

Performance Measure Summary - Medium Area Sum

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 Medium Area Sum

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	23,230	22,985	22,755	22,555	22,367
Rank	--	--	--	--	--
Commuters (1000s)	11,701	11,668	11,547	11,414	11,281
Daily Vehicle-Miles of Travel (1000s)					
Freeway	186,865	184,033	185,460	192,841	190,566
Arterial Streets	211,745	210,009	209,885	212,415	211,085
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)	3.35	3.56	3.53	3.37	2.75
Diesel (\$/gallon)	3.68	3.95	3.95	3.74	3.02
System Performance	2014	2013	2012	2011	2010
Congested Travel (% of peak VMT)	25	--	--	--	--
Congested System (% of lane-miles)	23	--	--	--	--
Congested Time (number of "Rush Hours")	2.52	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	323,816	317,443	311,811	306,087	301,664
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	18	18	17	17	17
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	660,045	646,981	635,457	624,037	615,114
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	37	36	36	36	35
Rank	--	--	--	--	--
Travel Time Index					
	1.18	1.18	1.18	1.18	1.18
Rank	--	--	--	--	--
Commuter Stress Index					
	1.22	1.22	1.22	1.22	1.22
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	2.08	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	15,631	15,566	15,514	15,543	15,804
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	867	862	859	861	876
Rank	--	--	--	--	--

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

The Mobility Data for Medium Area Sum

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	22,090	21,825	21,555	21,280	21,060
Rank	--	--	--	--	--
Commuters (1000s)	11,099	10,919	10,724	10,530	10,346
Daily Vehicle-Miles of Travel (1000s)					
Freeway	184,483	180,785	183,785	182,195	178,450
Arterial Streets	212,349	213,305	215,880	214,470	210,410
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)	2.30	3.45	3.04	2.67	2.32
Diesel (\$/gallon)	2.64	4.21	3.47	2.90	2.55
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)	294,559	304,684	297,744	285,792	275,740
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	16	17	17	16	15
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	600,415	621,311	606,590	581,941	561,409
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	35	37	37	36	35
Rank	--	--	--	--	--
Travel Time Index					
	1.18	1.18	1.18	1.18	1.17
Rank	--	--	--	--	--
Commuter Stress Index					
	1.21	1.22	1.22	1.22	1.21
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	15,677	16,164	16,373	16,128	16,074
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	870	896	910	899	900
Rank	--	--	--	--	--

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

The Mobility Data for Medium Area Sum

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	20,790	20,515	20,185	19,905	19,615
Rank	--	--	--	--	--
Commuters (1000s)	10,152	9,965	9,689	9,421	9,154
Daily Vehicle-Miles of Travel (1000s)					
Freeway	173,820	167,755	162,870	156,590	152,025
Arterial Streets	205,255	200,660	195,555	190,525	186,615
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)	1.97	1.55	1.41	1.56	1.57
Diesel (\$/gallon)	2.01	1.55	1.40	1.57	1.54
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)	266,375	257,282	245,488	236,417	227,688
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	15	15	14	13	13
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	542,347	523,609	499,325	480,488	462,609
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	34	34	33	32	32
Rank	--	--	--	--	--
Travel Time Index					
	1.17	1.17	1.16	1.16	1.16
Rank	--	--	--	--	--
Commuter Stress Index					
	1.21	1.21	1.20	1.20	1.20
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	16,060	15,914	15,523	15,177	15,021
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	902	897	879	863	856
Rank	--	--	--	--	--

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The Mobility Data for Medium Area Sum

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	19,290	19,040	18,740	18,520	18,270
Rank	--	--	--	--	--
Commuters (1000s)	8,896	8,672	8,421	8,227	8,012
Daily Vehicle-Miles of Travel (1000s)					
Freeway	146,340	141,440	135,910	130,710	126,965
Arterial Streets	182,385	177,780	172,500	167,170	162,235
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)	1.17	1.12	1.24	1.30	1.20
Diesel (\$/gallon)	1.18	1.20	1.30	1.35	1.25
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)	216,739	203,524	190,935	179,033	167,721
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	12	12	11	10	10
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	439,965	413,078	387,294	363,105	340,159
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	31	30	29	27	26
Rank	--	--	--	--	--
Travel Time Index					
	1.15	1.15	1.14	1.14	1.13
Rank	--	--	--	--	--
Commuter Stress Index					
	1.19	1.19	1.18	1.17	1.17
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	14,776	14,186	13,509	12,952	12,495
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	845	814	777	749	725
Rank	--	--	--	--	--

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The Mobility Data for Medium Area Sum

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	17,990	17,715	17,485	17,245	16,980
Rank	--	--	--	--	--
Commuters (1000s)	7,790	7,567	7,375	7,175	6,974
Daily Vehicle-Miles of Travel (1000s)					
Freeway	122,450	119,215	115,295	108,525	105,690
Arterial Streets	157,450	152,855	147,843	142,345	138,340
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)	1.11	1.15	1.17	1.15	1.10
Diesel (\$/gallon)	1.14	1.19	1.19	1.27	1.12
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)	157,108	145,492	134,977	124,549	114,585
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	9	8	8	7	7
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	318,520	295,095	273,652	252,479	232,382
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	25	24	22	21	20
Rank	--	--	--	--	--
Travel Time Index					
	1.13	1.12	1.11	1.11	1.10
Rank	--	--	--	--	--
Commuter Stress Index					
	1.16	1.16	1.15	1.14	1.14
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	12,039	11,425	10,917	10,383	9,958
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	701	667	640	610	588
Rank	--	--	--	--	--

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The Mobility Data for Medium Area Sum

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	16,775	16,540	16,300	16,065	15,830
Rank	--	--	--	--	--
Commuters (1000s)	6,830	6,687	6,537	6,393	6,254
Daily Vehicle-Miles of Travel (1000s)					
Freeway	101,695	97,750	93,240	88,265	84,646
Arterial Streets	133,825	130,845	124,975	125,380	121,990
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)	1.12	1.04	1.05	1.02	1.33
Diesel (\$/gallon)	1.08	1.00	1.00	0.98	1.28
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)	103,949	95,816	88,604	82,313	75,043
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	6	6	5	5	5
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	210,755	194,260	179,700	166,834	152,036
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	18	17	16	15	14
Rank	--	--	--	--	--
Travel Time Index					
	1.09	1.09	1.08	1.08	1.07
Rank	--	--	--	--	--
Commuter Stress Index					
	1.13	1.12	1.12	1.11	1.11
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	9,535	9,208	8,877	8,553	7,946
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	565	549	531	514	481
Rank	--	--	--	--	--

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

The Mobility Data for Medium Area Sum

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	15,640	15,520	17,105
Rank	--	--	--
Commuters (1000s)	6,129	6,032	6,523
Daily Vehicle-Miles of Travel (1000s)			
Freeway	79,960	74,840	79,735
Arterial Streets	115,075	114,035	119,955
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	46.47	44.23	43.08
Gasoline (\$/gallon)	1.34	1.38	1.44
Diesel (\$/gallon)	1.29	1.32	1.38
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)	68,975	61,523	64,012
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	4	4	5
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	139,608	124,418	130,233
Rank	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	13	12	12
Rank	--	--	--
Travel Time Index			
	1.07	1.06	1.06
Rank	--	--	--
Commuter Stress Index			
	1.10	1.10	1.09
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 \$)			
Total Cost (\$ millions)	7,573	7,039	7,714
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	465	434	600
Rank	--	--	--

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