

Performance Measure Summary – Sarasota-Bradenton, FL

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2007. There is no single performance measure that experts agree “says it all.” The best comparison of congestion levels and trends is done between regions of similar size, over several years, and with a few measures of congestion. 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. A few key points should be recognized by users of the Urban Mobility Report data.

Use the Trends – The multi-year performance measures are better indicators, in most cases, than 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 the top of a few 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. The ratio of travel time in the peak period to travel time in free-flow. A value of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak.

Peak Travelers – Number of travelers (using any travel mode) who begin a trip during the morning or evening peak travel periods (6 to 9 a.m. and 4 to 7 p.m.).

Annual Delay per Traveler – A yearly sum of all the per-trip delays. This measure illustrates the effect of the per-mile congestion as well as the length of each trip. The extra time required to travel in the peak period is divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.).

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 (60 mph on freeways and 35 mph on arterials) – These values are used as the national comparison thresholds. Other speed values may be appropriate for urban areas or sub-regions.

Excess Fuel Consumed – Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

Public Transportation – Regular route service from all public transportation providers in an urban area.

Operations Treatments – Freeway incident management, freeway ramp metering, arterial street signal coordination and arterial street access management.

Congestion Cost – Value of travel delay for 2007 (estimated at \$15.47 per hour of person travel and \$102.12 per hour of truck time) and excess fuel consumption (estimated using state average cost per gallon).

Annual Increase Needed to Maintain Constant Congestion Level – Number of lane-miles that must be added to the road system each year – or – the number of new transit riders or carpoolers that must be added to keep congestion levels the same as the previous year.

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). The annual change in miles traveled, therefore, includes both new travel due to growth and travel that previously occurred in areas designated as rural.

Number of Rush Hours – Time when system might have congestion.

The Mobility Data for Sarasota-Bradenton FL

Inventory Measures	2007	2006	2005	2004	2003	2002
Urban Area Information						
Population (1000s)	665	650	640	620	590	570
Rank	60	61	61	62	64	65
Urban Area (square miles)	505	500	500	500	495	490
Population Density (persons/sq mile)	1,317	1,300	1,280	1,240	1,192	1,163
Peak Travelers (1000s)	366	356	348	335	317	303
Freeway						
Daily Vehicle-Miles of Travel (1000s)	2,575	2,645	2,510	2,325	2,100	1,900
Lane-Miles	165	165	165	160	145	130
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	6,545	6,750	6,575	6,400	6,110	5,815
Lane-Miles	965	955	940	925	920	915
Public Transportation						
Annual Psgr-Miles of Travel (millions)	20.4	19.2	13.2	13.6	17.0	17.7
Annual Unlinked Psgr Trips (millions)	4.0	3.9	3.5	3.3	3.2	2.8
Cost Components						
Value of Time (\$/hour)	15.47	15.06	14.58	14.10	13.73	13.43
Commercial Cost (\$/hour)	102.12	98.77	94.06	86.24	82.38	79.96
Fuel Cost (\$/gallon)	2.98	2.66	2.34	1.99	1.53	1.41
System Performance	2007	2006	2005	2004	2003	2002
Congested Travel (% of peak VMT)	49	49	48	48	47	46
Congested System (% of lane-miles)	45	44	44	44	44	44
Congested Time (number of "Rush Hours")	7.6	7.6	7.6	7.4	7.4	7.4
Annual Increase Needed to Maintain Constant Congestion Level:						
Lane-miles	39	61	63	66	65	65
Transit Riders or Carpoolers (millions)	11	18	18	18	17	17
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	5,418	5,741	5,293	5,099	4,702	4,420
Rank	58	56	56	56	58	58
Fuel per Peak Traveler (gallons)	15	16	15	15	15	15
Rank	52	48	51	49	48	50
Annual Delay						
Total Delay (1000s of person-hours)	9,030	9,723	8,840	8,572	7,924	7,536
Rank	58	56	56	55	58	56
Delay per Peak Traveler (person-hours)	25	27	25	26	25	25
Rank	51	47	50	48	48	48
Delay due to Incidents (percent)	53	53	53	53	53	53
Travel Time Index	1.19	1.20	1.19	1.19	1.18	1.18
Rank	37	36	36	38	39	37
Congestion Cost						
Total Cost (\$ millions)	176	183	160	148	130	120
Rank	58	56	55	56	58	58
Cost per Peak Traveler (\$)	480	514	460	442	410	396
Rank	54	48	50	48	49	51

Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.

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

The Mobility Data for Sarasota-Bradenton FL, Continued

Inventory Measures	2001	2000	1999	1998	1997
Urban Area Information					
Population (1000s)	550	535	525	515	505
Rank	67	67	65	65	65
Urban Area (square miles)	485	480	480	475	495
Population Density (persons/sq mile)	1,134	1,115	1,094	1,084	1,020
Peak Travelers (1000s)	288	277	268	260	251
Freeway					
Daily Vehicle-Miles of Travel (1000s)	1,700	1,500	1,300	1,100	850
Lane-Miles	115	100	90	89	70
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	5,525	5,385	5,200	5,000	4,850
Lane-Miles	915	910	905	900	895
Public Transportation					
Annual Psgr-Miles of Travel (millions)	16.1	14.7	14.2	13.5	13.8
Annual Unlinked Psgr Trips (millions)	2.7	2.5	2.7	2.4	2.7
Cost Components					
Value of Time (\$/hour)	13.22	12.85	12.43	12.17	11.98
Commercial Cost (\$/hour)	80.88	80.75	74.23	72.61	74.32
Fuel Cost (\$/gallon)	1.51	1.54	1.14	1.07	1.17
System Performance	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)	46	46	47	44	45
Congested System (% of lane-miles)	45	45	45	46	46
Congested Time (number of "Rush Hours")	7.2	7.2	7.2	6.4	6.2
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	63	62	60	51	40
Transit Riders or Carpoolers (millions)	15	15	14	11	8
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	4,158	3,972	3,893	3,339	3,225
Rank	61	62	62	63	60
Fuel per Peak Traveler (gallons)	14	14	15	13	13
Rank	53	50	46	52	52
Annual Delay					
Total Delay (1000s of person-hours)	7,060	6,770	6,678	5,737	5,572
Rank	59	61	60	63	60
Delay per Peak Traveler (person-hours)	24	24	25	22	22
Rank	49	48	46	50	48
Delay due to Incidents (percent)	53	52	52	52	52
Travel Time Index	1.18	1.18	1.19	1.17	1.18
Rank	34	35	31	35	29
Congestion Cost					
Total Cost (\$ millions)	111	104	97	82	79
Rank	62	63	63	63	60
Cost per Peak Traveler (\$)	386	375	362	314	314
Rank	49	51	48	54	53

Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.

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

The Mobility Data for Sarasota-Bradenton FL, Continued

Inventory Measures	1996	1995	1994	1993	1992
Urban Area Information					
Population (1000s)	505	500	490	475	465
Rank	65	65	66	67	67
Urban Area (square miles)	470	470	460	460	430
Population Density (persons/sq mile)	1,074	1,064	1,065	1,033	1,081
Peak Travelers (1000s)	248	243	235	225	218
Freeway					
Daily Vehicle-Miles of Travel (1000s)	650	500	400	370	345
Lane-Miles	60	55	50	50	50
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	4,710	4,600	4,450	4,385	4,300
Lane-Miles	890	890	885	880	880
Public Transportation					
Annual Psgr-Miles of Travel (millions)	12.4	11.1	9.7	9.1	9.0
Annual Unlinked Psgr Trips (millions)	2.6	2.4	2.1	2.1	2.0
Cost Components					
Value of Time (\$/hour)	11.71	11.37	11.06	10.78	10.47
Commercial Cost (\$/hour)	74.17	71.54	69.53	67.77	66.19
Fuel Cost (\$/gallon)	1.30	1.20	1.08	1.13	1.12
System Performance	1996	1995	1994	1993	1992
Congested Travel (% of peak VMT)	45	40	43	42	38
Congested System (% of lane-miles)	47	42	47	47	43
Congested Time (number of "Rush Hours")	5.8	5.6	5.2	5.2	5.0
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	29	28	31	35	37
Transit Riders or Carpoolers (millions)	6	5	5	6	6
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	2,997	2,488	2,595	2,515	2,210
Rank	61	63	62	62	61
Fuel per Peak Traveler (gallons)	12	10	11	11	10
Rank	54	58	51	48	48
Annual Delay					
Total Delay (1000s of person-hours)	5,190	4,309	4,534	4,413	3,917
Rank	61	62	60	55	58
Delay per Peak Traveler (person-hours)	21	18	19	20	18
Rank	50	57	51	45	46
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.17	1.15	1.16	1.16	1.14
Rank	32	36	27	26	30
Congestion Cost					
Total Cost (\$ millions)	72	58	60	57	49
Rank	62	63	60	58	60
Cost per Peak Traveler (\$)	292	240	253	252	225
Rank	54	58	52	49	49

Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.

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

The Mobility Data for Sarasota-Bradenton FL, Continued

Inventory Measures	1991	1990	1989	1988	1987
Urban Area Information					
Population (1000s)	455	430	405	390	380
Rank	67	69	69	69	69
Urban Area (square miles)	420	405	395	385	380
Population Density (persons/sq mile)	1,083	1,062	1,025	1,013	1,000
Peak Travelers (1000s)	210	196	183	175	169
Freeway					
Daily Vehicle-Miles of Travel (1000s)	350	340	320	300	270
Lane-Miles	50	50	50	45	45
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	4,275	4,085	3,815	3,650	3,545
Lane-Miles	875	855	825	800	780
Public Transportation					
Annual Psgr-Miles of Travel (millions)	8.7	8.1	7.5	6.7	6.8
Annual Unlinked Psgr Trips (millions)	2.0	1.8	1.6	1.5	1.4
Cost Components					
Value of Time (\$/hour)	10.17	9.75	9.25	8.83	8.48
Commercial Cost (\$/hour)	64.55	62.47	59.16	56.03	54.62
Fuel Cost (\$/gallon)	1.10	1.05	1.08	1.00	1.00
System Performance	1991	1990	1989	1988	1987
Congested Travel (% of peak VMT)	38	36	34	34	36
Congested System (% of lane-miles)	43	43	42	43	47
Congested Time (number of "Rush Hours")	5.0	4.6	4.2	4.2	4.0
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	43	28	18	17	27
Transit Riders or Carpoolers (millions)	8	5	3	3	4
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	2,195	1,949	1,693	1,575	1,643
Rank	56	58	61	59	54
Fuel per Peak Traveler (gallons)	10	10	9	9	10
Rank	48	49	46	42	35
Annual Delay					
Total Delay (1000s of person-hours)	3,888	3,408	2,970	2,747	2,864
Rank	53	57	58	56	52
Delay per Peak Traveler (person-hours)	18	17	16	16	17
Rank	43	44	43	41	32
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.14	1.13	1.12	1.12	1.13
Rank	26	27	25	24	17
Congestion Cost					
Total Cost (\$ millions)	47	40	33	29	29
Rank	56	57	58	57	52
Cost per Peak Traveler (\$)	225	203	180	166	173
Rank	45	48	45	43	38

Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.

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

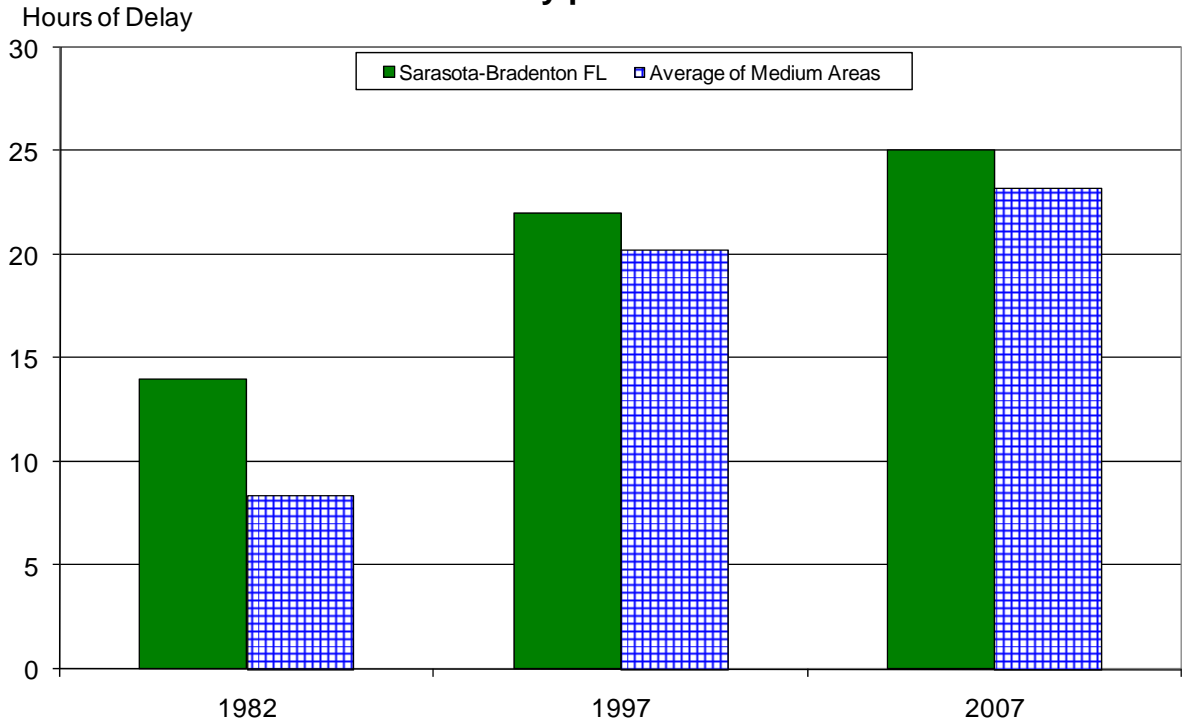
The Mobility Data for Sarasota-Bradenton FL, Continued

Inventory Measures	1986	1985	1984	1983	1982
Urban Area Information					
Population (1000s)	370	360	350	340	325
Rank	69	69	70	70	70
Urban Area (square miles)	365	350	340	330	320
Population Density (persons/sq mile)	1,014	1,029	1,029	1,030	1,016
Peak Travelers (1000s)	164	158	152	147	139
Freeway					
Daily Vehicle-Miles of Travel (1000s)	260	250	240	240	240
Lane-Miles	45	45	45	45	45
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	3,420	3,550	3,485	3,345	3,000
Lane-Miles	760	745	735	715	700
Public Transportation					
Annual Psgr-Miles of Travel (millions)	4.8	6.5	13.3	13.3	13.3
Annual Unlinked Psgr Trips (millions)	1.6	1.8	1.7	1.7	1.7
Cost Components					
Value of Time (\$/hour)	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	52.63	55.80	54.65	52.70	52.13
Fuel Cost (\$/gallon)	0.98	1.28	1.29	1.32	1.38
System Performance	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	35	39	39	38	29
Congested System (% of lane-miles)	42	42	42	42	42
Congested Time (number of "Rush Hours")	4.0	4.6	4.6	4.4	3.4
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	--	--	--	--	--
Transit Riders or Carpoolers (millions)	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,558	1,824	1,769	1,644	1,122
Rank	51	43	40	40	46
Fuel per Peak Traveler (gallons)	10	12	12	11	8
Rank	33	17	16	15	24
Annual Delay					
Total Delay (1000s of person-hours)	2,730	3,180	3,081	2,881	2,007
Rank	50	42	39	37	44
Delay per Peak Traveler (person-hours)	17	20	20	20	14
Rank	30	17	15	11	24
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.13	1.15	1.14	1.14	1.10
Rank	15	8	9	6	15
Congestion Cost					
Total Cost (\$ millions)	27	32	30	27	18
Rank	51	42	40	37	45
Cost per Peak Traveler (\$)	165	201	196	184	132
Rank	34	18	18	16	24

Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.

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

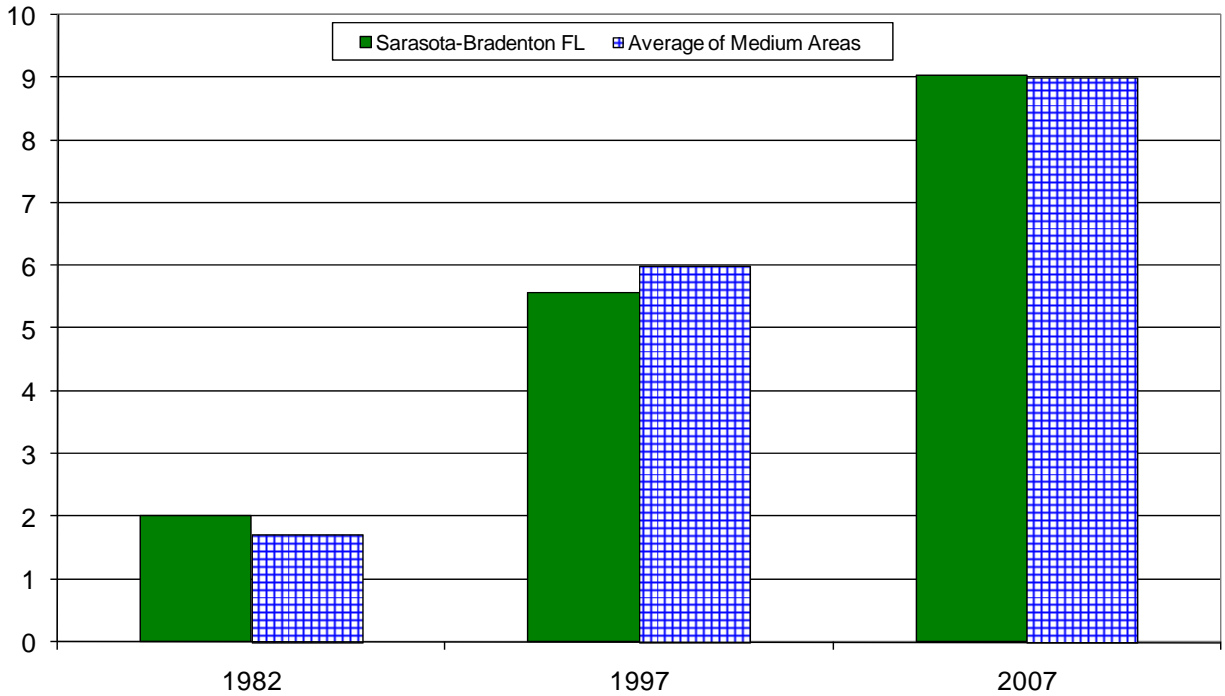
Growth in Delay per Peak Traveler



Note: Medium areas have populations between 0.5 and 1 million

Annual Hours of Delay (millions)

Growth in Total Delay



Note: Medium areas have populations between 0.5 and 1 million

**Benefits from Public Transportation Service and Operations Strategies in
Sarasota-Bradenton FL**

Operations Strategies	2007	2006	2005	2004
Freeway Ramp Metering				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	--	--	--	--
Freeway Incident Management				
Cameras				
Percent of Roadway Miles	--	--	--	--
Service Patrols				
Percent of Roadway Miles	45	45	47	47
Annual Delay Reduction (1000 hours)	18	15	12	10
Arterial Signal Coordination				
Percent of Roadway Miles	80	81	68	67
Annual Delay Reduction (1000 hours)	102	98	73	77
Arterial Access Management				
Percent of Roadway Miles	61	61	60	56
Annual Delay Reduction (1000 hours)	444	460	422	427
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	564	573	506	514
Annual Delay Saved per Peak Traveler (hours)	2	2	1	2
Annual Congestion Cost Savings (\$million)	10.9	10.7	9.1	8.8
Travel Time Index with Strategies	1.189	1.195	1.185	1.186
Travel Time Index (Base)	1.199	1.206	1.195	1.196
Public Transportation Service	2007	2006	2005	2004
Existing Service				
Annual Passenger-miles of travel (million)	20.4	19.2	13.2	13.6
Unlinked Passenger Trips (million)	4.0	3.9	3.5	3.3
Travel Time Index (combined road and transit)	1.198	1.204	1.194	1.195
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.200	1.206	1.195	1.196
Annual Increase				
Delay (1000 hours)	135	122	86	83
Delay per Peak Traveler (hours)	0	0	0	0
Congestion Cost (\$million)	2.6	2.2	1.5	1.4

**Benefits from Public Transportation Service and Operations Strategies in
Sarasota-Bradenton FL, Continued**

Operations Strategies	2003	2002	2001	2000
Freeway Ramp Metering				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	--	--	--	--
Freeway Incident Management				
Cameras				
Percent of Roadway Miles	--	--	--	--
Service Patrols				
Percent of Roadway Miles	34	38	--	--
Annual Delay Reduction (1000 hours)	3	2	--	--
Arterial Signal Coordination				
Percent of Roadway Miles	51	44	40	40
Annual Delay Reduction (1000 hours)	87	78	45	44
Arterial Access Management				
Percent of Roadway Miles	40	40	40	40
Annual Delay Reduction (1000 hours)	349	347	360	352
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	440	427	404	396
Annual Delay Saved per Peak Traveler (hours)	1	1	1	1
Annual Congestion Cost Savings (\$million)	7.2	6.8	6.3	6.0
Travel Time Index with Strategies	1.182	1.182	1.182	1.182
Travel Time Index (Base)	1.191	1.191	1.191	1.192
Public Transportation Service	2003	2002	2001	2000
Existing Service				
Annual Passenger-miles of travel (million)	17.0	17.7	16.1	14.7
Unlinked Passenger Trips (million)	3.2	2.8	2.7	2.5
Travel Time Index (combined road and transit)	1.190	1.190	1.190	1.190
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.191	1.192	1.191	1.192
Annual Increase				
Delay (1000 hours)	95	111	88	82
Delay per Peak Traveler (hours)	0	0	0	0
Congestion Cost (\$million)	1.5	1.7	1.4	1.2

**Comparison of Several Key Mobility Performance Measures
Medium Group – 500,000 to 1 million population urban areas**

Urban Area	Delay per Traveler	Travel Time Index	Total Delay	1982 to 2007	
				Delay per Traveler	Total Delay
Nashville-Davidson, TN	H+	0	H+	F	F+
Salt Lake City, UT	H	H+	H+	F	F+
Richmond, VA	L	L-	H	0	F+
Louisville, KY-IN	H+	H+	H+	F+	F+
Hartford, CT	L	L	H	F	F+
Bridgeport-Stamford, CT-NY	H+	H+	H+	F+	F+
Oklahoma City, OK	H	L	H+	F+	F+
Tulsa, OK	0	L	0	0	F
Tucson, AZ	H+	H+	H+	F	F+
Dayton, OH	L-	L-	L-	S-	S-
Rochester, NY	L-	L-	L-	S-	S-
Birmingham, AL	H+	0	H+	F+	F+
Lancaster-Palmdale, CA	L-	L	L-	S-	S-
Honolulu, HI	H	H+	H	S	S
El Paso, TX-NM	L	L	L	0	S
Oxnard-Ventura, CA	H+	H+	H+	F+	F+
Sarasota-Bradenton, FL	H	H+	0	S-	0
Springfield, MA-CT	L-	L-	L-	S-	S-
Omaha, NE-IA	H	H	0	F+	F
Fresno, CA	L	0	L	S-	S-
Allentown-Bethlehem, PA-NJ	0	0	L	S	S-
Akron, OH	L-	L-	L-	S-	S-
Grand Rapids, MI	0	L	L	0	S
Albany-Schenectady, NY	L	L	L	0	S-
Albuquerque, NM	H+	H	H	F+	F+
New Haven, CT	L	L	L-	0	S-
Indio-Cathedral City-Palm Springs, CA	L-	0	L-	S-	S-
Toledo, OH-MI	L-	L-	L-	S	S-
Poughkeepsie-Newburgh, NY	L-	L-	L-	S-	S-
Bakersfield, CA	L-	L-	L-	S-	S-
Colorado Springs, CO	0	0	L	F	S-

0 – Average congestion levels or average congestion growth

H Higher congestion; H+ Much higher congestion; F Faster congestion growth; F+ Much faster growth

L Lower congestion; L- Much lower congestion; S Slower congestion growth; S- Much slower growth

Key Mobility Performance Measure Labels

Note: Designation of an urban area congestion problem as “Much higher”, “Much faster growth”, etc. is determined using a general indicator of the accuracy of the congestion estimates. For regions with the same indicator label, there may be no difference in congestion levels. Different values are used for the indicators in regions over 1 million population and below 1 million population.

Measures	Differences Within These Values May Not Indicate a Difference in Congestion Level	
	Above 1M Population	Below 1M Population
2007 Values Delay per Traveler - Travel Time Index - Total Delay -	Above 1M Population 5 Hours 5 Index Points 5 Hours x Average Population	Below 1M Population 3 Hours 3 Index Points 3 Hours x Average Population
1982 to 2007 Trends Delay per Traveler - Total Delay -	5 Hours 5 Hours x Average Population	3 Hours 3 Hours x Average Population