

Performance Measure Summary - 101 Area Average

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.

The Mobility Data for 101 Area Average

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	1,750	1,735	1,720	1,704	1,690
Rank	--	--	--	--	--
Commuters (1000s)	792	794	789	784	777
Daily Vehicle-Miles of Travel (1000s)					
Freeway	15,142	15,180	15,153	15,678	15,440
Arterial Streets	14,786	14,795	14,461	14,739	14,587
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)	3.35	3.61	3.58	3.40	2.79
Diesel (\$/gallon)	3.67	3.96	3.97	3.76	3.04
System Performance	2014	2013	2012	2011	2010
Congested Travel (% of peak VMT)	35	--	--	--	--
Congested System (% of lane-miles)	29	--	--	--	--
Congested Time (number of "Rush Hours")	4.25	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	26,706	26,313	25,871	25,328	24,840
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	23	23	22	22	22
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	59,767	58,903	57,920	56,727	55,650
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	52	51	51	50	49
Rank	--	--	--	--	--
Travel Time Index					
	1.26	1.26	1.26	1.25	1.25
Rank	--	--	--	--	--
Commuter Stress Index					
	1.32	1.32	1.32	1.31	1.31
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	2.66	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,371	1,373	1,369	1,369	1,385
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,189	1,191	1,189	1,189	1,204
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	1,671	1,654	1,637	1,619	1,602
Rank	--	--	--	--	--
Commuters (1000s)	767	757	748	737	725
Daily Vehicle-Miles of Travel (1000s)					
Freeway	15,164	15,012	15,308	15,164	14,975
Arterial Streets	14,538	14,552	14,753	14,695	14,516
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)	2.34	3.51	3.07	2.70	2.36
Diesel (\$/gallon)	2.64	4.23	3.47	2.92	2.60
System Performance	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 (1000 gallons)	24,346	25,154	25,153	24,697	24,024
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	21	22	22	21	21
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	54,578	56,446	56,420	55,462	53,925
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	49	52	52	52	51
Rank	--	--	--	--	--
Travel Time Index					
	1.25	1.26	1.26	1.26	1.26
Rank	--	--	--	--	--
Commuter Stress Index					
	1.31	1.32	1.33	1.32	1.32
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,381	1,422	1,476	1,490	1,497
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,202	1,239	1,288	1,304	1,313
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	1,585	1,566	1,544	1,521	1,499
Rank	--	--	--	--	--
Commuters (1000s)	714	700	682	662	642
Daily Vehicle-Miles of Travel (1000s)					
Freeway	14,722	14,291	13,819	13,424	13,047
Arterial Streets	14,277	13,919	13,582	13,214	12,933
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)	2.04	1.58	1.43	1.61	1.56
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 (1000 gallons)	23,257	22,340	21,423	20,433	19,445
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	20	20	19	18	17
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	52,213	50,152	48,096	45,896	43,706
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	50	49	48	47	46
Rank	--	--	--	--	--
Travel Time Index					
	1.25	1.25	1.24	1.24	1.23
Rank	--	--	--	--	--
Commuter Stress Index					
	1.32	1.31	1.31	1.30	1.30
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,498	1,477	1,448	1,404	1,374
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,318	1,302	1,281	1,245	1,223
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	1,474	1,455	1,432	1,412	1,391
Rank	--	--	--	--	--
Commuters (1000s)	622	604	585	568	551
Daily Vehicle-Miles of Travel (1000s)					
Freeway	12,690	12,316	11,917	11,592	11,227
Arterial Streets	12,632	12,306	12,084	11,784	11,464
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	1.13	1.24	1.28	1.21
Diesel (\$/gallon)	1.23	1.22	1.33	1.35	1.27
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 (1000 gallons)	18,473	17,484	16,566	15,642	14,729
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	16	16	15	14	13
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	41,561	39,376	37,340	35,308	33,263
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	45	44	43	42	40
Rank	--	--	--	--	--
Travel Time Index					
	1.23	1.22	1.22	1.21	1.20
Rank	--	--	--	--	--
Commuter Stress Index					
	1.29	1.28	1.28	1.27	1.26
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,350	1,307	1,258	1,217	1,180
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,206	1,174	1,134	1,102	1,074
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	1,371	1,354	1,335	1,319	1,297
Rank	--	--	--	--	--
Commuters (1000s)	535	520	505	491	475
Daily Vehicle-Miles of Travel (1000s)					
Freeway	10,827	10,475	10,104	9,704	9,473
Arterial Streets	11,153	10,793	10,458	10,107	9,856
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)	1.15	1.20	1.20	1.26	1.13
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 (1000 gallons)	13,850	12,981	12,194	11,479	10,773
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	13	12	11	11	10
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	31,314	29,371	27,618	26,049	24,434
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	39	37	36	35	34
Rank	--	--	--	--	--
Travel Time Index					
	1.20	1.19	1.18	1.18	1.17
Rank	--	--	--	--	--
Commuter Stress Index					
	1.26	1.25	1.24	1.24	1.23
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,142	1,098	1,064	1,033	1,010
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,045	1,009	981	958	939
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	1,279	1,262	1,240	1,222	1,203
Rank	--	--	--	--	--
Commuters (1000s)	464	453	442	431	421
Daily Vehicle-Miles of Travel (1000s)					
Freeway	9,131	8,703	8,258	7,777	7,328
Arterial Streets	9,579	9,362	9,006	8,806	8,485
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	1.04	1.01	1.32
Diesel (\$/gallon)	1.08	1.00	1.01	0.98	1.28
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 (1000 gallons)	10,127	9,545	8,937	8,381	7,878
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	9	9	8	8	7
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	23,015	21,712	20,324	19,070	17,961
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	32	31	30	29	28
Rank	--	--	--	--	--
Travel Time Index					
	1.16	1.16	1.15	1.15	1.14
Rank	--	--	--	--	--
Commuter Stress Index					
	1.22	1.22	1.21	1.20	1.20
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	1,002	991	966	940	901
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	936	927	906	884	850
Rank	--	--	--	--	--

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

The Mobility Data for 101 Area Average

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	1,182	1,170	1,161
Rank	--	--	--
Commuters (1000s)	410	402	394
Daily Vehicle-Miles of Travel (1000s)			
Freeway	6,946	6,561	6,222
Arterial Streets	8,181	7,968	7,733
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)	1.29	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)	7,349	6,827	6,374
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	7	6	6
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	16,730	15,561	14,498
Rank	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	27	25	24
Rank	--	--	--
Travel Time Index			
	1.13	1.13	1.12
Rank	--	--	--
Commuter Stress Index			
	1.19	1.18	1.17
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 \$)			
Total Cost (\$ millions)	870	844	813
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	818	797	801
Rank	--	--	--

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