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 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 Minneapolis-St. Paul MN-WI

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	2,815	2,810	2,785	2,760	2,730
Rank	16	16	16	16	16
Commuters (1000s)	1,383	1,383	1,371	1,356	1,337
Daily Vehicle-Miles of Travel (1000s)					
Freeway	30,259	29,550	28,765	30,383	30,085
Arterial Streets	26,451	25,831	23,875	23,919	23,685
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 ($/gallon)	3.30	3.49	3.48	3.39	2.71
Diesel ($/gallon)	3.72	3.88	3.96	3.72	3.01
System Performance	**2014**	**2013**	**2012**	**2011**	**2010**
Congested Travel (% of peak VMT)	40	--	--	--	--
Congested System (% of lane-miles)	28	--	--	--	--
Congested Time (number of "Rush Hours")	5.10	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	38,542	38,065	37,444	36,822	35,835
Rank	19	18	18	17	16
Fuel per Peak Auto Commuter (gallons)	18	18	18	17	17
Rank	62	57	55	62	58
Annual Delay					
Total Delay (1000s of person-hours)	99,710	98,477	96,869	95,261	92,707
Rank	16	16	15	15	15
Delay per Peak Auto Commuter (pers-hrs)	47	46	46	46	45
Rank	23	23	23	21	24
Travel Time Index	1.26	1.26	1.26	1.25	1.25
Rank	21	20	19	21	21
Commuter Stress Index	1.31	1.31	1.30	1.30	1.30
Rank	27	25	28	27	25
Freeway Planning Time Index (95th Pctile)	2.72	--	--	--	--
Rank	20	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	2,196	2,204	2,200	2,208	2,217
Rank	17	15	15	15	15
Cost per Peak Auto Commuter ($)	1,035	1,039	1,037	1,041	1,045
Rank	36	33	34	33	33

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	2,700	2,670	2,620	2,570	2,520
Rank	16	16	16	16	16
Commuters (1000s)	1,317	1,298	1,265	1,232	1,199
Daily Vehicle-Miles of Travel (1000s)					
Freeway	29,300	28,835	29,000	28,610	28,140
Arterial Streets	23,741	24,475	24,350	24,000	23,830
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 ($/gallon)	2.22	3.36	2.87	2.59	2.19
Diesel ($/gallon)	2.55	4.07	3.34	2.90	2.45
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)	34,695	36,731	36,707	36,346	35,711
Rank	16	16	16	16	16
Fuel per Peak Auto Commuter (gallons)	16	17	17	17	17
Rank	61	61	57	52	46
Annual Delay					
Total Delay (1000s of person-hours)	89,757	95,024	94,962	94,028	92,387
Rank	15	15	15	15	15
Delay per Peak Auto Commuter (pers-hrs)	44	48	49	49	50
Rank	27	23	22	21	19
Travel Time Index	1.25	1.26	1.27	1.27	1.28
Rank	21	20	19	20	17
Commuter Stress Index	1.29	1.31	1.32	1.32	1.33
Rank	28	26	23	23	18
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	2,182	2,302	2,389	2,430	2,467
Rank	15	15	15	15	15
Cost per Peak Auto Commuter ($)	1,028	1,085	1,126	1,145	1,163
Rank	35	32	30	27	25

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	2,490	2,475	2,440	2,430	2,390
Rank	16	16	16	16	16
Commuters (1000s)	1,178	1,165	1,132	1,108	1,073
Daily Vehicle-Miles of Travel (1000s)					
Freeway	27,400	27,580	27,300	28,185	27,095
Arterial Streets	23,535	23,205	23,105	22,450	21,825
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 ($/gallon)	1.84	1.51	1.34	1.43	1.54
Diesel ($/gallon)	1.91	1.45	1.32	1.50	1.48
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)	35,081	34,228	33,318	32,516	31,272
Rank	16	16	16	15	15
Fuel per Peak Auto Commuter (gallons)	17	16	16	15	15
Rank	43	44	36	40	33
Annual Delay					
Total Delay (1000s of person-hours)	90,756	88,549	86,194	84,119	80,902
Rank	15	15	15	15	15
Delay per Peak Auto Commuter (pers-hrs)	50	49	49	48	48
Rank	14	14	13	13	13
Travel Time Index	1.28	1.27	1.27	1.27	1.27
Rank	16	15	14	14	11
Commuter Stress Index	1.32	1.32	1.32	1.32	1.31
Rank	20	17	17	16	17
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	2,505	2,510	2,498	2,477	2,450
Rank	15	15	15	15	15
Cost per Peak Auto Commuter ($)	1,181	1,183	1,177	1,167	1,155
Rank	24	21	19	17	14

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	2,370	2,320	2,290	2,250	2,220
Rank	16	16	16	16	15
Commuters (1000s)	1,046	1,008	979	946	919
Daily Vehicle-Miles of Travel (1000s)					
Freeway	26,165	25,505	24,485	22,930	22,385
Arterial Streets	21,445	20,735	20,610	19,520	19,010
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 ($/gallon)	1.14	1.09	1.19	1.35	1.16
Diesel ($/gallon)	1.12	1.14	1.28	1.43	1.23
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)	29,659	27,856	26,318	24,033	21,794
Rank	15	15	15	15	15
Fuel per Peak Auto Commuter (gallons)	14	13	12	11	10
Rank	34	34	38	41	44
Annual Delay					
Total Delay (1000s of person-hours)	76,729	72,065	68,085	62,174	56,382
Rank	15	15	15	15	15
Delay per Peak Auto Commuter (pers-hrs)	46	45	43	41	38
Rank	12	12	12	12	15
Travel Time Index	1.26	1.25	1.24	1.23	1.21
Rank	9	10	11	10	18
Commuter Stress Index	1.31	1.30	1.29	1.27	1.26
Rank	16	16	16	23	23
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	2,402	2,306	2,212	2,066	1,929
Rank	15	15	15	15	15
Cost per Peak Auto Commuter ($)	1,132	1,087	1,043	974	909
Rank	15	16	17	21	25

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	2,175	2,115	2,110	2,055	2,010
Rank	15	15	15	15	15
Commuters (1000s)	887	848	833	797	768
Daily Vehicle-Miles of Travel (1000s)					
Freeway	21,785	20,860	19,490	18,600	17,790
Arterial Streets	18,745	18,235	17,645	16,000	14,960
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 ($/gallon)	1.12	1.14	1.13	1.14	1.12
Diesel ($/gallon)	1.18	1.21	1.18	1.26	1.14
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)	19,922	17,627	15,663	13,901	11,974
Rank	15	17	18	19	21
Fuel per Peak Auto Commuter (gallons)	9	8	7	7	6
Rank	49	50	53	49	51
Annual Delay					
Total Delay (1000s of person-hours)	51,538	45,602	40,520	35,962	30,977
Rank	15	15	15	17	17
Delay per Peak Auto Commuter (pers-hrs)	36	33	30	27	24
Rank	16	18	25	30	39
Travel Time Index	1.20	1.18	1.16	1.15	1.14
Rank	19	20	23	23	25
Commuter Stress Index	1.24	1.23	1.21	1.20	1.18
Rank	24	25	29	30	33
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,813	1,646	1,506	1,377	1,236
Rank	15	16	16	17	18
Cost per Peak Auto Commuter ($)	855	776	710	649	582
Rank	28	33	38	43	47

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	1,970	1,925	1,885	1,845	1,800
Rank	15	16	16	17	17
Commuters (1000s)	747	723	704	682	661
Daily Vehicle-Miles of Travel (1000s)					
Freeway	16,860	16,420	15,620	14,560	13,685
Arterial Streets	14,265	14,570	14,110	13,605	12,670
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 ($/gallon)	1.16	1.07	1.07	1.05	1.37
Diesel ($/gallon)	1.09	1.00	1.01	0.98	1.29
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)	10,966	10,072	9,010	8,054	7,338
Rank	21	21	22	24	23
Fuel per Peak Auto Commuter (gallons)	5	5	4	4	3
Rank	57	47	55	48	63
Annual Delay					
Total Delay (1000s of person-hours)	28,369	26,057	23,309	20,837	18,985
Rank	17	17	19	19	19
Delay per Peak Auto Commuter (pers-hrs)	23	22	20	18	17
Rank	36	32	37	43	38
Travel Time Index	1.13	1.12	1.11	1.10	1.10
Rank	27	27	29	32	26
Commuter Stress Index	1.17	1.16	1.15	1.14	1.14
Rank	34	33	33	35	33
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	1,193	1,149	1,070	991	920
Rank	18	18	19	19	20
Cost per Peak Auto Commuter ($)	562	541	504	467	434
Rank	47	44	45	49	48

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

The Mobility Data for Minneapolis-St. Paul MN-WI

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	1,750	1,750	1,750
Rank	18	17	17
Commuters (1000s)	638	634	626
Daily Vehicle-Miles of Travel (1000s)			
Freeway	13,000	12,165	11,200
Arterial Streets	11,820	11,515	10,830
Cost Components			
Value of Time ($/hour)	7.75	7.43	7.20
Commercial Cost ($/hour)	46.47	44.23	43.08
Gasoline ($/gallon)	1.38	1.42	1.48
Diesel ($/gallon)	1.30	1.33	1.39
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)	6,571	5,582	5,015
Rank	22	24	24
Fuel per Peak Auto Commuter (gallons)	3	3	2
Rank	54	42	62
Annual Delay			
Total Delay (1000s of person-hours)	16,999	14,442	12,975
Rank	21	22	21
Delay per Peak Auto Commuter (pers-hrs)	16	14	12
Rank	41	45	49
Travel Time Index	1.09	1.08	1.07
Rank	29	33	35
Commuter Stress Index	1.13	1.12	1.11
Rank	34	34	34
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 $)			
Total Cost ($ millions)	853	756	701
Rank	21	23	22
Cost per Peak Auto Commuter ($)	402	356	330
Rank	47	57	58

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