

Performance Measure Summary - 494 Area Sum

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 494 Area Sum

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	237,620	233,135	231,623	230,471	226,676	224,626
Rank	--	--	--	--	--	--
Commuters (1000s)	114,880	111,658	110,864	110,329	110,472	110,272
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,125,172	1,667,998	1,617,353	1,558,649	1,521,521	1,500,870
Arterial Streets	2,186,049	1,549,206	1,518,349	1,502,737	1,487,185	1,478,555
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)	2.37	2.19	2.35	3.35	3.51	3.30
Diesel (\$/gallon)	2.56	2.32	2.55	3.65	3.90	3.65
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	25.1	--	--	--	--	--
Congested System (% of lane-miles)	14.6	--	--	--	--	--
Congested Time (number of "Rush Hours")	3.3	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	3,340,884	3,286,896	3,250,218	3,213,282	3,303,567	3,249,219
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	21	21	21	20	20	20
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	8,809,935	8,570,255	8,380,168	8,173,844	7,992,521	7,747,034
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	54	53	51	50	48	47
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.23	1.23	1.23	1.22	1.22	1.22
Commuter Stress Index						
Rank	1.27	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.67	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	178,710	170,966	165,069	163,247	156,975	149,947
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	1,079	1,061	1,031	1,000	987	970
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	386,924	376,132	368,066	359,831	351,090	340,307
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	686,640	675,517	668,120	660,414	683,371	672,131
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	19,503	18,185	16,905	16,575	15,346	14,459
Rank	--	--	--	--	--	--

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

Mobility Data for 494 Area Sum

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	222,590	220,689	218,304	215,976	213,798	211,393
Rank	--	--	--	--	--	--
Commuters (1000s)	110,138	109,223	107,760	106,336	105,121	103,538
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,554,213	1,530,443	1,505,252	1,490,575	1,518,870	1,505,695
Arterial Streets	1,503,485	1,489,922	1,485,012	1,484,245	1,504,725	1,499,045
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)	3.40	2.75	2.28	3.51	3.06	2.70
Diesel (\$/gallon)	3.75	3.01	2.62	4.18	3.44	2.87
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)	3,180,501	3,119,256	3,059,491	3,159,425	3,159,913	3,107,563
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	19	18	19	19	19
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	7,452,307	7,210,663	6,946,895	6,840,990	6,838,078	6,733,794
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	45	44	43	42	43	42
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.21	1.21	1.21	1.22	1.22	1.22
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	142,743	132,263	124,323	126,669	120,790	114,734
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	963	962	944	923	961	976
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	327,355	316,739	305,161	300,502	300,374	295,801
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	657,913	645,249	632,887	653,558	653,652	642,825
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	15,237	13,714	12,813	13,476	12,589	11,658
Rank	--	--	--	--	--	--

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

Mobility Data for 494 Area Sum

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	209,259	207,061	204,488	201,605	198,708	195,721
Rank	--	--	--	--	--	--
Commuters (1000s)	101,913	100,259	98,415	95,833	92,980	90,141
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,487,340	1,462,425	1,419,170	1,371,715	1,333,200	1,295,215
Arterial Streets	1,481,125	1,456,125	1,420,910	1,387,085	1,352,410	1,322,170
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)	2.36	2.01	1.57	1.45	1.61	1.59
Diesel (\$/gallon)	2.53	1.99	1.53	1.39	1.57	1.52
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)	3,025,004	2,931,049	2,817,187	2,703,138	2,579,545	2,456,775
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	18	18	17	16	16
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	6,551,669	6,349,822	6,103,575	5,857,430	5,593,476	5,332,100
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	42	41	41	40	39	38
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.22	1.21	1.21	1.20	1.20	1.19
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	107,328	99,691	92,169	86,166	81,333	75,333
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	984	989	979	963	936	920
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	287,800	278,926	268,111	257,296	245,700	234,221
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	625,751	606,316	582,754	559,168	533,601	508,205
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	10,803	9,811	8,861	8,131	7,617	7,001
Rank	--	--	--	--	--	--

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Mobility Data for 494 Area Sum

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	192,560	190,006	187,039	184,395	181,608	179,100
Rank	--	--	--	--	--	--
Commuters (1000s)	87,330	84,857	82,246	79,823	77,372	75,124
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,259,935	1,222,428	1,183,160	1,150,380	1,114,585	1,075,665
Arterial Streets	1,292,795	1,260,135	1,236,925	1,207,500	1,175,950	1,141,895
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)	1.23	1.12	1.24	1.28	1.20	1.10
Diesel (\$/gallon)	1.17	1.18	1.28	1.36	1.24	1.14
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)	2,335,906	2,213,303	2,099,316	1,984,854	1,870,746	1,760,533
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	15	14	13	13	12	12
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	5,075,742	4,815,505	4,572,074	4,330,138	4,083,002	3,847,863
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	37	36	36	34	33	32
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.19	1.18	1.18	1.17	1.17	1.16
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	68,679	63,710	59,812	55,518	50,833	46,528
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	910	888	860	838	819	800
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	222,960	211,531	200,841	190,209	179,359	169,022
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	483,201	457,842	434,257	410,580	386,979	364,184
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	6,289	5,889	5,571	5,220	4,822	4,449
Rank	--	--	--	--	--	--

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Mobility Data for 494 Area Sum

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	176,772	174,389	172,266	169,331	167,036	164,748
Rank	--	--	--	--	--	--
Commuters (1000s)	72,993	70,903	68,924	66,666	65,181	63,692
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,039,035	1,000,565	961,160	937,600	902,271	859,520
Arterial Streets	1,104,515	1,069,593	1,033,305	1,006,700	979,170	955,695
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)	1.15	1.17	1.14	1.10	1.12	1.03
Diesel (\$/gallon)	1.18	1.20	1.23	1.11	1.09	1.00
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)	1,651,324	1,552,708	1,464,126	1,375,743	1,296,667	1,224,364
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	11	10	10	9	9	8
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	3,611,845	3,399,886	3,213,158	3,017,340	2,850,220	2,693,683
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	31	30	29	28	27	26
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.16	1.15	1.15	1.14	1.14	1.13
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	42,732	39,193	36,049	32,525	29,320	26,487
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	774	755	741	728	730	728
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	158,660	149,347	141,143	132,538	125,206	118,329
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	341,594	321,197	302,865	284,580	268,230	253,267
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	4,145	3,856	3,618	3,314	3,083	2,855
Rank	--	--	--	--	--	--

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Mobility Data for 494 Area Sum

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	161,968	159,595	157,093	154,397	152,858	151,565
Rank	--	--	--	--	--	--
Commuters (1000s)	62,062	60,575	59,113	57,557	56,477	55,349
Daily Vehicle-Miles of Travel (1000s)						
Freeway	816,340	769,170	726,066	689,385	651,865	618,060
Arterial Streets	921,225	902,270	872,620	843,565	821,625	798,275
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)	1.03	1.01	1.32	1.33	1.36	1.43
Diesel (\$/gallon)	1.01	0.98	1.29	1.30	1.33	1.39
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)	1,147,718	1,077,065	1,014,514	946,222	880,699	821,763
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	8	7	7	6	6	5
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	2,524,192	2,370,134	2,236,932	2,082,590	1,941,393	1,808,246
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	25	24	23	22	21	20
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.13	1.12	1.12	1.11	1.10	1.10
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	23,948	21,749	20,482	18,488	16,643	15,137
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	712	696	670	643	631	611
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	110,879	104,108	98,266	91,479	85,279	79,434
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	237,413	222,795	209,868	195,732	182,186	169,987
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	2,651	2,446	2,350	2,160	1,998	1,842
Rank	--	--	--	--	--	--

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