Performance Measure Summary - Brownsville 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 Brownsville TX

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	225	220	215	210	210	205
Rank	100	100	100	100	100	100
Commuters (1000s)	120	117	114	112	111	108
Daily Vehicle-Miles of Travel (1000s)						
Freeway	932	931	888	894	754	750
Arterial Streets	1,614	1,632	1,574	1,374	1,508	1,505
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)	8.5	--	--	--	--	--
Congested System (% of lane-miles)	7.9	--	--	--	--	--
Congested Time (number of "Rush Hours")	0.6	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,871	1,821	1,761	1,688	1,600	1,591
Rank	100	100	100	100	100	99
Fuel per Peak Auto Commuter (gallons)	12	12	13	12	11	11
Rank	96	96	92	95	96	96
Annual Delay						
Total Delay (1000s of person-hours)	4,629	4,412	4,135	3,836	3,516	3,377
Rank	100	100	100	101	101	101
Delay per Auto Commuter (pers-hrs)	29	28	28	27	26	25
Rank	96	96	96	95	95	95
Travel Time Index	1.13	1.13	1.13	1.14	1.14	1.14
Rank	83	83	83	80	78	79
Commuter Stress Index	1.13	--	--	--	--	--
Rank	92	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	1.12	--	--	--	--	--
Rank	96	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	93	87	81	77	69	66
Rank	100	100	100	101	101	101
Cost per Auto Commuter ($)	571	548	508	472	435	422
Rank	95	95	95	94	96	96
Truck Congestion						
Annual Person-Hours of Delay (000)	194	185	174	161	148	142
Rank	100	100	100	101	101	101
Annual Gallons of Wasted Fuel (000)	397	386	373	358	339	337
Rank	100	100	100	100	100	99
Annual Congestion Cost ($ million)	10	9	8	8	7	6
Rank	100	100	100	100	100	101

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

Mobility Data for Brownsville TX

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	205	200	200	195	195	190
Rank	100	100	100	100	100	100
Commuters (1000s)	108	105	104	102	101	98
Daily Vehicle-Miles of Travel (1000s)						
Freeway	800	830	810	790	800	770
Arterial Streets	1,517	1,496	1,513	1,505	1,600	1,510
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)	1,583	1,538	1,477	1,542	1,439	1,331
Rank	99	99	99	99	99	99
Fuel per Peak Auto Commuter (gallons)	11	11	10	12	11	10
Rank	95	95	93	90	94	93
Annual Delay						
Total Delay (1000s of person-hours)	3,300	3,121	2,913	2,897	2,704	2,500
Rank	101	101	101	100	100	101
Delay per Auto Commuter (pers-hrs)	24	24	22	23	21	20
Rank	94	94	94	93	97	97
Travel Time Index	1.14	1.14	1.14	1.15	1.14	1.13
Rank	77	73	74	72	80	82
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	64	58	52	54	48	43
Rank	101	101	101	100	100	100
Cost per Auto Commuter ($)	429	413	394	389	381	354
Rank	95	96	96	97	96	97
Truck Congestion						
Annual Person-Hours of Delay (000)	139	131	122	122	114	105
Rank	101	101	101	100	100	101
Annual Gallons of Wasted Fuel (000)	336	326	313	327	305	282
Rank	99	99	99	99	99	99
Annual Congestion Cost ($ million)	7	6	5	6	5	4
Rank	100	99	100	98	100	100

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

Mobility Data for Brownsville TX

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	185	180	175	175	175	170
Rank	100	100	100	100	100	100
Commuters (1000s)	95	92	88	87	86	82
Daily Vehicle-Miles of Travel (1000s)						
Freeway	745	710	675	630	600	560
Arterial Streets	1,430	1,360	1,290	1,215	1,160	1,100
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)	1,237	1,121	929	809	739	678
Rank	99	99	99	99	99	99
Fuel per Peak Auto Commuter (gallons)	10	10	8	7	5	7
Rank	93	90	92	95	96	91
Annual Delay						
Total Delay (1000s of person-hours)	2,324	2,106	1,744	1,520	1,389	1,273
Rank	100	100	100	100	100	100
Delay per Auto Commuter (pers-hrs)	19	18	15	13	12	12
Rank	97	97	97	97	97	97
Travel Time Index	1.13	1.12	1.10	1.09	1.08	1.08
Rank	82	84	91	96	98	97
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	38	33	26	22	20	18
Rank	100	100	100	100	100	100
Cost per Auto Commuter ($)	347	318	278	239	222	208
Rank	97	97	98	98	99	99
Truck Congestion						
Annual Person-Hours of Delay (000)	98	88	73	64	58	53
Rank	100	100	100	100	100	100
Annual Gallons of Wasted Fuel (000)	262	238	197	172	157	144
Rank	99	99	99	99	99	99
Annual Congestion Cost ($ million)	4	3	2	2	2	2
Rank	99	99	100	100	99	98

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

Mobility Data for Brownsville TX

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	165	160	160	150	145	135
Rank	100	100	100	99	99	100
Commuters (1000s)	78	75	74	68	65	60
Daily Vehicle-Miles of Travel (1000s)						
Freeway	515	470	430	370	330	290
Arterial Streets	1,020	950	900	875	840	775
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)	468	441	373	324	277	229
Rank	100	101	101	101	101	101
Fuel per Peak Auto Commuter (gallons)	3	4	3	2	2	2
Rank	98	96	98	98	98	96
Annual Delay						
Total Delay (1000s of person-hours)	880	829	701	609	520	430
Rank	101	101	101	101	101	101
Delay per Auto Commuter (pers-hrs)	9	8	7	7	6	5
Rank	99	99	99	99	99	99
Travel Time Index	1.06	1.05	1.05	1.04	1.04	1.03
Rank	98	99	99	99	99	100
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	12	11	9	8	7	5
Rank	101	101	101	101	101	101
Cost per Auto Commuter ($)	152	149	133	116	99	81
Rank	99	99	100	101	101	101
Truck Congestion						
Annual Person-Hours of Delay (000)	37	35	29	26	22	18
Rank	101	101	101	101	101	101
Annual Gallons of Wasted Fuel (000)	99	94	79	69	59	49
Rank	100	101	101	101	101	101
Annual Congestion Cost ($ million)	1	1	1	1	1	-
Rank	100	100	100	99	98	101

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Mobility Data for Brownsville TX

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	130	125	120	115	115	110
Rank	99	99	100	100	100	100
Commuters (1000s)	56	53	51	48	47	45
Daily Vehicle-Miles of Travel (1000s)						
Freeway	270	245	230	235	225	210
Arterial Streets	705	680	660	640	620	590
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)	185	170	166	162	161	142
Rank	101	101	101	100	100	100
Fuel per Peak Auto Commuter (gallons)	1	1	1	1	1	1
Rank	99	98	98	98	97	94
Annual Delay						
Total Delay (1000s of person-hours)	348	319	312	304	302	267
Rank	101	101	101	100	100	100
Delay per Auto Commuter (pers-hrs)	5	4	4	5	5	4
Rank	99	99	99	99	99	99
Travel Time Index	1.03	1.03	1.03	1.03	1.03	1.03
Rank	100	100	99	96	95	94
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	4	4	4	3	3	3
Rank	101	101	100	100	100	100
Cost per Auto Commuter ($)	66	74	72	68	68	79
Rank	101	101	100	100	100	99
Truck Congestion						
Annual Person-Hours of Delay (000)	15	13	13	13	13	11
Rank	101	101	101	100	100	100
Annual Gallons of Wasted Fuel (000)	39	36	35	34	34	30
Rank	101	101	101	100	100	100
Annual Congestion Cost ($ million)	-	-	-	-	-	-
Rank	101	100	100	100	100	100

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Mobility Data for Brownsville TX

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	110	105	105	105	100	100
Rank	99	99	99	99	99	99
Commuters (1000s)	45	42	42	42	39	39
Daily Vehicle-Miles of Travel (1000s)						
Freeway	195	175	140	135	125	110
Arterial Streets	570	550	550	540	525	480
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)	114	105	80	71	65	64
Rank	100	100	101	101	101	101
Fuel per Peak Auto Commuter (gallons)	1	1	1	1	1	1
Rank	93	91	90	87	86	82
Annual Delay						
Total Delay (1000s of person-hours)	213	197	151	134	121	120
Rank	100	100	101	101	101	101
Delay per Auto Commuter (pers-hrs)	3	3	3	2	2	2
Rank	99	99	99	99	99	99
Travel Time Index	1.02	1.02	1.02	1.01	1.01	1.01
Rank	96	96	96	99	99	98
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	2	2	1	1	1	1
Rank	100	100	101	101	100	100
Cost per Auto Commuter ($)	51	43	52	41	34	34
Rank	99	99	100	100	100	99
Truck Congestion						
Annual Person-Hours of Delay (000)	9	8	6	6	5	5
Rank	100	100	101	101	101	101
Annual Gallons of Wasted Fuel (000)	24	22	17	15	14	13
Rank	100	100	101	101	101	101
Annual Congestion Cost ($ million)	-	-	-	-	-	-
Rank	99	99	99	98	96	95

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