

Performance Measure Summary - Large Area Sum (32 areas)

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 Large Area Sum (32 areas)

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	54,380	53,955	53,560	53,210	52,655	52,040
Rank	--	--	--	--	--	--
Commuters (1000s)	27,328	27,111	26,867	26,646	26,643	26,406
Daily Vehicle-Miles of Travel (1000s)						
Freeway	559,382	549,455	527,166	508,891	494,697	484,915
Arterial Streets	483,295	478,343	469,849	462,125	456,564	451,035
Cost Components						
Value of Time (\$/hour)	18.29	17.91	17.69	17.67	17.39	17.14
Commercial Cost (\$/hour)	54.94	50.20	46.87	44.82	41.23	39.66
Gasoline (\$/gallon)	2.38	2.21	2.36	3.33	3.56	3.53
Diesel (\$/gallon)	2.57	2.35	2.57	3.67	3.92	3.93
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	25.2	--	--	--	--	--
Congested System (% of lane-miles)	14.9	--	--	--	--	--
Congested Time (number of "Rush Hours")	3.6	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	768,964	760,372	749,936	740,382	732,200	717,353
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	22	22	21	21	21	20
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	1,969,281	1,921,148	1,865,204	1,813,530	1,767,752	1,704,104
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	54	53	51	50	48	47
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.24	1.23	1.23	1.23	1.23	1.23
Commuter Stress Index						
Rank	1.26	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.71	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	39,871	38,252	36,683	36,228	34,811	33,077
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	1,031	1,010	975	942	927	905
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	82,707	80,690	78,338	76,169	74,246	71,572
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	163,019	161,198	158,985	156,963	155,228	152,079
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	4,208	3,941	3,638	3,575	3,295	3,089
Rank	--	--	--	--	--	--

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

Mobility Data for Large Area Sum (32 areas)

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	51,465	50,935	50,271	49,675	49,090	48,410
Rank	--	--	--	--	--	--
Commuters (1000s)	26,188	25,864	25,452	25,056	24,621	24,144
Daily Vehicle-Miles of Travel (1000s)						
Freeway	501,733	495,876	486,682	480,340	489,425	480,870
Arterial Streets	457,344	451,726	446,446	446,975	451,390	448,800
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)	3.36	2.75	2.30	3.47	3.02	2.67
Diesel (\$/gallon)	3.71	3.01	2.61	4.17	3.43	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)	698,983	682,537	661,167	685,102	680,917	666,756
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	20	20	18	19	19	19
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	1,628,517	1,569,979	1,492,686	1,475,568	1,466,254	1,434,985
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	46	44	43	43	43	43
Rank	--	--	--	--	--	--
Travel Time Index						
Total Delay (1000s of person-hours)	1.22	1.22	1.22	1.22	1.23	1.23
Rank	--	--	--	--	--	--
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	31,278	28,868	26,767	27,416	25,979	24,526
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	892	887	858	840	868	873
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	68,399	65,937	62,696	61,972	61,583	60,270
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	148,185	144,698	140,168	145,244	144,353	141,354
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	3,229	2,895	2,668	2,821	2,619	2,414
Rank	--	--	--	--	--	--

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

Mobility Data for Large Area Sum (32 areas)

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	47,750	47,205	46,425	45,650	44,840	43,955
Rank	--	--	--	--	--	--
Commuters (1000s)	23,655	23,265	22,763	22,065	21,329	20,591
Daily Vehicle-Miles of Travel (1000s)						
Freeway	471,985	461,335	445,650	429,390	416,900	404,650
Arterial Streets	444,385	437,235	427,495	414,820	403,860	393,130
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)	2.34	1.97	1.56	1.42	1.55	1.57
Diesel (\$/gallon)	2.56	2.01	1.53	1.41	1.59	1.55
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)	647,692	627,758	599,154	572,607	544,286	511,385
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	18	18	17	16	16
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	1,392,150	1,347,250	1,284,843	1,226,507	1,164,364	1,093,287
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	43	42	41	41	40	39
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.22	1.22	1.21	1.21	1.20	1.20
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	22,870	21,191	19,445	18,074	16,953	15,483
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	876	878	860	840	811	784
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	58,470	56,583	53,964	51,511	48,902	45,920
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	137,312	133,083	127,019	121,391	115,386	108,415
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	2,225	2,016	1,802	1,647	1,536	1,389
Rank	--	--	--	--	--	--

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

Mobility Data for Large Area Sum (32 areas)

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	43,160	42,500	41,915	41,185	40,455	39,735
Rank	--	--	--	--	--	--
Commuters (1000s)	19,880	19,273	18,715	18,101	17,500	16,935
Daily Vehicle-Miles of Travel (1000s)						
Freeway	394,075	382,505	370,795	359,095	345,775	331,380
Arterial Streets	383,795	374,070	366,350	356,790	346,015	333,455
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)	1.21	1.12	1.22	1.29	1.19	1.10
Diesel (\$/gallon)	1.22	1.21	1.31	1.38	1.27	1.17
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)	480,651	449,970	424,600	399,163	372,113	344,192
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	15	14	13	12	12	11
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	1,026,939	960,200	905,286	850,267	792,505	733,369
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	37	36	35	34	32	31
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.19	1.18	1.18	1.17	1.16	1.16
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	13,919	12,731	11,867	10,942	9,894	8,897
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	764	732	702	678	654	626
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	43,128	40,330	38,025	35,710	33,286	30,804
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	101,899	95,393	90,016	84,624	78,890	72,968
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	1,231	1,137	1,070	998	911	826
Rank	--	--	--	--	--	--

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Mobility Data for Large Area Sum (32 areas)

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	39,050	38,365	37,720	36,915	36,220	35,680
Rank	--	--	--	--	--	--
Commuters (1000s)	16,378	15,848	15,324	14,756	14,374	14,032
Daily Vehicle-Miles of Travel (1000s)						
Freeway	316,050	299,595	284,265	274,510	261,751	250,115
Arterial Streets	320,515	309,435	298,480	288,015	277,995	271,655
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	1.15	1.14	1.10	1.13	1.04
Diesel (\$/gallon)	1.22	1.22	1.25	1.13	1.10	1.01
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)	316,085	291,341	269,527	246,166	224,994	204,098
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	10	9	9	8	7	7
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	674,090	621,790	575,443	524,556	479,278	435,206
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	29	28	26	25	23	22
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.15	1.14	1.13	1.13	1.12	1.11
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	7,998	7,186	6,481	5,675	4,954	4,298
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	591	563	539	514	496	473
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	28,312	26,116	24,170	22,031	20,129	18,280
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	67,010	61,766	57,139	52,187	47,700	43,267
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	753	686	631	562	504	448
Rank	--	--	--	--	--	--

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Mobility Data for Large Area Sum (32 areas)

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	34,970	34,385	33,840	33,310	32,865	30,815
Rank	--	--	--	--	--	--
Commuters (1000s)	13,647	13,292	12,986	12,678	12,418	11,544
Daily Vehicle-Miles of Travel (1000s)						
Freeway	236,650	223,090	210,325	200,335	188,485	169,475
Arterial Streets	260,920	253,680	243,555	235,330	226,520	217,750
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)	1.04	1.02	1.33	1.35	1.38	1.44
Diesel (\$/gallon)	1.02	0.99	1.30	1.31	1.34	1.40
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)	184,409	168,632	153,936	139,414	126,651	107,995
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	6	5	5	5	4	3
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	393,144	359,561	328,099	297,352	269,924	230,163
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	20	19	17	16	15	14
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.10	1.09	1.09	1.08	1.08	1.07
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	3,746	3,316	3,022	2,657	2,330	1,943
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	445	423	394	370	352	327
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	16,510	15,100	13,782	12,486	11,339	9,666
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	39,096	35,748	32,638	29,559	26,852	22,894
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	399	360	338	299	275	225
Rank	--	--	--	--	--	--

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