CATI
- LL_CATI
- Margin of Error

Percent of Weighted Respondents Reporting Zero Trips
Trips per traveling person are significantly lower for all but older travelers:

Trends in Trips per Traveling Person

Person Trips per Day

16-30 31-44 45-60 61-75 76+ All

Margin of Error
**Trip distance** was collected differently and may need an adjustment to be comparable. This effects VMT and PMT trends. A suggested adjustment was part of STT, but does not make a significant difference.
Transit trips are unaccountably high—Primarily because of higher estimate of subway use and transit commutes. FHWA has funded research on this.
Walk and bike trips may also not be comparable due to a change in trip definition, and possibly under-reporting of short non-purposeful trips. More research is needed.
Some Long-Term Demographic Trends for Context
The number of people in non-metro areas has remained about the same since 1980—population growth has gone to metro areas.

Number of People in Metropolitan and Non-Metropolitan Areas (in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Metro</th>
<th>Non-Metro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>84.5</td>
<td>66.2</td>
</tr>
<tr>
<td>1960</td>
<td>113.5</td>
<td>65.9</td>
</tr>
<tr>
<td>1970</td>
<td>140.2</td>
<td>63.0</td>
</tr>
<tr>
<td>1980</td>
<td>169.4</td>
<td>57.1</td>
</tr>
<tr>
<td>1990</td>
<td>192.7</td>
<td>56.0</td>
</tr>
<tr>
<td>2000</td>
<td>226.0</td>
<td>55.4</td>
</tr>
<tr>
<td>2010</td>
<td>249.3</td>
<td>59.5</td>
</tr>
</tbody>
</table>

The population is aging:
Percent of the US Population by Age Group

“The aging of baby boomers means that within just a couple decades, older people are projected to outnumber children for the first time in U.S. history.

By 2035, there will be 78.0 million people 65 years and older compared to 76.4 million under the age of 18.”

US Census Bureau, March 13, 2018
Jonathon Vespa, Release Number: CB18-41
About 61.3 percent of the 2017 NHTS Sample Were Workers (BLS estimate is 60.4 in 2017)

Number of People aged 16+
Long term trends in other travel-related factors:

Drivers (000):

Housheold Vehicles (000):

Workers (000):

VMT (000,000):
Measures of Travel

- Household Travel
- Person Travel
- Special Topics
Trends in Household-Based Travel

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Person Trips</td>
<td>8.9</td>
<td>9.7</td>
<td>9.5</td>
<td>8.6</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>per Household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Vehicle Trips</td>
<td>5.7</td>
<td>6.4</td>
<td>6.0</td>
<td>5.7</td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>per Household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Person Trips</td>
<td>3.8</td>
<td>4.3</td>
<td>4.1</td>
<td>3.8</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>per Person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Vehicle Trips</td>
<td>3.3</td>
<td>3.6</td>
<td>3.4</td>
<td>3.0</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>per Driver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1990 - 2017 NHTS Summary of Travel Trends: HOUSEHOLD TRAVEL
Middle- and higher-income households report lower trip making:

Trips per HH by HH Income

Annual Person Trips per HH


100,000 AND OVER

$100,000 AND OVER
Household VMT trends show significant declines in errands and social/rec between 2001 and 2017:
VMT for the younger people (16-34) in urban areas was the same as 2009:
Since 1995, trip-making has declined significantly for all ages except over 65...
Trends in VMT and PMT by Gender

Trends in Vehicle and Non-Vehicle Miles of Travel per Day by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>28.6</td>
<td>16.4</td>
</tr>
<tr>
<td>2009</td>
<td>26.9</td>
<td>14.0</td>
</tr>
<tr>
<td>2017</td>
<td>22.3</td>
<td>17.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>16.7</td>
<td>19.0</td>
</tr>
<tr>
<td>2009</td>
<td>16.8</td>
<td>14.7</td>
</tr>
<tr>
<td>2017</td>
<td>16.0</td>
<td>16.8</td>
</tr>
</tbody>
</table>
Men and women’s travel rates have declined about the same amount:
The number of home deliveries to US households from on-line shopping doubled:

Number of Deliveries in Last 30 Days by Life Cycle
2009 and 2017 NHTS

- All
- No Kids
- Kids 5-15
- Kids 16-21

2009 Deliveries
2017 Deliveries
Margin of Error
Everyone is shopping on-line more, and growth is notable in 65 and older:

Percent of People with Deliveries from On-Line Shopping in the Last 30 days

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2009</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>35%</td>
<td>2.1%</td>
</tr>
<tr>
<td>25-34</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>35-44</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td>45-54</td>
<td>67%</td>
<td>2.7%</td>
</tr>
<tr>
<td>55-64</td>
<td>59%</td>
<td>2.1%</td>
</tr>
<tr>
<td>65-74</td>
<td>51%</td>
<td>1.7%</td>
</tr>
<tr>
<td>75+</td>
<td>44%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Total</td>
<td>34%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Mean Deliveries in last month
Other Topics

- Commute Travel
- Temporal Distribution
- Vehicle Use and Availability
The average commute in 2017 took 27.5 minutes (one-way) compared to 24.2 minutes in 2009.

An average worker who travels to and from work five days a week spent 33 more minutes a week commuting in 2017 compared to 2009.
No real signs of peak-spreading...the 2017 commutes are more peaked than previous
Autos are currently half the fleet, SUVs a growing share:

Number of Vehicles by Type, in millions

- **1977**: 120
- **1983**: 144
- **1990**: 165
- **1995**: 176
- **2001**: 201
- **2009**: 211
- **2017**: 223

xx=Total Household Vehicles (millions)

- Motorcycle/Moped
- Pick-up
- Van
- SUV
- Auto
Newer vehicles are less likely to be autos:

Distribution of Newer Vehicles by Vehicle Type
Vehicles 2 Years Old or Newer

- Car, 46.4%
- SUV, 34.8%
- Pick-Up, 11.7%
- MotorCycle, 1.8%
- Van, 4.3%
Thank you!

Questions? Comments?