

Performance Measure Summary - Medium Area Average (33 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 Medium Area Average (33 areas)

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	703	703	702	701	697	692
Rank	--	--	--	--	--	--
Commuters (1000s)	355	355	354	354	351	349
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,257	6,279	6,304	6,204	6,110	5,961
Arterial Streets	5,508	6,506	6,595	6,576	6,559	6,433
Cost Components						
Value of Time (\$/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost (\$/hour)	55.24	53.96	54.71	52.14	50.20	46.87
Gasoline (\$/gallon)	2.40	2.67	2.89	2.36	2.19	2.34
Diesel (\$/gallon)	2.87	3.03	3.31	2.57	2.36	2.61
System Performance	2020	2019	2018	2017	2016	2015
Congested Travel (% of peak VMT)	--	--	--	15.6	--	--
Congested System (% of lane-miles)	--	--	--	10.3	--	--
Congested Time (number of "Rush Hours")	--	--	--	2.1	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,779	8,924	8,699	8,542	8,395	8,262
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	11	19	19	19	18	18
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	11,391	21,251	20,752	20,435	19,837	19,247
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	25	45	44	44	43	42
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.08	1.18	1.18	1.18	1.18	1.18
Commuter Stress Index						
Rank	1.09	1.21	1.21	1.20	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	1.44	1.42	1.45	--	--
Congestion Cost						
Total Cost (\$ millions)	258	467	456	440	420	402
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	502	905	886	855	839	809
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	602	1,029	990	962	935	906
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,041	1,787	1,736	1,704	1,677	1,647
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	32	56	55	51	48	44
Rank	--	--	--	--	--	--
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	47,904	89,478	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	1,463,709	2,658,704	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	11,502	19,738	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	407,927	664,683	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Medium Area Average (33 areas)

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	689	682	676	670	664	656
Rank	--	--	--	--	--	--
Commuters (1000s)	347	346	343	339	335	329
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,733	5,508	5,411	5,632	5,570	5,403
Arterial Streets	6,329	6,188	6,118	6,204	6,159	6,200
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)	3.35	3.56	3.53	3.38	2.75	2.30
Diesel (\$/gallon)	3.69	3.95	3.95	3.75	3.03	2.65
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)	8,116	7,999	7,862	7,719	7,606	7,427
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	18	18	17	17	17	16
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	18,658	18,126	17,563	16,975	16,486	15,816
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	41	39	39	37	37	36
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.18	1.18	1.18	1.17	1.17	1.17
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	397	380	363	347	323	302
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	781	765	750	748	749	732
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	875	849	822	795	773	740
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,616	1,591	1,562	1,533	1,510	1,474
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	43	39	37	39	35	33
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	--	--	--	--	--	--

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Mobility Data for Medium Area Average (33 areas)

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	648	641	632	626	618	610
Rank	--	--	--	--	--	--
Commuters (1000s)	324	319	313	307	302	296
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,302	5,400	5,371	5,292	5,164	4,987
Arterial Streets	6,227	6,313	6,288	6,175	6,025	5,893
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)	3.45	3.05	2.67	2.32	1.98	1.55
Diesel (\$/gallon)	4.22	3.48	2.90	2.56	2.01	1.55
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)	7,667	7,458	7,155	6,916	6,699	6,467
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	17	17	16	16	15	15
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	15,577	15,144	14,525	14,049	13,610	13,137
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	35	35	34	34	34	33
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.18	1.17	1.17	1.17	1.17	1.16
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	308	286	264	245	228	211
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	714	726	716	718	720	715
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	728	704	675	653	633	612
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,522	1,478	1,417	1,367	1,324	1,279
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	34	31	28	26	23	21
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	--	--	--	--	--	--

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Mobility Data for Medium Area Average (33 areas)

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	600	593	584	576	568	560
Rank	--	--	--	--	--	--
Commuters (1000s)	288	280	273	265	259	252
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,843	4,665	4,537	4,380	4,232	4,066
Arterial Streets	5,745	5,600	5,487	5,367	5,237	5,086
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)	1.41	1.57	1.57	1.18	1.12	1.24
Diesel (\$/gallon)	1.41	1.58	1.54	1.19	1.20	1.30
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)	6,175	5,948	5,731	5,473	5,139	4,828
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	14	14	13	13	12	12
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	12,543	12,081	11,643	11,114	10,442	9,811
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	32	32	32	31	30	28
Rank	--	--	--	--	--	--
Travel Time Index						
Rank	1.16	1.16	1.15	1.15	1.14	1.14
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	196	187	175	160	147	137
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	698	682	676	667	644	614
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	583	562	541	517	487	458
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	1,220	1,175	1,132	1,082	1,018	958
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	19	18	17	15	14	13
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 Medium Area Average (33 areas)

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	554	547	539	532	525	518
Rank	--	--	--	--	--	--
Commuters (1000s)	246	240	233	227	221	216
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,917	3,801	3,671	3,580	3,431	3,268
Arterial Streets	4,944	4,808	4,672	4,541	4,396	4,238
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)	1.31	1.21	1.11	1.16	1.17	1.15
Diesel (\$/gallon)	1.35	1.25	1.14	1.19	1.19	1.27
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)	4,533	4,250	3,986	3,696	3,429	3,161
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	11	11	10	9	9	8
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	9,215	8,638	8,098	7,514	6,970	6,423
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	27	26	25	24	22	21
Rank	--	--	--	--	--	--
Travel Time Index						
	1.13	1.13	1.12	1.12	1.11	1.10
Rank	--	--	--	--	--	--
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	126	115	105	95	86	77
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	594	578	560	535	515	490
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	431	405	380	352	327	302
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	899	843	790	732	679	626
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	13	12	11	10	9	8
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 Medium Area Average (33 areas)

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	511	505	498	491	485	478
Rank	--	--	--	--	--	--
Commuters (1000s)	210	206	201	197	193	189
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,191	3,076	2,970	2,844	2,700	2,598
Arterial Streets	4,120	4,020	3,909	3,735	3,747	3,655
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	1.05	1.02	1.33
Diesel (\$/gallon)	1.12	1.08	1.00	1.00	0.98	1.28
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)	2,906	2,646	2,449	2,267	2,112	1,925
Rank	--	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	7	7	6	6	5	5
Rank	--	--	--	--	--	--
Annual Delay						
Total Delay (1000s of person-hours)	5,909	5,378	4,979	4,612	4,296	3,915
Rank	--	--	--	--	--	--
Delay per Auto Commuter (pers-hrs)	20	18	17	16	15	14
Rank	--	--	--	--	--	--
Travel Time Index						
	1.10	1.09	1.09	1.08	1.08	1.07
Rank	--	--	--	--	--	--
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	68	59	52	47	42	38
Rank	--	--	--	--	--	--
Cost per Auto Commuter (\$)	474	457	448	431	418	391
Rank	--	--	--	--	--	--
Truck Congestion						
Annual Person-Hours of Delay (000)	278	254	236	219	205	187
Rank	--	--	--	--	--	--
Annual Gallons of Wasted Fuel (000)	575	524	485	449	419	383
Rank	--	--	--	--	--	--
Annual Congestion Cost (\$ million)	7	7	6	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 Medium Area Average (33 areas)

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	473	469	502
Rank	--	--	--
Commuters (1000s)	185	182	192
Daily Vehicle-Miles of Travel (1000s)			
Freeway	2,459	2,311	2,395
Arterial Streets	3,462	3,432	3,516
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	1.38	1.44
Diesel (\$/gallon)	1.29	1.32	1.38
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)	1,785	1,591	1,611
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	5	4	3
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	3,633	3,238	3,295
Rank	--	--	--
Delay per Auto Commuter (pers-hrs)	13	12	12
Rank	--	--	--
Travel Time Index			
Rank	1.07	1.06	1.06
Commuter Stress Index			
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
Rank	--	--	--
Congestion Cost			
Total Cost (\$ millions)	35	30	30
Rank	--	--	--
Cost per Auto Commuter (\$)	378	354	342
Rank	--	--	--
Truck Congestion			
Annual Person-Hours of Delay (000)	175	156	156
Rank	--	--	--
Annual Gallons of Wasted Fuel (000)	356	318	319
Rank	--	--	--
Annual Congestion Cost (\$ million)	4	4	4
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.