

# Commuting Programs and Products from the Census Bureau

Applying Census Data for  
Transportation

Kansas City, MO

November, 2017

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# Decennial Census vs. American Community Survey

## Census:

- Everyone in the U.S.
- U.S. population count
- Core demographic characteristics
- Every 10 years

## ACS:

- 3.54 million addresses/year
- Estimates of the population and housing characteristics
- Demographic, social, economic and housing characteristics
- Every year

# Commuting Data and the ACS

Commuting data is collected through the ACS, which began in 2005.

ACS questions related to commuting are the same as those on the 2000 Census Long Form

The ACS only asks about work trips

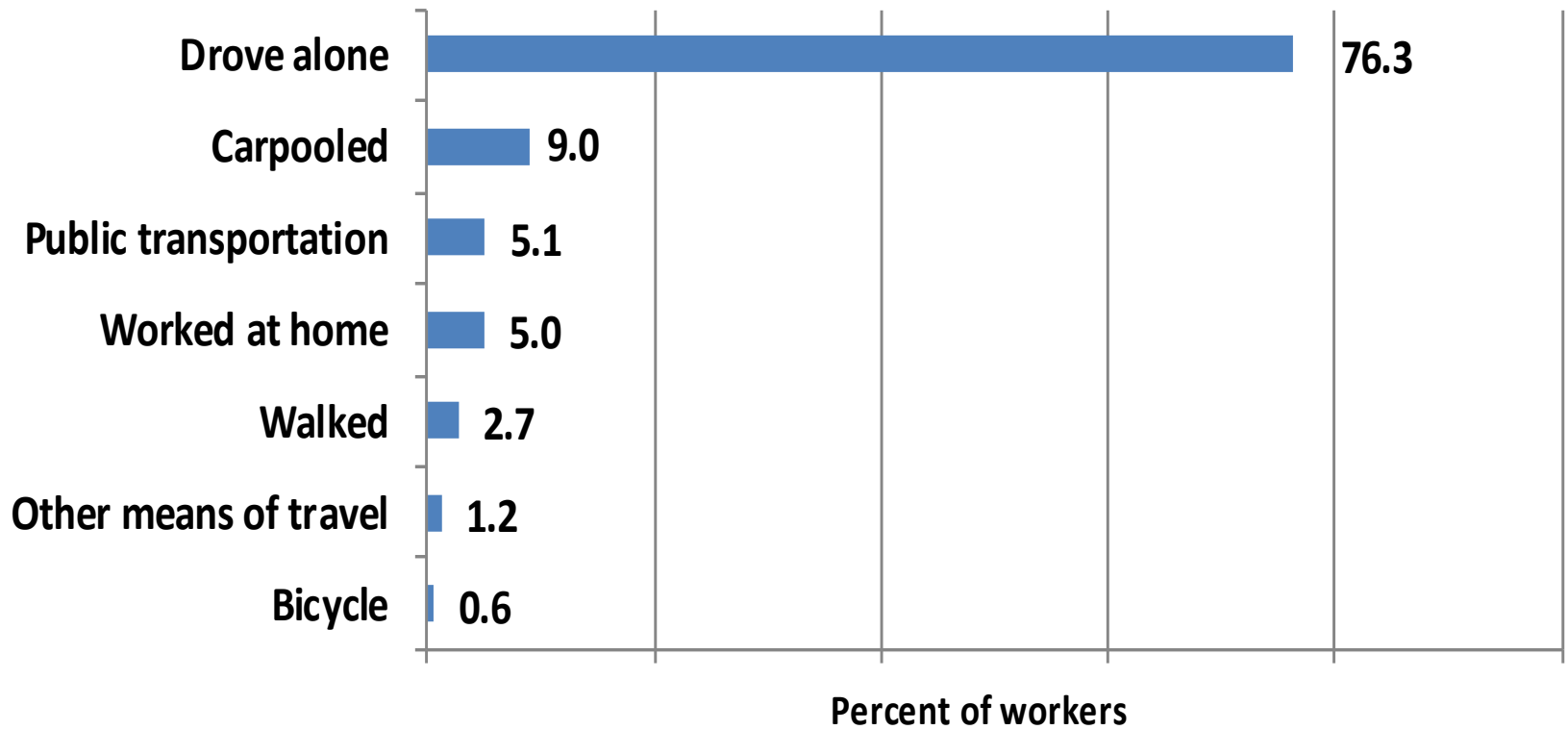
# Transportation Information Available from the ACS

- Means of transportation
- Occupants per vehicle
- Time leaving home for work
- Travel time to work
- Place of work
- Vehicles per household

# Strengths of ACS Transportation Data

- Survey data, collected continuously
- Available for small areas (block group)
- Comparability across years and geographies
- Includes margins of error for quality checks
- Rich set of demographic characteristics
- Several ways to access the data

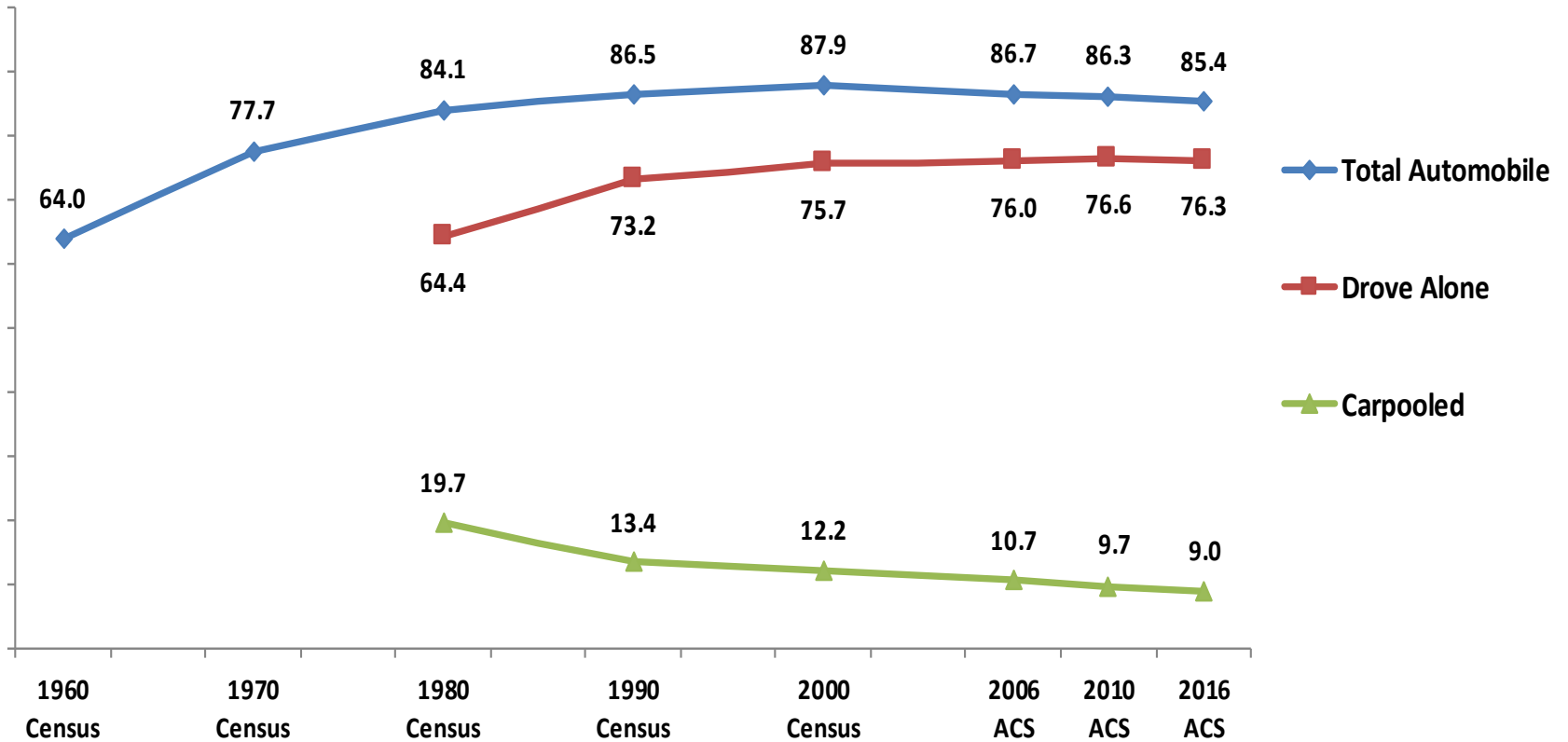
## How People Travel to Work: 2016



Source: U.S. Census Bureau, 2016 American Community Survey. Table S0801.

# Commuting by Automobile: 1960 to 2016

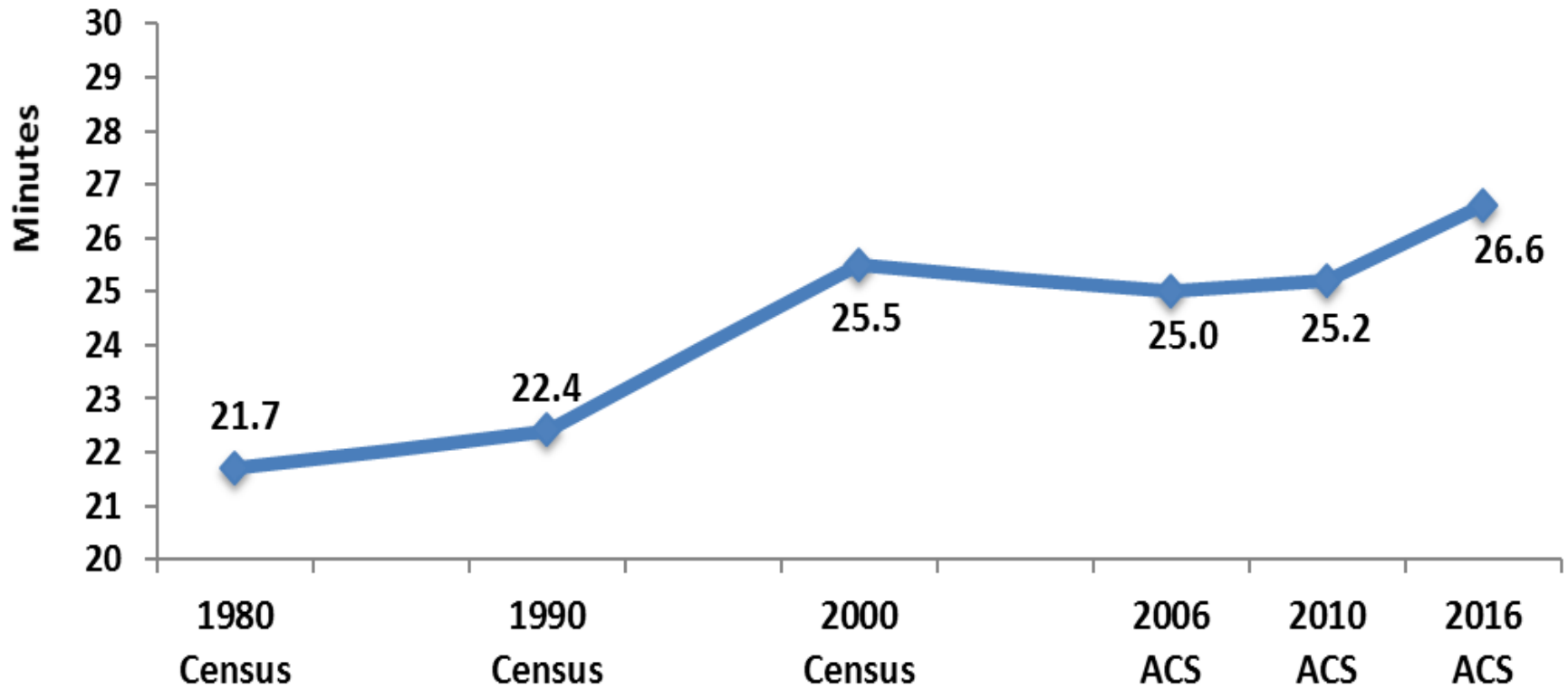
Percent of workers



Sources: Census 1960, 1970, 1980, 1990, 2000; American Community Survey 2006, 2010, 2016.

Universe: Workers 16 years and older.

## Travel Time to Work in the U.S. (1980 to 2016)



Sources: U.S. Census Bureau, Decennial Census 1980, 1990, 2000.  
U.S. Census Bureau, American Community Survey, 2006, 2010, 2016.



# ACS Release Schedule

- ACS 2016 1-year (Sept. 14<sup>th</sup>)
  - For geographies of at least 65,000 population
- 2016 ACS Supplemental Tables (Oct. 19<sup>th</sup>)
  - For selected geographies of at least 20,000 population
  - 58 tables (basic demographics)
- 2016 Public Use Microdata Sample (PUMS) file (Oct. 19<sup>th</sup>)
- ACS 2012-2016 5-year (Dec. 7<sup>th</sup>)
  - For all geographies

Available on American FactFinder  
-[factfinder.census.gov](https://factfinder.census.gov)

# American Factfinder – factfinder.census.gov

The screenshot shows the top navigation bar of the American Factfinder website. It includes the United States Census Bureau logo, the 'AMERICAN FactFinder' title, and a search bar with a magnifying glass icon. Below the navigation bar, there is a blue banner with a white information icon and text: 'The January 2016 update to American FactFinder is here! Read about upgrades to reference maps, thematic maps, and more in the January 2016 Updates to American FactFinder. For information on all software updates, see the Software Updates section on the News and Notes page.' Below this banner, there are four main navigation options: 'Community Facts', 'Guided Search', 'Advanced Search', and 'Download Center'. The 'Community Facts' section is expanded, showing a description: 'Find popular facts (population, income, etc.) and frequently requested data about your community.' Below this is a search input field with the placeholder text 'Enter a state, county, city, town, or zip code:' and a 'GO' button. The input field contains the example text 'e.g., Atlanta, GA'. To the right of the navigation options is a large photograph of a smiling family: a man, a woman, and a young girl. Below the navigation options, there is a 'Popular Tables' section with two columns of links. The first column is 'Population and Housing' and the second is 'Poverty and Income'. Below the 'Popular Tables' section, there is a 'News and Notes' section with a 'GET EMAIL UPDATES' button and a news item dated June 25, 2015, titled 'Population Estimates by Demographic Characteristic are now available...'. The news item includes a small thumbnail image of a family.

United States Census Bureau

AMERICAN FactFinder

MAIN COMMUNITY FACTS GUIDED SEARCH ADVANCED SEARCH DOWNLOAD CENTER

**i** The January 2016 update to American FactFinder is here!  
Read about upgrades to reference maps, thematic maps, and more in the [January 2016 Updates to American FactFinder](#).  
For information on all software updates, see the [Software Updates](#) section on the [News and Notes](#) page.

**Community Facts**  
Find popular facts (population, income, etc.) and frequently requested data about your community.  
Enter a state, county, city, town, or zip code:

**Guided Search**

**Advanced Search**

**Download Center**

**Popular Tables**

**Population and Housing**

- Annual Population Estimates (2015 PER, PEANNRES)
- Demographic and Housing Estimates (2014 ACS, DP05)
- General Housing Characteristics (2014 ACS, DP04)
- General Demographic Characteristics (2010 Census, DP-1)

**Poverty and Income**

- General Economic Characteristics (2014 ACS, DP03)

**Age, Race, Sex and Education**

- Selected Social Characteristics (2014 ACS, DP02)
- Educational Attainment (2014 ACS, S1501)

**News and Notes**

June 25, 2015  
Population Estimates by Demographic Characteristic are now available...



**Search** - Use the options on the left (topics, geographies, ...) to narrow your search results

**Your Selections**

"Your Selections" is empty

[load search](#) | [save search](#)

Search using the options below:

**Topics**  
(age, income, year, dataset, ...)

**Geographies**  
(states, counties, places, ...)

**Race and Ethnic Groups**  
(race, ancestry, tribe)

**Industry Codes**  
(NAICS industry, ...)

**EEO Occupation Codes**  
(executives, analysts, ...)

*To search for tables and other files in American FactFinder:*

- 1 Enter search terms and an optional geography and click GO

topic or table name S0801	state, county or place (optional) District of Columbia	GO	?
<input checked="" type="radio"/> topics <input type="radio"/> race/ancestry <input type="radio"/> industries <input type="radio"/> occupations			

-- or --

Select from **Topics, Race and Ethnic Groups, Industry Codes, EEO Occupation Codes.**

- these are added to 'Your Selections'
- the Search Results are updated

- 2 Next, select **Geographies** (states, counties, cities, towns, etc.)

- these are added to 'Your Selections'
- the Search Results are updated

- 3 Select one or more Search Results and click **View**

# Metropolitan and Micropolitan Areas

- Metropolitan and Micropolitan Areas were updated with post 2010 Census definitions
- These updates were included in the 2013 ACS Estimates (released in 2014)
- Metro areas are aggregations of counties
- 2006-2010 county-level commuting flow files served as input for the metro/micro area delineation process.

# Forthcoming Metro and Micro Area Update

- Metro and Micro areas to be updated based on 2011-2015 ACS.
- Central counties would not change, but commuting patterns could change the outlying counties included in a metro based on qualifying criteria:
  - At least 25 percent of the workers living in the county work in the central county or counties of the CBSA;
  - At least 25 percent of the employment in the county is accounted for by workers who reside in the central county or counties of the CBSA.
- Produced by Population Division, released early 2018.

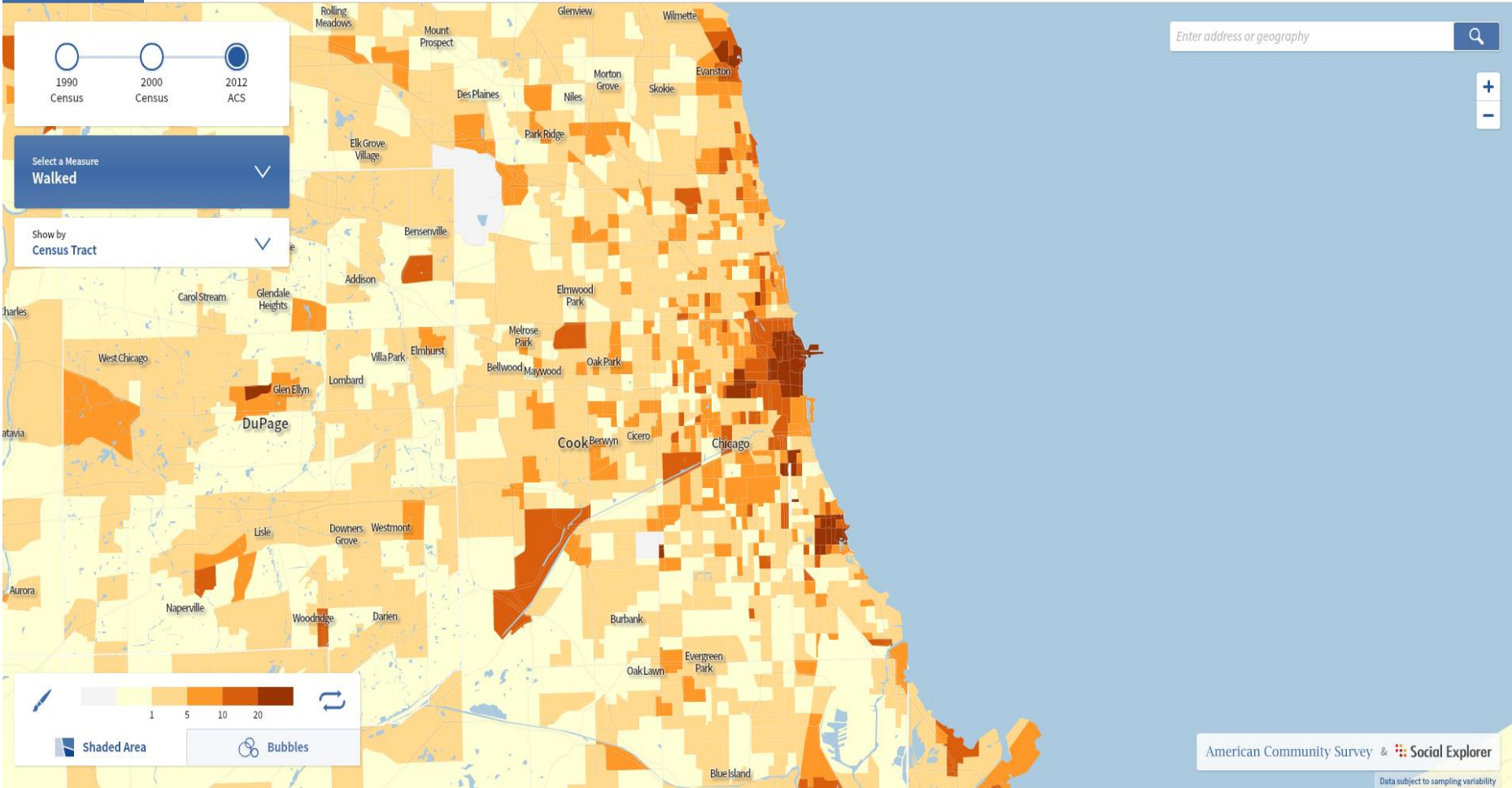
# Historical County Commuting Flows Page

- Commuting flows homepage:  
<https://www.census.gov/topics/employment/commuting/guidance/flows>
- Includes flows from 1990, 2000, 2006-10, 2009-13
- 2009-2013 5-year county-to-county (and MCD) commuting flows
  - Total worker counts
  - Means of transportation (4 categories)
- Metro area redefinition expected using mid-decade ACS 5-year estimates (2011-2015)

# Census Explorer Mapping Tool

- [www.census.gov/censusexplorer/](http://www.census.gov/censusexplorer/)
- Maps selected ACS variables for Census 1990, Census 2000, and 5-year ACS
- Census Explorer Commuting Edition:
  - Drove alone, Carpooled, Transit, Walk, Bicycle
  - Average travel time
  - Percent traveled 60 minutes or longer





Enter address or geography

1990 Census  
2000 Census  
2012 ACS

Select a Measure  
**Walked**

Show by  
**Census Tract**

1 5 10 20

Shaded Area

Bubbles



# PUMS Data

- Public Use Microdata Sample (PUMS)
  - A sample of population and housing unit records from the ACS
- Allows users to create custom tables that are not available through pretabulated ACS products
- Smallest Geographic Summary Level is the Public Use Microdata Areas (PUMAs)
- Now available in AFF (CSV and SAS files)

# ACS Content Test: Objectives

- Commute Mode:
  - Update and clarify the terminology
- Time of Departure:
  - Address privacy concerns by phrasing the question in a less intrusive way


# Commute Mode

## Control Version

**32** How did this person usually get to work **LAST WEEK**? *If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.*

<input type="checkbox"/> Car, truck, or van	<input type="checkbox"/> Motorcycle
<input type="checkbox"/> Bus or trolley bus	<input type="checkbox"/> Bicycle
<input type="checkbox"/> Streetcar or trolley car	<input type="checkbox"/> Walked
<input type="checkbox"/> Subway or elevated	<input type="checkbox"/> Worked at home → <i>SKIP to question 40a</i>
<input type="checkbox"/> Railroad	<input type="checkbox"/> Other method
<input type="checkbox"/> Ferryboat	
<input type="checkbox"/> Taxicab	

## Test Version

**31** How did this person usually get to work **LAST WEEK**? *Mark ONE box for the method of transportation used for most of the distance.* 

<input type="checkbox"/> Car, truck, or van	<input type="checkbox"/> Taxicab
<input type="checkbox"/> <b>Bus</b>	<input type="checkbox"/> Motorcycle
<input type="checkbox"/> <b>Subway or elevated rail</b>	<input type="checkbox"/> Bicycle
<input type="checkbox"/> <b>Long-distance train or commuter rail</b>	<input type="checkbox"/> Walked
<input type="checkbox"/> <b>Light rail, streetcar, or trolley</b>	<input type="checkbox"/> <b>Worked from home → <i>SKIP to question 39a</i></b>
<input type="checkbox"/> Ferryboat	<input type="checkbox"/> Other method

# Time of Departure

## Control Version

**34** What time did this person usually leave home to go to work **LAST WEEK**?

Hour

Minute

a.m.  
p.m.

## Test Version

**33** **LAST WEEK, what time did this person's trip to work usually begin?**

Hour

Minute

a.m.  
p.m.

# Content Test Findings

**Commute Mode and Time of Departure:** Test did not impact the overall response distribution, item missing data rate, response reliability.

**Commute Mode:** Test version performed well in cognitive testing, provides refined language, and shortens instructions to reduce burden.

**Time of Departure:** Test version performed well in cognitive testing and is believed to address some of the perceived sensitivity to the question.

# Longitudinal Employer-Household Dynamics (LEHD)

- The LEHD program uses administrative records information from employers across states
- Key pieces of information about workers and firms (e.g. worker counts, age, employment locations, industry, firm size)
- Includes origin-destination worker flows at the block level (LODES)
- User-friendly website offers several data extraction options

# American Housing Survey (AHS)

- Longitudinal survey of housing units conducted every two years
- Collects information on housing and neighborhood characteristics, including transportation and mobility
- Tables published for Nation, largest 15 Metro Areas, and 10 Rotating Metro Areas (Sample size: 120,000 households)
- New public transportation data available for 2013 AHS; new 2017 transportation data forthcoming (released in 2018)
- [www.census.gov/programs-surveys/ahs/](http://www.census.gov/programs-surveys/ahs/)

# 2017 AHS Transportation-Related Questions Assess:

- Public transportation use (specific modes)
- The frequency of public transportation use for work/school
- Distance to closest public transportation stop
- Access to amenities via public transportation
- Biking and walking to work and amenities
- Sidewalk availability and sidewalk lighting
- Availability of bike lanes
- Costs associated with commuting



# 2017 AHS Asks New Transportation-Related Questions:

- Number of commuting days each week
- Number of days drives self all the way to work each week
- Company car use
- Drives self a portion of the way to work
- Use of carpool
- Roundtrip miles driven for commute
- Cost of parking and tolls
- Use of public transportation for commute

# Resources for Census Products

- **Census Bureau General assistance with AFF**  
301-763-INFO (4636) or 800-923-8282
- **Census.gov FTP Technical Support**  
301-763-2626
- **Census 2020 Support**  
census.2020.program.management.review@census.gov
- **Journey to Work and Migration Statistics Branch**  
301-763-2454