

Performance Measure Summary - Tulsa OK

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2017. There is no single performance measure that experts agree "says it all". A few key points should be recognized by users of the Urban Mobility Scorecard data.

Use the trends - The multi-year performance measures are better indicators, in most cases, than any single year. Examining a few measures over many years reduces the chance that data variations or the estimating procedures may have caused a "spike" in any single year. (5 years is 5 times better than 1 year.)

Use several measures - Each performance measure illustrates a different element of congestion. (The view is more interesting from atop several measures.)

Compare to similar regions - Congestion analyses that compare areas with similar characteristics (for example, population, growth rate, road and public transportation system design) are usually more insightful than comparisons of different regions. (Los Angeles is not Peoria.)

Compare ranking changes and performance measure values - In some performance measures, a small change in the value may cause a significant change in rank from one year to the next. This is the case when there are several regions with nearly the same value. (15 hours is only 1 hour more than 14 hours.)

Consider the scope of improvement options - Any improvement project in a corridor within most of the regions will only have a modest effect on the regional congestion level. (To have an effect on areawide congestion, there must be significant change in the system or service.)

Performance Measures and Definition of Terms

Travel Time Index - A measure of congestion that focuses on each trip and each mile of travel. It is calculated as the ratio of travel time in the peak period to travel time in free-flow. A value of 1.30 indicates that a 20-minute free-flow trip takes 26 minutes in the peak.

Planning Time Index - A travel time reliability measure that represents the total travel time that should be planned for a trip. Computed with the 95th percentile travel time it represents the amount of time that should be planned for a commute trip to be late for only 1 day a month. If it is computed with the 80th percentile travel time it represents the amount of time that should be planned for a trip to be late for only 1 day a week. A PTI of 2.00 means that for a 20-minute trip in light traffic, 40 minutes should be planned.

Peak Commuters - Number of travelers who begin a trip during the morning or evening peak travel periods (6 to 10 a.m. and 3 to 7 p.m.). "Commuters" are private vehicle users unless specifically noted.

Annual Delay per Commuter - A yearly sum of all the per-trip delays for those persons who travel in the peak period (6 to 10 a.m. and 3 to 7 p.m.). This measure illustrates the effect of traffic slowdowns as well as the length of each trip.

Total Delay - The overall size of the congestion problem. Measured by the total travel time above that needed to complete a trip at free-flow speeds. The ranking of total delay usually follows the population ranking (larger regions usually have more delay).

Free-Flow Speeds - These values are derived from time periods with lighter traffic volumes in the INRIX speed database. They are used as the national comparison thresholds. Other speed thresholds may be appropriate for urban project evaluations or sub-region studies.

Excess Fuel Consumed - Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

Congestion Cost - Value of travel delay for 2017 (estimated at \$18.29 per hour of person travel and \$59.94 per hour of truck time) and excess fuel consumption estimated using state average cost per gallon.

Urban Area - The developed area (population density more than 1,000 persons per square mile) within a metropolitan region. The urban area boundaries change frequently (every year for most growing areas), so increases include both new growth and development that was previously in areas designated as rural.

Number of Rush Hours - Time when the road system might have congestion.

Mobility Data for Tulsa OK

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	755	750	745	745	730	720
Rank	59	59	59	58	59	59
Commuters (1000s)	408	404	402	402	384	379
Daily Vehicle-Miles of Travel (1000s)						
Freeway	8,541	8,597	8,314	8,047	7,886	7,440
Arterial Streets	8,090	7,976	7,618	9,073	8,985	8,160
Cost Components						
Value of Time (\$/hour)	18.12	17.91	17.69	17.67	17.39	17.14
Commercial Cost (\$/hour)	52.14	50.20	46.87	44.82	41.23	39.66
Gasoline (\$/gallon)	2.14	1.98	2.11	3.21	3.35	3.33
Diesel (\$/gallon)	2.29	2.06	2.27	3.43	3.66	3.75
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	12.1	--	--	--	--	--
Congested System (% of lane-miles)	7.0	--	--	--	--	--
Congested Time (number of "Rush Hours")	0.9	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	9,940	9,883	9,750	9,675	9,560	9,208
Rank	54	54	54	54	54	54
Fuel per Peak Auto Commuter (gallons)	17	17	17	16	17	16
Rank	68	68	65	70	64	69
Annual Delay						
Total Delay (1000s of person-hours)	25,228	24,618	23,868	23,270	22,583	21,355
Rank	54	54	54	54	54	54
Delay per Auto Commuter (pers-hrs)	46	44	42	40	39	37
Rank	47	53	61	63	63	69
Travel Time Index						
Rank	1.15	1.15	1.15	1.15	1.15	1.16
Rank	71	71	69	71	70	60
Commuter Stress Index						
Rank	1.16	--	--	--	--	--
Rank	72	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.28	--	--	--	--	--
Rank	75	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	508	488	467	464	443	413
Rank	54	54	54	54	54	54
Cost per Auto Commuter (\$)	732	720	695	673	660	632
Rank	73	73	70	70	71	74
Truck Congestion						
Annual Person-Hours of Delay (000)	1,060	1,034	1,002	977	948	897
Rank	54	54	54	54	54	54
Annual Gallons of Wasted Fuel (000)	2,107	2,095	2,067	2,051	2,027	1,952
Rank	54	54	54	54	54	54
Annual Congestion Cost (\$ million)	53	50	46	45	42	39
Rank	54	54	54	54	54	53

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Tulsa OK

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	715	710	700	690	680	675
Rank	60	60	60	60	60	60
Commuters (1000s)	376	372	365	359	352	347
Daily Vehicle-Miles of Travel (1000s)						
Freeway	7,634	7,581	7,300	7,140	7,140	7,015
Arterial Streets	8,197	8,140	8,820	9,000	10,000	10,330
Cost Components						
Value of Time (\$/hour)	16.79	16.28	16.01	16.07	15.47	15.06
Commercial Cost (\$/hour)	44.62	42.50	41.83	40.77	39.30	37.88
Gasoline (\$/gallon)	3.26	2.55	2.11	3.31	2.87	2.51
Diesel (\$/gallon)	3.53	2.76	2.32	3.98	3.22	2.73
System Performance	2011	2010	2009	2008	2007	2006
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	9,106	8,837	8,734	9,282	8,882	8,591
Rank	54	54	54	54	54	54
Fuel per Peak Auto Commuter (gallons)	15	15	14	16	17	17
Rank	74	73	71	68	61	56
Annual Delay						
Total Delay (1000s of person-hours)	20,922	20,116	19,694	19,933	19,073	18,448
Rank	54	55	54	52	52	54
Delay per Auto Commuter (pers-hrs)	35	35	35	32	32	32
Rank	74	71	68	77	77	77
Travel Time Index						
Rank	1.16	1.16	1.16	1.16	1.17	1.17
Rank	59	58	58	63	56	53
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	401	368	351	369	336	314
Rank	54	54	54	52	53	53
Cost per Auto Commuter (\$)	638	633	631	632	629	626
Rank	72	73	71	67	72	72
Truck Congestion						
Annual Person-Hours of Delay (000)	879	845	827	837	801	775
Rank	54	55	54	52	52	54
Annual Gallons of Wasted Fuel (000)	1,930	1,874	1,852	1,968	1,883	1,821
Rank	54	54	54	54	54	54
Annual Congestion Cost (\$ million)	41	37	35	38	34	31
Rank	54	54	53	52	53	53

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Tulsa OK

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	675	670	670	665	665	660
Rank	59	59	58	56	56	55
Commuters (1000s)	345	340	338	332	328	321
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,960	6,935	7,025	6,850	6,700	6,500
Arterial Streets	10,000	9,615	9,335	8,825	8,590	8,365
Cost Components						
Value of Time (\$/hour)	14.58	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	36.51	35.19	33.92	32.69	31.51	30.38
Gasoline (\$/gallon)	2.19	1.77	1.42	1.27	1.31	1.48
Diesel (\$/gallon)	2.34	1.77	1.35	1.21	1.39	1.38
System Performance	2005	2004	2003	2002	2001	2000
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	8,111	7,736	7,553	6,982	6,720	6,556
Rank	54	54	54	57	57	57
Fuel per Peak Auto Commuter (gallons)	16	15	16	15	14	13
Rank	58	65	49	53	54	56
Annual Delay						
Total Delay (1000s of person-hours)	17,418	16,613	16,219	14,993	14,430	14,079
Rank	54	55	55	56	57	55
Delay per Auto Commuter (pers-hrs)	32	33	33	33	33	34
Rank	75	69	65	59	58	49
Travel Time Index						
Rank	1.16	1.15	1.15	1.14	1.13	1.13
Rank	61	66	64	69	73	72
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	285	260	244	220	208	199
Rank	54	55	55	56	57	55
Cost per Auto Commuter (\$)	611	602	603	569	555	557
Rank	74	73	72	75	76	74
Truck Congestion						
Annual Person-Hours of Delay (000)	732	698	681	630	606	591
Rank	54	55	55	56	57	55
Annual Gallons of Wasted Fuel (000)	1,720	1,640	1,601	1,480	1,425	1,390
Rank	54	54	54	57	57	57
Annual Congestion Cost (\$ million)	27	24	22	20	19	18
Rank	54	55	55	55	54	54

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Tulsa OK

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	655	655	650	650	645	645
Rank	56	56	54	54	53	50
Commuters (1000s)	315	311	304	301	295	291
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,300	6,100	5,900	5,800	5,515	5,265
Arterial Streets	8,135	8,050	7,900	7,700	7,520	7,380
Cost Components						
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37	11.06
Commercial Cost (\$/hour)	29.28	28.89	28.50	28.12	27.75	27.38
Gasoline (\$/gallon)	1.03	1.00	1.08	1.21	1.06	0.97
Diesel (\$/gallon)	1.00	1.03	1.13	1.27	1.11	1.01
System Performance	1999	1998	1997	1996	1995	1994
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,316	6,191	5,820	5,440	5,091	4,871
Rank	57	55	55	55	55	54
Fuel per Peak Auto Commuter (gallons)	13	14	13	12	10	10
Rank	51	31	38	38	52	45
Annual Delay						
Total Delay (1000s of person-hours)	13,563	13,294	12,497	11,682	10,933	10,459
Rank	55	53	53	53	52	52
Delay per Auto Commuter (pers-hrs)	34	33	32	30	28	27
Rank	45	46	47	49	52	51
Travel Time Index						
Rank	1.13	1.13	1.12	1.12	1.11	1.11
Rank	70	66	69	67	68	63
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	183	175	163	150	136	126
Rank	55	53	53	53	52	52
Cost per Auto Commuter (\$)	555	558	531	507	490	482
Rank	68	64	63	64	62	60
Truck Congestion						
Annual Person-Hours of Delay (000)	570	558	525	491	459	439
Rank	55	53	53	53	52	52
Annual Gallons of Wasted Fuel (000)	1,339	1,312	1,234	1,153	1,079	1,033
Rank	57	55	55	55	55	54
Annual Congestion Cost (\$ million)	16	15	15	14	12	12
Rank	55	53	53	53	52	51

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Mobility Data for Tulsa OK

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	640	640	635	630	625	605
Rank	51	50	50	50	50	52
Commuters (1000s)	285	282	276	270	266	255
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,265	4,855	4,430	4,465	4,520	4,485
Arterial Streets	7,200	7,120	7,150	7,135	7,205	6,915
Cost Components						
Value of Time (\$/hour)	10.78	10.47	10.17	9.75	9.25	8.83
Commercial Cost (\$/hour)	27.02	26.66	26.30	25.95	25.60	25.26
Gasoline (\$/gallon)	1.05	1.03	1.05	1.11	1.06	0.98
Diesel (\$/gallon)	1.09	1.08	1.10	1.09	0.98	0.90
System Performance	1993	1992	1991	1990	1989	1988
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,747	4,393	3,903	3,577	3,322	3,169
Rank	54	53	54	53	53	50
Fuel per Peak Auto Commuter (gallons)	11	10	9	8	7	7
Rank	22	24	27	35	39	27
Annual Delay						
Total Delay (1000s of person-hours)	10,194	9,434	8,381	7,681	7,133	6,805
Rank	51	51	51	51	51	49
Delay per Auto Commuter (pers-hrs)	27	25	23	21	20	20
Rank	45	45	49	52	48	44
Travel Time Index						
Rank	54	59	62	63	56	48
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	120	108	94	83	73	67
Rank	51	51	51	51	51	49
Cost per Auto Commuter (\$)	485	462	422	403	396	396
Rank	52	53	57	58	57	54
Truck Congestion						
Annual Person-Hours of Delay (000)	428	396	352	323	300	286
Rank	51	51	51	51	51	49
Annual Gallons of Wasted Fuel (000)	1,006	931	827	758	704	672
Rank	53	53	54	53	53	50
Annual Congestion Cost (\$ million)	11	10	9	8	7	7
Rank	51	51	51	51	51	48

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Mobility Data for Tulsa OK

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	580	565	550	530	510	500
Rank	51	51	52	53	55	54
Commuters (1000s)	243	235	227	217	207	201
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,300	4,200	4,150	3,990	3,545	3,500
Arterial Streets	6,900	6,800	6,745	6,525	5,520	4,490
Cost Components						
Value of Time (\$/hour)	8.48	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	24.93	24.60	24.27	23.94	23.63	23.31
Gasoline (\$/gallon)	0.98	0.96	1.25	1.27	1.30	1.35
Diesel (\$/gallon)	0.90	0.88	1.15	1.16	1.19	1.25
System Performance	1987	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,917	2,614	2,323	2,162	1,928	1,715
Rank	50	50	51	50	51	52
Fuel per Peak Auto Commuter (gallons)	7	6	5	4	4	2
Rank	22	28	32	41	35	55
Annual Delay						
Total Delay (1000s of person-hours)	6,265	5,614	4,989	4,642	4,139	3,682
Rank	48	47	47	47	49	49
Delay per Auto Commuter (pers-hrs)	19	18	16	16	15	13
Rank	43	42	45	41	40	44
Travel Time Index						
Rank	1.07	1.07	1.06	1.06	1.06	1.05
Rank	55	49	54	51	46	51
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	59	52	46	41	36	31
Rank	48	46	48	47	47	49
Cost per Auto Commuter (\$)	381	361	324	312	290	264
Rank	52	54	55	50	53	54
Truck Congestion						
Annual Person-Hours of Delay (000)	263	236	210	195	174	155
Rank	48	47	47	47	48	49
Annual Gallons of Wasted Fuel (000)	619	554	493	458	409	364
Rank	49	50	51	50	51	52
Annual Congestion Cost (\$ million)	6	6	5	5	4	4
Rank	47	45	46	46	47	44

* Note: Zeroes in the table reflect values less than 0.5.