

Performance Measure Summary - Small Area Average (21 areas)

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2020. 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 2020 (estimated at \$20.17 per hour of person travel and \$55.24 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.

Annual Greenhouse Gases (CO₂) Produced - Tons of CO₂ produced from all vehicle travel.

Excess Greenhouse Gases (CO₂) Produced due to Congestion - Tons of CO₂ produced due to congested portion of travel. The excess CO₂ is a subset of the total CO₂ produced.

Mobility Data for Small Area Average (21 areas)

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	338	338	337	336	333	330
Rank	--	--	--	--	--	--
Commuters (1000s)	171	171	171	170	167	166
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,671	3,104	3,090	3,094	3,037	2,899
Arterial Streets	2,874	3,342	3,345	3,408	3,340	3,267
Cost Components						
Value of Time (\$/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost (\$/hour)	55.24	52.84	54.71	52.14	50.20	46.87
Gasoline (\$/gallon)	2.61	2.84	3.07	2.50	2.31	2.52
Diesel (\$/gallon)	3.00	3.13	3.38	2.61	2.37	2.60
System Performance	2020	2019	2018	2017	2016	2015
Congested Travel (% of peak VMT)	--	--	--	14.0	--	--
Congested System (% of lane-miles)	--	--	--	9.5	--	--
Congested Time (number of "Rush Hours")	--	--	--	1.3	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,229	3,868	3,700	3,535	3,456	3,363
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	9	17	16	16	15	15
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	5,092	8,855	8,617	8,432	8,157	7,833
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	21	37	37	36	35	34
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.07	1.14	1.14	1.14	1.14	1.14
Commuter Stress Index						
Rank	1.09	1.16	1.16	1.16	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	1.27	1.26	1.27	--	--
Congestion Cost						
Total Cost (\$ millions)	117	195	191	183	174	164
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	420	703	691	663	647	615
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	307	474	440	418	398	379
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	534	827	784	758	725	697
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	18	26	26	24	22	20
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	22,463	38,904	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	795,590	1,333,020	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	6,405	9,174	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	253,724	352,445	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	327	324	321	318	314	310
Rank	--	--	--	--	--	--
Commuters (1000s)	164	164	162	160	158	155
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,808	2,678	2,773	2,876	2,837	2,797
Arterial Streets	3,183	3,161	3,268	3,291	3,261	3,220
Cost Components						
Value of Time (\$/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost (\$/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline (\$/gallon)	3.39	3.61	3.58	3.41	2.82	2.37
Diesel (\$/gallon)	3.68	3.95	3.98	3.79	3.05	2.63
System Performance	2014	2013	2012	2011	2010	2009
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	3,308	3,259	3,212	3,150	3,086	3,005
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	14	14	14	13	13	12
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	7,595	7,359	7,179	6,921	6,682	6,386
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	33	32	31	30	29	29
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.14	1.14	1.14	1.14	1.14	1.13
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	162	155	149	142	131	122
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	592	578	565	562	560	547
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	365	353	344	332	322	308
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	681	669	658	647	634	619
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	19	18	17	17	16	15
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	306	303	299	295	290	284
Rank	--	--	--	--	--	--
Commuters (1000s)	153	151	148	145	142	138
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,754	2,838	2,800	2,708	2,627	2,505
Arterial Streets	3,224	3,270	3,186	3,107	3,013	2,866
Cost Components						
Value of Time (\$/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost (\$/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline (\$/gallon)	3.54	3.07	2.70	2.37	2.03	1.59
Diesel (\$/gallon)	4.22	3.44	2.90	2.62	2.05	1.60
System Performance	2008	2007	2006	2005	2004	2003
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	3,073	3,033	2,910	2,771	2,611	2,445
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	13	13	13	13	12	11
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	6,219	6,177	5,949	5,655	5,319	4,981
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	28	29	28	27	27	26
Rank	--	--	--	--	--	--
Travel Time Index						
	1.14	1.14	1.13	1.13	1.13	1.12
Rank	--	--	--	--	--	--
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	124	117	108	99	89	80
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	525	560	556	547	529	508
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	299	295	281	267	250	233
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	632	622	593	564	529	493
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	15	14	13	12	10	9
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	278	274	268	264	259	255
Rank	--	--	--	--	--	--
Commuters (1000s)	133	129	124	120	117	113
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,404	2,353	2,263	2,211	2,143	2,066
Arterial Streets	2,764	2,682	2,630	2,591	2,508	2,455
Cost Components						
Value of Time (\$/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost (\$/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline (\$/gallon)	1.46	1.63	1.59	1.26	1.12	1.25
Diesel (\$/gallon)	1.42	1.61	1.54	1.23	1.22	1.32
System Performance	2002	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,291	2,124	1,955	1,817	1,677	1,550
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	11	10	9	9	8	7
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	4,666	4,317	3,969	3,682	3,401	3,148
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	25	24	23	22	21	20
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)	73	67	60	53	48	44
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	485	454	429	414	396	374
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	218	201	184	171	158	145
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	462	428	392	364	335	309
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	8	7	7	6	5	5
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	249	244	239	234	230	225
Rank	--	--	--	--	--	--
Commuters (1000s)	109	105	102	98	95	92
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,004	1,934	1,872	1,785	1,723	1,650
Arterial Streets	2,393	2,335	2,289	2,240	2,204	2,137
Cost Components						
Value of Time (\$/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost (\$/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline (\$/gallon)	1.27	1.20	1.11	1.16	1.17	1.16
Diesel (\$/gallon)	1.31	1.25	1.14	1.20	1.19	1.23
System Performance	1996	1995	1994	1993	1992	1991
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,419	1,309	1,214	1,102	1,015	945
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	7	6	6	5	5	5
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	2,884	2,654	2,460	2,232	2,055	1,910
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	19	18	17	16	15	14
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.09	1.08	1.08	1.07	1.07	1.07
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	39	35	32	28	25	23
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	351	336	321	303	288	279
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	132	122	113	102	93	87
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	281	259	239	216	198	184
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	4	4	4	3	3	3
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	221	218	213	208	204	200
Rank	--	--	--	--	--	--
Commuters (1000s)	89	87	84	81	79	77
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,588	1,528	1,467	1,411	1,343	1,283
Arterial Streets	2,088	2,031	1,975	1,918	1,878	1,816
Cost Components						
Value of Time (\$/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost (\$/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline (\$/gallon)	1.10	1.12	1.04	1.04	1.02	1.33
Diesel (\$/gallon)	1.12	1.10	1.01	1.05	0.99	1.30
System Performance	1990	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)	857	782	706	640	588	542
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	4	4	4	3	3	3
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	1,731	1,574	1,425	1,293	1,189	1,096
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	13	12	12	11	10	10
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.06	1.06	1.06	1.05	1.05	1.05
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	20	17	15	13	12	11
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	262	254	241	231	219	205
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	79	72	65	59	55	50
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	168	153	138	125	116	107
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	2	2	2	2	2	1
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Small Area Average (21 areas)

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	195	191	188
Rank	--	--	--
Commuters (1000s)	75	73	70
Daily Vehicle-Miles of Travel (1000s)			
Freeway	1,191	1,128	1,075
Arterial Streets	1,767	1,698	1,651
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	23.94	23.63	23.31
Gasoline (\$/gallon)	1.34	1.37	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)	498	453	406
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	2	2	2
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	1,006	914	829
Rank	--	--	--
Delay per Auto Commuter (pers-hrs)	9	8	8
Rank	--	--	--
Travel Time Index			
	1.05	1.04	1.04
Rank	--	--	--
Commuter Stress Index			
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
Rank	--	--	--
Congestion Cost			
Total Cost (\$ millions)	10	8	8
Rank	--	--	--
Cost per Auto Commuter (\$)	193	190	182
Rank	--	--	--
Truck Congestion			
Annual Person-Hours of Delay (000)	46	42	38
Rank	--	--	--
Annual Gallons of Wasted Fuel (000)	98	89	81
Rank	--	--	--
Annual Congestion Cost (\$ million)	1	1	1
Rank	--	--	--
Annual Greenhouse Gases (CO2) Produced			
Excess Due to Congestion (tons)	--	--	--
Rank	--	--	--
Due to All Travel (tons)	--	--	--
Rank	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced			
Excess Due to Truck Congestion (tons)	--	--	--
Rank	--	--	--
Due to Truck Travel (tons)	--	--	--
Rank	--	--	--

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