WHERE WE STAND

Where We Stand ***tracks the health of the St. Louis region among the 50 most populous MSAs.[1] These metro areas, known as the peer regions, are our domestic competition and provide a consistent yardstick to gauge "Where We Stand."***

This update looks at the proportion of workers who commute by non-single occupancy vehicles, which includes public transportation, carpooling, walking, biking, and telecommuting.

7th Edition, Update 8 **June 2018**

Transportation Mode Split

Fewer than 20 percent of commuters in the St. Louis region travel to work using a mode other than driving alone. Under federal law, departments of transportation (DOT) and metropolitan planning organizations (MPO) are required to set targets for a set of national performance measures. One of the measures is the percentage of travel by non-single occupancy vehicles (SOV). This includes travel taken via public transportation, walking, bicycling, or carpooling as well as working from home (telecommuting).

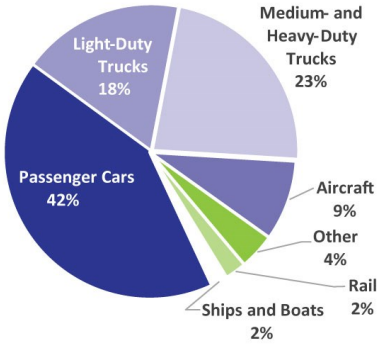
Federal transportation law mandates the use of this metric as an indication of how regions are performing on the goals of the Congestion Mitigation and Air Quality Improvement Program. Reducing the number of trips completed in single-occupancy vehicles, and therefore congestion, can have a positive effect on air quality by reducing emissions. The transportation sector accounts for about a quarter of all greenhouse gas (GHG) emissions in the United States, and, as shown on Figure 1, about half of transportation related emissions are from travel by individuals (passenger cars and light-duty trucks).[2]

In the St. Louis region, providing more transportation choices is one of the guiding principles of the long-range transportation plan, Connected2045. Performance on this principle is measured by the percent of commute trips by non-SOV travel. This principle emerged as a top priority for the region through a process that solicited extensive input from stakeholders and the general public.

In addition to environmental benefits, increasing non-SOV travel can encourage more active lifestyles, reduce traffic congestion, and make non-motorized modes of transportation more viable options (EWG 2015).

Residents in the St. Louis region who do not own a car are limited in the jobs and other destinations they can reach. For example, a vast majority of residents of the city of St. Louis live within a quarter mile of bus or light rail stop. However, at most, a city resident can only reach 37 percent of jobs in the East-West Gateway (EWG) region via a 60 minute public transportation commute.[3] There are some residents in portions of St. Louis County that have similar access to jobs via public transit, but residents in outer areas of the region have very limited access. By comparison, almost all city of St. Louis and St. Louis County residents, as well as some residents in St. Charles, St. Clair, Madison, and Jefferson counties, can reach 100 percent of jobs in the region via automobile within 45 minutes (EWG 2015).

Figure 1: Share of U.S. Transportation Sector GHG Emissions by Source, 2015



Source: EPA, Fast Facts, 1990-2015

Despite the limited reach of the transit system, some people may choose to not own a car. For others, owning a car is not an affordable option. On average, owning a car is estimated to cost $8,469 per year (AAA 2017) compared to $936 a year for 12 monthly passes for Metro transit in St. Louis (Metro 2018). Litman (2017) deems transportation costs in excess of 20 percent of a household's income to be unaffordable. By this criterion, a household would need an income of $42,345 for an automobile to be considered affordable. In St. Louis, about 35 percent of households have an income that is lower than this threshold (U.S. Census 2016).

1 MSAs (Metropolitan Statistical Areas) are geographic entities delineated by the Office of Management and Budget (OMB). MSAs are areas with "at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties."
2 Light-duty vehicles include trucks used for light cargo as well as sport utility vehicles and minivans, which are primarily used for transporting passengers.
3 The East-West Gateway (EWG) region, including Franklin, Jefferson, St. Charles, and St. Louis counties and city of St. Louis in Missouri and Madison, Monroe, and St. Clair counties in Illinois.

This Where We Stand (WWS) Update provides data on transportation mode split to inform the establishment of a goal for the percentage of travel completed by non-SOVs in the St. Louis region. It shows how the region ranks among the 50 most populous U.S. regions (the peer regions) as well as data specifically for the St. Louis region on mode split by county, age, and race. The St. Louis MSA has been among the peer regions with the lowest proportion of non-SOV commuters for at least the last 16 years. A majority of commuters in St. Louis, as well as across the nation, drive alone to work. This has not changed much in recent years, but there has been a decline in carpoolers and an increase in the number of people working from home. In St. Louis, these trends are similar in all counties, for all age groups, and for all racial and ethnic groups, although non-SOV travel is more common among younger workers and members of racial or ethnic minorities.

Mode Split in the United States, 1980 to 2016

The data in this report focuses solely on transportation mode split for commutes to work. This is the most consistently available data as well as a sensible focus for the target measure. Commute trips constitute a large share of travel—an estimated 28 percent of household vehicle miles of travel (VMT) and 39 percent of all transit passenger miles of travel. Commute trips are important to planning for at least three additional reasons. First, commute trips tend to occur during the most congested times of day. Second, commute trips often influence where people choose to live or to locate businesses. Third, commute trips affect the timing and destination of other trips (AASHTO, 2013).

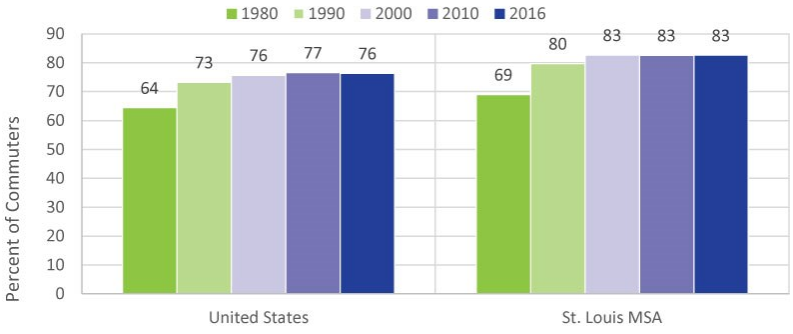
There is not reliable and consistent data on what mode people use for non-commute trips. However, continuing increases in VMT per capita indicate that automobile travel is not being replaced by other modes. Nationally and in the St. Louis region, VMT per capita has closely followed economic conditions. While VMT per capita declined during the recession, it has returned to pre-recession levels nationally and is close to pre-recession levels for St. Louis. Nationally, VMT is projected to continue increasing over the next 20 years, albeit at a lower rate than has been experienced over the last three decades. (FHWA 2017).

In the United States, SOV travel has long been the dominant mode of transportation. In 1980, SOV accounted for 64 percent of commuter travel. It increased to 76 percent in 2000 and has remained about the same since that time. Figure 2 shows the trend has been the same for the St. Louis MSA, with a slightly larger percentage of commuters using SOVs over the entire time period.

The nation experienced several changes over this time period that affected mode share, all of which can make the flexibility of driving alone more appealing than other modes. First, work schedules tend to vary more or be more flexible now than they once were. The lack of a regular schedule makes public transportation less appealing and coordination of carpooling challenging. Second, less dense land use means fewer people have access to public transportation and people are less likely to live within walking distance of their jobs. Lastly, trip chaining has increased. Carpooling or using public transportation makes it difficult to pick up children from school or grocery shop on the way home from work (AASHTO 2013).

Figure 3 (Page 3) shows the change in non-SOV modes for the nation from 1980 to 2016. The most notable changes include a steady decline in carpooling from 19.7 percent in 1980 to 9.0 percent in 2016 and a steady increase in the proportion working from home from 2.3 percent in 1980 to 5.0 percent in 2016. Public transportation and walking both declined from 1980 to 2000 but appear to have leveled off over the past 16 years. Other modes of transportation combined, including bicycle, motorcycle, and taxi cab, have accounted for less than 2 percent of travel over the entire time period.

Figure 2: Single Occupancy Vehicle Travel
United States & St. Louis MSA, 1980 to 2016



Source: U.S. Census Bureau, Decennial Census, American Community Survey 1-Year Estimates

Where We Stand: St. Louis 15-County MSA

In 2016, the St. Louis MSA had one of the lowest proportions of non-SOV travel among the peer regions. The region ranked 41st with 16.6 percent of commute trips taken via walking, biking, carpooling, public transit, or working from home. This is 5.9 percentage points lower than the United States as a whole.

The region's ranking among the peers has fluctuated some over the past 16 years, but the region has remained among the 10 regions with the lowest percentage of non-SOV commuters, except in 2008 when the region ranked 38th.

Similar to the region's ranking among the peers, the percentage of non-SOV commuters for St. Louis has not changed much, ranging from a low of 15.9 percent in 2011 and 2015 to a high of 17.7 percent in 2008. The percentage of non-SOV commuters for the United States as a whole also has not fluctuated much, and the proportion has consistently been higher than that of the St. Louis region.

From 2000 to 2016, 17 regions experienced an increase in non-SOV travel, but the increase was minimal for most regions. The regions with the largest increases are in the Northeast and on the West Coast. Many were already among the regions with the largest proportions of non-SOV commuters in 2000. The largest percentage point increases from 2000 to 2016 were San Francisco (4.1), New York (4.0), Boston (3.9), and Seattle (3.0).

Non-Single Occupancy Vehicle Travel

Percent of workers walking, biking, carpooling, working from home, or taking public transit to work, 2016

1	New York	49.1
2	San Francisco	40.0
3	Washington, D.C.	32.6
4	Boston	32.0
5	Seattle	30.6
6	Chicago	28.5
7	Portland	28.1
8	Philadelphia	26.4
9	Salt Lake City	24.3
10	San Jose	24.2
11	Denver	23.7
12	Los Angeles	23.6
13	San Diego	22.8
14	Austin	22.8
15	Pittsburgh	22.5
United States		**22.5**
16	Baltimore	22.3
17	Phoenix	22.0
18	Sacramento	22.0
19	Minneapolis	21.5
20	New Orleans	21.3
21	Atlanta	20.9
22	Miami	20.9
23	Riverside	20.4
24	San Antonio	19.7
25	Tampa	19.6
26	Las Vegas	19.1
27	Milwaukee	18.8
28	Virginia Beach	18.8
29	Hartford	18.6
30	Raleigh	18.5
31	Providence	18.5
32	Orlando	18.2
33	Charlotte	18.1
34	Dallas	18.1
35	Houston	17.9
36	Cleveland	17.8
37	Jacksonville	17.6
38	Cincinnati	17.6
39	Nashville	17.2
40	Richmond	16.7
41	**St. Louis**	**16.6**
42	Buffalo	16.6
43	Columbus	16.4
44	Louisville	16.3
45	Memphis	15.8
46	Oklahoma City	15.6
47	Kansas City	15.5
48	Detroit	14.9
49	Indianapolis	14.7
50	Birmingham	13.4

Source: U.S. Census, American Community Survey 1-Year Estimates

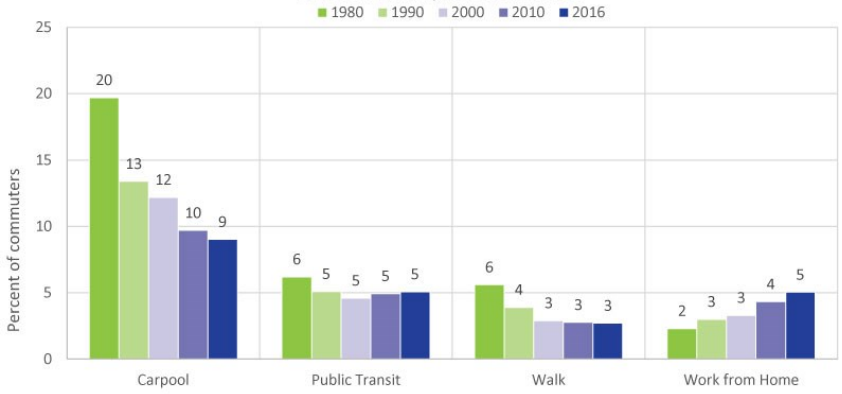
Change in Non-Single Occupancy Vehicle Travel

Percentage point change in percent of workers walking, biking, carpooling, working from home, or taking public transit to work, 2000 - 2016

1	San Francisco	4.1
2	New York	4.0
3	Boston	3.9
4	Seattle	3.0
5	San Jose	2.3
6	Portland	2.1
7	Hartford	1.8
8	Washington, D.C.	1.1
9	Salt Lake City	1.0
10	Pittsburgh	0.7
11	Tampa	0.5
12	Denver	0.4
13	Austin	0.3
14	Minneapolis	0.3
15	Raleigh	0.3
16	Detroit	0.2
17	Philadelphia	0.2
18	Orlando	0.0
19	Providence	-0.1
20	Chicago	-0.1
21	Charlotte	-0.1
22	Cleveland	-0.2
23	**St. Louis**	**-0.2**
24	Cincinnati	-0.5
25	Richmond	-0.6
26	Miami	-0.6
27	Jacksonville	-0.7
28	Virginia Beach	-0.8
United States		**-0.9**
29	Milwaukee	-0.9
30	Atlanta	-1.1
31	Columbus	-1.1
32	Buffalo	-1.2
33	Kansas City	-1.2
34	Baltimore	-1.3
35	Louisville	-1.3
36	Nashville	-1.4
37	Sacramento	-1.8
38	Oklahoma City	-1.8
39	San Diego	-1.9
40	Indianapolis	-1.9
41	Phoenix	-1.9
42	Dallas	-2.2
43	Birmingham	-2.6
44	Memphis	-2.7
45	San Antonio	-3.0
46	Los Angeles	-3.5
47	Houston	-3.9
48	New Orleans	-4.3
49	Riverside	-5.0
50	Las Vegas	-5.0

Source: U.S. Census, American Community Survey 1-Year Estimates

Figure 3: Non-Single Occupancy Vehicle Mode Split
United States, 1980 to 2016



Source: U.S. Census Bureau, Decennial Census, American Community Survey 1-Year Estimates

Relative to the peers, these regions have a few characteristics in common. They tend to have established and extensive public transportation systems, they have recently experienced strong growth in public transportation commuters, and they tend to have more commuters who walk to work.

From 2000 to 2016, all 50 MSAs saw a decline in the proportion of commuters that carpooled. Some of the regions with the largest increases in single-occupancy vehicle commuters saw some of the steepest declines in carpooling, including Las Vegas, Riverside, and Houston.

All 50 regions also saw an increase in the proportion of workers telecommuting. Austin, Raleigh, and Tampa all saw increases over four percentage points.

Even in communities with extensive public transportation systems, driving alone is the most popular mode of travel. Among the peer MSAs, New York has the lowest percentage of commuters who drive alone, ranking 50th and comprising 49.5 percent of commuters in 2016. The St. Louis MSA has the 8th largest proportion of commuters driving alone, 82.6 percent.

Where We Stand tables for each mode for 2016 and for total non-SOV travel for 2000 through 2016 are available at http://www.ewgateway.org/research-center/where-we-stand/

Workers Who Commute by Public Transportation

Percent of Workers, 2016

1	New York	31.4
2	San Francisco	17.2
3	Washington, D.C.	13.4
4	Boston	13.1
5	Chicago	12.0
6	Seattle	9.5
7	Philadelphia	9.3
8	Portland	6.4
9	Baltimore	6.1
10	Pittsburgh	6.0
United States		**5.1**
11	Los Angeles	5.1
12	Minneapolis	4.7
13	Salt Lake City	4.6
14	San Jose	4.3
15	Denver	4.0
16	Miami	3.8
17	Las Vegas	3.7
18	Milwaukee	3.6
19	Buffalo	3.5
20	Cleveland	3.1
21	Atlanta	3.1
22	Hartford	3.1
23	San Diego	2.9
24	**St. Louis**	**2.6**
25	New Orleans	2.6
26	Providence	2.5
27	San Antonio	2.3
28	Austin	2.2
29	Sacramento	2.1
30	Cincinnati	1.9
31	Houston	1.9
32	Orlando	1.9
33	Phoenix	1.8
34	Virginia Beach	1.8
35	Louisville	1.8
36	Jacksonville	1.7
37	Columbus	1.6
38	Detroit	1.5
39	Richmond	1.4
40	Dallas	1.4
41	Tampa	1.4
42	Charlotte	1.4
43	Riverside	1.3
44	Raleigh	1.2
45	Memphis	1.1
46	Nashville	0.9
47	Kansas City	0.9
48	Indianapolis	0.7
49	Birmingham	0.5
50	Oklahoma City	0.4

Source: U.S. Census Bureau, American Community Survey 1-Year Estimates

Workers Who Commute by Walking

Percent of Workers, 2016

1	New York	5.8
2	Boston	5.2
3	San Francisco	4.5
4	Seattle	4.1
5	Virginia Beach	3.8
6	Philadelphia	3.6
7	Providence	3.4
8	Washington, D.C.	3.4
9	Portland	3.2
10	San Diego	3.2
11	Pittsburgh	3.2
12	Chicago	3.1
United States		**2.7**
13	Milwaukee	2.7
14	Baltimore	2.6
15	Los Angeles	2.5
16	Salt Lake City	2.5
17	Hartford	2.5
18	Buffalo	2.4
19	Denver	2.3
20	Cleveland	2.3
21	San Jose	2.3
22	Columbus	2.2
23	New Orleans	2.2
24	Minneapolis	2.1
25	Cincinnati	2.1
26	Jacksonville	2.0
27	Richmond	1.9
28	San Antonio	1.9
29	Sacramento	1.8
30	Miami	1.7
31	Austin	1.7
32	Indianapolis	1.6
33	**St. Louis**	**1.6**
34	Tampa	1.5
35	Louisville	1.5
36	Phoenix	1.5
37	Riverside	1.5
38	Oklahoma City	1.5
39	Houston	1.4
40	Atlanta	1.3
41	Nashville	1.3
42	Kansas City	1.3
43	Charlotte	1.3
44	Detroit	1.3
45	Las Vegas	1.2
46	Dallas	1.2
47	Memphis	1.1
48	Birmingham	1.1
49	Orlando	1.1
50	Raleigh	1.0

Source: U.S. Census Bureau, American Community Survey 1-Year Estimates

Mode Split by County

Driving alone is the dominant mode of travel in every county in the East-West Gateway (EWG) planning area.[4] Table 1 shows the percentage of commuters by main mode of transportation to work by county for the St. Louis region for the 2012-2016 time period. The city of St. Louis has the lowest proportion of commuters driving alone, 71.6 percent, and St. Charles County has the highest, 86.4 percent.

Although the dominant mode of travel in each county of the region is driving alone, non-SOV modes are used in every county. In the 2012-2016 time period, 16.4 percent of commuters in the EWG region used non-SOV modes. The most common non-SOV mode was carpooling, with 7.3 percent of commuters using this mode. Over the past few decades, however, carpooling has been on the decline in all counties. Working from home was the second most common, accounting for 4.4 percent of commuters and is the choice of a growing number of workers, particularly in areas of the region that are more distant from the urban core.

Commuters in the core of the region (city of St. Louis, St. Louis County, and St. Clair County) were the most likely to take public transportation, bike, and walk. However, the city of St. Louis is the only area of the region where public transportation is the dominant non-SOV mode, and even there, carpooling is not far behind. The city of St. Louis also had the largest proportions of bicyclists (0.9 percent) and walkers (4.3 percent).

As distance from the urban core increases, access to public transportation becomes more limited. In these areas, carpooling is used more frequently. Franklin and Jefferson counties have the largest proportions of carpoolers, both over 9 percent. Monroe and St. Charles counties have the largest proportions of people working from home, both over 5 percent.

Table 1: Mode Split
East-West Gateway (EWG) Region, 2012-2016

County	Drive Alone	Carpool	Public Transit	Bicycle	Walk	Work from Home	Total Non-SOV[1]
Madison	85.4	6.9	1.7	0.2	1.1	4.0	13.8
Monroe	84.7	7.7	0.6	0.0	1.0	5.7	15.1
St. Clair	82.0	7.4	4.2	0.2	1.7	3.2	16.8
Franklin	84.3	9.7	0.6	0.1	1.7	2.9	15.1
Jefferson	86.1	9.3	0.2	0.0	0.6	3.4	13.5
St. Charles	86.4	6.1	0.2	0.1	0.9	5.6	12.8
St. Louis	83.3	6.7	2.6	0.2	1.5	4.8	15.9
City of St. Louis	71.6	8.7	9.8	0.9	4.3	3.6	27.3
EWG Region	**82.8**	**7.3**	**2.8**	**0.3**	**1.6**	**4.4**	**16.4**

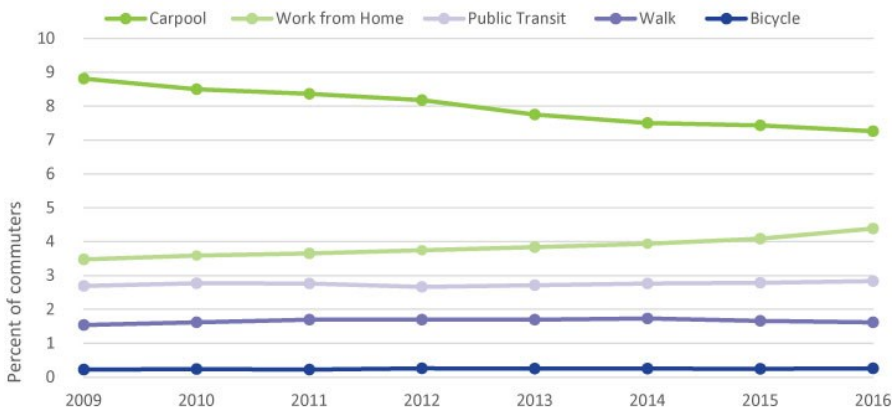
1 Total Non-SOV includes carpool, public transit, bicycle, walk, and work from home.
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (B08301).

4 This section focuses on the eight-county region for which East-West Gateway Council of Governments coordinates transportation funding. Due to data availability and for comparison purposes, the WWS tables use the St. Louis 15-county Metropolitan Statistical Area (MSA). For a map of the counties see http://www.ewgateway.org/about-us/where-we-are/ .

Table 2 shows the percentage of commuters using Non-SOV modes by county for the past eight years.[5] The last column indicates the percentage point change. For the region as a whole, there has been very little change, ranging from 16.2 to 16.7 percent of commuters using non-SOV modes. Monroe County saw the largest decline in non-SOV travel with a 2.8 percentage point decrease, mostly due to a decline in carpooling.

Figure 4 provides the percentage of commuters by mode for the entire region from 2009 to 2016. Although small, the largest changes were a 1.5 percentage point decline in carpoolers and a 0.9 percentage point increase in people working from home. The other modes have remained about the same over the time period with about 2.7 percent of commuters using public transit, 1.6 percent walking, and 0.2 percent bicycling.

Figure 4: Non-SOV Mode Split
East-West Gateway Region, 2009 to 2016



Note: Data is for the 5-year periods ending in the stated years.
Source: U.S. Census Bureau, American Community Survey 5-Years Estimates (B08301)

Table 2: Percent of Commuters using Non-Single Occupancy Vehicle (SOV) Modes [1]
East-West Gateway (EWG) Region, 2009-2016

County	2009	2010	2011	2012	2013	2014	2015	2016	Change, 2009-2016
Madison	13.7	13.6	13.9	13.3	13.4	14.0	14.0	13.8	0.11
Monroe	17.9	18.1	17.1	16.0	14.6	14.9	14.6	15.1	-2.83
St. Clair	17.5	17.8	17.7	17.4	17.7	17.2	16.9	16.8	-0.67
Franklin	16.7	16.8	16.6	16.7	16.3	16.2	15.8	15.1	-1.65
Jefferson	15.2	14.6	14.2	14.8	14.6	14.3	13.7	13.5	-1.70
St. Charles	12.4	12.4	12.4	12.2	12.1	12.1	12.1	12.8	0.40
St. Louis	15.4	15.7	15.8	15.7	15.3	15.2	15.6	15.9	0.43
City of St. Louis	28.5	28.9	28.7	28.3	27.7	27.8	27.1	27.3	-1.24
EWG Region	**16.7**	**16.7**	**16.7**	**16.5**	**16.3**	**16.2**	**16.2**	**16.4**	**-0.38**

1 Total Non-SOV includes carpool, public transit, bicycle, walk, and work from home.
Note: Data is for the 5-year period ending in the stated years. For example, "2009" is for the 2005-2009 time period. The Census warns against comparing overlapping years.
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates (B08301).

5 Table 2 and Figure 4 use American Community Survey 5-Year estimates. They display the end year for the 5-year period reflected in the data. For example, "2009" is for the 2005-2009 time period. The U.S. Census Bureau warns against comparing overlapping years, but this is the best available for looking at data over time by county.

Mode Split by Age

As the millennials, along with younger generations, enter the workforce, they are doing so with advancing technologies at their disposal, including an increasing number of smartphone applications and the potential for driverless cars. These advances may have important implications for transportation choices. However, thus far, these changes have not made much of a difference in the proportion of the population that is choosing non-SOV modes of transportation.

This section first looks at broad age groups to see how mode choice differs among people of different ages and then looks at how these mode choices have changed over the past few decades. Last, is a look specifically at the choices of the millennial generation.

In 2016, a majority of commuters of all age groups in the St. Louis MSA drove alone to work with younger commuters less likely to drive than older ones. As shown in Table 3, the percentage increases from a low of 70.9 percent for 16-19 year olds, to a peak of 83.6 percent for the age group 55-59. About 80 percent of workers over the age of 65 commute via SOV.

Figure 5 shows the split for non-SOV modes by age group for the St. Louis MSA in 2016. The youngest commuters, 16-19 and 20-24 year olds, were the most likely to travel by non-SOV modes. Teenagers are the age group with the largest percentage of workers walking to work (6.4 percent) and taking public transit (8.9 percent). Public transit use is lower among other age groups—4.4 percent for 20-24 year olds, around 2 percent for the 25-44 and 60-64 age groups, and less than 1 percent for the 65 and older group.

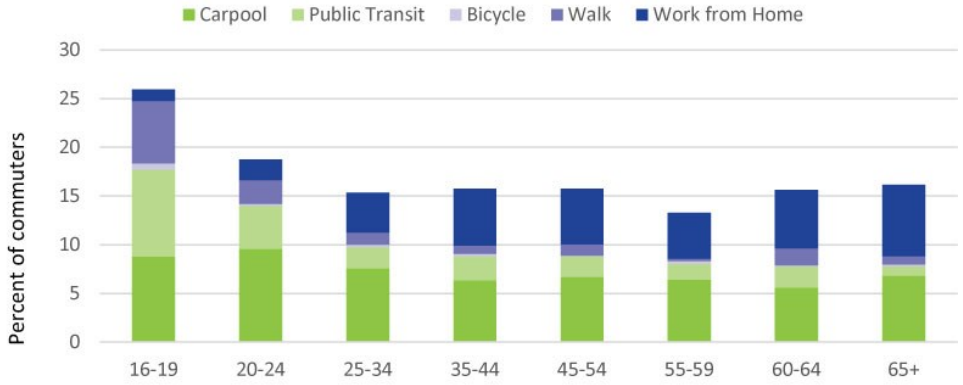
Table 3: Percent of Commuters Driving Alone by Age
St. Louis MSA, 2016

Age Group	Percent
16-19	70.9
20-24	78.3
25-34	82.6
35-44	81.7
45-54	82.1
55-59	83.6
60-64	81.5
65+	80.3
All Ages	**81.3**

Source: IPUMS, U.S. Census Bureau, American Community Survey 1-Year Estimates

Teenagers are about as likely to carpool as they are to take public transit. Those 65 and older are about as likely to carpool as they are to work from home (about 7 percent). For all other age groups, carpooling is the dominant mode of non-SOV travel with working from home following close behind for most age groups.

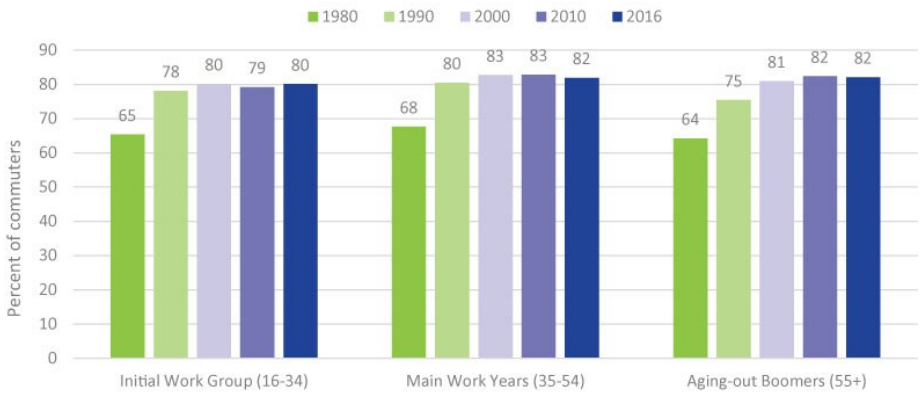
Figure 5: Non-SOV Mode Split by Age Group
St. Louis MSA, 2016



Source: IPUMS, U.S. Census Bureau, American Community Survey 1-Year Estimates

Looking at mode-split for people of the same age group in different time periods indicates that, for the most part, the mode choices have changed similarly for all age groups. Figure 6 and Table 4 provide mode split for three age groups for the St. Louis MSA from 1980 through 2016. These age groups were defined by the American Association of State Highway and Transportation Officials (AASHTO) as initial work group (ages 16-34), main work years group (ages 35-54) and aging-out boomers (ages 55+) (2013). In St. Louis, the percentage of workers driving alone to work increased for all three age groups with the most substantial increases between 1980 and 1990 followed by minimal, if any, changes over the remaining time periods (See Figure 6).

Figure 6: Commuters Driving Alone by Age Group
St. Louis MSA, 1980 to 2016



Source: IPUMS, U.S. Census Bureau, Decennial Census, American Community Survey 1-Year Estimates

Table 4 provides detail on the changes in mode-split for non-SOV modes for the most recent time periods (2000 and 2016). The change, or absence of change, in some of the mode choices is similar among all three age groups—carpooling declined, walking remained about the same, and working from home increased.

One area where groups differ is public transit. The youngest group was more likely to take transit in 2016 than in 2000, but the older age groups did not see the same increase.

The travel behaviors of millennials have received a lot of attention, in part because this generation has not been driving as much as older generations. There was speculation this might be due to a shift in values millennials would carry with them as they aged.

This section looks at how the mode choice of this generation compares to other generations and has changed in recent years.

The most recent data indicates that millennials, as well as those who are younger, indicates they are simply starting to drive at an older age than other generations. This delay is not likely attributable to a change in values. Rather, the amount they drive alone seems to mirror trends of the past several decades—following economic trends and correlated with several lifestyle choices.

Born between 1981 and 1996, many millennials were reaching workforce age during the economic downturn. For most generations, between 40 and 50 percent of teens participated in the workforce. However, workforce participation was lower among millennial teens (about 35 percent). As the economy recovered, the workforce participation rate of this cohort increased and is similar to other generations (Ruggles, 1990 and 2000; U.S. Census, 2010 and 2016).

Lower workforce participation led millennials to stay in school longer, be more likely to be unemployed, and be more likely to delay buying a home, getting married, and having children. All of these factors have long been associated with certain travel behaviors.

Table 4: Non-SOV Mode Split by Age Group
Percent of age group
St. Louis MSA, 2000 and 2016

	Initial Work Group (Ages 16-34)		Main Work Years (Ages 35-54)		Aging-Out Boomers (Ages 55+)	
	2000	2016	2000	2016	2000	2016
Carpool	11.2	8.3	8.9	6.5	7.4	6.3
Walk	2.1	2.2	1.0	1.0	1.5	0.9
Work from Home	1.5	2.8	3.0	5.8	5.4	5.7
Public Transit	2.5	3.8	2.3	2.3	2.3	1.6
Total Nov-SOV	**17.4**	**17.4**	**15.3**	**15.7**	**16.7**	**14.7**

Note: Bicycle is included in the total but not shown separately due to minimal commuters using this mode.
Source: IPUMS, U.S. Census Bureau, Decennial Census, American Community Survey 1-Year Estimates

People who are unemployed tend to drive less. As income rises, VMT increases (AASHTO 2013). VMT is also found to be higher among homeowners than renters as well as among families with children than those without children (Polzin 2014). Interestingly, the millennial generation has attained higher levels of education, which is associated with increased driving (Polzin 2014). However, they are also carrying large amounts of student debt, which is thought to contribute to their delay in some of these lifestyle choices.

Table 6: Mode Split for Oldest Millennials
St. Louis MSA, 2016

	2000 (Aged 16-19)	2010 (Aged 26-29)	2016 (Aged 32-35)
Drive Alone	71.7	78.3	82.8
Carpool	17.1	9.6	6.9
Public Transit	3.0	3.9	2.3
Walk	4.4	2.2	0.9
Work from Home	1.0	3.2	5.1

Source: IPUMS, U.S. Census Bureau, American Community Survey 1-Year Estimates

Table 5 shows the mode split for 2016 by generation.[6] In St. Louis, at ages 20-35, millennials are just as likely to drive alone as the older generations (about 82 percent of commuters). They are slightly more likely to carpool, take public transit, and walk to work than the older generations. However, historically, younger commuters have used these modes with more frequency as well (see Figure 6, Page 8). The proportions of total non-SOV commuters are not much different across age groups since older commuters are more likely to work from home than the youngest commuters.

Data indicate that the oldest of the millennials in St. Louis are changing their mode choices as they age. Table 6 shows mode-split for the oldest millennials, those who were between the ages of 16 to 19 in 2000. Following this cohort into their 20's and 30's, they follow the same trends as are reported in other sections of this report – increased driving and working from home as well as decreased carpooling, public transit, and walking.

The age at which people obtain drivers licenses has been used as an indication that millennials are driving less (Sivak 2016). Data from the Federal Highway Administration indicates that nationally the youngest millennials are following a similar trend as the oldest millennials—delaying obtaining licenses, not forgoing it.

In 1997, less than half (43 percent) of the oldest millennials had a license when they were 16. By the time they were 20, in 2001, 78 percent had licenses. The youngest millennials turned 16 in 2012. At that time, only 28 percent obtained licenses. By the time they were 20, in 2016, that increased to 76 percent (FHWA 2018). This delay in obtaining licenses is likely due to the economic factors discussed previously as well as the enactment of more restricted graduated licensing programs, which are now policy in all states.

Table 5: Mode Split by Generation
St. Louis MSA, 2016

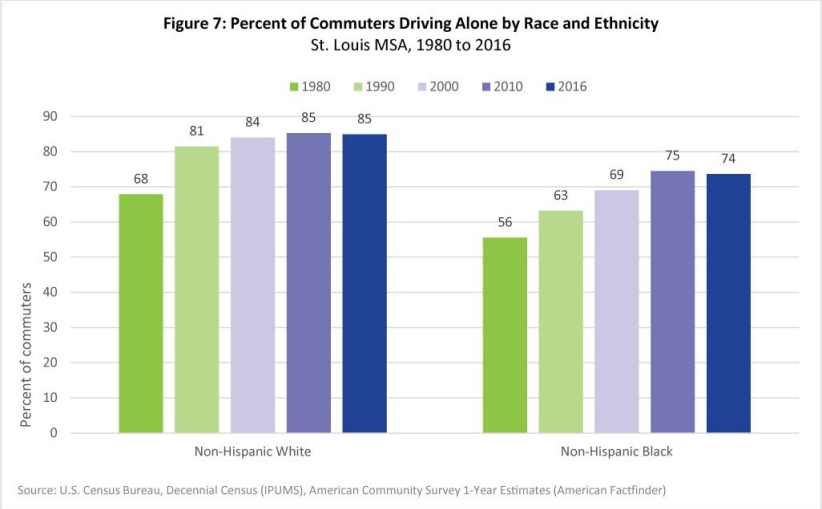
	Aged 20-35 (Millennials)	Aged 36-51 (Generation X)	Aged 52-70 (Baby Boomers)	All Ages
Drive Alone	81.5	81.4	82.7	81.3
Carpool	7.9	6.7	6.5	7.1
Public Transit	3.0	2.5	1.7	2.7
Walk	1.5	1.1	0.9	1.4
Work from Home	3.4	5.7	5.3	4.7

Source: IPUMS, U.S. Census Bureau, American Community Survey 1-Year Estimates

6 Generations are defined as follows: baby boomers (born between 1946 and 1964), Generation X (born between 1965 and 1980), and millennials (born between 1981 and 1996).

Mode Split by Race and Ethnicity

The commuting patterns of people across racial and ethnic groups are similar to the trends observed in previous sections – a majority drive alone, carpooling is declining, and people are increasingly working from home. This was found to be true in national research (AASHTO 2013), as well as in the data reported on St. Louis in this section. Nationally, and in the St. Louis region, people of color are a growing proportion of the population. Historically, people of color have been more likely than non-Hispanic whites to use non-SOV modes, particularly public transportation and carpooling, but their travel behaviors are becoming more similar to that of white commuters.



In 2016, a majority of people of all races and ethnicities in the St. Louis MSA drove alone. Non-Hispanic whites were the most likely to drive alone (85.3 percent). For non-Hispanic blacks the proportion was about 74 percent. For earlier years, the sample sizes for other races and ethnicities in St. Louis are small and therefore not included on Figure 7. However, for 2016, the U.S. Census Bureau estimates that 71 percent of Hispanics and Latinos and 76 percent of Asians in the region drive alone to work.

Figure 7 shows that, for the most part, the proportion of commuters driving alone has increased for both non-Hispanic whites and non-Hispanic blacks. As discussed in previous sections, the largest increases were from 1980 to 1990. The percentage of non-Hispanic blacks driving alone showed a minimal decline from 2010 to 2016, but annual data for that time period indicates that the percentage has not changed substantially. The annual average for 2010 through 2016 was 74 percent of commuters.[7]

Table 7 displays non-SOV mode split for non-Hispanic whites and non-Hispanic blacks for the St. Louis MSA for 2000 and 2016. The percent of commuters carpooling to work decreased for both groups. Carpooling remains the dominant non-SOV mode for non-Hispanic whites (6.4 percent of commuters). The dominant mode for non-Hispanic blacks remains public transit. The proportion of black commuters using transit has fluctuated some over the past 11 years. In 2008 and 2013 the percentage was highest, at 13 percent, and in 2011 it reached a low of 9 percent. Non-Hispanic whites are almost as likely to work from home (5.5 percent) as they are to carpool.

Table 7: Non-SOV Mode Split by Race and Ethnicity
Percent of commuters aged 16 and older
St. Louis MSA, 2000 and 2016

	Non-Hispanic White		Non-Hispanic Black	
	2000	2016	2000	2016
Carpool	8.6	6.4	13.3	8.9
Public Transit	1.0	0.9	10.5	10.5
Walk	1.3	1.3	2.1	2.9
Work from Home	3.1	5.5	1.4	2.6
Total Non-SOV	**13.9**	**14.1**	**27.3**	**24.9**

Source: U.S. Census Bureau, Decennial Census (IPUMS), American Community Survey 1-Year Estimates (American Factfinder)

7 Due to data availability, the data for 1980, 1990, and 2000 is from IPUMS and the data for 2010 and 2016 is from American Factfinder.

Summary

This update provides data that may help inform target-setting for the federally required performance measure of tracking non-single occupancy vehicle (SOV) travel. Driving alone is the preferred mode of travel across regions, races, and ages. The flexibility of driving alone makes it challenging to meet the goal of increasing non-SOV travel. In St. Louis, the challenge may be even greater than for some regions due to the region's relatively low congestion[8], low gas prices, and low population density.

Yet, it is important to work towards making non-SOV modes viable options for people commuting to work and reaching other destinations. This change can have positive benefits for the environment, encourage healthier lifestyles, and reduce traffic congestion. Making these options viable means making them available in more locations, connecting them to a greater number of destinations in a reasonable time, making them more affordable, and making them safer. Additionally, the region can look at ways to make telecommuting a more workable option for a greater number of employers.

East-West Gateway's long-range transportation plan outlines many strategies that can be employed to increase transportation choices. These strategies include increasing connections between jobs and housing, encouraging coordinated land use and multi-modal transportation planning, using Complete Street principles to enhance connections, encourage efforts to create a statewide transit funding program in Missouri, and provide assistance to encourage transit oriented development (EWG 2015).

Developing technologies may provide additional strategies for how the region can increase non-SOV travel. East-West Gateway recently completed a study on emerging technologies that considers the potential impacts of new technologies in each of the guiding principle areas. The study concluded that technology is leading to an increased number of options for non-single occupancy vehicle use, including bicycle sharing, microtransit, carsharing, ridesourcing, and improved connections between modes. As technological advances are made and mobile phone technology is used for a greater number of purposes, these options will likely become more accessible for a greater number of people. The study notes that there is no consensus on how autonomous vehicles will affect vehicle ownership or vehicle miles traveled (EWG 2017).

8 See Where We Stand Update on Roadway Congestion & System Reliability to see how St. Louis ranks among the peer regions http://www.ewgateway.org/wp-content/uploads/2018/02/

Sources

AAA, NewsRoom, 23 August 2017, accessed on 25 March 2018 at http://newsroom.aaa.com/tag/driving-cost-per-mile/

American Association of State Highway and Transportation Officials (AASHTO), Commuting in America 2013, accessed on 25 March 2018 at http://traveltrends.transportation.org

East-West Gateway Council of Governments (EWG), Connected2045, June 2015, accessed on 4 May 2018 at http://www.ewgateway.org/transportation-planning/long-range-planning/

East-West Gateway Council of Governments (EWG) – Prepared for by ICF, St. Louis Region Emerging Transportation Technology Strategic Plan, June 2017, accessed on 4 May 2018 at http://www.ewgateway.org/wp-content/uploads/2017/08/emergingtranstechstratplan.pdf

Federal Highway Administration (FHWA), Forecasts of Vehicle Miles Traveled (VMT): Spring 2017, 4 May 2017, accessed on 25 March 2018 at https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt_forecast_sum.pdf

Federal Highway Administration (FHWA), Highway Statistics Series, multiple years, accessed on 25 March 2018 at https://www.fhwa.dot.gov/policyinformation/statistics.cfm

Fry, Richard, Millennials projected to overtake Baby Boomers as America's largest generation, Pew Research Center, 1 March 2018, accessed on 25 March 2018 at http://www.pewresearch.org/fact-tank/2018/03/01/millennials-overtake-baby-boomers/

Litman, Todd, Transportation Affordability Evaluation and Improvement Strategies, Victoria Transport Policy Institute, 18 July 2017, accessed on 25 March at http://www.vtpi.org/affordability.pdf

McDonald, Noreen C., Are Millennials Really the "Go-Nowhere" Generation?, Journal of the American Planning Association, Vol. 81, No. 2, Spring 2015.

Metro, Metro Fair Details, accessed on 7 March 2018 at https://www.metrostlouis.org/fares-and-passes/

Polzin, S.E., The impact of millennials' travel behavior on future personal vehicle travel, Energy Strategy Reviews (2014), http://dx.doi.org/10.1016/j.esr.2014.10.003

Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. Integrated Public Use Microdata Series: Version 7.0 [1990, 2000]. Minneapolis: University of Minnesota, 2017. https://doi.org/10.18128/D010.V7.0

Sivak, Michael and Brandon Scholettle, Recent decreases in the proportion of persons with a driver's license across all age groups, Transportation Research Institute, University of Michigan, January 2016, accessed on 25 March 2018 at http://umich.edu/~umtriswt/PDF/UMTRI-2016-4.pdf .

U.S. Census Bureau, American Community Survey 1-Year Estimates 2010; 2016 (S1901).

EAST-WEST GATEWAY
Council of Governments
Creating Solutions Across Jurisdictional Boundaries

One Memorial Drive, Suite 1600
St. Louis, MO 63102
314-421-4220/618-274-2750

To receive future WWS Updates,
contact wws@ewgateway.org
To view past editions of WWS and WWS Updates,
visit www.ewgateway.org/research-center/where-we-stand/

This publication was supported, in part, by a grant provided from the U.S. Department of Transportation through the Missouri Department of Transportation and the Illinois Department of Transportation.