

Performance Measure Summary - Austin TX

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 Austin TX

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	1,620	1,580	1,540	1,500	1,480	1,460
Rank	32	34	34	34	34	34
Commuters (1000s)	785	765	725	705	712	719
Daily Vehicle-Miles of Travel (1000s)						
Freeway	15,552	15,813	15,334	13,936	12,849	12,510
Arterial Streets	14,037	14,174	13,435	12,022	10,805	10,680
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)	2.17	1.97	2.11	3.12	3.37	3.33
Diesel (\$/gallon)	2.31	2.10	2.36	3.47	3.76	3.75
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	34.2	--	--	--	--	--
Congested System (% of lane-miles)	24.0	--	--	--	--	--
Congested Time (number of "Rush Hours")	4.9	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	24,195	23,433	22,571	21,744	21,293	20,624
Rank	31	31	33	33	33	33
Fuel per Peak Auto Commuter (gallons)	25	24	24	22	23	22
Rank	20	23	20	24	17	21
Annual Delay						
Total Delay (1000s of person-hours)	68,187	64,709	61,262	58,506	56,789	54,518
Rank	27	27	28	28	28	29
Delay per Auto Commuter (pers-hrs)	66	63	61	59	58	55
Rank	14	16	16	16	14	17
Travel Time Index						
Rank	1.34	1.34	1.33	1.33	1.32	1.31
Rank	11	11	12	12	13	13
Commuter Stress Index						
Rank	1.45	--	--	--	--	--
Rank	7	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	2.15	--	--	--	--	--
Rank	11	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,368	1,277	1,193	1,156	1,106	1,045
Rank	28	28	28	29	29	29
Cost per Auto Commuter (\$)	1,391	1,329	1,251	1,188	1,165	1,133
Rank	13	13	13	15	16	17
Truck Congestion						
Annual Person-Hours of Delay (000)	2,864	2,718	2,573	2,457	2,385	2,290
Rank	27	27	28	28	28	29
Annual Gallons of Wasted Fuel (000)	5,129	4,968	4,785	4,610	4,514	4,372
Rank	31	31	33	33	33	33
Annual Congestion Cost (\$ million)	143	130	117	113	103	96
Rank	28	28	29	29	30	30

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

Mobility Data for Austin TX

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,410	1,370	1,300	1,250	1,200	1,100
Rank	35	36	37	37	37	38
Commuters (1000s)	711	689	655	631	605	553
Daily Vehicle-Miles of Travel (1000s)						
Freeway	12,650	12,274	11,960	11,900	12,200	11,750
Arterial Streets	11,004	10,677	10,854	10,800	11,000	10,500
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)	3.29	2.56	2.13	3.36	2.92	2.55
Diesel (\$/gallon)	3.56	2.83	2.43	4.07	3.30	2.73
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)	19,572	18,624	17,538	18,243	18,063	16,692
Rank	34	34	34	35	34	36
Fuel per Peak Auto Commuter (gallons)	21	20	17	18	19	18
Rank	25	29	43	49	40	47
Annual Delay						
Total Delay (1000s of person-hours)	50,352	47,034	43,462	43,058	42,632	39,396
Rank	30	31	32	31	31	32
Delay per Auto Commuter (pers-hrs)	51	49	48	50	51	52
Rank	19	21	19	15	16	14
Travel Time Index						
Rank	13	13	12	9	9	8
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	958	856	772	792	748	667
Rank	30	32	32	31	31	32
Cost per Auto Commuter (\$)	1,080	1,040	978	959	988	937
Rank	19	19	22	21	22	27
Truck Congestion						
Annual Person-Hours of Delay (000)	2,115	1,975	1,825	1,808	1,791	1,655
Rank	30	31	32	31	31	32
Annual Gallons of Wasted Fuel (000)	4,149	3,948	3,718	3,868	3,829	3,539
Rank	34	34	34	35	34	36
Annual Congestion Cost (\$ million)	98	85	76	80	74	65
Rank	31	32	32	31	32	32

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

Mobility Data for Austin TX

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,070	1,040	1,010	990	960	925
Rank	38	40	40	40	41	41
Commuters (1000s)	537	520	502	485	462	439
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,400	10,800	10,200	9,750	9,300	8,800
Arterial Streets	10,000	9,400	9,000	8,550	8,100	7,700
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)	2.23	1.83	1.45	1.32	1.46	1.47
Diesel (\$/gallon)	2.40	1.85	1.43	1.29	1.48	1.42
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)	15,669	14,779	13,636	12,726	12,015	10,804
Rank	37	37	37	38	40	41
Fuel per Peak Auto Commuter (gallons)	17	16	15	14	13	12
Rank	48	56	58	61	63	68
Annual Delay						
Total Delay (1000s of person-hours)	36,982	34,880	32,184	30,035	28,358	25,499
Rank	32	35	36	38	37	37
Delay per Auto Commuter (pers-hrs)	50	49	47	45	44	42
Rank	17	14	18	21	20	22
Travel Time Index						
Rank	1.31	1.31	1.29	1.28	1.28	1.26
Rank	12	9	11	13	10	15
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	602	543	483	439	410	358
Rank	32	35	36	38	37	38
Cost per Auto Commuter (\$)	910	887	840	802	766	709
Rank	29	33	37	39	38	46
Truck Congestion						
Annual Person-Hours of Delay (000)	1,553	1,465	1,352	1,261	1,191	1,071
Rank	32	35	36	38	37	37
Annual Gallons of Wasted Fuel (000)	3,322	3,133	2,891	2,698	2,547	2,290
Rank	37	37	37	38	40	41
Annual Congestion Cost (\$ million)	58	51	44	40	37	32
Rank	32	35	37	37	37	37

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Mobility Data for Austin TX

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	895	870	840	800	760	730
Rank	41	42	43	45	45	46
Commuters (1000s)	417	399	379	355	332	314
Daily Vehicle-Miles of Travel (1000s)						
Freeway	8,500	8,250	8,000	7,600	7,250	6,800
Arterial Streets	7,250	6,600	6,000	5,600	5,200	4,800
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)	1.07	1.01	1.12	1.21	1.14	1.03
Diesel (\$/gallon)	1.07	1.10	1.19	1.29	1.21	1.09
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)	10,052	9,041	8,182	7,240	6,212	5,576
Rank	41	41	41	43	48	49
Fuel per Peak Auto Commuter (gallons)	11	10	9	8	7	7
Rank	72	73	75	76	77	73
Annual Delay						
Total Delay (1000s of person-hours)	23,726	21,339	19,311	17,088	14,661	13,160
Rank	37	37	37	39	43	42
Delay per Auto Commuter (pers-hrs)	40	38	36	34	31	29
Rank	25	26	28	33	41	42
Travel Time Index						
Rank	1.25	1.24	1.23	1.21	1.19	1.18
Rank	15	14	15	20	23	23
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	319	281	251	218	182	159
Rank	37	37	37	39	43	42
Cost per Auto Commuter (\$)	682	628	576	521	462	427
Rank	48	52	57	61	68	72
Truck Congestion						
Annual Person-Hours of Delay (000)	996	896	811	718	616	553
Rank	37	37	37	39	43	42
Annual Gallons of Wasted Fuel (000)	2,131	1,917	1,735	1,535	1,317	1,182
Rank	41	41	41	43	48	49
Annual Congestion Cost (\$ million)	28	25	22	20	17	15
Rank	37	37	38	38	41	42

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Mobility Data for Austin TX

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	720	710	690	660	625	615
Rank	46	47	47	49	50	49
Commuters (1000s)	305	296	283	266	250	244
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,500	6,100	5,830	5,320	4,900	4,555
Arterial Streets	4,600	4,500	4,400	4,250	4,100	3,950
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)	1.10	1.09	1.12	1.04	1.07	0.99
Diesel (\$/gallon)	1.17	1.17	1.20	1.07	1.05	0.97
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)	5,145	4,698	4,300	3,925	3,442	3,247
Rank	49	49	48	48	50	49
Fuel per Peak Auto Commuter (gallons)	5	5	4	5	3	3
Rank	82	82	85	72	85	81
Annual Delay						
Total Delay (1000s of person-hours)	12,144	11,088	10,149	9,263	8,123	7,663
Rank	44	45	46	44	46	45
Delay per Auto Commuter (pers-hrs)	28	26	25	24	22	21
Rank	40	41	39	39	40	38
Travel Time Index						
Rank	1.17	1.16	1.15	1.15	1.14	1.13
Rank	23	23	23	21	23	23
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	143	127	114	99	83	75
Rank	44	45	46	44	46	45
Cost per Auto Commuter (\$)	405	383	358	341	316	315
Rank	72	68	70	69	71	69
Truck Congestion						
Annual Person-Hours of Delay (000)	510	466	426	389	341	322
Rank	44	45	46	44	46	45
Annual Gallons of Wasted Fuel (000)	1,091	996	912	832	730	688
Rank	49	49	48	48	50	49
Annual Congestion Cost (\$ million)	13	12	11	10	8	8
Rank	44	44	44	42	46	42

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Mobility Data for Austin TX

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	580	565	560	545	520	495
Rank	51	51	51	51	53	57
Commuters (1000s)	229	221	217	210	199	187
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,375	4,550	4,200	3,730	3,615	3,000
Arterial Streets	3,800	3,650	3,500	3,400	3,200	3,000
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)	0.99	0.97	1.27	1.28	1.31	1.37
Diesel (\$/gallon)	0.97	0.95	1.24	1.25	1.28	1.34
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)	3,102	2,937	2,632	2,473	2,247	1,907
Rank	48	46	47	46	45	49
Fuel per Peak Auto Commuter (gallons)	3	3	3	3	2	2
Rank	80	74	66	61	69	55
Annual Delay						
Total Delay (1000s of person-hours)	7,321	6,932	6,212	5,836	5,304	4,500
Rank	43	43	43	43	43	45
Delay per Auto Commuter (pers-hrs)	22	21	19	19	18	16
Rank	28	26	30	27	25	28
Travel Time Index						
Rank	1.14	1.13	1.12	1.12	1.11	1.10
Rank	19	19	20	19	18	19
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	69	63	57	52	45	38
Rank	43	43	43	43	43	44
Cost per Auto Commuter (\$)	312	311	283	277	260	226
Rank	64	62	63	60	58	64
Truck Congestion						
Annual Person-Hours of Delay (000)	307	291	261	245	223	189
Rank	43	43	43	43	43	45
Annual Gallons of Wasted Fuel (000)	658	623	558	524	476	404
Rank	48	46	47	46	45	49
Annual Congestion Cost (\$ million)	7	7	6	6	5	4
Rank	43	40	43	40	43	44

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