

Performance Measure Summary - Very Large 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 Very Large Area Average

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	6,252	6,213	6,167	6,118	6,073
Rank	--	--	--	--	--
Commuters (1000s)	2,557	2,572	2,567	2,558	2,548
Daily Vehicle-Miles of Travel (1000s)					
Freeway	52,326	51,776	53,546	55,318	54,284
Arterial Streets	51,398	50,541	48,960	50,187	49,644
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)	3.37	3.66	3.64	3.45	2.82
Diesel (\$/gallon)	3.66	3.99	4.01	3.81	3.06
System Performance	2014	2013	2012	2011	2010
Congested Travel (% of peak VMT)	42	--	--	--	--
Congested System (% of lane-miles)	34	--	--	--	--
Congested Time (number of "Rush Hours")	5.35	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	99,488	98,481	97,049	95,125	93,352
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	27	27	26	26	25
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	231,972	229,718	226,431	222,006	217,960
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	63	63	62	61	60
Rank	--	--	--	--	--
Travel Time Index					
Rank	1.32	1.32	1.31	1.31	1.30
Rank	--	--	--	--	--
Commuter Stress Index					
Rank	1.40	1.39	1.39	1.38	1.38
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
Rank	3.06	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	5,259	5,291	5,291	5,294	5,361
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,433	1,442	1,441	1,441	1,458
Rank	--	--	--	--	--

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

The Mobility Data for Very Large Area Average

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	6,019	5,961	5,908	5,855	5,808
Rank	--	--	--	--	--
Commuters (1000s)	2,521	2,494	2,480	2,454	2,424
Daily Vehicle-Miles of Travel (1000s)					
Freeway	53,499	53,199	54,226	53,963	53,633
Arterial Streets	49,639	49,620	50,428	50,397	49,842
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)	2.37	3.55	3.10	2.73	2.39
Diesel (\$/gallon)	2.66	4.28	3.50	2.94	2.64
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)	92,107	94,981	95,830	94,754	92,471
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	25	26	26	26	25
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	215,171	222,154	223,779	221,580	216,136
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	60	63	63	63	63
Rank	--	--	--	--	--
Travel Time Index					
Rank	1.30	1.32	1.32	1.32	1.32
Rank	--	--	--	--	--
Commuter Stress Index					
Rank	1.38	1.39	1.40	1.40	1.39
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
Rank	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	5,380	5,531	5,788	5,885	5,932
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,464	1,507	1,576	1,605	1,619
Rank	--	--	--	--	--

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

The Mobility Data for Very Large Area Average

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	5,754	5,700	5,633	5,561	5,492
Rank	--	--	--	--	--
Commuters (1000s)	2,388	2,351	2,298	2,233	2,170
Daily Vehicle-Miles of Travel (1000s)					
Freeway	53,052	51,770	50,143	48,795	47,482
Arterial Streets	49,140	47,875	46,917	45,610	44,742
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)	2.04	1.58	1.47	1.65	1.61
Diesel (\$/gallon)	2.07	1.63	1.45	1.64	1.58
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)	89,599	86,316	83,061	79,274	75,767
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	24	24	23	22	21
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	209,614	201,998	194,447	185,871	177,878
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	62	60	59	58	57
Rank	--	--	--	--	--
Travel Time Index					
	1.31	1.30	1.30	1.29	1.29
Rank	--	--	--	--	--
Commuter Stress Index					
	1.39	1.38	1.38	1.37	1.37
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	5,945	5,881	5,788	5,617	5,526
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,626	1,611	1,588	1,546	1,524
Rank	--	--	--	--	--

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The Mobility Data for Very Large Area Average

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	5,408	5,343	5,252	5,186	5,115
Rank	--	--	--	--	--
Commuters (1000s)	2,104	2,045	1,978	1,921	1,863
Daily Vehicle-Miles of Travel (1000s)					
Freeway	46,217	44,900	43,468	42,425	41,283
Arterial Streets	43,683	42,554	42,002	41,074	40,060
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)	1.25	1.13	1.25	1.28	1.22
Diesel (\$/gallon)	1.26	1.24	1.34	1.33	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)	72,323	68,939	65,621	62,234	58,982
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	20	19	18	17	17
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	170,060	162,359	154,738	147,078	139,414
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	56	55	54	52	51
Rank	--	--	--	--	--
Travel Time Index					
	1.28	1.28	1.27	1.26	1.26
Rank	--	--	--	--	--
Commuter Stress Index					
	1.36	1.35	1.35	1.34	1.34
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	5,458	5,323	5,152	5,006	4,885
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,511	1,482	1,440	1,405	1,377
Rank	--	--	--	--	--

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The Mobility Data for Very Large Area Average

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	5,057	5,007	4,951	4,905	4,829
Rank	--	--	--	--	--
Commuters (1000s)	1,812	1,767	1,719	1,676	1,623
Daily Vehicle-Miles of Travel (1000s)					
Freeway	39,925	38,912	37,844	36,708	36,066
Arterial Streets	39,153	37,963	36,822	35,650	34,998
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	1.16	1.18	1.14	1.10
Diesel (\$/gallon)	1.14	1.20	1.19	1.27	1.14
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)	55,921	53,038	50,384	47,982	45,720
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	16	15	14	13	13
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	132,308	125,430	119,175	113,684	108,129
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	49	48	47	46	45
Rank	--	--	--	--	--
Travel Time Index					
	1.25	1.24	1.24	1.23	1.22
Rank	--	--	--	--	--
Commuter Stress Index					
	1.33	1.32	1.31	1.31	1.30
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	4,766	4,634	4,535	4,455	4,417
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,349	1,315	1,290	1,272	1,261
Rank	--	--	--	--	--

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The Mobility Data for Very Large Area Average

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	4,776	4,714	4,641	4,578	4,506
Rank	--	--	--	--	--
Commuters (1000s)	1,589	1,553	1,514	1,479	1,442
Daily Vehicle-Miles of Travel (1000s)					
Freeway	34,959	33,196	31,479	29,556	27,710
Arterial Streets	34,165	33,396	32,182	31,344	30,166
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)	1.11	1.02	1.03	1.00	1.31
Diesel (\$/gallon)	1.07	0.99	1.01	0.97	1.27
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)	43,723	41,962	39,889	37,787	36,036
Rank	--	--	--	--	--
Fuel per Peak Auto Commuter (gallons)	13	12	11	11	10
Rank	--	--	--	--	--
Annual Delay					
Total Delay (1000s of person-hours)	103,527	99,261	94,175	89,185	85,160
Rank	--	--	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	44	43	41	40	39
Rank	--	--	--	--	--
Travel Time Index					
	1.22	1.21	1.21	1.20	1.20
Rank	--	--	--	--	--
Commuter Stress Index					
	1.30	1.29	1.28	1.28	1.27
Rank	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)					
	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 \$)					
Total Cost (\$ millions)	4,456	4,479	4,428	4,348	4,229
Rank	--	--	--	--	--
Cost per Peak Auto Commuter (\$)	1,275	1,283	1,269	1,247	1,215
Rank	--	--	--	--	--

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

The Mobility Data for Very Large Area Average

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	4,420	4,384	4,352
Rank	--	--	--
Commuters (1000s)	1,399	1,374	1,348
Daily Vehicle-Miles of Travel (1000s)			
Freeway	26,239	24,862	23,593
Arterial Streets	29,195	28,523	27,855
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	46.47	44.23	43.08
Gasoline (\$/gallon)	1.32	1.35	1.42
Diesel (\$/gallon)	1.28	1.31	1.37
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)	33,975	31,946	30,121
Rank	--	--	--
Fuel per Peak Auto Commuter (gallons)	10	9	9
Rank	--	--	--
Annual Delay			
Total Delay (1000s of person-hours)	80,042	75,313	70,789
Rank	--	--	--
Delay per Peak Auto Commuter (pers-hrs)	38	36	35
Rank	--	--	--
Travel Time Index			
	1.19	1.18	1.17
Rank	--	--	--
Commuter Stress Index			
	1.26	1.25	1.25
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)			
	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 \$)			
Total Cost (\$ millions)	4,120	4,045	3,926
Rank	--	--	--
Cost per Peak Auto Commuter (\$)	1,178	1,161	1,133
Rank	--	--	--

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