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 2014. 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 overnight speeds 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 2014 (estimated at $17.67 per hour of person travel and $94.04 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.

The Mobility Data for St. Louis MO-IL

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	2,200	2,200	2,200	2,195	2,195
Rank	20	20	20	20	20
Commuters (1000s)	1,120	1,142	1,142	1,137	1,133
Daily Vehicle-Miles of Travel (1000s)					
Freeway	31,260	30,557	29,490	30,207	30,181
Arterial Streets	19,537	19,248	19,185	19,743	19,726
Cost Components					
Value of Time ($/hour)	17.67	17.39	17.14	16.79	16.30
Commercial Cost ($/hour)	94.04	89.60	89.56	86.81	88.12
Gasoline ($/gallon)	3.16	3.36	3.30	3.24	2.49
Diesel ($/gallon)	3.47	3.67	3.69	3.54	2.77
System Performance	**2014**	**2013**	**2012**	**2011**	**2010**
Congested Travel (% of peak VMT)	17	--	--	--	--
Congested System (% of lane-miles)	17	--	--	--	--
Congested Time (number of "Rush Hours")	1.30	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	32,991	32,801	32,565	32,329	32,302
Rank	21	21	21	20	20
Fuel per Peak Auto Commuter (gallons)	21	20	20	20	20
Rank	32	40	36	30	27
Annual Delay					
Total Delay (1000s of person-hours)	69,350	68,951	68,455	67,959	67,901
Rank	23	23	23	21	21
Delay per Peak Auto Commuter (pers-hrs)	43	42	42	42	42
Rank	35	40	36	35	34
Travel Time Index	1.16	1.16	1.16	1.16	1.16
Rank	65	63	63	61	57
Commuter Stress Index	1.19	1.19	1.18	1.18	1.18
Rank	61	60	66	66	65
Freeway Planning Time Index (95th Pctile)	2.16	--	--	--	--
Rank	47	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,637	1,654	1,666	1,688	1,740
Rank	22	22	22	21	20
Cost per Peak Auto Commuter ($)	1,020	1,031	1,039	1,052	1,085
Rank	37	36	33	31	29

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	2,190	2,185	2,175	2,160	2,150
Rank	20	20	20	19	19
Commuters (1000s)	1,127	1,120	1,107	1,092	1,079
Daily Vehicle-Miles of Travel (1000s)					
Freeway	29,700	29,455	29,610	27,860	27,200
Arterial Streets	18,900	18,000	18,145	17,100	17,500
Cost Components					
Value of Time ($/hour)	16.01	16.10	15.47	15.06	14.58
Commercial Cost ($/hour)	89.75	81.52	82.56	80.43	78.05
Gasoline ($/gallon)	2.09	3.31	2.85	2.54	2.20
Diesel ($/gallon)	2.33	4.01	3.22	2.72	2.36
System Performance	**2009**	**2008**	**2007**	**2006**	**2005**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	31,824	33,753	32,926	32,179	31,344
Rank	20	19	19	19	18
Fuel per Peak Auto Commuter (gallons)	20	21	21	20	20
Rank	24	24	20	22	19
Annual Delay					
Total Delay (1000s of person-hours)	66,896	70,952	69,214	67,642	65,887
Rank	21	21	22	22	22
Delay per Peak Auto Commuter (pers-hrs)	42	44	44	43	42
Rank	32	33	31	34	36
Travel Time Index	1.16	1.17	1.17	1.16	1.16
Rank	56	56	58	63	61
Commuter Stress Index	1.18	1.19	1.19	1.19	1.18
Rank	62	65	63	59	68
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,743	1,841	1,866	1,873	1,885
Rank	20	20	20	20	20
Cost per Peak Auto Commuter ($)	1,086	1,148	1,163	1,168	1,175
Rank	27	23	22	22	22

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	2,130	2,115	2,100	2,075	2,040
Rank	19	18	18	19	19
Commuters (1000s)	1,063	1,050	1,027	998	966
Daily Vehicle-Miles of Travel (1000s)					
Freeway	27,665	27,200	26,900	26,400	25,900
Arterial Streets	17,390	17,565	17,560	17,540	17,425
Cost Components					
Value of Time ($/hour)	14.10	13.73	13.43	13.22	12.85
Commercial Cost ($/hour)	74.17	72.23	70.86	71.38	70.47
Gasoline ($/gallon)	1.78	1.43	1.30	1.33	1.48
Diesel ($/gallon)	1.80	1.39	1.25	1.40	1.41
System Performance	**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)	30,367	29,369	28,480	27,519	26,354
Rank	18	18	18	18	18
Fuel per Peak Auto Commuter (gallons)	19	18	18	17	16
Rank	23	25	19	20	23
Annual Delay					
Total Delay (1000s of person-hours)	63,835	61,737	59,868	57,848	55,398
Rank	21	21	21	21	21
Delay per Peak Auto Commuter (pers-hrs)	42	41	40	40	39
Rank	33	34	34	32	33
Travel Time Index	1.16	1.15	1.15	1.15	1.15
Rank	59	64	61	58	57
Commuter Stress Index	1.18	1.18	1.18	1.17	1.17
Rank	66	62	60	64	63
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,888	1,875	1,859	1,825	1,798
Rank	19	20	20	20	19
Cost per Peak Auto Commuter ($)	1,177	1,169	1,159	1,138	1,121
Rank	25	23	21	21	19

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	2,005	2,000	2,000	1,995	1,995
Rank	19	19	19	19	19
Commuters (1000s)	933	916	902	885	870
Daily Vehicle-Miles of Travel (1000s)					
Freeway	25,600	24,960	24,195	23,765	23,310
Arterial Streets	17,380	17,315	17,775	17,635	17,645
Cost Components					
Value of Time ($/hour)	12.43	12.17	11.98	11.71	11.37
Commercial Cost ($/hour)	66.76	65.76	66.83	66.20	64.27
Gasoline ($/gallon)	1.02	1.01	1.06	1.22	1.04
Diesel ($/gallon)	1.02	1.04	1.15	1.34	1.14
System Performance	**1999**	**1998**	**1997**	**1996**	**1995**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	25,265	24,126	23,034	21,922	20,961
Rank	18	17	16	17	17
Fuel per Peak Auto Commuter (gallons)	16	15	14	14	13
Rank	17	17	18	14	15
Annual Delay					
Total Delay (1000s of person-hours)	53,110	50,716	48,419	46,082	44,061
Rank	21	18	18	18	18
Delay per Peak Auto Commuter (pers-hrs)	38	37	36	35	33
Rank	33	31	29	26	32
Travel Time Index	1.15	1.14	1.14	1.13	1.13
Rank	52	56	47	50	47
Commuter Stress Index	1.17	1.16	1.16	1.15	1.15
Rank	58	60	55	58	55
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,781	1,739	1,686	1,641	1,616
Rank	17	17	17	17	17
Cost per Peak Auto Commuter ($)	1,110	1,084	1,051	1,023	1,007
Rank	19	19	15	14	13

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	1,990	1,980	1,970	1,965	1,960
Rank	19	18	18	17	17
Commuters (1000s)	856	837	820	804	789
Daily Vehicle-Miles of Travel (1000s)					
Freeway	22,460	20,730	18,700	17,500	17,670
Arterial Streets	15,100	14,000	13,250	12,415	12,000
Cost Components					
Value of Time ($/hour)	11.06	10.78	10.47	10.17	9.75
Commercial Cost ($/hour)	62.23	60.84	59.01	57.31	55.03
Gasoline ($/gallon)	0.95	0.98	0.96	1.01	0.98
Diesel ($/gallon)	1.04	1.08	1.08	1.09	0.98
System Performance	**1994**	**1993**	**1992**	**1991**	**1990**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	19,843	17,865	16,492	14,700	13,955
Rank	17	16	16	17	17
Fuel per Peak Auto Commuter (gallons)	12	11	10	9	9
Rank	15	15	16	22	16
Annual Delay					
Total Delay (1000s of person-hours)	41,712	37,554	34,667	30,900	29,336
Rank	18	18	19	21	19
Delay per Peak Auto Commuter (pers-hrs)	32	29	27	25	24
Rank	28	32	37	38	39
Travel Time Index	1.12	1.11	1.10	1.09	1.09
Rank	51	54	59	62	56
Commuter Stress Index	1.14	1.13	1.13	1.12	1.11
Rank	58	62	51	54	59
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,573	1,452	1,381	1,268	1,254
Rank	17	17	18	19	17
Cost per Peak Auto Commuter ($)	980	905	861	790	782
Rank	12	18	19	19	19

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	1,955	1,950	1,940	1,930	1,910
Rank	16	15	15	15	14
Commuters (1000s)	782	773	764	753	740
Daily Vehicle-Miles of Travel (1000s)					
Freeway	17,085	16,835	15,860	16,255	15,590
Arterial Streets	11,750	11,480	11,170	10,900	10,400
Cost Components					
Value of Time ($/hour)	9.25	8.83	8.48	8.18	8.03
Commercial Cost ($/hour)	52.81	50.04	48.53	46.57	47.83
Gasoline ($/gallon)	1.11	1.02	1.03	1.00	1.31
Diesel ($/gallon)	1.04	0.96	0.96	0.94	1.23
System Performance	**1989**	**1988**	**1987**	**1986**	**1985**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	12,845	11,809	11,490	11,201	10,284
Rank	17	17	17	15	15
Fuel per Peak Auto Commuter (gallons)	8	7	7	7	6
Rank	18	21	19	14	17
Annual Delay					
Total Delay (1000s of person-hours)	27,002	24,825	24,153	23,545	21,618
Rank	18	18	17	17	17
Delay per Peak Auto Commuter (pers-hrs)	22	21	20	20	19
Rank	40	38	37	31	30
Travel Time Index	1.08	1.08	1.08	1.08	1.07
Rank	56	48	44	42	48
Commuter Stress Index	1.11	1.10	1.10	1.10	1.09
Rank	52	55	52	51	53
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,217	1,173	1,188	1,200	1,123
Rank	17	17	17	16	16
Cost per Peak Auto Commuter ($)	759	731	741	748	700
Rank	20	21	17	16	16

* Note: Cells containing "--" indicate no available data.

The Mobility Data for St. Louis MO-IL

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	1,890	1,875	1,870
Rank	14	14	13
Commuters (1000s)	727	716	705
Daily Vehicle-Miles of Travel (1000s)			
Freeway	14,620	14,000	13,365
Arterial Streets	10,000	9,850	9,700
Cost Components			
Value of Time ($/hour)	7.75	7.43	7.20
Commercial Cost ($/hour)	46.47	44.23	43.08
Gasoline ($/gallon)	1.33	1.36	1.42
Diesel ($/gallon)	1.24	1.27	1.33
System Performance	**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)	9,855	9,064	8,564
Rank	15	15	15
Fuel per Peak Auto Commuter (gallons)	6	6	5
Rank	15	12	16
Annual Delay			
Total Delay (1000s of person-hours)	20,716	19,054	18,002
Rank	15	15	15
Delay per Peak Auto Commuter (pers-hrs)	18	17	16
Rank	30	29	28
Travel Time Index	1.07	1.06	1.06
Rank	42	46	43
Commuter Stress Index	1.09	1.09	1.08
Rank	49	47	51
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 $)			
Total Cost ($ millions)	1,114	1,069	1,042
Rank	16	15	15
Cost per Peak Auto Commuter ($)	695	666	650
Rank	14	14	15

* Note: Cells containing "--" indicate no available data.