

Performance Measure Summary - St. Louis MO-IL

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 St. Louis MO-IL

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	2,200	2,200	2,200	2,200	2,200	2,200
Rank	20	20	20	20	20	20
Commuters (1000s)	1,120	1,120	1,120	1,120	1,142	1,142
Daily Vehicle-Miles of Travel (1000s)						
Freeway	32,408	31,693	30,883	30,549	30,557	29,490
Arterial Streets	19,150	18,759	18,712	19,163	19,248	19,185
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)	2.16	1.98	2.08	3.16	3.36	3.30
Diesel (\$/gallon)	2.31	2.11	2.31	3.47	3.67	3.69
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	18.8	--	--	--	--	--
Congested System (% of lane-miles)	12.3	--	--	--	--	--
Congested Time (number of "Rush Hours")	2.5	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	28,919	28,752	28,596	28,421	28,209	28,007
Rank	23	23	23	23	23	23
Fuel per Peak Auto Commuter (gallons)	19	19	19	19	19	19
Rank	55	53	50	47	45	42
Annual Delay						
Total Delay (1000s of person-hours)	71,481	70,712	69,729	68,106	66,414	65,347
Rank	25	25	25	25	25	25
Delay per Auto Commuter (pers-hrs)	46	46	45	44	44	43
Rank	47	47	45	44	43	43
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	1.15	--	--	--	--	--
Rank	78	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.40	--	--	--	--	--
Rank	54	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,442	1,402	1,363	1,357	1,304	1,263
Rank	25	25	25	25	25	25
Cost per Auto Commuter (\$)	898	894	877	851	840	837
Rank	43	41	40	40	40	39
Truck Congestion						
Annual Person-Hours of Delay (000)	3,002	2,970	2,929	2,860	2,789	2,745
Rank	25	25	25	25	25	25
Annual Gallons of Wasted Fuel (000)	6,131	6,095	6,062	6,025	5,980	5,937
Rank	23	23	23	23	23	23
Annual Congestion Cost (\$ million)	151	144	134	133	123	117
Rank	25	25	25	25	25	25

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

Mobility Data for St. Louis MO-IL

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	2,195	2,195	2,190	2,185	2,175	2,160
Rank	20	20	20	20	20	19
Commuters (1000s)	1,137	1,133	1,127	1,120	1,107	1,092
Daily Vehicle-Miles of Travel (1000s)						
Freeway	30,207	30,181	29,700	29,455	29,610	27,860
Arterial Streets	19,743	19,726	18,900	18,000	18,145	17,100
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)	3.24	2.49	2.09	3.31	2.85	2.54
Diesel (\$/gallon)	3.54	2.77	2.33	4.01	3.22	2.72
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)	27,804	27,780	27,369	29,028	28,317	27,674
Rank	23	23	23	23	23	23
Fuel per Peak Auto Commuter (gallons)	20	20	19	22	21	21
Rank	32	29	27	19	23	24
Annual Delay						
Total Delay (1000s of person-hours)	63,120	62,483	60,407	61,019	59,524	58,172
Rank	24	24	24	22	23	24
Delay per Auto Commuter (pers-hrs)	42	43	42	41	42	42
Rank	42	34	35	35	33	32
Travel Time Index						
Rank	1.16	1.16	1.16	1.17	1.17	1.16
Rank	59	58	58	53	56	62
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,211	1,143	1,078	1,131	1,051	992
Rank	24	24	24	22	24	24
Cost per Auto Commuter (\$)	834	852	837	838	850	852
Rank	38	38	36	32	35	34
Truck Congestion						
Annual Person-Hours of Delay (000)	2,651	2,624	2,537	2,563	2,500	2,443
Rank	24	24	24	22	23	24
Annual Gallons of Wasted Fuel (000)	5,894	5,889	5,802	6,154	6,003	5,867
Rank	23	23	23	23	23	23
Annual Congestion Cost (\$ million)	125	114	107	116	106	97
Rank	24	24	24	22	24	25

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

Mobility Data for St. Louis MO-IL

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	2,150	2,130	2,115	2,100	2,075	2,040
Rank	19	19	18	18	19	19
Commuters (1000s)	1,079	1,063	1,050	1,027	998	966
Daily Vehicle-Miles of Travel (1000s)						
Freeway	27,200	27,665	27,200	26,900	26,400	25,900
Arterial Streets	17,500	17,390	17,565	17,560	17,540	17,425
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)	2.20	1.78	1.43	1.30	1.33	1.48
Diesel (\$/gallon)	2.36	1.80	1.39	1.25	1.40	1.41
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)	26,956	26,116	25,258	24,493	23,667	22,665
Rank	23	23	22	22	22	22
Fuel per Peak Auto Commuter (gallons)	21	20	19	19	18	17
Rank	20	21	23	18	23	24
Annual Delay						
Total Delay (1000s of person-hours)	56,663	54,898	53,094	51,486	49,749	47,642
Rank	23	23	23	22	21	21
Delay per Auto Commuter (pers-hrs)	42	42	41	40	40	39
Rank	31	30	30	30	29	30
Travel Time Index						
Rank	1.16	1.16	1.15	1.15	1.15	1.15
Rank	61	59	64	61	58	56
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	928	859	801	756	720	673
Rank	24	24	23	22	21	21
Cost per Auto Commuter (\$)	858	860	855	846	829	816
Rank	36	37	35	34	31	29
Truck Congestion						
Annual Person-Hours of Delay (000)	2,380	2,306	2,230	2,162	2,089	2,001
Rank	23	23	23	22	21	21
Annual Gallons of Wasted Fuel (000)	5,715	5,537	5,355	5,193	5,017	4,805
Rank	23	23	22	22	22	22
Annual Congestion Cost (\$ million)	90	81	74	68	65	60
Rank	25	24	23	23	21	21

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

Mobility Data for St. Louis MO-IL

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	2,005	2,000	2,000	1,995	1,995	1,990
Rank	19	19	19	19	19	19
Commuters (1000s)	933	916	902	885	870	856
Daily Vehicle-Miles of Travel (1000s)						
Freeway	25,600	24,960	24,195	23,765	23,310	22,460
Arterial Streets	17,380	17,315	17,775	17,635	17,645	15,100
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)	1.02	1.01	1.06	1.22	1.04	0.95
Diesel (\$/gallon)	1.02	1.04	1.15	1.34	1.14	1.04
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)	21,729	20,749	19,809	18,853	18,026	17,065
Rank	21	21	21	20	19	18
Fuel per Peak Auto Commuter (gallons)	17	16	15	15	14	13
Rank	17	18	17	13	15	15
Annual Delay						
Total Delay (1000s of person-hours)	45,675	43,616	41,640	39,631	37,892	35,872
Rank	21	21	21	21	21	21
Delay per Auto Commuter (pers-hrs)	38	37	36	35	33	32
Rank	32	31	28	25	31	27
Travel Time Index						
Rank	52	55	47	50	47	51
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	615	576	543	509	471	433
Rank	21	21	21	20	21	21
Cost per Auto Commuter (\$)	810	790	767	746	735	716
Rank	27	24	24	23	22	22
Truck Congestion						
Annual Person-Hours of Delay (000)	1,918	1,832	1,749	1,664	1,591	1,507
Rank	21	21	21	21	21	21
Annual Gallons of Wasted Fuel (000)	4,606	4,399	4,200	3,997	3,822	3,618
Rank	21	21	21	20	19	18
Annual Congestion Cost (\$ million)	54	51	49	46	43	40
Rank	21	21	20	21	21	20

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Mobility Data for St. Louis MO-IL

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	1,980	1,970	1,965	1,960	1,955	1,950
Rank	18	18	17	17	16	15
Commuters (1000s)	837	820	804	789	782	773
Daily Vehicle-Miles of Travel (1000s)						
Freeway	20,730	18,700	17,500	17,670	17,085	16,835
Arterial Streets	14,000	13,250	12,415	12,000	11,750	11,480
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)	0.98	0.96	1.01	0.98	1.11	1.02
Diesel (\$/gallon)	1.08	1.08	1.09	0.98	1.04	0.96
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)	15,364	14,183	12,642	12,002	11,047	10,156
Rank	19	19	20	19	19	19
Fuel per Peak Auto Commuter (gallons)	12	11	9	10	9	7
Rank	16	16	27	14	19	27
Annual Delay						
Total Delay (1000s of person-hours)	32,296	29,814	26,574	25,229	23,222	21,350
Rank	21	21	21	21	21	21
Delay per Auto Commuter (pers-hrs)	29	27	25	24	22	21
Rank	33	38	39	39	40	38
Travel Time Index						
Rank	54	59	62	56	56	48
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	381	342	298	272	240	211
Rank	21	21	21	21	21	21
Cost per Auto Commuter (\$)	663	632	580	577	560	541
Rank	25	25	26	25	25	22
Truck Congestion						
Annual Person-Hours of Delay (000)	1,356	1,252	1,116	1,060	975	897
Rank	21	21	21	21	21	21
Annual Gallons of Wasted Fuel (000)	3,257	3,007	2,680	2,544	2,342	2,153
Rank	19	19	20	19	19	19
Annual Congestion Cost (\$ million)	36	33	29	27	24	22
Rank	21	21	21	21	21	19

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Mobility Data for St. Louis MO-IL

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	1,940	1,930	1,910	1,890	1,875	1,870
Rank	15	15	14	14	14	13
Commuters (1000s)	764	753	740	727	716	705
Daily Vehicle-Miles of Travel (1000s)						
Freeway	15,860	16,255	15,590	14,620	14,000	13,365
Arterial Streets	11,170	10,900	10,400	10,000	9,850	9,700
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)	1.03	1.00	1.31	1.33	1.36	1.42
Diesel (\$/gallon)	0.96	0.94	1.23	1.24	1.27	1.33
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)	9,882	9,633	8,844	8,475	7,795	7,365
Rank	19	18	19	17	16	16
Fuel per Peak Auto Commuter (gallons)	7	8	6	7	6	4
Rank	22	14	22	12	13	19
Annual Delay						
Total Delay (1000s of person-hours)	20,772	20,249	18,591	17,816	16,386	15,482
Rank	20	19	20	20	20	19
Delay per Auto Commuter (pers-hrs)	20	20	19	18	17	16
Rank	36	32	30	30	30	28
Travel Time Index						
Rank	44	42	48	42	46	43
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	198	187	171	159	141	130
Rank	20	19	20	20	20	18
Cost per Auto Commuter (\$)	549	557	522	518	498	486
Rank	21	20	19	18	18	18
Truck Congestion						
Annual Person-Hours of Delay (000)	872	850	781	748	688	650
Rank	20	19	20	20	20	19
Annual Gallons of Wasted Fuel (000)	2,095	2,042	1,875	1,797	1,653	1,561
Rank	19	18	19	17	16	16
Annual Congestion Cost (\$ million)	21	20	19	18	16	15
Rank	19	19	20	20	19	18

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