

Performance Measure Summary - All 471 Areas Sum

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2014. 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 overnight speeds 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 2014 (estimated at \$17.67 per hour of person travel and \$94.04 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.

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Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	228,888	227,593	226,357	225,103	222,874
Rank	--	--	--	--	--
Commuters (1000s)	109,866	109,700	109,557	109,405	109,238
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,920	1,905	1,880	1,855	1,829
Arterial Streets	2,065	2,045	2,025	2,003	1,985
Cost Components					
Value of Time (\$/hour)	17.67	17.39	17.14	16.79	16.30
Commercial Cost (\$/hour)	94.04	89.60	89.56	86.81	88.12
Gasoline (\$/gallon)	3.20	3.51	3.30	3.40	2.75
Diesel (\$/gallon)	3.50	3.90	3.65	3.75	3.01
System Performance	2014	2013	2012	2011	2010
Congested Travel (% of peak VMT)	32	--	--	--	--
Congested System (% of lane-miles)	25	--	--	--	--
Congested Time (number of "Rush Hours")	4.39	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (million gallons)	3,122	3,074	3,023	2,884	2,851
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	19	19	18	18	18
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	6,922	6,815	6,702	5,520	5,457
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	42	42	41	41	40
Rank	--	--	--	--	--
Travel Time Index	1.22	1.21	1.21	1.21	1.20
Rank	--	--	--	--	--
Commuter Stress Index	1.29	--	--	--	--
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	2.41	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	159.12	153.33	149.12	144.13	137.32
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	960	961	959	959	970
Rank	--	--	--	--	--

* Note: Cells containing "--" indicate no available data.

The Mobility Data for All 471 Areas - Sum

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	221,651	219,412	216,234	216,290	212,016
Rank	--	--	--	--	--
Commuters (1000s)	109,087	108,902	108,652	108,443	108,186
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,811	1,800	1,839	1,820	1,793
Arterial Streets	1,967	1,960	1,986	1,970	1,945
Cost Components					
Value of Time (\$/hour)	16.01	16.10	15.47	15.06	14.58
Commercial Cost (\$/hour)	89.75	81.52	82.56	80.43	78.05
Gasoline (\$/gallon)	2.28	3.51	3.06	2.70	2.36
Diesel (\$/gallon)	2.62	4.18	3.44	2.87	2.53
	2009	2008	2007	2006	2005
Congested Travel (% of peak VMT)					
	--	--	--	--	--
Congested System (% of lane-miles)					
	--	--	--	--	--
Congested Time (number of "Rush Hours")					
	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (million gallons)	2,813	2,755	3,234	3,197	3,167
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	17	18	18	17	17
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	5,428	5,229	5,876	5,941	5,909
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	40	42	42	42	41
Rank	--	--	--	--	--
Travel Time Index					
	1.20	1.21	1.21	1.21	1.21
Rank	--	--	--	--	--
Commuter Stress Index					
	--	--	--	--	--
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	133.34	138.22	134.69	127.27	118.37
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	967	996	1,034	1,043	1,048
Rank	--	--	--	--	--

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The Mobility Data for All 471 Areas - Sum

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	207,415	202,169	195,464	191,811	190,829
Rank	--	--	--	--	--
Commuters (1000s)	107,973	107,823	107,769	107,683	107,577
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,736	1,672	1,586	1,540	1,499
Arterial Streets	1,895	1,816	1,736	1,688	1,667
Cost Components					
Value of Time (\$/hour)	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	74.17	72.23	70.86	71.38	70.47
Gasoline (\$/gallon)	2.01	1.57	1.45	1.61	1.59
Diesel (\$/gallon)	1.99	1.53	1.39	1.57	1.52
System Performance	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 (million gallons)	3,017	2,831	2,665	2,512	2,386
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	17	17	16	15	14
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	5,612	5,270	4,966	4,701	4,496
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	41	40	39	38	37
Rank	--	--	--	--	--
Travel Time Index					
	1.21	1.20	1.20	1.19	1.19
Rank	--	--	--	--	--
Commuter Stress Index					
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	108.34	99.68	93.93	88.68	82.63
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,049	1,034	1,014	983	962
Rank	--	--	--	--	--

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The Mobility Data for All 471 Areas - Sum

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	185,494	183,415	180,764	177,030	174,524
Rank	--	--	--	--	--
Commuters (1000s)	107,564	107,451	107,403	107,280	107,210
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,459	1,411	1,369	1,333	1,294
Arterial Streets	1,628	1,584	1,564	1,541	1,502
Cost Components					
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37
Commercial Cost (\$/hour)	66.76	65.76	66.83	66.20	64.27
Gasoline (\$/gallon)	1.23	1.12	1.24	1.28	1.20
Diesel (\$/gallon)	1.17	1.18	1.28	1.36	1.24
System Performance	1999	1998	1997	1996	1995
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (million gallons)	2,277	2,116	2,015	1,902	1,779
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	13	13	12	12	11
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	4,296	4,002	3,848	3,640	3,420
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	36	35	34	32	31
Rank	--	--	--	--	--
Travel Time Index					
	1.18	1.18	1.17	1.17	1.16
Rank	--	--	--	--	--
Commuter Stress Index					
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	74.60	69.44	65.92	61.53	56.32
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	945	915	881	852	826
Rank	--	--	--	--	--

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The Mobility Data for All 471 Areas - Sum

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	172,003	169,747	169,564	167,118	163,963
Rank	--	--	--	--	--
Commuters (1000s)	107,083	106,913	106,706	106,429	106,326
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,251	1,208	1,176	1,111	1,084
Arterial Streets	1,461	1,412	1,369	1,308	1,279
Cost Components					
Value of Time (\$/hour)	11.06	10.78	10.47	10.17	9.75
Commercial Cost (\$/hour)	62.23	60.84	59.01	57.31	55.03
Gasoline (\$/gallon)	1.10	1.15	1.17	1.14	1.10
Diesel (\$/gallon)	1.14	1.18	1.20	1.23	1.11
System Performance	1994	1993	1992	1991	1990
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (million gallons)	1,638	1,571	1,499	1,409	1,365
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	11	10	9	9	8
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	3,192	3,064	2,903	2,727	2,662
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	30	29	28	27	26
Rank	--	--	--	--	--
Travel Time Index					
	1.15	1.15	1.14	1.14	1.13
Rank	--	--	--	--	--
Commuter Stress Index					
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	51.43	47.18	43.44	39.87	36.13
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	800	769	745	723	707
Rank	--	--	--	--	--

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Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	161,962	159,198	155,991	152,328	150,254
Rank	--	--	--	--	--
Commuters (1000s)	106,129	106,000	105,975	105,896	105,826
Daily Vehicle-Miles of Travel (millions)					
Freeway	1,046	995	931	882	833
Arterial Streets	1,247	1,214	1,163	1,157	1,110
Cost Components					
Value of Time (\$/hour)	9.25	8.83	8.48	8.18	8.03
Commercial Cost (\$/hour)	52.81	50.04	48.53	46.57	47.83
Gasoline (\$/gallon)	1.12	1.03	1.03	1.01	1.32
Diesel (\$/gallon)	1.09	1.00	1.01	0.98	1.29
System Performance	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 (million gallons)	1,279	1,153	999	883	753
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	7	7	7	7	6
Rank	--	--	--	--	--
Annual Delay					
Total Delay (millions of person-hours)	2,514	2,291	1,991	1,794	1,557
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	25	24	23	22	21
Rank	--	--	--	--	--
Travel Time Index					
	1.13	1.12	1.12	1.11	1.11
Rank	--	--	--	--	--
Commuter Stress Index					
	--	--	--	--	--
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ billions)	32.39	29.10	26.33	23.91	22.97
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	702	694	676	658	631
Rank	--	--	--	--	--

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The Mobility Data for All 471 Areas - Sum

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	148,335	146,798	144,276
Rank	--	--	--
Commuters (1000s)	105,812	105,623	105,373
Daily Vehicle-Miles of Travel (millions)			
Freeway	791	742	698
Arterial Streets	1,051	1,047	979
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	46.47	44.23	43.08
Gasoline (\$/gallon)	1.33	1.36	1.43
Diesel (\$/gallon)	1.30	1.33	1.39
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 (million gallons)	648	585	533
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	6	5	5
Rank	--	--	--
Annual Delay			
Total Delay (millions of person-hours)	1,345	1,228	1,118
Rank	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	20	19	18
Rank	--	--	--
Travel Time Index			
	1.10	1.10	1.09
Rank	--	--	--
Commuter Stress Index			
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
Rank	--	--	--
Congestion Cost (constant 2014 \$)			
Total Cost (\$ billions)	20.89	18.73	17.17
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	609	591	569
Rank	--	--	--

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