

Performance Measure Summary - Large 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 Large Area Sum

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	52,230	51,700	51,105	50,545	50,025
Rank	--	--	--	--	--
Commuters (1000s)	26,157	26,154	25,924	25,715	25,398
Daily Vehicle-Miles of Travel (1000s)					
Freeway	493,249	493,930	476,765	493,653	488,326
Arterial Streets	436,804	438,882	441,505	447,904	442,626
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)	3.33	3.56	3.53	3.36	2.75
Diesel (\$/gallon)	3.67	3.92	3.93	3.71	3.01
System Performance	2014	2013	2012	2011	2010
Congested Travel (% of peak VMT)	31	--	--	--	--
Congested System (% of lane-miles)	26	--	--	--	--
Congested Time (number of "Rush Hours")	3.75	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	796,444	780,028	764,542	745,517	728,576
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	21	21	20	20	19
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	1,717,129	1,680,553	1,646,255	1,606,060	1,569,824
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	45	44	44	43	43
Rank	--	--	--	--	--
Travel Time Index					
	1.23	1.23	1.23	1.22	1.22
Rank	--	--	--	--	--
Commuter Stress Index					
	1.28	1.28	1.27	1.27	1.27
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	2.46	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	39,716	39,507	39,282	39,105	39,430
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,045	1,039	1,033	1,028	1,038
Rank	--	--	--	--	--

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

The Mobility Data for Large Area Sum

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	49,371	48,795	48,230	47,550	46,910
Rank	--	--	--	--	--
Commuters (1000s)	24,993	24,608	24,187	23,713	23,237
Daily Vehicle-Miles of Travel (1000s)					
Freeway	479,232	472,980	482,625	474,570	466,085
Arterial Streets	437,446	438,075	442,590	440,400	436,385
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	3.47	3.02	2.67	2.34
Diesel (\$/gallon)	2.61	4.17	3.43	2.90	2.56
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)	706,384	732,173	726,745	711,518	691,228
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	19	19	19	18
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	1,522,074	1,580,157	1,568,564	1,535,049	1,489,531
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	42	44	45	44	44
Rank	--	--	--	--	--
Travel Time Index					
	1.22	1.23	1.23	1.23	1.23
Rank	--	--	--	--	--
Commuter Stress Index					
	1.26	1.28	1.28	1.28	1.28
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	38,864	40,174	41,426	41,657	41,787
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,023	1,057	1,091	1,098	1,102
Rank	--	--	--	--	--

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

The Mobility Data for Large Area Sum

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	46,385	45,615	44,860	44,070	43,205
Rank	--	--	--	--	--
Commuters (1000s)	22,859	22,364	21,682	20,962	20,239
Daily Vehicle-Miles of Travel (1000s)					
Freeway	455,705	440,385	424,265	411,975	400,150
Arterial Streets	430,035	420,595	408,320	397,660	387,430
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	1.56	1.42	1.55	1.57
Diesel (\$/gallon)	2.01	1.53	1.41	1.59	1.55
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)	669,966	639,702	611,789	582,029	547,599
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	18	17	16	16	15
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	1,441,675	1,375,375	1,313,897	1,248,605	1,174,005
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	43	42	41	40	39
Rank	--	--	--	--	--
Travel Time Index					
	1.22	1.22	1.21	1.21	1.20
Rank	--	--	--	--	--
Commuter Stress Index					
	1.27	1.26	1.26	1.25	1.25
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	41,828	40,976	40,029	38,643	37,369
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,104	1,082	1,059	1,025	994
Rank	--	--	--	--	--

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The Mobility Data for Large Area Sum

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	42,450	41,810	41,265	40,555	39,845
Rank	--	--	--	--	--
Commuters (1000s)	19,552	18,959	18,424	17,824	17,236
Daily Vehicle-Miles of Travel (1000s)					
Freeway	390,010	378,480	366,985	355,445	342,165
Arterial Streets	378,195	368,670	361,030	351,500	340,750
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)	1.21	1.12	1.22	1.29	1.19
Diesel (\$/gallon)	1.22	1.21	1.31	1.38	1.27
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)	515,509	483,072	455,937	428,686	399,533
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	14	13	12	12	11
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	1,104,739	1,034,002	975,154	916,183	853,849
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	38	36	35	34	33
Rank	--	--	--	--	--
Travel Time Index					
	1.19	1.18	1.18	1.17	1.17
Rank	--	--	--	--	--
Commuter Stress Index					
	1.24	1.23	1.22	1.22	1.21
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	36,337	34,766	33,291	32,009	30,721
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	969	929	892	862	831
Rank	--	--	--	--	--

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The Mobility Data for Large Area Sum

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	39,145	38,485	37,815	37,200	36,415
Rank	--	--	--	--	--
Commuters (1000s)	16,683	16,141	15,621	15,113	14,556
Daily Vehicle-Miles of Travel (1000s)					
Freeway	328,050	312,950	296,795	281,835	272,410
Arterial Streets	328,825	316,040	305,175	294,340	283,915
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)	1.10	1.14	1.15	1.14	1.10
Diesel (\$/gallon)	1.17	1.22	1.22	1.25	1.13
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)	369,731	339,692	312,913	289,127	264,131
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	10	9	9	8	7
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	790,507	726,888	670,089	619,375	564,723
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	31	29	28	26	25
Rank	--	--	--	--	--
Travel Time Index					
	1.16	1.15	1.14	1.13	1.13
Rank	--	--	--	--	--
Commuter Stress Index					
	1.20	1.19	1.18	1.18	1.17
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	29,240	27,573	26,186	24,935	23,721
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	794	749	713	680	649
Rank	--	--	--	--	--

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The Mobility Data for Large Area Sum

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	35,730	35,215	34,515	33,955	33,430
Rank	--	--	--	--	--
Commuters (1000s)	14,180	13,849	13,469	13,126	12,828
Daily Vehicle-Miles of Travel (1000s)					
Freeway	259,821	248,290	234,940	221,590	208,945
Arterial Streets	274,195	268,055	257,470	250,360	240,355
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)	1.13	1.04	1.04	1.02	1.33
Diesel (\$/gallon)	1.10	1.01	1.02	0.99	1.30
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)	241,606	219,327	198,153	181,334	165,418
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	7	6	5	5	5
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	516,361	469,247	423,797	387,954	353,858
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	23	22	20	19	17
Rank	--	--	--	--	--
Travel Time Index					
	1.12	1.11	1.10	1.10	1.09
Rank	--	--	--	--	--
Commuter Stress Index					
	1.16	1.15	1.14	1.14	1.13
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	22,864	21,771	20,483	19,436	18,059
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	626	594	559	531	494
Rank	--	--	--	--	--

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

The Mobility Data for Large Area Sum

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	32,920	32,485	30,450
Rank	--	--	--
Commuters (1000s)	12,529	12,274	11,407
Daily Vehicle-Miles of Travel (1000s)			
Freeway	199,065	187,365	168,475
Arterial Streets	232,170	223,400	204,750
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	46.47	44.23	43.08
Gasoline (\$/gallon)	1.35	1.38	1.44
Diesel (\$/gallon)	1.31	1.34	1.40
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)	150,072	136,509	116,868
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	4	4	3
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	321,296	292,020	249,117
Rank	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	16	15	14
Rank	--	--	--
Travel Time Index			
	1.08	1.08	1.07
Rank	--	--	--
Commuter Stress Index			
	1.12	1.12	1.11
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 \$)			
Total Cost (\$ millions)	16,977	16,102	14,160
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	464	441	409
Rank	--	--	--

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