2018

Biennial Congestion Management Report

Memphis Urban Area Metropolitan Planning Organization (MPO)

Memphis MPO
METROPOLITAN PLANNING ORGANIZATION

Strengthening Regional Transportation

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The **Memphis Urban Area Metropolitan Planning Organization** has prepared the **2018 Congestion Management Process (CMP) Biennial Report**, which examines congestion in the Memphis Metropolitan Planning Area.

U.S. Cities Comparison

The congestion level measure assesses the increase in overall travel time when compared to a free flow situation. For example, a congestion level of 17% corresponds to 17% additional travel time compared to what the travel time would be in a Free Flow situation. **Table 1** compares the 2016 traffic congestion statistics for Memphis to various cities throughout the U.S.

Table 1

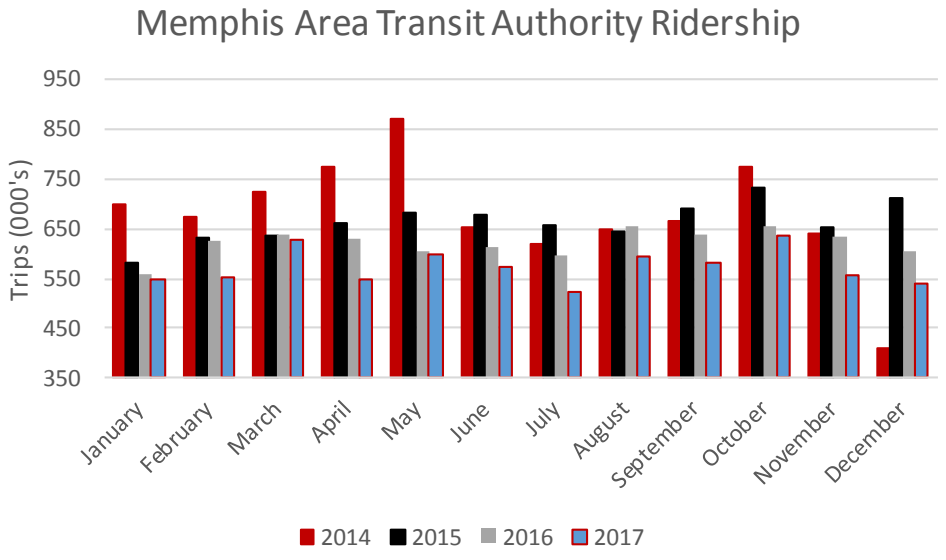
Congestion U.S. Rank	City	Congestion Level	Change from Previous Year	Morning Peak	Evening Peak
1	Los Angeles, CA	45%	4% ↑	62%	84%
12	Atlanta, GA	27%	3% ↑	45%	65%
20	Nashville, TN	23%	1% ↓	41%	62%
21	New Orleans, LA	23%	1% ↑	33%	50%
39	Raleigh, NC	18%	2%	30%	49%
42	Jacksonville, FL	18%	2% ↑	29%	48%
46	**Memphis, TN**	**17%**	**1%** ↑	**28%**	**48%**
47	Louisville, KY	17%	0%	23%	46%
59	Birmingham, AL	15%	2% ↑	25%	37%
63	Oklahoma City, OK	14%	0%	24%	32%

Source: TomTom Traffic Index, 2016

Transit Ridership

The American Public Transportation Association (APTA) provides quarterly and year-to-date estimates of unlinked transit passenger trips for the current and previous years. Unlinked passenger trips are defined as the number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles, regardless of how many vehicles they use to travel from their origin to their destination. Figure 1 displays the number of unlinked transit passenger trips for the Memphis Area Transit Authority from 2013-2017.

Figure 1



Source: American Public Transportation Association

2016 Vehicle Miles Traveled (VMT)

VMT measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one year period. **Table 2** compares the 2016 Estimated VMT for the Memphis Urbanized Area (UZA) to various Urbanized Areas throughout the U.S. As shown in the table, approximately 25.2% of the 2016 Daily VMT in the Memphis UZA occurred on the Interstate.

Table 2

Urbanized Area	2016 Estimated Daily Vehicle-Miles of Travel (Thousands)	2016 Estimated Daily Vehicle Miles Traveled (Thousands) on Interstate	% of Estimated Daily Vehicle Miles Traveled (Thousands) on the Interstate
Atlanta, GA	158,141	45,204	28.6%
Birmingham, AL	30,058	11,745	39.1%
Jacksonville, FL	35,688	9,838	27.6%
Los Angeles-Long Beach-Anaheim, CA	279,292	78,395	28.1%
Louisville/Jefferson County, KY-IN	22,133	9,957	45.0%
Memphis, TN-MS-AR	**29,461**	**7,414**	**25.2%**
Nashville-Davidson, TN	46,387	15,855	34.2%
New Orleans, LA	18,041	6,474	35.9%
Oklahoma City, OK	31,446	9,162	29.1%
Raleigh, NC	32,824	7,841	23.9%

Data Source: FHWA Policy and Governmental Affairs

2017 –2018 Rideshare Program (Vanpool)

The Memphis Area Rideshare, offered through the Shelby County Air Quality Improvement Branch, provides information to individuals and employers to help create transportation options for area workers. The tables below displays details on trip elimination as well as reductions in fuel spending and miles traveled.

Source: Shelby County Air Quality Improvement Branch

Table 3

2017 Memphis Area Rideshare Program	
2017 Trips Eliminated	81,023
2017 Miles Eliminated	4,699,336
Fuel Saved (Gallons Per Year)	186,481
Fuel Savings (Dollars Per Year)	419,583
Carbon Monoxide Reduction (Tons Per Year)	70.2

Table 4

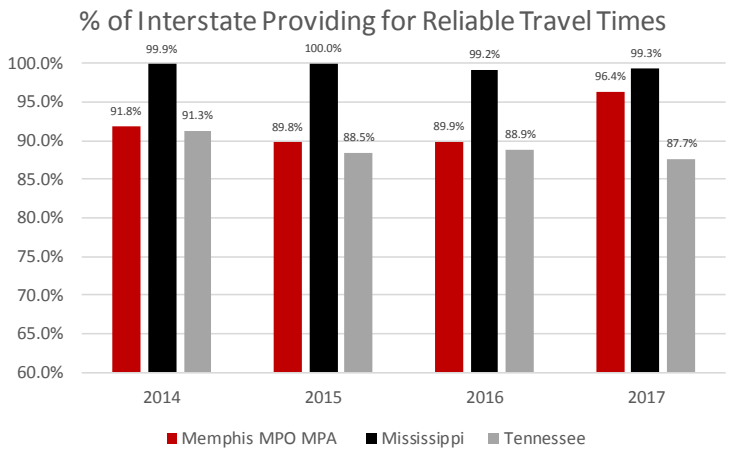
2018 Memphis Area Rideshare Program	
2018 Trips Eliminated	73,463
2018 Miles Eliminated	4,260,856
Fuel Saved (Gallons Per Year)	169,082
Fuel Savings (Dollars Per Year)	422,704
Carbon Monoxide Reduction (Tons Per Year)	63.7

Level of Travel Time Reliability (LOTTR) and Truck Travel Time Reliability (TTTR) Index

LOTTR is defined as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile) for a reporting segment. Reporting segments represent segments of the U.S. Interstate System and the U.S. National Highway System (NHS). Data for the these measures is collected from the National Performance Management Research Data Set (NPMRDS). Data for the LOTTR measure is collected in 15-minute segments for four time periods; Weekdays from 6 a.m. to 10 a.m. (A.M. Peak), 10 a.m. to 4 p.m. (Midday), 4 p.m. to 8 p.m. (P.M. Peak), and Weekends from 6 a.m. to 8 p.m. In order for a reporting segment to be considered reliable, it must have a ratio below 1.50 for all four reporting periods. **Figure 2** displays the annual average percentage of Interstate providing for reliable travel times for the Memphis MPO Metropolitan Planning Area (MPA), State of Tennessee, and the State of Mississippi. **Figure 3** displays the annual average percentage of Non -Interstate NHS providing for reliable travel times for the Memphis MPO MPA, State of Tennessee, and the State of Mississippi. **Figure 7** (Page 6) displays the 2017 annual average LOTTR for all reporting segments within the Memphis MPO MPA.

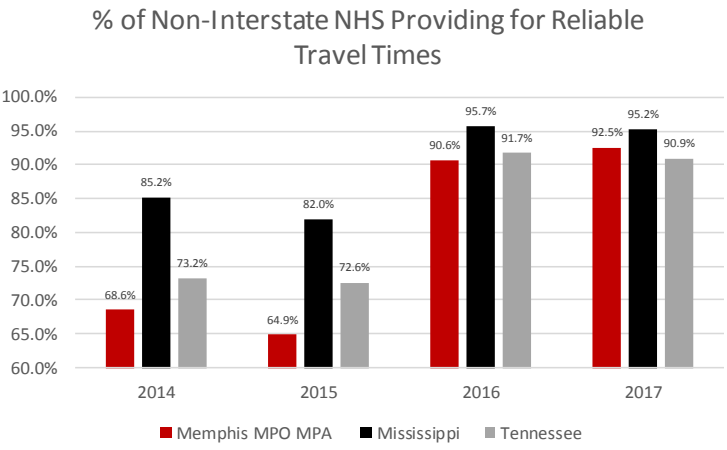
TTTR is defined as the ratio of the "longer" truck travel times (95th percentile) to a "normal" travel time (50th percentile) for a reporting segment. Data for the TTTR measure are collected in 15-minute segments for the same four time periods as the LOTTR measure, however, an additional time period; Overnights from 8 p.m. to 6 a.m., is included to capture overnight truck travel times. The TTTR index is generated by multiplying each segment's largest ratio of the five time periods by the segments length, then dividing the sum of all length-weighted segments by the total length of the interstate. There is no Federally defined threshold for determining whether a segment provides for reliable truck travel times, however, a lower TTTR index translates to a higher level of reliability. **Figure 4** displays the TTTR for the Memphis MPA, the State of Tennessee, and the State of Mississippi.

Figure 2



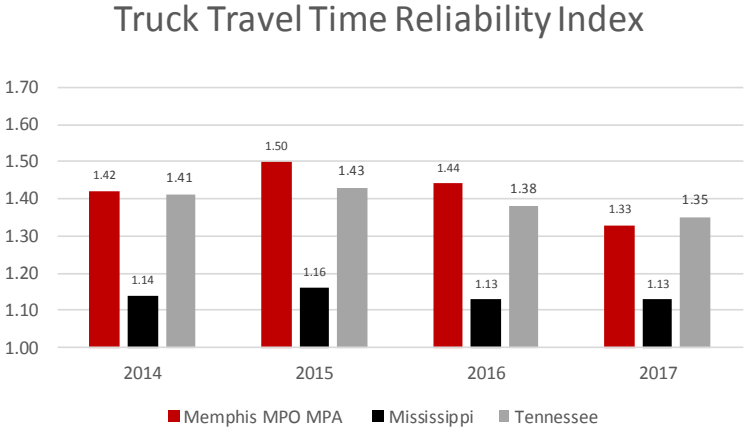
Data Source: NPMRDS HERE (2014-2015) and NPMRDS INRIX (2016-2017)

Figure 3



Data Source: NPMRDS HERE (2014-2015) and NPMRDS INRIX (2016-2017)

Figure 4



Data Source: NPMRDS HERE (2014-2015) and NPMRDS INRIX (2016-2017)

Travel Time Index (TTI)

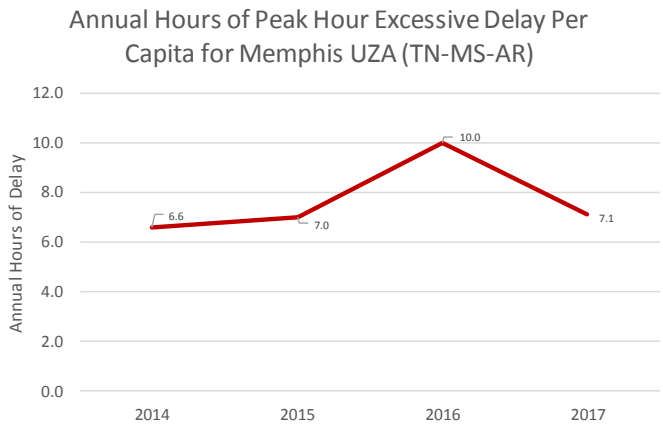
The TTI measure is defined as the ratio of travel time in the peak period to the travel time at free-flow conditions. For example, a value of 1.35 indicates that a 20-minute free-flow trip takes 27 minutes during peak period hours. **Table 5** compares the 2016 annual average TTI for Memphis to various cities throughout the U.S.

Table 5

Rank	Urban Area	2016 Travel Time Index
1	Los Angeles-Long Beach-Satna Ana, CA	1.71
15	Atlanta, GA	1.31
29	**Memphis, TN-MS-AR**	**1.20**
33	Nashville-Davidson, TN	1.18
36	Jacksonville, FL	1.16
36	Raleigh-Durham, NC	1.16
42	Louisville, KY-IN	1.15
45	New Orleans, LA	1.14
49	Oklahoma City, OK	1.11
52	Birmingham, AL	1.04

Data Source: Bureau of Transportation Statistics

Figure 5



Data Source: NPMRDS HERE (2014-2015) and NPMRDS INRIX (2016-2017)

Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita for Memphis UZA

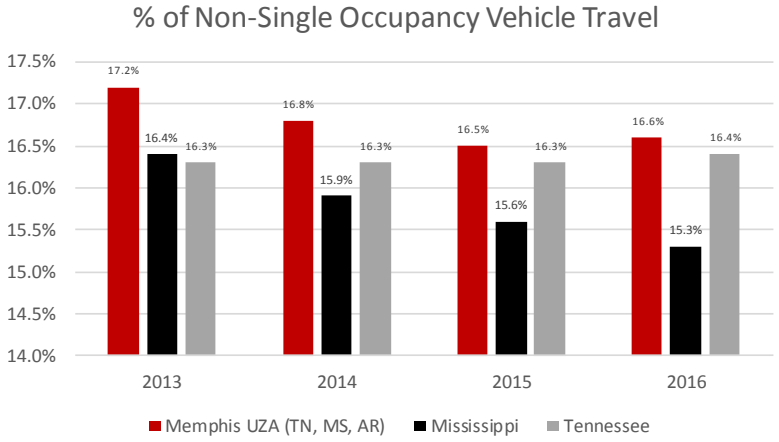
PHED measures the annual hours of peak hour exces-sive delay per capita on the NHS. The speed threshold for excessive delay is based on the travel time at 20 miles per hour or 60% of the posted speed limit, whichever is greater, on all reporting segments. Peak travel hours for the Memphis MPO are defined as 6 a.m. to 10 a.m. Weekday mornings, and 3 p.m. to 7 p.m. Weekday afternoons. Data this the measure is col-lected from the NPMRDS, and data reported in the da-taset are collected in 15-minute epochs for the two peak hour time periods.

Figure 5 displays the annual hours of peak hour excessive delay per capita for the Memphis Urbanized Area (TN, MS, AR).

Non-Single Occupancy Vehicle Travel (Non-SOV)

Non-SOV travel is defined as any travel mode other than driving alone in a motorized vehicle, and Non-SOV travel can include travel via carpool, van, public transportation, commuter rail, walking, bicycling, and telecommuting. Data for this measure is collected from the most recent American Community Survey (ACS) 5-year estimates. **Figure 6** displays the annual estimated percentage of Non-SOV travel for the Memphis UZA, the State of Tennessee, and the State of Mississippi.

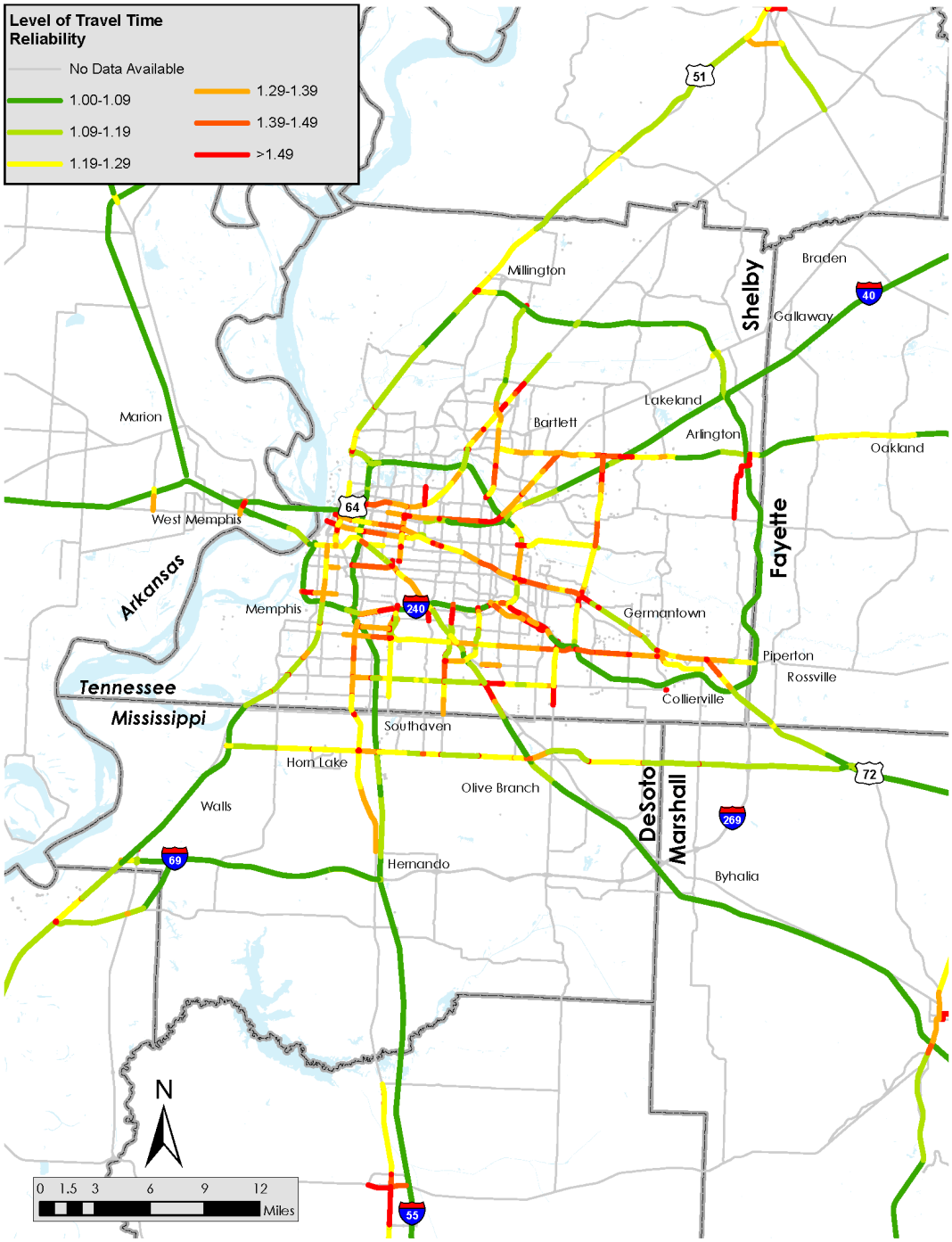
Figure 6



Data Source: American Community Survey (ACS)

Figure 7 Level of Travel Time Reliability

Figure 7 displays the 2017 annual average LOTTR for all reporting segments within the Memphis MPO MPA. In order for a reporting segment to be considered reliable, it must have a ratio below 1.50 for all four reporting periods.



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