Performance Measure Summary - Miami FL

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 Miami FL

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	6,040	5,990	5,920	5,860	5,800	5,720
Rank	4	4	4	4	4	4
Commuters (1000s)	2,808	2,786	2,753	2,724	2,748	2,751
Daily Vehicle-Miles of Travel (1000s)						
Freeway	46,868	46,596	44,769	43,683	41,175	41,775
Arterial Streets	53,296	52,974	51,322	50,168	49,181	49,680
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 ($/gallon)	2.28	2.12	2.23	3.27	3.47	3.50
Diesel ($/gallon)	2.48	2.31	2.55	3.60	3.90	3.87
System Performance	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
Congested Travel (% of peak VMT)	1.6	--	--	--	--	--
Congested System (% of lane-miles)	1.3	--	--	--	--	--
Congested Time (number of "Rush Hours")	4.5	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	103,239	101,567	99,801	97,602	96,026	94,115
Rank	4	4	4	4	4	4
Fuel per Peak Auto Commuter (gallons)	34	33	32	30	30	29
Rank	5	4	4	5	4	5
Annual Delay						
Total Delay (1000s of person-hours)	265,947	257,800	251,153	241,385	233,319	224,594
Rank	4	4	4	4	5	5
Delay per Auto Commuter (pers-hrs)	69	67	65	63	60	58
Rank	12	12	12	11	11	12
Travel Time Index	1.31	1.31	1.31	1.30	1.29	1.29
Rank	17	17	16	17	18	17
Commuter Stress Index	1.39	--	--	--	--	--
Rank	12	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	2.02	--	--	--	--	--
Rank	15	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	5,367	5,119	4,919	4,811	4,583	4,353
Rank	4	4	4	4	5	5
Cost per Auto Commuter ($)	1,412	1,378	1,335	1,275	1,245	1,214
Rank	12	12	12	12	12	12
Truck Congestion						
Annual Person-Hours of Delay (000)	11,170	10,828	10,548	10,138	9,799	9,433
Rank	4	4	4	4	5	5
Annual Gallons of Wasted Fuel (000)	21,887	21,532	21,158	20,692	20,357	19,952
Rank	4	4	4	4	4	4
Annual Congestion Cost ($ million)	565	527	488	473	434	405
Rank	4	4	4	4	4	5

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

Mobility Data for Miami FL

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	5,620	5,550	5,500	5,400	5,370	5,340
Rank	4	4	4	4	4	4
Commuters (1000s)	2,718	2,739	2,734	2,713	2,732	2,721
Daily Vehicle-Miles of Travel (1000s)						
Freeway	43,452	42,731	41,000	40,000	41,035	40,360
Arterial Streets	50,848	52,000	52,068	52,330	52,160	52,585
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 ($/gallon)	3.24	2.74	2.33	3.47	2.98	2.66
Diesel ($/gallon)	3.65	2.96	2.59	4.15	3.36	2.85
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)	92,205	90,695	90,154	97,190	95,590	94,889
Rank	4	4	4	4	4	4
Fuel per Peak Auto Commuter (gallons)	27	26	24	25	24	23
Rank	8	9	8	7	10	14
Annual Delay						
Total Delay (1000s of person-hours)	216,035	210,529	205,361	210,847	207,376	205,855
Rank	4	5	4	4	4	4
Delay per Auto Commuter (pers-hrs)	56	55	54	53	52	52
Rank	12	11	11	11	14	14
Travel Time Index	1.29	1.28	1.28	1.30	1.29	1.29
Rank	15	16	15	12	15	14
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	4,137	3,866	3,681	3,914	3,666	3,513
Rank	5	5	4	4	4	4
Cost per Auto Commuter ($)	1,205	1,211	1,202	1,223	1,250	1,275
Rank	12	11	10	10	10	10
Truck Congestion						
Annual Person-Hours of Delay (000)	9,073	8,842	8,625	8,856	8,710	8,646
Rank	4	5	4	4	4	4
Annual Gallons of Wasted Fuel (000)	19,548	19,227	19,113	20,604	20,265	20,117
Rank	4	4	4	4	4	4
Annual Congestion Cost ($ million)	426	387	366	402	368	345
Rank	4	5	5	4	4	4

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

Mobility Data for Miami FL

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	5,330	5,240	5,150	5,100	5,035	4,970
Rank	4	5	5	5	5	5
Commuters (1000s)	2,702	2,642	2,583	2,517	2,440	2,368
Daily Vehicle-Miles of Travel (1000s)						
Freeway	39,470	38,320	37,000	35,695	35,065	34,700
Arterial Streets	52,455	52,240	49,045	45,580	44,055	42,735
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 ($/gallon)	2.34	1.99	1.53	1.41	1.51	1.54
Diesel ($/gallon)	2.53	2.01	1.61	1.41	1.58	1.55
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)	94,093	92,315	89,351	88,502	83,233	78,896
Rank	4	4	4	4	4	4
Fuel per Peak Auto Commuter (gallons)	23	24	22	23	21	21
Rank	13	10	11	9	9	8
Annual Delay						
Total Delay (1000s of person-hours)	204,127	200,271	193,840	191,999	180,568	171,159
Rank	4	4	4	4	5	5
Delay per Auto Commuter (pers-hrs)	52	52	51	52	50	49
Rank	12	12	12	10	11	10
Travel Time Index	1.29	1.29	1.29	1.29	1.28	1.27
Rank	13	13	11	10	10	11
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	3,350	3,149	2,930	2,826	2,623	2,420
Rank	4	4	4	4	5	5
Cost per Auto Commuter ($)	1,307	1,326	1,318	1,334	1,271	1,239
Rank	10	10	10	9	10	10
Truck Congestion						
Annual Person-Hours of Delay (000)	8,573	8,411	8,141	8,064	7,584	7,189
Rank	4	4	4	4	5	5
Annual Gallons of Wasted Fuel (000)	19,948	19,571	18,942	18,762	17,645	16,726
Rank	4	4	4	4	4	4
Annual Congestion Cost ($ million)	325	299	273	258	238	218
Rank	4	4	4	4	5	5

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

Mobility Data for Miami FL

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	4,820	4,725	4,560	4,435	4,280	4,120
Rank	5	5	5	5	5	5
Commuters (1000s)	2,254	2,171	2,059	1,971	1,867	1,764
Daily Vehicle-Miles of Travel (1000s)						
Freeway	32,815	31,475	30,900	29,800	29,460	27,660
Arterial Streets	40,040	38,065	36,050	34,000	32,995	31,600
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 ($/gallon)	1.14	1.07	1.17	1.30	1.20	1.08
Diesel ($/gallon)	1.19	1.20	1.27	1.40	1.30	1.17
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)	71,303	67,238	60,817	54,169	49,880	45,857
Rank	5	5	6	6	7	7
Fuel per Peak Auto Commuter (gallons)	19	19	17	14	13	12
Rank	9	8	9	18	19	21
Annual Delay						
Total Delay (1000s of person-hours)	154,687	145,867	131,938	117,516	108,210	99,483
Rank	5	5	6	8	8	8
Delay per Auto Commuter (pers-hrs)	46	45	43	39	38	37
Rank	11	11	12	15	14	14
Travel Time Index	1.26	1.25	1.24	1.22	1.21	1.21
Rank	9	10	11	17	18	16
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	2,091	1,930	1,725	1,512	1,350	1,205
Rank	5	5	5	8	8	8
Cost per Auto Commuter ($)	1,158	1,117	1,025	935	887	840
Rank	10	11	12	14	14	16
Truck Congestion						
Annual Person-Hours of Delay (000)	6,497	6,126	5,541	4,936	4,545	4,178
Rank	5	5	6	8	8	8
Annual Gallons of Wasted Fuel (000)	15,116	14,254	12,893	11,484	10,574	9,722
Rank	5	5	6	6	7	7
Annual Congestion Cost ($ million)	185	172	155	138	124	112
Rank	5	5	5	8	8	8

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

Mobility Data for Miami FL

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	4,080	4,030	3,965	3,910	3,860	3,755
Rank	5	5	6	6	6	6
Commuters (1000s)	1,718	1,668	1,613	1,563	1,529	1,474
Daily Vehicle-Miles of Travel (1000s)						
Freeway	25,815	24,875	22,675	21,670	21,020	19,360
Arterial Streets	30,925	30,110	29,500	29,210	28,895	28,415
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 ($/gallon)	1.13	1.12	1.10	1.05	1.08	1.00
Diesel ($/gallon)	1.22	1.20	1.24	1.11	1.07	0.99
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)	42,860	40,980	37,494	36,152	34,153	32,890
Rank	7	7	8	8	9	9
Fuel per Peak Auto Commuter (gallons)	12	11	9	10	8	8
Rank	16	16	27	14	26	20
Annual Delay						
Total Delay (1000s of person-hours)	92,981	88,902	81,341	78,430	74,093	71,352
Rank	8	7	9	8	8	8
Delay per Auto Commuter (pers-hrs)	35	34	32	32	31	31
Rank	14	14	14	14	14	13
Travel Time Index	1.20	1.19	1.18	1.18	1.17	1.17
Rank	17	17	16	16	16	16
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	1,102	1,026	914	846	763	703
Rank	8	7	8	8	8	8
Cost per Auto Commuter ($)	805	796	750	755	756	765
Rank	17	16	17	17	17	17
Truck Congestion						
Annual Person-Hours of Delay (000)	3,905	3,734	3,416	3,294	3,112	2,997
Rank	8	7	9	8	8	8
Annual Gallons of Wasted Fuel (000)	9,086	8,688	7,949	7,664	7,241	6,973
Rank	7	7	8	8	9	9
Annual Congestion Cost ($ million)	104	98	89	83	78	73
Rank	8	7	8	8	8	8

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

Mobility Data for Miami FL

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	3,670	3,635	3,580	3,495	3,415	3,370
Rank	6	6	6	6	7	7
Commuters (1000s)	1,427	1,401	1,367	1,322	1,282	1,253
Daily Vehicle-Miles of Travel (1000s)						
Freeway	17,425	15,770	14,605	13,375	12,405	11,960
Arterial Streets	27,790	27,025	26,010	25,320	24,910	24,500
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 ($/gallon)	1.00	0.98	1.28	1.29	1.32	1.38
Diesel ($/gallon)	0.99	0.97	1.27	1.28	1.31	1.37
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)	31,600	29,770	28,586	26,851	25,197	23,803
Rank	8	9	8	8	7	8
Fuel per Peak Auto Commuter (gallons)	8	7	7	7	6	6
Rank	18	21	15	12	13	10
Annual Delay						
Total Delay (1000s of person-hours)	68,554	64,583	62,016	58,252	54,662	51,639
Rank	8	9	9	9	8	8
Delay per Auto Commuter (pers-hrs)	31	29	29	28	27	26
Rank	13	12	12	12	12	12
Travel Time Index	1.17	1.16	1.16	1.15	1.15	1.14
Rank	15	15	11	12	10	12
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	651	594	569	518	470	433
Rank	8	9	9	9	8	8
Cost per Auto Commuter ($)	766	750	733	714	700	684
Rank	16	12	12	12	12	12
Truck Congestion						
Annual Person-Hours of Delay (000)	2,879	2,712	2,605	2,447	2,296	2,169
Rank	8	9	9	9	8	8
Annual Gallons of Wasted Fuel (000)	6,699	6,311	6,060	5,692	5,342	5,046
Rank	8	9	8	8	7	8
Annual Congestion Cost ($ million)	70	65	63	59	55	51
Rank	8	9	9	8	7	8

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