

Performance Measure Summary - Medium Area Average (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 Medium Area Average (32 areas)

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	707	703	698	695	688	682
Rank	--	--	--	--	--	--
Commuters (1000s)	357	355	352	351	349	346
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,182	6,081	5,918	5,713	5,486	5,402
Arterial Streets	6,600	6,594	6,477	6,356	6,224	6,160
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	2.20	2.35	3.35	3.56	3.53
Diesel (\$/gallon)	2.58	2.36	2.61	3.68	3.95	3.95
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	17.9	--	--	--	--	--
Congested System (% of lane-miles)	11.4	--	--	--	--	--
Congested Time (number of "Rush Hours")	1.9	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	9,079	8,951	8,812	8,659	8,534	8,392
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	19	19	18	18	18
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	21,671	21,102	20,489	19,876	19,305	18,716
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	44	43	42	41	40	39
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.18	1.18	1.18	1.18	1.18	1.18
Commuter Stress Index						
Rank	1.19	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.45	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	402	382	368	366	353	338
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	748	729	708	687	676	665
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	910	886	861	835	811	786
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,925	1,898	1,868	1,836	1,809	1,779
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	49	44	40	40	36	34
Rank	--	--	--	--	--	--

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

Mobility Data for Medium Area Average (32 areas)

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	676	671	662	655	647	638
Rank	--	--	--	--	--	--
Commuters (1000s)	342	338	333	327	322	316
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,628	5,565	5,393	5,290	5,390	5,365
Arterial Streets	6,250	6,203	6,247	6,274	6,359	6,333
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)	3.37	2.75	2.30	3.45	3.04	2.67
Diesel (\$/gallon)	3.74	3.02	2.64	4.21	3.47	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)	8,238	8,117	7,928	8,178	7,974	7,656
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	17	17	16	17	17	17
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	18,080	17,556	16,842	16,572	16,142	15,487
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	38	37	36	35	35	35
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.18	1.18	1.18	1.18	1.18	1.18
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	319	297	277	285	264	244
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	656	657	641	628	638	629
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	759	737	707	696	678	651
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,746	1,721	1,681	1,734	1,691	1,623
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	36	33	30	32	29	26
Rank	--	--	--	--	--	--

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

Mobility Data for Medium Area Average (32 areas)

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	632	624	616	606	598	590
Rank	--	--	--	--	--	--
Commuters (1000s)	310	305	299	291	283	275
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,281	5,153	4,978	4,834	4,652	4,523
Arterial Streets	6,216	6,064	5,915	5,778	5,631	5,519
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)	2.32	1.97	1.55	1.41	1.56	1.57
Diesel (\$/gallon)	2.55	2.01	1.55	1.40	1.57	1.54
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)	7,406	7,174	6,934	6,626	6,388	6,161
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	16	16	15	15	14	14
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	14,980	14,512	14,018	13,388	12,899	12,440
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	34	34	33	33	32	32
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.17	1.17	1.17	1.16	1.16	1.16
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	227	210	195	182	173	163
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	631	633	628	614	602	597
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	629	610	589	562	542	522
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,570	1,521	1,470	1,405	1,354	1,306
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	24	22	20	18	17	16
Rank	--	--	--	--	--	--

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Mobility Data for Medium Area Average (32 areas)

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	581	573	565	559	552	544
Rank	--	--	--	--	--	--
Commuters (1000s)	268	261	254	248	242	236
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,364	4,215	4,047	3,899	3,784	3,654
Arterial Streets	5,398	5,268	5,114	4,971	4,834	4,696
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)	1.17	1.12	1.24	1.30	1.20	1.11
Diesel (\$/gallon)	1.18	1.20	1.30	1.35	1.25	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)	5,884	5,529	5,194	4,877	4,571	4,285
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	13	13	12	11	11	10
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	11,876	11,159	10,479	9,839	9,222	8,643
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	31	30	29	27	26	25
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.15	1.15	1.14	1.14	1.13	1.13
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	148	136	127	117	106	96
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	589	568	543	525	510	495
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	499	469	440	413	387	363
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,247	1,172	1,101	1,034	969	908
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	14	13	12	12	11	10
Rank	--	--	--	--	--	--

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Mobility Data for Medium Area Average (32 areas)

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	536	529	523	515	509	502
Rank	--	--	--	--	--	--
Commuters (1000s)	229	223	218	212	207	203
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,563	3,413	3,248	3,172	3,056	2,948
Arterial Streets	4,562	4,415	4,255	4,135	4,033	3,921
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	1.15	1.10	1.12	1.04
Diesel (\$/gallon)	1.19	1.19	1.27	1.12	1.08	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)	3,970	3,683	3,398	3,126	2,844	2,633
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	9	9	8	8	7	6
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	8,013	7,433	6,856	6,310	5,741	5,318
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	24	23	21	20	18	17
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.12	1.11	1.11	1.10	1.09	1.09
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	87	79	71	62	54	48
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	471	454	431	417	400	390
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	337	312	288	265	241	223
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	842	781	720	663	603	558
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	9	8	8	7	6	6
Rank	--	--	--	--	--	--

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Mobility Data for Medium Area Average (32 areas)

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	495	489	482	477	473	523
Rank	--	--	--	--	--	--
Commuters (1000s)	199	195	191	187	184	200
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,820	2,674	2,570	2,430	2,279	2,442
Arterial Streets	3,743	3,758	3,664	3,467	3,437	3,635
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)	1.05	1.02	1.33	1.34	1.38	1.44
Diesel (\$/gallon)	1.00	0.98	1.28	1.29	1.32	1.38
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)	2,440	2,275	2,077	1,927	1,722	1,790
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	6	5	5	5	4	3
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	4,931	4,596	4,196	3,892	3,477	3,636
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	16	16	14	13	12	12
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.08	1.08	1.07	1.07	1.06	1.06
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	43	38	35	32	27	28
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	376	365	342	332	310	298
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	207	193	176	163	146	153
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	517	482	440	409	365	379
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	5	5	4	4	3	4
Rank	--	--	--	--	--	--

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