

## 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 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 Austin TX

Inventory Measures	2014	2013	2012	2011	2010
<b>Urban Area Information</b>					
Population (1000s)	1,500	1,480	1,460	1,410	1,370
Rank	34	34	34	35	36
Commuters (1000s)	705	712	719	711	689
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	13,273	12,849	12,510	12,650	12,274
Arterial Streets	11,237	10,805	10,680	11,004	10,677
<b>Cost Components</b>					
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)	3.12	3.37	3.33	3.29	2.56
Diesel (\$/gallon)	3.47	3.76	3.75	3.56	2.83
System Performance	2014	2013	2012	2011	2010
<b>Congested Travel (% of peak VMT)</b>	37	--	--	--	--
<b>Congested System (% of lane-miles)</b>	28	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	5.00	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	21,654	21,205	20,538	19,491	18,547
Rank	33	33	34	35	36
Fuel per Peak Auto Commuter (gallons)	22	22	21	20	19
Rank	23	21	25	30	39
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	51,116	50,055	48,482	46,010	43,781
Rank	29	29	29	30	31
Delay per Peak Auto Commuter (pers-hrs)	52	51	49	47	46
Rank	12	15	18	18	22
<b>Travel Time Index</b>					
	1.33	1.32	1.31	1.30	1.29
Rank	10	11	11	12	12
<b>Commuter Stress Index</b>					
	1.44	1.43	1.42	1.41	1.40
Rank	7	8	9	9	9
<b>Freeway Planning Time Index (95th Pctile)</b>					
	2.58	--	--	--	--
Rank	25	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	1,140	1,135	1,115	1,080	1,060
Rank	31	31	31	32	33
Cost per Peak Auto Commuter (\$)	1,159	1,154	1,134	1,098	1,078
Rank	20	20	22	24	31

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

### The Mobility Data for Austin TX

Inventory Measures	2009	2008	2007	2006	2005
<b>Urban Area Information</b>					
Population (1000s)	1,300	1,250	1,200	1,100	1,070
Rank	37	37	37	38	38
Commuters (1000s)	655	631	605	553	537
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	11,960	11,900	12,200	11,750	11,400
Arterial Streets	10,854	10,800	11,000	10,500	10,000
<b>Cost Components</b>					
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)	2.13	3.36	2.92	2.55	2.23
Diesel (\$/gallon)	2.43	4.07	3.30	2.73	2.40
System Performance	2009	2008	2007	2006	2005
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	17,465	18,168	17,988	16,623	15,604
Rank	37	36	36	40	41
Fuel per Peak Auto Commuter (gallons)	18	18	18	17	16
Rank	45	51	47	52	55
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	41,227	42,886	42,462	39,239	36,834
Rank	34	34	31	34	34
Delay per Peak Auto Commuter (pers-hrs)	46	50	51	52	50
Rank	20	19	18	15	19
<b>Travel Time Index</b>					
	1.29	1.31	1.32	1.33	1.31
Rank	12	10	9	8	12
<b>Commuter Stress Index</b>					
	1.40	1.43	1.44	1.44	1.43
Rank	9	9	8	6	7
<b>Freeway Planning Time Index (95th Pctile)</b>					
	--	--	--	--	--
Rank	--	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	1,015	1,052	1,082	1,027	996
Rank	36	35	35	37	38
Cost per Peak Auto Commuter (\$)	1,032	1,069	1,100	1,044	1,013
Rank	34	35	32	41	47

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

### The Mobility Data for Austin TX

Inventory Measures	2004	2003	2002	2001	2000
<b>Urban Area Information</b>					
Population (1000s)	1,040	1,010	990	960	925
Rank	40	40	40	41	41
Commuters (1000s)	520	502	485	462	439
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	10,800	10,200	9,750	9,300	8,800
Arterial Streets	9,400	9,000	8,550	8,100	7,700
<b>Cost Components</b>					
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)	1.83	1.45	1.32	1.46	1.47
Diesel (\$/gallon)	1.85	1.43	1.29	1.48	1.42
System Performance	2004	2003	2002	2001	2000
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	14,717	13,579	12,673	11,965	10,759
Rank	42	44	45	45	46
Fuel per Peak Auto Commuter (gallons)	15	14	13	12	11
Rank	59	62	64	66	70
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	34,741	32,055	29,915	28,245	25,397
Rank	35	39	41	41	42
Delay per Peak Auto Commuter (pers-hrs)	49	47	45	44	42
Rank	17	21	23	21	24
<b>Travel Time Index</b>					
	1.31	1.29	1.28	1.28	1.26
Rank	9	11	13	10	15
<b>Commuter Stress Index</b>					
	1.42	1.40	1.39	1.39	1.37
Rank	7	8	8	8	8
<b>Freeway Planning Time Index (95th Pctile)</b>					
	--	--	--	--	--
Rank	--	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	971	920	878	842	779
Rank	42	43	43	43	44
Cost per Peak Auto Commuter (\$)	987	935	893	856	792
Rank	52	61	65	63	67

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

### The Mobility Data for Austin TX

Inventory Measures	1999	1998	1997	1996	1995
<b>Urban Area Information</b>					
Population (1000s)	895	870	840	800	760
Rank	41	42	43	45	45
Commuters (1000s)	417	399	379	355	332
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	8,500	8,250	8,000	7,600	7,250
Arterial Streets	7,250	6,600	6,000	5,600	5,200
<b>Cost Components</b>					
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)	1.07	1.01	1.12	1.21	1.14
Diesel (\$/gallon)	1.07	1.10	1.19	1.29	1.21
System Performance	1999	1998	1997	1996	1995
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	10,010	9,004	8,148	7,210	6,186
Rank	46	47	49	52	54
Fuel per Peak Auto Commuter (gallons)	10	9	8	7	6
Rank	73	74	74	77	81
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	23,631	21,254	19,234	17,020	14,602
Rank	42	43	43	45	48
Delay per Peak Auto Commuter (pers-hrs)	40	38	36	34	31
Rank	26	28	29	34	40
<b>Travel Time Index</b>					
	1.25	1.24	1.23	1.21	1.19
Rank	15	14	15	20	23
<b>Commuter Stress Index</b>					
	1.36	1.35	1.33	1.32	1.30
Rank	10	9	11	10	11
<b>Freeway Planning Time Index (95th Pctile)</b>					
	--	--	--	--	--
Rank	--	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	749	689	633	573	506
Rank	44	45	45	46	50
Cost per Peak Auto Commuter (\$)	761	700	643	582	514
Rank	69	73	73	74	78

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

### The Mobility Data for Austin TX

Inventory Measures	1994	1993	1992	1991	1990
<b>Urban Area Information</b>					
Population (1000s)	730	720	710	690	660
Rank	46	46	47	47	49
Commuters (1000s)	314	305	296	283	266
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	6,800	6,500	6,100	5,830	5,320
Arterial Streets	4,800	4,600	4,500	4,400	4,250
<b>Cost Components</b>					
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)	1.03	1.10	1.09	1.12	1.04
Diesel (\$/gallon)	1.09	1.17	1.17	1.20	1.07
System Performance	1994	1993	1992	1991	1990
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	5,552	5,124	4,678	4,282	3,908
Rank	53	53	54	54	54
Fuel per Peak Auto Commuter (gallons)	6	5	5	4	4
Rank	79	79	77	82	77
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	13,107	12,095	11,044	10,108	9,226
Rank	49	49	49	49	50
Delay per Peak Auto Commuter (pers-hrs)	29	28	26	25	24
Rank	41	39	40	38	39
<b>Travel Time Index</b>					
	1.18	1.17	1.16	1.15	1.15
Rank	23	23	23	23	21
<b>Commuter Stress Index</b>					
	1.29	1.28	1.26	1.26	1.25
Rank	11	12	16	15	17
<b>Freeway Planning Time Index (95th Pctile)</b>					
	--	--	--	--	--
Rank	--	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	467	442	416	392	373
Rank	50	50	50	50	51
Cost per Peak Auto Commuter (\$)	475	449	423	398	379
Rank	83	80	84	82	79

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

### The Mobility Data for Austin TX

Inventory Measures	1989	1988	1987	1986	1985
<b>Urban Area Information</b>					
Population (1000s)	625	615	580	565	560
Rank	50	49	51	51	51
Commuters (1000s)	250	244	229	221	217
<b>Daily Vehicle-Miles of Travel (1000s)</b>					
Freeway	4,900	4,555	4,375	4,550	4,200
Arterial Streets	4,100	3,950	3,800	3,650	3,500
<b>Cost Components</b>					
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)	1.07	0.99	0.99	0.97	1.27
Diesel (\$/gallon)	1.05	0.97	0.97	0.95	1.24
System Performance	1989	1988	1987	1986	1985
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>					
Total Fuel (1000 gallons)	3,428	3,233	3,089	2,925	2,621
Rank	55	55	54	54	52
Fuel per Peak Auto Commuter (gallons)	3	3	3	3	3
Rank	84	79	77	71	63
<b>Annual Delay</b>					
Total Delay (1000s of person-hours)	8,091	7,632	7,292	6,904	6,187
Rank	52	52	49	48	48
Delay per Peak Auto Commuter (pers-hrs)	22	21	22	21	19
Rank	40	38	29	26	30
<b>Travel Time Index</b>					
	1.14	1.13	1.14	1.13	1.12
Rank	23	23	19	19	20
<b>Commuter Stress Index</b>					
	1.24	1.23	1.24	1.23	1.22
Rank	18	18	15	17	18
<b>Freeway Planning Time Index (95th Pctile)</b>					
	--	--	--	--	--
Rank	--	--	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>					
Total Cost (\$ millions)	345	341	339	333	304
Rank	53	53	50	49	49
Cost per Peak Auto Commuter (\$)	350	346	345	338	309
Rank	80	79	76	72	73

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

### The Mobility Data for Austin TX

Inventory Measures	1984	1983	1982
<b>Urban Area Information</b>			
Population (1000s)	545	520	495
Rank	51	53	57
Commuters (1000s)	210	199	187
<b>Daily Vehicle-Miles of Travel (1000s)</b>			
Freeway	3,730	3,615	3,000
Arterial Streets	3,400	3,200	3,000
<b>Cost Components</b>			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	46.47	44.23	43.08
Gasoline (\$/gallon)	1.28	1.31	1.37
Diesel (\$/gallon)	1.25	1.28	1.34
System Performance	1984	1983	1982
<b>Congested Travel (% of peak VMT)</b>	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--
<b>Annual Excess Fuel Consumed</b>			
Total Fuel (1000 gallons)	2,463	2,238	1,899
Rank	53	53	53
Fuel per Peak Auto Commuter (gallons)	3	2	2
Rank	54	68	62
<b>Annual Delay</b>			
Total Delay (1000s of person-hours)	5,813	5,283	4,482
Rank	48	49	50
Delay per Peak Auto Commuter (pers-hrs)	19	18	16
Rank	27	25	28
<b>Travel Time Index</b>			
	1.12	1.11	1.10
Rank	19	18	19
<b>Commuter Stress Index</b>			
	1.22	1.21	1.20
Rank	17	16	16
<b>Freeway Planning Time Index (95th Pctile)</b>			
	--	--	--
Rank	--	--	--
<b>Congestion Cost (constant 2014 \$)</b>			
Total Cost (\$ millions)	296	280	245
Rank	48	50	52
Cost per Peak Auto Commuter (\$)	300	285	249
Rank	70	68	75

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