Performance Measure Summary - Dallas-Fort Worth-Arlington TX

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2020. 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 2020 (estimated at \$20.17 per hour of person travel and \$55.24 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.

Annual Greenhouse Gases (CO2) Produced -Tons of CO2 produced from all vehicle travel.

Excess Greenhouse Gases (CO2) Produced due to Congestion-Tons of CO2 produced due to congested portion of travel. The excess CO2 is a subset of the total CO2 produced.

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	5,830	5,830	5,760	5,630	5,570	5,520
Rank	5	5	5	5	5	6
Commuters (1000s)	2,684	2,684	2,679	2,645	2,615	2,590
Daily Vehicle-Miles of Travel (1000s)					Ì	
Freeway	63,448	74,121	72,986	71,557	72,450	69,589
Arterial Streets	39,764	46,453	46,879	47,773	47,111	45,640
Cost Components						
Value of Time (\$/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost (\$/hour)	55.24	61.03	54.71	52.14	50.20	46.87
Gasoline (\$/gallon)	2.05	2.37	2.63	2.17	1.97	2.11
Diesel (\$/gallon)	2.51	2.73	2.99	2.31	2.10	2.36
System Performance	2020	2019	2018	2017	2016	2015
Congested Travel (% of peak VMT)				31.8		
Congested System (% of lane-miles)				18.0		
Congested Time (number of "Rush Hours")				4.5		
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	52,105	83,609	81,191	79,677	79,381	78,784
Rank	6	10	10	9	9	9
Fuel per Peak Auto Commuter (gallons)	16	26	25	25	24	23
Rank	5	16	20	20	23	25
Annual Delay						
Total Delay (1000s of person-hours)	136,953	219,759	222,965	224,883	220,076	214,718
Rank	5	9	9	8	8	8
Delay per Auto Commuter (pers-hrs)	40	65	66	67	65	63
Rank	8	16	14	13	13	13
Travel Time Index	1.12	1.25	1.25	1.26	1.26	1.26
Rank	10	25	25	23	23	23
Commuter Stress Index	1.14	1.33	1.34	1.31		
Rank	10	21	17	21		
Freeway Planning Time Index (95th Pctile)		1.77	1.76	1.79		
Rank		28	26	26		
Congestion Cost	2.051	4.006	4.012	4.7750	4.500	4 400
Total Cost (\$ millions) Rank	3,051	4,806 9	4,813	4,758	4,580	4,409 9
Cost per Auto Commuter (\$)	5 848	1,335	1,340	1,342	1,322	1,283
Rank	10	1,333	1,340	1,342	1,322	1,263
Truck Congestion	10	10	10	10	1 /	1 /
Annual Person-Hours of Delay (000)	6,250	9,846	9,601	9,445	9,243	9,018
Rank	6,230	8	9,001	9,443	9,243	9,018
Annual Gallons of Wasted Fuel (000)	10,750	16,936	16,842	16,891	16,829	16,702
Rank	5	8	7	7	7	7
Annual Congestion Cost (\$ million)	330	580	526	497	467	433
Rank	6	6	9	9	9	9
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	518,729	832,366				
Rank	6	10				
Due to All Travel (tons)	16,616,624	26,663,471				
		4				
Rank	2	· 1				
	2					
Rank	161,153	253,875				
Rank Truck Annual Greenhouse Gases (CO2) Produced	_		 			
Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)	161,153	253,875		 		

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

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	5,485	5,435	5,365	5,260	5,160	5,015
Rank	6	6	6	6	6	6
Commuters (1000s)	2,573	2,549	2,565	2,609	2,606	2,556
Daily Vehicle-Miles of Travel (1000s)						
Freeway	66,781	64,670	64,235	62,600	61,386	62,500
Arterial Streets	44,837	42,827	43,900	44,012	43,159	44,723
Cost Components	,	,	,	· ·		
Value of Time (\$/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost (\$/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline (\$/gallon)	3.12	3.37	3.33	3.29	2.56	2.13
Diesel (\$/gallon)	3.47	3.76	3.75	3.56	2.83	2.43
System Performance	2014	2013	2012	2011	2010	2009
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	78,282	77,248	76,053	72,750	69,639	67,823
Rank	9	9	9	9	9	9
Fuel per Peak Auto Commuter (gallons)	22	22	23	22	21	18
Rank	24	24	18	18	24	34
Annual Delay						
Total Delay (1000s of person-hours)	209,671	205,089	198,340	186,308	175,068	167,318
Rank	8	9	8	9	9	9
Delay per Auto Commuter (pers-hrs)	60	59	57	53	50	49
Rank	14	13	13	17	17	15
Travel Time Index	1.27	1.27	1.26	1.26	1.25	1.25
Rank	19	19	21	21	21	22
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	4,373	4,214	4,015	3,741	3,362	3,136
Rank	9	9	9	9	9	9
Cost per Auto Commuter (\$)	1,245	1,237	1,205	1,168	1,132	1,101
Rank	17	15	16	17	17	17
Truck Congestion						
Annual Person-Hours of Delay (000)	8,806	8,614	8,330	7,825	7,353	7,027
Rank	9	9	9	9	9	9
Annual Gallons of Wasted Fuel (000)	16,596	16,377	16,123	15,423	14,763	14,379
Rank	7	7	7	9	9	9
Annual Congestion Cost (\$ million)	426	394	369	381	333	309
Rank	9	9	9	9	9	9
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Due to All Travel (tons) Rank	 					
Rank Truck Annual Greenhouse Gases (CO2) Produced						
Rank						
Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank		 		 	 	
Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)		 		 		

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

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	4,900	4,860	4,750	4,650	4,525	4,400
Rank	6	6	6	6	6	6
Commuters (1000s)	2,519	2,608	2,545	2,479	2,400	2,322
Daily Vehicle-Miles of Travel (1000s)						
Freeway	62,465	63,300	63,000	61,500	59,180	57,870
Arterial Streets	44,500	46,000	45,680	45,750	44,805	42,970
Cost Components						
Value of Time (\$/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost (\$/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline (\$/gallon)	3.36	2.92	2.55	2.23	1.83	1.45
Diesel (\$/gallon)	4.07	3.30	2.73	2.40	1.85	1.43
System Performance	2008	2007	2006	2005	2004	2003
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	71,310	77,195	75,192	70,525	66,031	62,032
Rank	9	8	8	10	11	12
Fuel per Peak Auto Commuter (gallons)	18	23	22	21	20	19
Rank	49	13	18	20	21	23
Annual Delay						
Total Delay (1000s of person-hours)	167,543	181,368	176,664	165,698	155,139	145,744
Rank	8	7	7	8	8	9
Delay per Auto Commuter (pers-hrs)	50	53	53	51	49	48
Rank	15	12	12	15	14	14
Travel Time Index	1.26	1.27	1.27	1.26	1.25	1.24
Rank	21	19	19	22	23	25
Commuter Stress Index						
Rank Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost Total Cost (\$ millions)	3,250	3,357	3,154	2,845	2,550	2,309
Rank	3,230	3,337	3,134	2,643	2,330	2,309
Cost per Auto Commuter (\$)	1,092	1,229	1,230	1,193	1,154	1,114
Rank	17	14	14	15	16	15
Truck Congestion						
Annual Person-Hours of Delay (000)	7,037	7,617	7,420	6,959	6,516	6,121
Rank	8	7,017	7,120	8	8	9
Annual Gallons of Wasted Fuel (000)	15,118	16,365	15,941	14,951	13,999	13,151
Rank	8	6	6	9	9	9
Annual Congestion Cost (\$ million)	330	334	306	273	239	212
Rank	8	7	7	8	8	9
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)						
Rank						
Due to Truck Travel (tons)						
Rank						

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

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	4,280	4,160	4,075	3,970	3,860	3,740
Rank	6	6	6	7	8	8
Commuters (1000s)	2,243	2,143	2,062	1,977	1,891	1,798
Daily Vehicle-Miles of Travel (1000s)						
Freeway	56,000	54,300	52,000	50,285	48,740	46,165
Arterial Streets	42,240	42,150	42,265	40,695	37,345	37,530
Cost Components						
Value of Time (\$/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost (\$/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline (\$/gallon)	1.32	1.46	1.47	1.07	1.01	1.12
Diesel (\$/gallon)	1.29	1.48	1.42	1.07	1.10	1.19
System Performance	2002	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	58,455	57,024	55,240	52,776	49,623	46,988
Rank	12	12	10	10	10	10
Fuel per Peak Auto Commuter (gallons)	17	17	17	16	15	14
Rank	34	31	24	27	25	26
Annual Delay						
Total Delay (1000s of person-hours)	137,340	133,978	129,786	123,997	116,589	110,397
Rank	9	9	9	9	10	9
Delay per Auto Commuter (pers-hrs)	46	47	47	47	46	45
Rank	17	12	12	10	10	10
Travel Time Index	1.23	1.24	1.24	1.24	1.23	1.23
Rank	26	22	18	15	18	13
Commuter Stress Index						
Rank Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost Total Cost (\$ millions)	2,119	2,042	1,924	1,758	1,619	1,515
Rank	2,119	2,042	9	1,738	1,019	1,515
Cost per Auto Commuter (\$)	1,071	1,060	1,056	1,042	1,003	965
Rank	16	16	15	16	17	17
Truck Congestion						
Annual Person-Hours of Delay (000)	5,768	5,627	5,451	5,208	4,897	4,637
Rank	9	9	9	9	9	9
Annual Gallons of Wasted Fuel (000)	12,392	12,089	11,711	11,188	10,520	9,961
Rank	9	9	8	8	8	8
Annual Congestion Cost (\$ million)	191	183	171	154	143	135
Rank	9	9	9	9	9	9
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)						
Rank						
Due to Truck Travel (tons)						
Rank						

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

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	3,650	3,500	3,425	3,370	3,325	3,290
Rank	8	9	9	9	8	8
Commuters (1000s)	1,728	1,629	1,566	1,517	1,470	1,430
Daily Vehicle-Miles of Travel (1000s)						
Freeway	44,900	42,840	40,365	38,500	37,240	36,200
Arterial Streets	35,215	35,095	34,815	33,035	31,520	30,040
Cost Components						
Value of Time (\$/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost (\$/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline (\$/gallon)	1.21	1.14	1.03	1.10	1.09	1.12
Diesel (\$/gallon)	1.29	1.21	1.09	1.17	1.17	1.20
System Performance	1996	1995	1994	1993	1992	1991
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	45,027	42,341	39,399	37,922	36,306	34,636
Rank	10	10	10	10	10	10
Fuel per Peak Auto Commuter (gallons)	14	13	11	11	10	10
Rank	18	19	37	22	24	19
Annual Delay						
Total Delay (1000s of person-hours)	105,790	99,479	92,567	89,097	85,300	81,376
Rank	9	9	9	9	8	9
Delay per Auto Commuter (pers-hrs)	45	45	43	43	42	41
Rank	10	10	10	9	9	9
Travel Time Index	1.23	1.23	1.22	1.22	1.21	1.21
Rank	9	8	10	6	9	8
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost		4 2 2 2		1 100	4 000	0.64
Total Cost (\$ millions)	1,426	1,302	1,176	1,109	1,033	961
Rank	9	9	9	9	8	9
Cost per Auto Commuter (\$) Rank	946 17	916 17	879 17	868 15	855 14	843 14
	1/	1 /	1 /	13	14	14
Truck Congestion	4 442	4 170	2 000	2 742	2 502	2 410
Annual Person-Hours of Delay (000) Rank	4,443	4,178 9	3,888	3,742	3,583	3,418
Annual Gallons of Wasted Fuel (000)	9,546	8,976	8,353	8,039	7,697	7,343
Rank	7	7	8	7	7,097	7,343
Annual Congestion Cost (\$ million)	129	119	108	103	98	92
Rank	9	9	9	9	8	7
Annual Greenhouse Gases (CO2) Produced					0	,
Excess Due to Congestion (tons)						
Rank	 					
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)						
Rank						
Due to Truck Travel (tons)						
Rank						

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

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	3,250	3,175	3,100	3,010	2,900	2,750
Rank	8	8	9	9	10	10
Commuters (1000s)	1,390	1,346	1,303	1,254	1,198	1,126
Daily Vehicle-Miles of Travel (1000s)						
Freeway	35,700	33,200	32,770	32,360	30,000	28,975
Arterial Streets	27,980	25,990	24,030	22,025	20,355	19,710
Cost Components	,	,	,	,		
Value of Time (\$/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost (\$/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline (\$/gallon)	1.04	1.07	0.99	0.99	0.97	1.27
Diesel (\$/gallon)	1.07	1.05	0.97	0.97	0.95	1.24
System Performance	1990	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)	33,189	30,352	29,209	27,857	25,307	25,883
Rank	10	11	11	12	12	10
Fuel per Peak Auto Commuter (gallons)	10	9	8	9	7	7
Rank	14	19	20	13	21	15
Annual Delay						
Total Delay (1000s of person-hours)	77,977	71,311	68,626	65,451	59,459	60,813
Rank	9	9	9	10	10	10
Delay per Auto Commuter (pers-hrs)	40	38	37	37	35	38
Rank	9	11	11	10	11	5
Travel Time Index	1.20	1.19	1.19	1.19	1.18	1.19
Rank	9	10	9	8	8	6
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	884	772	710	653	574	585
Rank	9	9	9	10	10	10
Cost per Auto Commuter (\$)	844	815	827	823	776	806
Rank	14	16	15	13	13	11
Truck Congestion						
Annual Person-Hours of Delay (000)	3,275	2,995	2,882	2,749	2,497	2,554
Rank	8	9	9	9	10	8
Annual Gallons of Wasted Fuel (000)	7,036	6,435	6,192	5,906	5,365	5,487
Rank	6	7	7	7	8	7
Annual Congestion Cost (\$ million)	87	78	74	69	62	65
Rank	7	9	8	9	10	7
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
			I			
Due to All Travel (tons)		 				
Due to All Travel (tons)	 	 				
Due to All Travel (tons) Rank	 	 		 		
Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced	 	 		 		
Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)	 	 		 		

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

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	2,640	2,520	2,450
Rank	10	10	10
Commuters (1000s)	1,074	1,016	979
Daily Vehicle-Miles of Travel (1000s)			
Freeway	26,920	25,040	23,000
Arterial Streets	18,565	17,930	17,735
Cost Components	,	,	
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	23.94	23.63	23.31
Gasoline (\$/gallon)	1.28	1.31	1.37
Diesel (\$\(\frac{9}{gallon}\)	1.25	1.28	1.34
System Performance	1984	1983	1982
•	5, 0.1	1905	1902
Congested Travel (% of peak VMT)			
Congested System (% of lane-miles)			
Congested Time (number of "Rush Hours")			
Annual Excess Fuel Consumed			
Total Fuel (1000 gallons)	26,731	23,508	21,381
Rank	9	9	9
Fuel per Peak Auto Commuter (gallons)	9	8	6
Rank	10	10	10
Annual Delay			
Total Delay (1000s of person-hours)	62,804	55,232	50,235
Rank	7	8	9
Delay per Auto Commuter (pers-hrs)	41	38	36
Rank	5	4	4
Travel Time Index	1.21	1.19	1.18
Rank	4	5	5
Commuter Stress Index			
Rank			
Freeway Planning Time Index (95th Pctile)			
Rank			
Congestion Cost			
Total Cost (\$ millions)	586	498	442
Rank	8	8	9
Cost per Auto Commuter (\$)	865	794	747
Rank	10	11	11
Truck Congestion			
Annual Person-Hours of Delay (000)	2,638	2,320	2,110
Rank	7	7	8
Annual Gallons of Wasted Fuel (000)	5,667	4,984	4,533
Rank	7	7	7
Annual Congestion Cost (\$ million)	66	57	52
Rank	7	7	8
Annual Greenhouse Gases (CO2) Produced			
Excess Due to Congestion (tons)			
Rank			
Due to All Travel (tons)			
Rank			
Truck Annual Greenhouse Gases (CO2) Produced			
Excess Due to Truck Congestion (tons)			_
Rank			
Due to Truck Travel (tons)			
Rank			
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^{*} Note: Zeroes in the table reflect values less than 0.5.