Where We Stand: 8th Edition

Update 7: Roadway Congestion in Urban Areas   September 2020

In 2017, St. Louis continued to have one of the lowest levels of congestion among large metropolitan regions, despite having one of the highest rates of vehicle miles traveled.
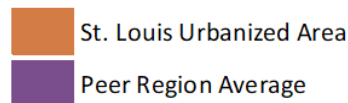
The Texas A&M Transportation Institute (TTI) Urban Mobility Report (UMR) provides a comprehensive dataset on roadway congestion in U.S. urbanized areas. According to the report, as the economy rebounded from the Great Recession, traffic congestion and the associated costs increased in most U.S. urban areas and, in 2017, were at the highest levels recorded.[1]

TTI reports increasing congestion as a "persistently growing problem." Less congested roadways can result in reduced fuel costs, reduced delivery times, and encourage economic development. For individuals, spending less time in congestion can mean more time and money available for what many people would perceive as better uses of both. Further, less congestion means less pollution and therefore better air quality.

On some roadways, congestion may not be considered problematic. Congestion can be seen as a sign of vitality, particularly on local roads and arterials that support dense concentrations of businesses and heavy pedestrian traffic. In these places, congested roadways can create traffic calming, which increases safety for those in cars as well as those traveling by other modes.

This Where We Stand Update ranks St. Louis among the 50 most populous regions on the data reported by TTI.[2] This includes multiple measures of congestion and estimates of the associated costs. Overall, St. Louis has relatively low congestion compared to other large metropolitan regions.
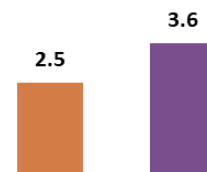
Congestion Metrics, 2017

■ St. Louis Urbanized Area
■ Peer Region Average

Congested Travel
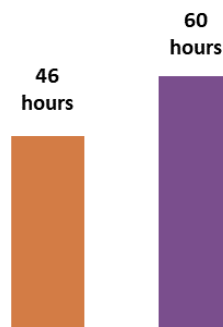Percent of peak vehicle miles traveled

- 18.8%
- 26.1%
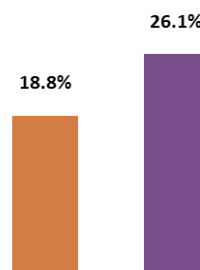
Rush Hours
Number of hours when system may be congested

- 2.5
- 3.6

Annual Delay
Average hours lost due to congestion per auto traveler

- 46 hours
- 60 hours

Congestion Costs
Average annual dollars per auto traveler

- $898
- $1,187

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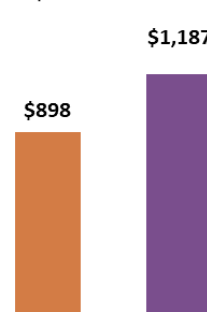
1 For the Urban Mobility Report data, 2017 is the most recent data available. The Annual Regional Congestion Report by East-West Gateway found that congestion continued to increase from 2017 through 2019.

2 *Where We Stand* tracks the St. Louis region among the 50 most populous Metropolitan Statistical Areas (MSAs), which 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." The data in this Where We Stand Update are for the urbanized areas of the 50 most populous MSAs.

The Transportation System

This section provides some baseline information on the transportation system in St. Louis and the peer regions. These metrics can be helpful in understanding the differences in congestion among the regions.

Vehicle Miles Traveled (VMT)

Although roadways in St. Louis are relatively uncongested, motorists in the region drive more than their counterparts in many of the peer regions. St. Louis residents drove an average of 23.4 miles per person per day, the 4th largest rate among the peer regions in 2017. Kansas City was one of only three peer regions with a greater average rate of VMT, ranking 3rd with 23.8 miles per capita per day.

The average daily VMT per person for most regions did not change much from 2000 to 2017, with the peer average increasing by one mile per capita. VMT in the St. Louis region increased more than the peer average with an increase of 2.2 miles per capita, from 21.2 in 2000 when it ranked 13th.

The change in the ranking for the region is in part due to the increase in St. Louis but also due to declines in VMT per capita in some of the peer regions. Indianapolis, Oklahoma City, Dallas, Atlanta, Louisville, Houston, Orlando, and Jacksonville all had higher rates of VMT than St. Louis in 2000 and experienced decreases that led them to having lower rates than St. Louis in 2017. All of these regions had larger increases in population over this time period than St. Louis.

Vehicle Miles Traveled

Average daily VMT per capita on freeways and arterials, 2017

1	Nashville	29.4
2	Birmingham	26.8
3	Kansas City	23.8
4	St. Louis	23.4
5	Richmond	23.2
6	Charlotte	23.2
7	Oklahoma City	22.5
8	Atlanta	22.4
9	Raleigh	22.4
10	Memphis	22.3
11	Dallas	21.2
12	Detroit	21.1
13	Hartford	21.0
14	Orlando	20.9
15	San Antonio	20.8
16	Houston	20.8
17	Minneapolis	20.7
18	Milwaukee	20.3
19	Columbus	20.3
20	Jacksonville	20.1
21	Cincinnati	20.1
22	Indianapolis	20.1
23	Los Angeles	19.7
24	San Diego	19.5
Peer Average		19.4
25	Baltimore	19.2
26	Riverside	19.2
27	Boston	19.1
28	Providence	19.1
29	Virginia Beach	18.9
30	Denver	18.8
31	Tampa	18.4
32	Cleveland	18.3
33	Phoenix	18.3
34	Austin	18.3
35	Washington, D.C.	17.9
36	Buffalo	17.8
37	Salt Lake City	17.3
38	Seattle	17.1
39	San Francisco	17.1
40	New Orleans	16.6
41	Sacramento	16.6
42	Miami	16.6
43	San Jose	16.5
44	Louisville	16.4
45	Philadelphia	15.5
46	Chicago	15.5
47	Pittsburgh	14.8
48	Portland	14.4
49	Las Vegas	14.2
50	New York	12.0

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Change in Vehicle Miles Traveled

Percent change in average daily VMT per capita, 2000-2017

1	Raleigh	64.6
2	Buffalo	38.8
3	Charlotte	31.5
4	New Orleans	31.2
5	Nashville	22.9
6	Milwaukee	19.4
7	Tampa	16.8
8	Cleveland	16.5
9	Memphis	15.1
10	Providence	13.7
11	Philadelphia	13.6
12	San Francisco	13.3
13	Boston	12.9
14	Cincinnati	12.9
15	San Antonio	12.6
16	Birmingham	12.5
17	New York	11.2
18	St. Louis	10.3
19	Las Vegas	10.0
20	Hartford	10.0
21	Detroit	9.1
22	Riverside	8.6
23	Baltimore	8.0
24	Salt Lake City	6.9
25	Phoenix	6.5
26	Miami	6.4
27	Columbus	5.7
28	Kansas City	5.7
Peer Average		5.5
29	Richmond	4.0
30	Chicago	2.8
31	Austin	2.4
32	Virginia Beach	2.2
33	Minneapolis	1.0
34	Sacramento	0.0
35	Washington, D.C.	-0.2
36	San Diego	-0.6
37	Atlanta	-1.1
38	Orlando	-2.0
39	Denver	-3.0
40	Houston	-3.6
41	Los Angeles	-3.7
42	Jacksonville	-5.3
43	Pittsburgh	-7.5
44	Portland	-7.8
45	Oklahoma City	-8.3
46	Dallas	-8.4
47	Seattle	-12.8
48	Indianapolis	-13.2
49	San Jose	-17.1
50	Louisville	-25.2

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Road Network

Lower congestion levels in St. Louis are due in part to the extensive road network in the region. St. Louis had 2,594 miles of freeway lanes facilitating movement across the 1,448 square miles of land in 2018. Among the peer regions, St. Louis had more lane miles per square mile than on average for the peer regions. The region ranks 13th with 1.8 lane miles per square mile of land area.

What is the St. Louis urbanized area?

TTI uses urbanized areas for the metropolitan regions.

2010 St Louis, MO-IL Urbanized Area

St. Louis Metropolitan Area
September 2020

LEGEND
- Urbanized Area
- Interstate Highway
- County Boundary
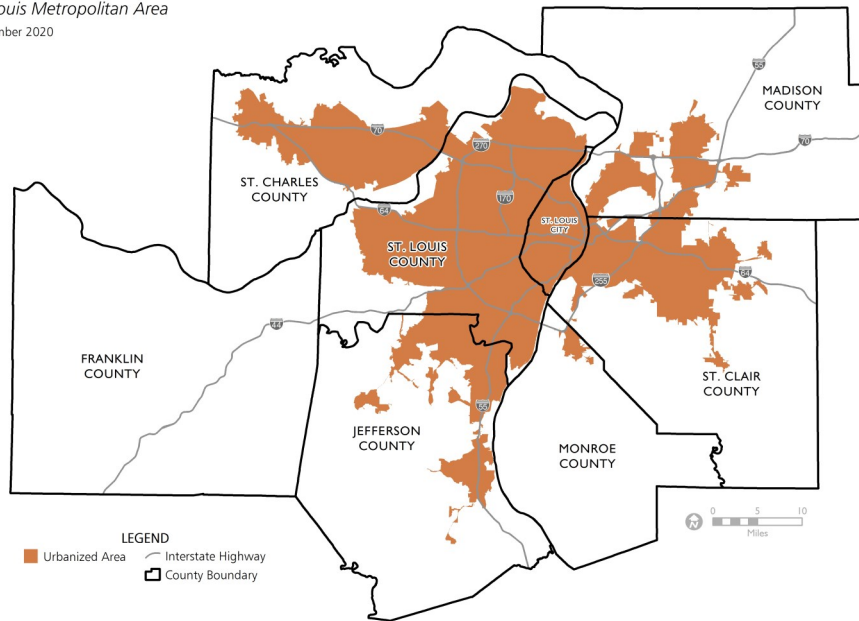
Sources: U.S. Census Bureau (2012);
East-West Gateway Council of Governments

Road Network

Freeway lane miles per urbanized area square mile, 2018

1	Salt Lake City	3.8
2	Los Angeles	2.6
3	San Jose	2.5
4	San Antonio	2.4
5	Dallas	2.2
5	Baltimore	2.2
7	San Diego	2.1
8	Houston	2.0
8	Austin	2.0
10	Washington, D.C.	1.9
10	San Francisco	1.9
10	Sacramento	1.9
13	St. Louis	1.8
13	Kansas City	1.8
13	Cleveland	1.8
16	Miami	1.7
16	Louisville	1.7
18	Riverside	1.6
18	Denver	1.6
18	Richmond	1.6
21	New York	1.5
21	Milwaukee	1.5
21	Las Vegas	1.5
Peer Average		**1.4**
24	Seattle	1.4
24	Columbus	1.4
26	Minneapolis	1.3
26	Cincinnati	1.3
26	Hartford	1.3
26	Oklahoma City	1.3
26	New Orleans	1.3
31	Detroit	1.2
31	Phoenix	1.2
31	Portland	1.2
34	Boston	1.1
34	Philadelphia	1.1
34	Nashville	1.1
34	Providence	1.1
34	Jacksonville	1.1
34	Buffalo	1.1
40	Pittsburgh	1.0
40	Charlotte	1.0
40	Orlando	1.0
40	Indianapolis	1.0
44	Birmingham	0.9
44	Memphis	0.9
46	Atlanta	0.8
46	Chicago	0.8
46	Raleigh	0.8
49	Tampa	0.7
50	Virginia Beach	0.6

Source: Federal Highway Administration, Highway Statistics Data is for urbanized areas.

Congestion

TTI uses several metrics to measure congestion. Each one provides a different perspective with all of them indicating that St. Louis has relatively little congestion compared to the peer regions.

For the first three metrics discussed in this section – rush hour, congested system, and congested travel – TTI uses the following parameters to determine if a roadway is "congested." The entire road network for each urban area is divided into segments. These segments are defined by INRIX, the same company that provides traffic speed data. The average speed for each 15-minute period is determined for each roadway segment.

Arterial roadways are considered congested if the speed is less than 75 percent of free-flow speed. For freeways, the threshold is 80 percent of free-flow speed. For example, this would be a speed below 48 mph on a freeway with a speed limit of 60 mph. A 15-minute period is considered congested if 30 percent of the urban area freeways are congested or if 50 percent of the urban area arterial roadways are congested.

Rush Hours

St. Louis has an average of 2.5 hours of congestion on area roadways each day, compared to an average of 3.6 hours for the peer regions. Among the peer regions, Richmond has the lowest number of rush hours with just under one hour (0.8) per day. Riverside has the highest with an average of 6.5 hours of congestion each day.

Rush Hours

Average daily hours when system is congested, 2017

1	Riverside	6.5
1	San Diego	6.5
1	San Francisco	6.5
4	Los Angeles	6.1
5	San Jose	5.9
6	Sacramento	5.2
7	Houston	5.1
7	New York	5.1
9	Seattle	5.0
9	Washington, D.C.	5.0
11	Austin	4.9
12	New Orleans	4.8
12	Portland	4.8
14	Baltimore	4.7
14	Denver	4.7
16	Atlanta	4.6
17	Dallas	4.5
17	Miami	4.5
19	Boston	4.4
20	Buffalo	4.2
21	Phoenix	4.1
21	San Antonio	4.1
23	Detroit	3.8
24	Minneapolis	3.7
Peer Average		**3.6**
25	Chicago	3.6
26	Nashville	3.5
27	Columbus	3.4
27	Philadelphia	3.4
29	Jacksonville	3.3
30	Salt Lake City	3.2
31	Charlotte	3.0
31	Las Vegas	3.0
33	Cincinnati	2.8
33	Milwaukee	2.8
33	Orlando	2.8
36	Hartford	2.7
36	Oklahoma City	2.7
36	Raleigh	2.7
39	St. Louis	2.5
40	Tampa	2.4
41	Kansas City	2.3
42	Providence	2.1
43	Louisville	1.9
43	Virginia Beach	1.9
45	Cleveland	1.5
46	Indianapolis	1.3
47	Birmingham	1.2
47	Memphis	1.2
47	Pittsburgh	1.2
50	Richmond	0.8

Source: Texas Transportation Institute,
Urban Mobility Report
Data is for urbanized areas.

Congested System (Lane Miles)

In 2017, an estimated 12.3 percent of lane miles in St. Louis were congested during peak-travel times. The region is closer to the peer region average on this metric than it is for most of the measures of congestion. The peer region average is 15.6 percent. St. Louis ranks 34th, with 16 regions having a smaller proportion of congested lane miles.

Congested Travel

In St. Louis, 18.8 percent of miles traveled during rush hours were driven under congested conditions. The average for the peer regions was 26.1 percent. Over half of peak VMT in Los Angeles (56.7 percent) and San Francisco (52.3 percent) was driven in congestion.

What are the most congested roadways in St. Louis?

For information on specific roadways that are congested in the St. Louis region, see the Annual Regional Congestion Report at www.ewgateway.org.
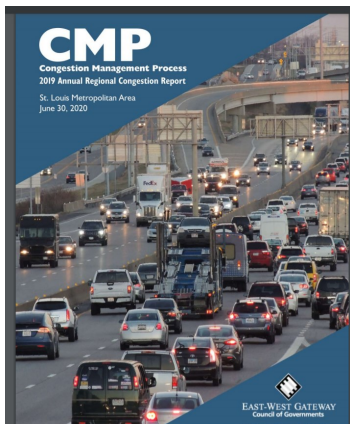
Congested System

Percent of lane miles congested during peak travel time, 2017

1	San Francisco	35.8
2	Los Angeles	34.6
3	San Diego	28.4
4	Washington, D.C.	26.4
5	Riverside	24.8
6	Houston	24.6
7	Austin	24.0
8	New York	23.3
8	Seattle	23.3
10	Sacramento	22.7
11	Portland	22.1
12	Baltimore	21.4
13	Atlanta	19.6
14	Denver	19.3
15	Boston	18.9
15	New Orleans	18.9
17	San Antonio	18.3
18	Charlotte	18.0
18	Dallas	18.0
20	Orlando	17.3
21	Nashville	16.6
22	Jacksonville	16.4
23	Columbus	16.0
Peer Average		**15.6**
24	Philadelphia	15.3
25	Tampa	14.9
26	Phoenix	14.8
26	Salt Lake City	14.8
28	Chicago	13.4
29	Louisville	13.2
30	Minneapolis	12.9
31	Detroit	12.8
32	Cincinnati	12.6
33	Hartford	12.5
34	St. Louis	12.3
35	Las Vegas	12.1
35	Providence	12.1
37	Raleigh	11.5
38	Kansas City	11.1
39	Birmingham	9.9
40	Cleveland	9.7
41	Oklahoma City	9.5
42	Virginia Beach	9.3
43	Indianapolis	8.2
44	Milwaukee	7.8
45	Richmond	7.3
46	Memphis	6.6
47	San Jose	3.2
48	Buffalo	2.4
49	Pittsburgh	1.7
50	Miami	1.3

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Congested Travel

Percent of peak vehicle miles traveled, 2017

|		
1	Los Angeles	56.7
2	San Francisco	52.3
3	San Jose	45.6
4	Riverside	43.2
5	San Diego	41.3
6	Houston	38.4
6	Washington, D.C.	38.4
8	Sacramento	37.6
9	Seattle	37.1
10	Portland	36.7
11	New York	36.3
12	New Orleans	36.1
13	Austin	34.2
14	Denver	33.7
15	Baltimore	32.3
16	Dallas	31.8
17	Boston	29.5
18	San Antonio	29.0
19	Phoenix	27.9
Peer Average		**26.1**
20	Buffalo	25.9
21	Detroit	25.4
22	Nashville	24.8
23	Columbus	24.6
23	Minneapolis	24.6
25	Charlotte	24.2
25	Salt Lake City	24.2
27	Jacksonville	24.1
27	Philadelphia	24.1
29	Chicago	24.0
30	Orlando	23.8
31	Las Vegas	22.7
32	Tampa	22.3
33	Cincinnati	21.2
34	Hartford	19.7
35	Oklahoma City	19.3
36	Raleigh	19.2
37	St. Louis	18.8
38	Providence	18.5
39	Louisville	18.4
40	Milwaukee	18.0
41	Kansas City	17.6
42	Virginia Beach	15.9
43	Birmingham	15.8
44	Cleveland	15.7
44	Pittsburgh	15.7
46	Indianapolis	12.8
47	Memphis	12.3
48	Richmond	11.0
49	Atlanta	3.0
50	Miami	1.6

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Travel Time Index

The travel time index (TTI) is the ratio of travel time in peak traffic (rush hour) to the travel time in free-flow conditions.[3] The travel time index in St. Louis in 2017 was 1.15. This means a trip is estimated to take 15 percent more time during congested times than it does during non-congested times. For example, a trip that takes 20 minutes during free-flow times would take 15 percent longer, or a total of 23 minutes, during rush hour. The St. Louis region, along with Cleveland and Kansas City, ranks 46th among the peer regions on this metric with one of the lowest levels of congestion.

The TTI in St. Louis increased steadily from 1982 through 2007 and 2008 when it reached a peak of 1.17. Figure 1 displays this increase in the number of minutes added to a 20-minute drive. The peak TTI for St. Louis during this time period was just before the Great Recession. In 2007 and 2008, the TTI was 1.17, meaning that 3.4 minutes would be added to a 20-minute trip. During the Great Recession, the TTI dipped to 1.15 in 2013 (3 additional minutes), where it has remained. By comparison, the peer region average TTI increased from 1.10 (add 2 minutes) in 1982 to 1.24 (add 4.9 minutes) in 2007. The peer region average TTI then decreased slightly during the recession but has since increased past pre-recession levels to 1.25 (5.1 minutes) in 2013, where it has remained.

Travel Time Index

Ratio of peak period travel time to free-flow travel time, 2017

1	Los Angeles	1.51
2	San Francisco	1.50
3	San Jose	1.45
4	Seattle	1.37
5	New Orleans	1.36
6	New York	1.35
6	Portland	1.35
6	San Diego	1.35
6	Washington, D.C.	1.35
10	Austin	1.34
10	Houston	1.34
10	Riverside	1.34
13	Chicago	1.32
14	Denver	1.31
14	Miami	1.31
16	Atlanta	1.30
16	Boston	1.30
18	Sacramento	1.28
19	Phoenix	1.27
20	Dallas	1.26
20	Las Vegas	1.26
Peer Average		**1.25**
22	Baltimore	1.25
22	Minneapolis	1.25
22	Philadelphia	1.25
25	Detroit	1.24
25	Orlando	1.24
27	San Antonio	1.23
28	Charlotte	1.22
28	Nashville	1.22
28	Tampa	1.22
31	Columbus	1.19
31	Jacksonville	1.19
31	Oklahoma City	1.19
31	Pittsburgh	1.19
35	Indianapolis	1.18
35	Louisville	1.18
35	Memphis	1.18
35	Salt Lake City	1.18
39	Cincinnati	1.17
39	Hartford	1.17
39	Milwaukee	1.17
39	Providence	1.17
39	Raleigh	1.17
39	Virginia Beach	1.17
45	Buffalo	1.16
46	Cleveland	1.15
46	Kansas City	1.15
46	**St. Louis**	**1.15**
49	Birmingham	1.13
50	Richmond	1.12

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Figure 1: Additional Minutes Added to a 20-Minute Drive to Arrive on Time Based on the Travel Time Index
St. Louis Urbanized Area and Peer Region Average, 1982 to 2017
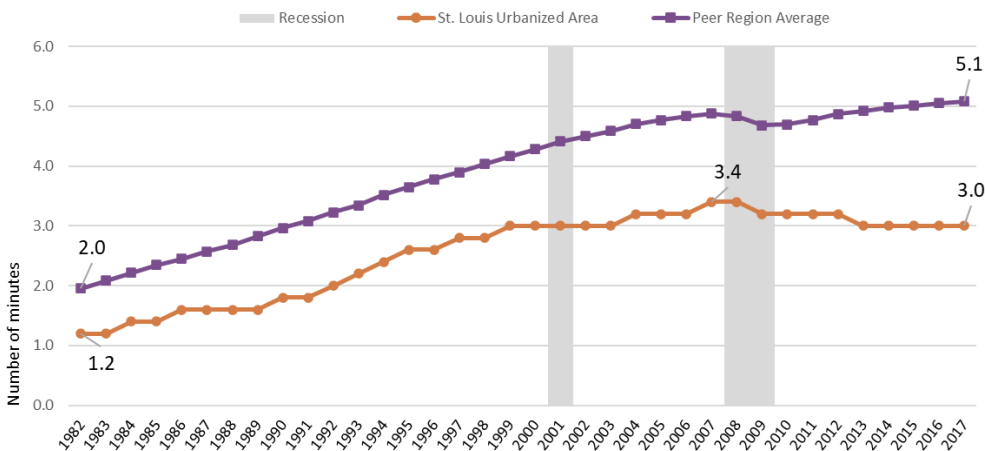
Source: Texas Transportation Institute, Urban Mobility Report

3 Free-flow speed is the average speed during low-volume conditions with an upper threshold of 65 mph on freeways and no limit on arterials.

Planning Time Index (PTI)

The planning time index (PTI) is similar to TTI, but the PTI considers atypical congestion along with typical congestion. In other words, it is the total time a traveler should allow to ensure arriving on-time for all except one work trip per month, or 19 out of 20 days. While the TTI is a measure of predictable congestion, the PTI also includes the traffic backups that are unexpected. These are usually a result of traffic accidents, weather, or special events. PTI is thus a measure of reliability.

The UMR reports that nationally 33 percent of traffic delay hours are in off-peak time periods when people and businesses are not expecting them.

For St. Louis, the PTI for 2017 was 1.40, meaning that in order to arrive on time, 28 minutes should be allowed for a trip that would take 20 minutes under free-flow conditions. The St. Louis region ranks 42nd on this metric. Again, Los Angeles ranks 1st, where an auto traveler would need to allow 57.4 minutes, for a 20-minute trip, in order to only be late to work once per month. The average index for the peer regions is 1.78, with the planning time for a 20-minute trip being 35.6 minutes. This is a new metric for UMR and is only available for 2017.

Commuter Stress Index (CSI)

The commuter stress index (CSI) is similar to the TTI, except that it examines only the peak direction of travel during rush hours. According to the UMR, this is "more indicative of the work trip experienced by each commuter on a daily basis." This is also a new metric for the UMR and is only available for 2017.

In 2017, St. Louis had one of the lowest scores on the CSI among the peer regions. Richmond had the lowest CSI, with a score of 1.13. St. Louis, Cleveland, and Birmingham tied for the second lowest CSI, with a score of 1.15.

Planning Time Index
Ratio of worst travel time to free-flow travel time, 2017

Rank	City	Index
1	Los Angeles	2.87
2	San Francisco	2.69
3	San Jose	2.60
4	Portland	2.37
5	San Diego	2.28
5	Seattle	2.28
7	Washington, D.C.	2.27
8	New Orleans	2.18
9	Austin	2.15
10	Atlanta	2.10
10	Riverside	2.10
12	New York	2.05
13	Miami	2.02
14	Phoenix	1.97
14	Sacramento	1.97
16	Houston	1.92
17	Boston	1.89
18	Chicago	1.85
19	Denver	1.83
19	Tampa	1.83
21	Dallas	1.79
Peer Average		1.78
22	San Antonio	1.74
23	Baltimore	1.73
24	Detroit	1.72
25	Nashville	1.70
26	Jacksonville	1.68
27	Charlotte	1.66
28	Philadelphia	1.65
29	Las Vegas	1.63
30	Minneapolis	1.61
30	Orlando	1.61
32	Columbus	1.59
33	Raleigh	1.58
34	Salt Lake City	1.57
35	Cincinnati	1.53
36	Milwaukee	1.52
37	Hartford	1.48
38	Virginia Beach	1.46
39	Oklahoma City	1.45
40	Buffalo	1.44
40	Pittsburgh	1.44
42	St. Louis	1.40
43	Birmingham	1.38
44	Kansas City	1.37
44	Providence	1.37
46	Louisville	1.36
47	Cleveland	1.35
48	Indianapolis	1.30
49	Memphis	1.27
50	Richmond	1.20

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Commuter Stress Index
Congestion experienced by travelers in peak direction at peak times, 2017

Rank	City	Index
1	Los Angeles	1.73
2	San Francisco	1.62
3	San Jose	1.57
4	San Diego	1.48
5	Austin	1.45
6	Riverside	1.44
6	Seattle	1.44
8	Portland	1.43
9	Washington, D.C.	1.41
10	Houston	1.39
10	Miami	1.39
12	New York	1.38
13	New Orleans	1.37
14	Atlanta	1.36
15	Sacramento	1.34
16	Chicago	1.33
17	Denver	1.32
18	Boston	1.31
18	Dallas	1.31
20	Nashville	1.30
20	Phoenix	1.30
20	San Antonio	1.30
Peer Average		1.29
23	Las Vegas	1.27
23	Tampa	1.27
25	Minneapolis	1.26
25	Philadelphia	1.26
27	Baltimore	1.25
27	Detroit	1.25
29	Charlotte	1.24
29	Jacksonville	1.24
29	Orlando	1.24
32	Columbus	1.21
32	Salt Lake City	1.21
34	Oklahoma City	1.20
34	Pittsburgh	1.20
36	Indianapolis	1.19
36	Louisville	1.19
36	Memphis	1.19
39	Cincinnati	1.18
39	Hartford	1.18
39	Milwaukee	1.18
39	Providence	1.18
39	Virginia Beach	1.18
44	Buffalo	1.17
44	Raleigh	1.17
46	Kansas City	1.16
47	Birmingham	1.15
47	Cleveland	1.15
47	St. Louis	1.15
50	Richmond	1.13

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Congestion Costs

For the United States[4] the cost of congestion increased from an estimated $15 billion (in 2017 dollars) in 1982 to $179 billion in 2017. The UMR defines congestion costs as "the yearly value of delay time and wasted fuel by all vehicles."
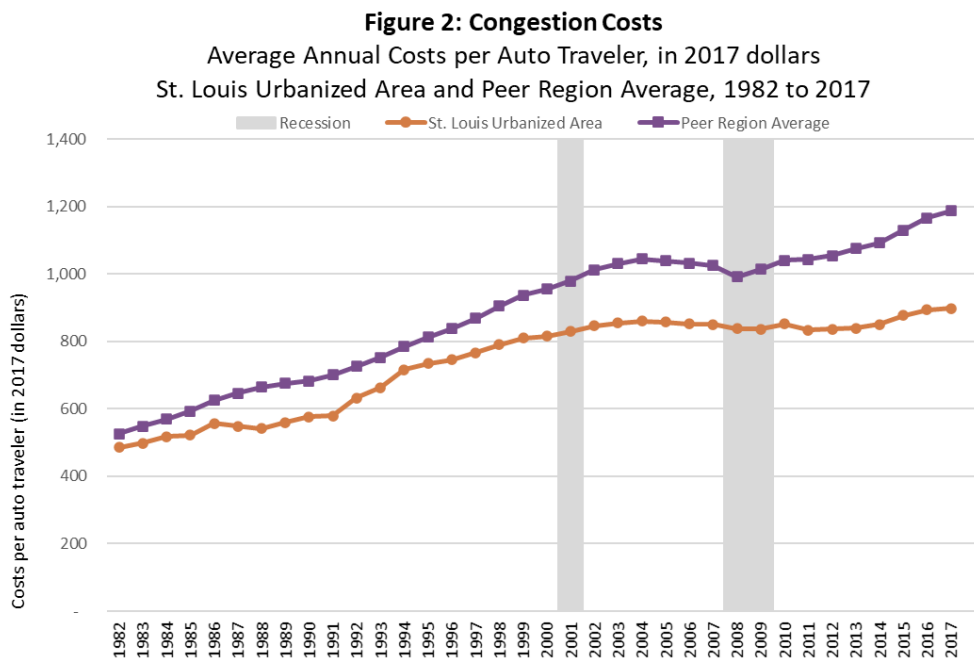
For 2017, congestion was estimated to cost $1.4 billion in the St. Louis region. This includes costs of time delay and extra fuel consumed during congested time for both individuals and truck drivers. The following sections provide the estimates reported in the UMR for costs to individuals and costs to companies (via trucks).

Costs to Individuals

Congestion cost those who traveled by car in the St. Louis region an average of $898 in 2017. This is a combination of the estimate of the value of time spent sitting in congestion and the amount of gas consumed during that time.

The region ranks 36th with lower average costs than most of the peer regions. The range is wide from $641 in Richmond to $2,676 in Los Angeles. The peer region average is 25 percent more than in St. Louis, at an average of $1,187 per auto traveler[5] in 2017.

Figure 2 displays the average costs for St. Louis and the peer region average for 1982 to 2017 (in 2017 dollars). While the costs rose for both, they increased at a greater magnitude on average for the peer regions than they did for St. Louis. Over the entire time period, congestion costs increased 85 percent in St. Louis and 126 percent on average for the peer regions.

Congestion Costs

Average annual costs per auto traveler, in dollars, 2017

1	Los Angeles	2,676
2	San Francisco	2,619
3	Washington, D.C.	2,015
4	New York	1,947
5	Atlanta	1,653
6	San Jose	1,643
7	San Diego	1,584
8	Boston	1,580
9	Seattle	1,541
10	Houston	1,508
11	Chicago	1,431
12	Miami	1,412
13	Austin	1,391
14	Portland	1,305
15	Riverside	1,288
16	Dallas	1,272
17	Charlotte	1,269
18	Nashville	1,217
19	New Orleans	1,208
20	Philadelphia	1,203
Peer Average		**1,187**
21	Denver	1,163
22	Detroit	1,129
23	Sacramento	1,118
24	Cincinnati	1,110
25	Orlando	1,103
26	Phoenix	1,089
27	Columbus	1,054
28	Baltimore	1,046
29	Tampa	987
30	Minneapolis	980
31	Cleveland	970
32	Buffalo	965
33	San Antonio	964
34	Las Vegas	932
35	Pittsburgh	908
36	St. Louis	898
37	Jacksonville	893
38	Hartford	881
39	Milwaukee	864
40	Oklahoma City	842
41	Kansas City	837
42	Salt Lake City	833
43	Providence	828
44	Birmingham	819
45	Indianapolis	813
46	Raleigh	794
47	Virginia Beach	758
48	Louisville	726
49	Memphis	651
50	**Richmond**	641

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Figure 2: Congestion Costs
Average Annual Costs per Auto Traveler, in 2017 dollars
St. Louis Urbanized Area and Peer Region Average, 1982 to 2017

Source: Texas Transportation Institute, Urban Mobility Report

4 "United States" is the 494 U.S. urban areas included in the UMR report.
5 TTI uses the term "auto commuter," but the term "traveler" is used in this report. The data point includes delay experienced both by commuters during rush hours and by other auto travelers during non-peak hours, including drivers and passengers for both.

Compared to the peer region average, St. Louis had a smaller increase in congested roadways, and a smaller increase in the price of motor fuel, between 1982 and 2017. Both of these factors contributed to the relatively small increase in congestion costs.

For fuel price, TTI uses the state average for each region. For the St. Louis region, they use the average for the state of Missouri. The cost of fuel for the St. Louis region and the average for the peer regions was the same in 1982, $1.42 per gallon. The prices fluctuated over the time period; the price was never more in the St. Louis region than the average for the peer regions. For 2017, the cost of a gallon of gas in St. Louis was $2.16, and the average for the peer regions was $2.40. Since the amount of time St. Louis residents spend in congestion is less than the average for the peer regions, less excess fuel is consumed. TTI estimates that in 1982, the amount of excess fuel consumed per auto traveler in St. Louis (4 gallons) was slightly less than the average for the peer regions (4.8 gallons). In 2017, the gap was larger. In St. Louis, the average auto traveler consumed an extra 19 gallons of fuel a day due to congestion. The peer region average was 24.2 gallons.

The other factor used to estimate congestion costs is the amount of time spent in congestion. A national constant for the value of time, $18.12 per hour per person, is used for the UMR.[6]

The average number of hours spent in congestion per auto traveler in the St. Louis region was one of the lowest among the peer regions. In 2017, only four of the peer regions had fewer hours of delay and six regions had the same number of hours (46).

Los Angeles ranks 1st with 119 hours of delay per auto traveler. The peer region average of 60 hours per auto traveler is well above that of the St. Louis region. Chicago and Detroit are the only Midwest peer regions with more hours of delay than the peer average. Cleveland and Milwaukee are two Midwest regions that join St. Louis with 46 hours of delay and Kansas City is about the same, with just one more hour of delay per auto traveler.

From 2010 to 2017, among all of the peer regions, St. Louis saw the smallest change in hours delayed due to congestion per auto traveler, an increase of three hours. The average increase for the peer regions was 10.7 hours and the largest increase was 22 hours in Los Angeles. From 2016 to 2017, St. Louis saw no change in average delay per auto commuter.

Annual Delay per Auto Traveler

Average hours lost due to congestion per auto traveler, 2017

1	Los Angeles	119
2	San Francisco	103
3	Washington, D.C.	102
4	New York	92
5	San Jose	81
6	Boston	80
7	Seattle	78
8	Atlanta	77
9	Houston	75
10	Chicago	73
11	Riverside	70
12	Miami	69
13	Dallas	67
14	Austin	66
14	Portland	66
16	San Diego	64
17	Philadelphia	62
17	Phoenix	62
19	Denver	61
19	Detroit	61
Peer Average		**60**
21	Baltimore	59
21	Sacramento	59
23	Nashville	58
23	New Orleans	58
25	Charlotte	57
25	Orlando	57
27	Minneapolis	56
28	Cincinnati	52
29	Las Vegas	51
29	San Antonio	51
31	Columbus	50
31	Hartford	50
31	Oklahoma City	50
31	Tampa	50
35	Buffalo	48
35	Indianapolis	48
35	Memphis	48
35	Providence	48
39	Kansas City	47
40	Cleveland	46
40	Jacksonville	46
40	Louisville	46
40	Milwaukee	46
40	Pittsburgh	46
40	**St. Louis**	**46**
40	Virginia Beach	46
47	Salt Lake City	45
48	Raleigh	42
49	Birmingham	40
50	**Richmond**	**35**

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Change in Annual Delay per Auto Traveler

Change in average hours lost due to congestion per auto traveler, 2010-2017

1	Los Angeles	22.0
2	Houston	20.0
3	San Jose	18.0
4	Atlanta	17.0
4	Austin	17.0
4	Dallas	17.0
7	Boston	15.0
7	Portland	15.0
9	Chicago	14.0
9	Miami	14.0
9	New York	14.0
9	Seattle	14.0
13	New Orleans	13.0
13	Sacramento	13.0
13	San Francisco	13.0
16	Baltimore	12.0
16	Charlotte	12.0
16	Nashville	12.0
16	Philadelphia	12.0
16	Phoenix	12.0
16	Riverside	12.0
16	Washington, D.C.	12.0
23	Cincinnati	11.0
23	Denver	11.0
Peer Average		**10.7**
25	Detroit	10.0
25	San Diego	10.0
27	Columbus	9.0
27	Louisville	9.0
27	Minneapolis	9.0
27	Orlando	9.0
27	Salt Lake City	9.0
27	San Antonio	9.0
33	Memphis	8.0
33	Raleigh	8.0
33	Tampa	8.0
33	Virginia Beach	8.0
37	Buffalo	7.0
37	Cleveland	7.0
37	Kansas City	7.0
37	Las Vegas	7.0
37	Oklahoma City	7.0
37	Pittsburgh	7.0
37	Providence	7.0
37	Richmond	7.0
45	Indianapolis	6.0
45	Milwaukee	6.0
47	Birmingham	5.0
47	Jacksonville	5.0
49	Hartford	4.0
50	**St. Louis**	**3.0**

Source: Texas Transportation Institute, Urban Mobility Report
Data is for urbanized areas.

Costs to Companies (via Trucks)

Trucks account for a disproportionate amount of congestion-related costs. In U.S. urban areas trucks incur about 11 percent of all congestion costs but only about 7 percent of total travel. Nationally, in 2017, trucks incurred an estimated $20 billion in congestion costs, which includes the value of commercial vehicle time (387 million hours) and excess fuel consumed due to congestion (687 million gallons).[7]

TTI accounts for two costs of congestion for commercial vehicles. The value of commercial vehicle time is a national standard of $52.14 per hour for 2017.[8] The state average cost per gallon for diesel fuel is used for each MSA. For all U.S. urban areas, the average cost of diesel in 2017 was $2.56. For the St. Louis region, TTI uses the average for Missouri, $2.31 per gallon of diesel in 2017.

In St. Louis, trucks spent an estimated 3 million hours in traffic in the region, costing companies an estimated $137 million in employee time and $14 million on excess fuel. For comparison with the peer regions, the truck congestion costs estimated by TTI are reported here based on the amount of vehicle miles traveled (VMT) in each region. Companies that run trucks through the St. Louis region, experience some of the lowest costs relative to other large metropolitan regions. The region ranks 44th, costing companies $2.90 per 1,000 miles driven in the region. The peer region average is a cost of $4.40 per 1,000 miles traveled.

Conclusion

While St. Louis has relatively low congestion compared to other large metropolitan regions, East-West Gateway (EWG) works with partners through the Congestion Management Process (CMP) to identify congested roadways and strategies for mitigating congestion. EWG produces an annual report that identifies specific roadways where congestion occurs most frequently and evaluates strategies for addressing both current and future congestion. The 2019 CMP report concluded that regional partners on the Congestion Management and Operations Committee have successfully been sharing ideas on how to address congestion, with signal timing projects singled out as having positive results in the region.

Truck Congestion Costs

Average annual costs per 1,000 vehicle miles traveled, in dollars, 2017

#	City	Cost
1	San Francisco	9.0
2	San Jose	8.4
3	Los Angeles	8.1
4	New York	7.6
5	New Orleans	7.3
6	Portland	6.5
7	Seattle	6.2
8	Washington, D.C.	5.9
9	Miami	5.6
10	Riverside	5.6
11	Chicago	5.6
12	Sacramento	5.3
13	Las Vegas	4.9
14	San Diego	4.9
15	Philadelphia	4.9
16	Houston	4.8
17	Austin	4.8
18	Phoenix	4.8
19	Boston	4.7
20	Denver	4.5
21	Atlanta	4.5
Peer Average		4.4
22	Detroit	4.4
23	Pittsburgh	4.3
24	Buffalo	4.1
25	Cincinnati	4.1
26	Oklahoma City	4.0
27	Baltimore	4.0
28	Dallas	3.9
29	Orlando	3.8
30	Cleveland	3.8
31	Tampa	3.7
32	Minneapolis	3.7
33	Columbus	3.6
34	San Antonio	3.5
35	Louisville	3.4
36	Salt Lake City	3.4
37	Providence	3.4
38	Charlotte	3.4
39	Milwaukee	3.2
40	Jacksonville	3.2
41	Nashville	3.1
42	Hartford	3.1
43	Virginia Beach	3.1
44	St. Louis	2.9
45	Indianapolis	2.9
46	Kansas City	2.7
47	Raleigh	2.5
48	Memphis	2.5
49	Birmingham	2.3
50	Richmond	2.2

Source: Texas Transportation Institute,
Urban Mobility Report
Data is for urbanized areas.

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7 Sum for the 494 U.S. urban areas.
8 The commercial value of time is based on an annual survey conducted by the American Transportation Research Institute.

Prepared by Mary Rocchio.

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

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