

Performance Measure Summary - Medium Area Average

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 Average

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	704	697	690	683	678
Rank	--	--	--	--	--
Commuters (1000s)	355	354	350	346	342
Daily Vehicle-Miles of Travel (1000s)					
Freeway	5,663	5,577	5,620	5,844	5,775
Arterial Streets	6,417	6,364	6,360	6,437	6,397
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)	9,813	9,619	9,449	9,275	9,141
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	18	18	17	17	17
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	20,001	19,605	19,256	18,910	18,640
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)	474	472	470	471	479
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 Average

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	669	661	653	645	638
Rank	--	--	--	--	--
Commuters (1000s)	336	331	325	319	314
Daily Vehicle-Miles of Travel (1000s)					
Freeway	5,590	5,478	5,569	5,521	5,408
Arterial Streets	6,435	6,464	6,542	6,499	6,376
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)	8,926	9,233	9,023	8,660	8,356
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	16	17	17	16	15
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	18,194	18,828	18,382	17,635	17,012
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)	475	490	496	489	487
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 Average

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	630	622	612	603	594
Rank	--	--	--	--	--
Commuters (1000s)	308	302	294	285	277
Daily Vehicle-Miles of Travel (1000s)					
Freeway	5,267	5,083	4,935	4,745	4,607
Arterial Streets	6,220	6,081	5,926	5,773	5,655
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)	8,072	7,796	7,439	7,164	6,900
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	15	15	14	13	13
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	16,435	15,867	15,131	14,560	14,018
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)	487	482	470	460	455
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	902	897	879	863	856
Rank	--	--	--	--	--

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The Mobility Data for Medium Area Average

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	585	577	568	561	554
Rank	--	--	--	--	--
Commuters (1000s)	270	263	255	249	243
Daily Vehicle-Miles of Travel (1000s)					
Freeway	4,435	4,286	4,118	3,961	3,847
Arterial Streets	5,527	5,387	5,227	5,066	4,916
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)	6,568	6,167	5,786	5,425	5,082
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	12	12	11	10	10
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	13,332	12,518	11,736	11,003	10,308
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)	448	430	409	392	379
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	845	814	777	749	725
Rank	--	--	--	--	--

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The Mobility Data for Medium Area Average

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	545	537	530	523	515
Rank	--	--	--	--	--
Commuters (1000s)	236	229	223	217	211
Daily Vehicle-Miles of Travel (1000s)					
Freeway	3,711	3,613	3,494	3,289	3,203
Arterial Streets	4,771	4,632	4,480	4,313	4,192
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)	4,761	4,409	4,090	3,774	3,472
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	9	8	8	7	7
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	9,652	8,942	8,292	7,651	7,042
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)	365	346	331	315	302
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	701	667	640	610	588
Rank	--	--	--	--	--

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

The Mobility Data for Medium Area Average

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	508	501	494	487	480
Rank	--	--	--	--	--
Commuters (1000s)	207	203	198	194	190
Daily Vehicle-Miles of Travel (1000s)					
Freeway	3,082	2,962	2,825	2,675	2,565
Arterial Streets	4,055	3,965	3,787	3,799	3,697
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)	3,150	2,904	2,685	2,494	2,274
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	6	6	5	5	5
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	6,387	5,887	5,445	5,056	4,607
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)	289	279	269	259	241
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 Average

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	474	470	503
Rank	--	--	--
Commuters (1000s)	186	183	192
Daily Vehicle-Miles of Travel (1000s)			
Freeway	2,423	2,268	2,345
Arterial Streets	3,487	3,456	3,528
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)	2,090	1,864	1,883
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	4	4	5
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	4,231	3,770	3,830
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)	229	213	227
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	465	434	600
Rank	--	--	--

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