Performance Measure Summary - Minneapolis-St. Paul MN-WI

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 Minneapolis-St. Paul MN-WI

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	2,850	2,840	2,830	2,815	2,810	2,785
Rank	16	16	16	16	16	16
Commuters (1000s)	1,402	1,396	1,390	1,383	1,383	1,371
Daily Vehicle-Miles of Travel (1000s)						
Freeway	32,969	32,321	30,126	30,126	29,550	28,765
Arterial Streets	25,956	25,383	25,958	25,959	25,831	23,875
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 ($/gallon)	2.30	2.08	2.24	3.30	3.49	3.48
Diesel ($/gallon)	2.48	2.26	2.49	3.72	3.88	3.96
System Performance	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Congested Travel (% of peak VMT)	24.6	--	--	--	--	--
Congested System (% of lane-miles)	12.9	--	--	--	--	--
Congested Time (number of "Rush Hours")	3.7	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	33,726	33,488	33,230	32,794	32,353	31,825
Rank	20	20	20	20	20	20
Fuel per Peak Auto Commuter (gallons)	18	18	18	17	17	17
Rank	63	60	58	65	64	61
Annual Delay						
Total Delay (1000s of person-hours)	103,695	101,370	99,730	96,726	93,750	90,573
Rank	19	19	19	19	19	19
Delay per Auto Commuter (pers-hrs)	56	54	53	52	50	50
Rank	31	30	29	28	28	23
Travel Time Index	1.25	1.25	1.25	1.26	1.26	1.26
Rank	25	25	24	22	22	21
Commuter Stress Index	1.26	--	--	--	--	--
Rank	31	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	1.61	--	--	--	--	--
Rank	37	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	2,078	1,998	1,939	1,908	1,820	1,734
Rank	19	19	19	19	19	19
Cost per Auto Commuter ($)	980	965	943	910	890	872
Rank	35	35	34	34	34	35
Truck Congestion						
Annual Person-Hours of Delay (000)	4,355	4,258	4,189	4,062	3,938	3,804
Rank	19	19	19	19	19	19
Annual Gallons of Wasted Fuel (000)	7,150	7,099	7,045	6,952	6,859	6,747
Rank	20	20	20	20	20	20
Annual Congestion Cost ($ million)	217	204	190	186	169	159
Rank	19	19	19	19	19	19

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

Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	2,760	2,730	2,700	2,670	2,620	2,570
Rank	16	16	16	16	16	16
Commuters (1000s)	1,356	1,337	1,317	1,298	1,265	1,232
Daily Vehicle-Miles of Travel (1000s)						
Freeway	30,383	30,085	29,300	28,835	29,000	28,610
Arterial Streets	23,919	23,685	23,741	24,475	24,350	24,000
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 ($/gallon)	3.39	2.71	2.22	3.36	2.87	2.59
Diesel ($/gallon)	3.72	3.01	2.55	4.07	3.34	2.90
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)	31,297	30,458	29,488	31,219	31,198	30,892
Rank	20	20	20	19	21	19
Fuel per Peak Auto Commuter (gallons)	17	18	15	17	17	17
Rank	60	46	62	61	61	56
Annual Delay						
Total Delay (1000s of person-hours)	87,450	84,317	80,108	80,770	80,718	79,924
Rank	19	19	19	18	18	18
Delay per Auto Commuter (pers-hrs)	49	47	47	47	48	48
Rank	22	24	23	21	19	20
Travel Time Index	1.25	1.25	1.25	1.26	1.27	1.27
Rank	22	22	22	22	20	21
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	1,659	1,532	1,420	1,474	1,406	1,347
Rank	19	19	19	19	19	18
Cost per Auto Commuter ($)	868	863	835	835	867	881
Rank	35	35	38	33	33	32
Truck Congestion						
Annual Person-Hours of Delay (000)	3,673	3,541	3,365	3,392	3,390	3,357
Rank	19	19	19	18	18	18
Annual Gallons of Wasted Fuel (000)	6,635	6,457	6,252	6,618	6,614	6,549
Rank	20	20	20	19	21	19
Annual Congestion Cost ($ million)	168	151	139	148	139	131
Rank	19	19	19	19	19	18

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

Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	2,520	2,490	2,475	2,440	2,430	2,390
Rank	16	16	16	16	16	16
Commuters (1000s)	1,199	1,178	1,165	1,132	1,108	1,073
Daily Vehicle-Miles of Travel (1000s)						
Freeway	28,140	27,400	27,580	27,300	28,185	27,095
Arterial Streets	23,830	23,535	23,205	23,105	22,450	21,825
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 ($/gallon)	2.19	1.84	1.51	1.34	1.43	1.54
Diesel ($/gallon)	2.45	1.91	1.45	1.32	1.50	1.48
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)	30,352	29,817	29,092	28,318	27,636	26,579
Rank	19	18	19	17	17	16
Fuel per Peak Auto Commuter (gallons)	17	17	16	16	16	16
Rank	48	46	49	42	36	32
Annual Delay						
Total Delay (1000s of person-hours)	78,529	77,143	75,267	73,265	71,501	68,767
Rank	18	16	16	16	16	16
Delay per Auto Commuter (pers-hrs)	49	49	48	48	47	47
Rank	18	14	14	13	12	12
Travel Time Index	1.28	1.28	1.27	1.27	1.27	1.27
Rank	16	16	15	14	14	11
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	1,271	1,197	1,128	1,069	1,028	964
Rank	18	17	16	16	16	16
Cost per Auto Commuter ($)	895	909	911	905	896	886
Rank	32	30	29	26	24	21
Truck Congestion						
Annual Person-Hours of Delay (000)	3,298	3,240	3,161	3,077	3,003	2,888
Rank	18	16	16	16	16	16
Annual Gallons of Wasted Fuel (000)	6,435	6,321	6,167	6,003	5,859	5,635
Rank	19	18	19	17	17	16
Annual Congestion Cost ($ million)	121	112	103	96	92	85
Rank	18	17	16	16	16	16

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

Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	2,370	2,320	2,290	2,250	2,220	2,175
Rank	16	16	16	16	15	15
Commuters (1000s)	1,046	1,008	979	946	919	887
Daily Vehicle-Miles of Travel (1000s)						
Freeway	26,165	25,505	24,485	22,930	22,385	21,785
Arterial Streets	21,445	20,735	20,610	19,520	19,010	18,745
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 ($/gallon)	1.14	1.09	1.19	1.35	1.16	1.12
Diesel ($/gallon)	1.12	1.14	1.28	1.43	1.23	1.18
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)	25,208	23,676	22,368	20,426	18,523	16,932
Rank	16	16	16	17	18	19
Fuel per Peak Auto Commuter (gallons)	15	14	13	12	11	10
Rank	32	31	38	38	41	45
Annual Delay						
Total Delay (1000s of person-hours)	65,220	61,255	57,872	52,848	47,925	43,807
Rank	16	16	16	16	16	16
Delay per Auto Commuter (pers-hrs)	46	45	43	41	38	36
Rank	11	11	12	12	14	15
Travel Time Index	1.26	1.25	1.24	1.23	1.21	1.20
Rank	9	10	11	10	18	19
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	876	805	752	676	593	528
Rank	16	16	16	16	16	16
Cost per Auto Commuter ($)	869	835	801	747	698	659
Rank	20	20	21	22	28	30
Truck Congestion						
Annual Person-Hours of Delay (000)	2,739	2,573	2,431	2,220	2,013	1,840
Rank	16	16	16	16	16	16
Annual Gallons of Wasted Fuel (000)	5,344	5,019	4,742	4,330	3,927	3,590
Rank	16	16	16	17	18	19
Annual Congestion Cost ($ million)	76	71	67	61	54	48
Rank	16	16	16	16	16	16

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

Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	2,115	2,110	2,055	2,010	1,970	1,925
Rank	15	15	15	15	15	16
Commuters (1000s)	848	833	797	768	747	723
Daily Vehicle-Miles of Travel (1000s)						
Freeway	20,860	19,490	18,600	17,790	16,860	16,420
Arterial Streets	18,235	17,645	16,000	14,960	14,265	14,570
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 ($/gallon)	1.14	1.13	1.14	1.12	1.16	1.07
Diesel ($/gallon)	1.21	1.18	1.26	1.14	1.09	1.00
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)	14,982	13,312	11,815	10,177	9,320	8,561
Rank	20	21	24	27	26	25
Fuel per Peak Auto Commuter (gallons)	9	8	8	7	5	6
Rank	49	53	45	50	63	45
Annual Delay						
Total Delay (1000s of person-hours)	38,762	34,442	30,568	26,330	24,114	22,148
Rank	17	18	20	20	20	19
Delay per Auto Commuter (pers-hrs)	33	30	27	24	23	22
Rank	18	25	30	39	37	32
Travel Time Index	1.18	1.16	1.15	1.14	1.13	1.12
Rank	20	23	23	25	27	27
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	456	394	341	283	247	217
Rank	17	18	20	20	20	19
Cost per Auto Commuter ($)	598	547	501	452	438	423
Rank	30	35	43	45	43	44
Truck Congestion						
Annual Person-Hours of Delay (000)	1,628	1,447	1,284	1,106	1,013	930
Rank	17	18	20	20	20	19
Annual Gallons of Wasted Fuel (000)	3,176	2,822	2,505	2,158	1,976	1,815
Rank	20	21	24	27	26	25
Annual Congestion Cost ($ million)	42	37	33	28	25	22
Rank	18	18	19	19	19	19

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

Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	1,885	1,845	1,800	1,750	1,750	1,750
Rank	16	17	17	18	17	17
Commuters (1000s)	704	682	661	638	634	626
Daily Vehicle-Miles of Travel (1000s)						
Freeway	15,620	14,560	13,685	13,000	12,165	11,200
Arterial Streets	14,110	13,605	12,670	11,820	11,515	10,830
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 ($/gallon)	1.07	1.05	1.37	1.38	1.42	1.48
Diesel ($/gallon)	1.01	0.98	1.29	1.30	1.33	1.39
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)	7,658	6,846	6,237	5,585	4,745	4,263
Rank	25	25	25	25	25	25
Fuel per Peak Auto Commuter (gallons)	4	4	3	4	3	2
Rank	61	54	66	41	46	55
Annual Delay						
Total Delay (1000s of person-hours)	19,813	17,711	16,137	14,449	12,276	11,029
Rank	21	22	23	23	24	24
Delay per Auto Commuter (pers-hrs)	20	18	17	16	14	12
Rank	36	42	38	41	44	47
Travel Time Index	1.11	1.10	1.10	1.09	1.08	1.07
Rank	29	32	26	29	33	35
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	187	162	147	128	105	92
Rank	21	22	22	24	24	24
Cost per Auto Commuter ($)	394	366	338	315	280	261
Rank	50	52	51	49	55	55
Truck Congestion						
Annual Person-Hours of Delay (000)	832	744	678	607	516	463
Rank	21	22	23	23	24	24
Annual Gallons of Wasted Fuel (000)	1,623	1,451	1,322	1,184	1,006	904
Rank	25	25	25	25	25	25
Annual Congestion Cost ($ million)	20	17	16	14	12	11
Rank	21	22	22	23	24	24

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