

Performance Measure Summary - San Jose CA

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2017. 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 2017 (estimated at \$18.29 per hour of person travel and \$59.94 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.

Mobility Data for San Jose CA

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	1,965	1,960	1,955	1,950	1,920	1,865
Rank	26	26	25	25	25	26
Commuters (1000s)	1,024	1,020	1,017	1,013	989	954
Daily Vehicle-Miles of Travel (1000s)						
Freeway	18,250	18,250	18,228	18,222	17,039	17,070
Arterial Streets	14,127	14,572	14,537	15,644	17,462	15,720
Cost Components						
Value of Time (\$/hour)	18.12	17.91	17.69	17.67	17.39	17.14
Commercial Cost (\$/hour)	52.14	50.20	46.87	44.82	41.23	39.66
Gasoline (\$/gallon)	2.96	2.78	3.18	3.63	3.89	3.89
Diesel (\$/gallon)	2.95	2.68	2.86	3.85	4.12	4.20
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	45.6	--	--	--	--	--
Congested System (% of lane-miles)	3.2	--	--	--	--	--
Congested Time (number of "Rush Hours")	5.9	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	44,956	44,047	43,166	42,516	41,979	40,394
Rank	15	16	16	16	16	16
Fuel per Peak Auto Commuter (gallons)	32	31	30	29	28	27
Rank	6	7	7	8	11	11
Annual Delay						
Total Delay (1000s of person-hours)	126,774	123,596	119,071	115,256	111,804	105,662
Rank	16	16	16	16	16	16
Delay per Auto Commuter (pers-hrs)	81	80	78	76	73	72
Rank	5	5	5	5	5	5
Travel Time Index						
Rank	1.45	1.44	1.43	1.41	1.39	1.38
Rank	3	3	3	3	3	3
Commuter Stress Index						
Rank	1.57	--	--	--	--	--
Rank	3	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	2.60	--	--	--	--	--
Rank	3	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	2,577	2,471	2,358	2,298	2,198	2,049
Rank	16	16	16	16	16	16
Cost per Auto Commuter (\$)	1,643	1,613	1,545	1,488	1,459	1,395
Rank	6	6	6	6	6	8
Truck Congestion						
Annual Person-Hours of Delay (000)	5,325	5,191	5,001	4,841	4,696	4,438
Rank	16	16	16	16	16	16
Annual Gallons of Wasted Fuel (000)	9,531	9,338	9,151	9,013	8,900	8,564
Rank	15	16	16	16	16	16
Annual Congestion Cost (\$ million)	272	254	232	225	207	190
Rank	16	16	16	16	16	16

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

Mobility Data for San Jose CA

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,820	1,815	1,770	1,740	1,705	1,690
Rank	26	24	27	28	28	27
Commuters (1000s)	930	924	898	879	856	842
Daily Vehicle-Miles of Travel (1000s)						
Freeway	17,146	16,922	16,600	16,350	16,680	16,800
Arterial Streets	16,563	16,347	16,610	16,795	17,105	17,055
Cost Components						
Value of Time (\$/hour)	16.79	16.28	16.01	16.07	15.47	15.06
Commercial Cost (\$/hour)	44.62	42.50	41.83	40.77	39.30	37.88
Gasoline (\$/gallon)	3.51	3.05	2.61	3.84	3.24	2.88
Diesel (\$/gallon)	4.02	3.20	2.71	4.39	3.60	3.17
System Performance	2011	2010	2009	2008	2007	2006
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	39,124	35,690	32,924	34,502	33,520	32,306
Rank	16	16	16	16	17	18
Fuel per Peak Auto Commuter (gallons)	27	25	20	23	22	22
Rank	8	11	18	13	19	18
Annual Delay						
Total Delay (1000s of person-hours)	100,478	90,811	82,207	82,046	79,709	76,823
Rank	16	17	18	17	19	19
Delay per Auto Commuter (pers-hrs)	69	63	59	60	60	58
Rank	5	7	7	7	7	7
Travel Time Index						
Rank	4	7	8	7	7	8
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,923	1,668	1,474	1,523	1,408	1,311
Rank	16	16	18	17	18	19
Cost per Auto Commuter (\$)	1,371	1,277	1,175	1,163	1,174	1,164
Rank	7	10	11	11	12	15
Truck Congestion						
Annual Person-Hours of Delay (000)	4,220	3,814	3,453	3,446	3,348	3,227
Rank	16	17	18	17	19	19
Annual Gallons of Wasted Fuel (000)	8,294	7,566	6,980	7,315	7,106	6,849
Rank	16	16	16	16	17	18
Annual Congestion Cost (\$ million)	199	166	146	155	141	129
Rank	16	16	18	18	18	19

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

Mobility Data for San Jose CA

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,675	1,675	1,675	1,675	1,675	1,675
Rank	27	27	25	25	24	24
Commuters (1000s)	828	824	819	807	794	782
Daily Vehicle-Miles of Travel (1000s)						
Freeway	16,820	16,600	16,565	16,760	16,775	16,530
Arterial Streets	16,400	16,800	17,950	17,575	17,455	16,775
Cost Components						
Value of Time (\$/hour)	14.58	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	36.51	35.19	33.92	32.69	31.51	30.38
Gasoline (\$/gallon)	2.62	2.28	1.78	1.66	1.93	1.72
Diesel (\$/gallon)	2.93	2.27	1.79	1.58	1.78	1.68
System Performance	2005	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)	30,805	29,628	29,096	28,151	27,427	25,841
Rank	18	20	18	18	18	17
Fuel per Peak Auto Commuter (gallons)	21	19	20	18	18	17
Rank	20	27	17	27	23	24
Annual Delay						
Total Delay (1000s of person-hours)	73,253	70,454	69,190	66,943	65,220	61,450
Rank	19	19	18	18	17	17
Delay per Auto Commuter (pers-hrs)	56	54	53	52	51	49
Rank	10	9	9	10	10	10
Travel Time Index						
Rank	1.32	1.31	1.31	1.30	1.30	1.28
Rank	8	9	8	9	7	9
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,204	1,111	1,048	988	954	869
Rank	19	19	18	18	17	17
Cost per Auto Commuter (\$)	1,146	1,140	1,150	1,135	1,122	1,087
Rank	14	13	13	13	13	12
Truck Congestion						
Annual Person-Hours of Delay (000)	3,077	2,959	2,906	2,812	2,739	2,581
Rank	19	19	18	18	17	17
Annual Gallons of Wasted Fuel (000)	6,531	6,281	6,168	5,968	5,814	5,478
Rank	18	20	18	18	18	17
Annual Congestion Cost (\$ million)	118	106	98	90	86	78
Rank	19	19	18	18	17	17

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

Mobility Data for San Jose CA

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	1,670	1,650	1,620	1,595	1,550	1,540
Rank	24	24	24	24	24	24
Commuters (1000s)	766	745	720	697	667	653
Daily Vehicle-Miles of Travel (1000s)						
Freeway	18,635	17,650	17,170	17,050	17,000	16,660
Arterial Streets	16,710	16,630	16,600	16,510	16,165	14,870
Cost Components						
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37	11.06
Commercial Cost (\$/hour)	29.28	28.89	28.50	28.12	27.75	27.38
Gasoline (\$/gallon)	1.59	1.27	1.40	1.21	1.27	1.16
Diesel (\$/gallon)	1.50	1.39	1.51	1.24	1.31	1.19
System Performance	1999	1998	1997	1996	1995	1994
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	23,773	21,990	20,721	19,524	18,560	17,707
Rank	18	19	19	18	17	17
Fuel per Peak Auto Commuter (gallons)	16	15	14	13	13	12
Rank	27	25	26	29	19	21
Annual Delay						
Total Delay (1000s of person-hours)	56,531	52,291	49,275	46,427	44,136	42,108
Rank	17	17	17	17	17	17
Delay per Auto Commuter (pers-hrs)	46	43	42	41	40	39
Rank	11	14	14	12	13	13
Travel Time Index						
Rank	1.26	1.25	1.24	1.23	1.23	1.23
Rank	9	10	11	10	10	7
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	771	694	647	593	550	509
Rank	17	17	17	17	17	17
Cost per Auto Commuter (\$)	1,033	979	936	903	884	869
Rank	13	15	16	16	15	14
Truck Congestion						
Annual Person-Hours of Delay (000)	2,374	2,196	2,070	1,950	1,854	1,769
Rank	17	17	17	17	17	17
Annual Gallons of Wasted Fuel (000)	5,040	4,662	4,393	4,139	3,935	3,754
Rank	18	19	19	18	17	17
Annual Congestion Cost (\$ million)	69	62	58	53	50	47
Rank	17	17	17	17	17	17

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

Mobility Data for San Jose CA

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	1,525	1,505	1,500	1,410	1,390	1,370
Rank	24	24	24	24	24	24
Commuters (1000s)	635	618	605	560	548	535
Daily Vehicle-Miles of Travel (1000s)						
Freeway	16,555	16,575	16,520	15,780	15,540	14,980
Arterial Streets	12,785	13,130	12,980	13,190	13,185	13,075
Cost Components						
Value of Time (\$/hour)	10.78	10.47	10.17	9.75	9.25	8.83
Commercial Cost (\$/hour)	27.02	26.66	26.30	25.95	25.60	25.26
Gasoline (\$/gallon)	1.23	1.28	1.11	1.14	1.14	1.05
Diesel (\$/gallon)	1.26	1.25	1.25	1.19	1.09	1.01
System Performance	1993	1992	1991	1990	1989	1988
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	16,643	16,309	15,965	14,548	13,926	13,157
Rank	17	16	16	16	15	15
Fuel per Peak Auto Commuter (gallons)	11	10	11	9	10	9
Rank	22	24	13	23	11	13
Annual Delay						
Total Delay (1000s of person-hours)	39,576	38,783	37,965	34,596	33,116	31,286
Rank	16	16	16	16	16	16
Delay per Auto Commuter (pers-hrs)	38	38	37	37	36	35
Rank	13	13	12	12	12	12
Travel Time Index						
Rank	1.22	1.22	1.22	1.21	1.21	1.20
Rank	7	6	6	7	5	7
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	469	448	425	373	340	307
Rank	16	16	16	16	16	16
Cost per Auto Commuter (\$)	839	847	856	814	825	821
Rank	14	13	12	12	11	13
Truck Congestion						
Annual Person-Hours of Delay (000)	1,662	1,629	1,595	1,453	1,391	1,314
Rank	16	16	16	16	16	16
Annual Gallons of Wasted Fuel (000)	3,528	3,458	3,385	3,084	2,952	2,789
Rank	17	16	16	16	15	15
Annual Congestion Cost (\$ million)	44	42	41	37	34	32
Rank	16	16	16	16	16	16

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

Mobility Data for San Jose CA

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	1,355	1,340	1,325	1,310	1,300	1,300
Rank	24	24	24	24	24	24
Commuters (1000s)	526	515	506	497	489	483
Daily Vehicle-Miles of Travel (1000s)						
Freeway	14,410	13,530	12,930	12,240	11,455	11,040
Arterial Streets	12,040	11,530	10,385	9,900	9,410	9,235
Cost Components						
Value of Time (\$/hour)	8.48	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	24.93	24.60	24.27	23.94	23.63	23.31
Gasoline (\$/gallon)	1.05	1.03	1.35	1.36	1.39	1.46
Diesel (\$/gallon)	1.01	0.99	1.29	1.31	1.34	1.40
System Performance	1987	1986	1985	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)	12,012	10,619	9,414	8,201	7,443	6,548
Rank	15	15	16	20	19	19
Fuel per Peak Auto Commuter (gallons)	9	8	7	6	6	4
Rank	13	14	15	20	13	19
Annual Delay						
Total Delay (1000s of person-hours)	28,565	25,252	22,386	19,502	17,700	15,571
Rank	16	16	16	17	17	18
Delay per Auto Commuter (pers-hrs)	32	29	26	23	21	19
Rank	12	12	13	13	14	17
Travel Time Index						
Rank	11	11	16	17	16	17
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	271	232	205	173	152	130
Rank	16	16	16	17	17	18
Cost per Auto Commuter (\$)	779	716	645	584	555	504
Rank	14	15	16	16	16	16
Truck Congestion						
Annual Person-Hours of Delay (000)	1,200	1,061	940	819	743	654
Rank	16	16	16	17	17	18
Annual Gallons of Wasted Fuel (000)	2,547	2,251	1,996	1,739	1,578	1,388
Rank	15	15	16	20	19	19
Annual Congestion Cost (\$ million)	29	25	23	19	18	15
Rank	16	16	16	17	17	18

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