

.Performance Measure Summary – Jacksonville, 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 Jacksonville FL

Inventory Measures	2007	2006	2005	2004	2003	2002
Urban Area Information						
Population (1000s)	1,040	1,015	990	965	925	905
Rank	40	43	42	42	44	43
Urban Area (square miles)	755	750	750	750	750	745
Population Density (persons/sq mile)	1,377	1,353	1,320	1,287	1,233	1,215
Peak Travelers (1000s)	582	564	546	530	505	487
Freeway						
Daily Vehicle-Miles of Travel (1000s)	12,460	12,420	11,500	10,825	10,275	9,965
Lane-Miles	780	775	775	760	735	730
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	9,645	9,815	10,000	9,895	9,275	8,925
Lane-Miles	1,510	1,505	1,500	1,490	1,480	1,480
Public Transportation						
Annual Psgr-Miles of Travel (millions)	64	68	67	66	68	59
Annual Unlinked Psgr Trips (millions)	12	12	11	10	10	9
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)	64	62	61	58	55	53
Congested System (% of lane-miles)	57	55	53	52	52	52
Congested Time (number of "Rush Hours")	7.4	7.4	7.2	7.0	6.8	6.4
Annual Increase Needed to Maintain Constant Congestion Level:						
Lane-miles	73	91	72	73	51	51
Transit Riders or Carpoolers (millions)	25	31	24	23	16	15
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	15,711	14,832	14,235	13,829	12,642	11,356
Rank	32	34	35	35	36	36
Fuel per Peak Traveler (gallons)	27	26	26	26	25	23
Rank	23	29	29	27	25	30
Annual Delay						
Total Delay (1000s of person-hours)	22,491	21,527	21,056	21,076	19,321	17,576
Rank	33	33	35	35	36	36
Delay per Peak Traveler (person-hours)	39	38	39	40	38	36
Rank	24	30	30	26	24	25
Delay due to Incidents (percent)	55	55	54	54	54	54
Travel Time Index	1.23	1.22	1.21	1.22	1.21	1.19
Rank	32	33	35	30	33	34
Congestion Cost						
Total Cost (\$ millions)	457	419	391	371	326	286
Rank	33	34	36	36	36	36
Cost per Peak Traveler (\$)	784	742	715	701	645	588
Rank	31	33	34	29	29	32

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 Jacksonville FL, Continued

Inventory Measures	2001	2000	1999	1998	1997
Urban Area Information					
Population (1000s)	890	865	850	840	825
Rank	42	42	43	43	44
Urban Area (square miles)	740	735	735	720	665
Population Density (persons/sq mile)	1,203	1,177	1,156	1,167	1,241
Peak Travelers (1000s)	471	451	435	423	409
Freeway					
Daily Vehicle-Miles of Travel (1000s)	9,750	9,835	9,355	9,025	8,650
Lane-Miles	720	720	700	675	650
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	8,555	8,565	8,325	8,425	8,205
Lane-Miles	1,470	1,470	1,465	1,460	1,450
Public Transportation					
Annual Psgr-Miles of Travel (millions)	60	49	46	43	55
Annual Unlinked Psgr Trips (millions)	9	9	9	9	9
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)	50	51	49	50	50
Congested System (% of lane-miles)	48	48	49	49	49
Congested Time (number of "Rush Hours")	6.2	6.4	6.0	6.2	6.0
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	52	85	78	91	84
Transit Riders or Carpoolers (millions)	15	25	22	26	24
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	9,765	9,660	9,497	9,524	9,815
Rank	39	39	37	34	33
Fuel per Peak Traveler (gallons)	21	21	22	22	24
Rank	32	33	29	24	17
Annual Delay					
Total Delay (1000s of person-hours)	15,093	14,944	14,869	15,076	15,787
Rank	39	37	36	33	33
Delay per Peak Traveler (person-hours)	32	33	34	36	39
Rank	34	31	25	18	11
Delay due to Incidents (percent)	54	53	54	54	54
Travel Time Index	1.17	1.17	1.17	1.17	1.18
Rank	40	38	39	35	29
Congestion Cost					
Total Cost (\$ millions)	243	237	225	223	233
Rank	39	39	37	33	33
Cost per Peak Traveler (\$)	517	526	516	526	570
Rank	38	34	28	23	16

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 Jacksonville FL, Continued

Inventory Measures	1996	1995	1994	1993	1992
Urban Area Information					
Population (1000s)	820	805	785	770	760
Rank	43	43	43	43	43
Urban Area (square miles)	650	600	555	545	540
Population Density (persons/sq mile)	1,262	1,342	1,414	1,413	1,407
Peak Travelers (1000s)	400	386	371	358	348
Freeway					
Daily Vehicle-Miles of Travel (1000s)	8,150	7,000	6,520	6,065	5,760
Lane-Miles	600	550	530	500	480
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	8,120	8,200	8,275	8,090	8,080
Lane-Miles	1,445	1,435	1,425	1,420	1,420
Public Transportation					
Annual Psgr-Miles of Travel (millions)	46	48	51	48	48
Annual Unlinked Psgr Trips (millions)	9	9	10	10	10
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)	53	51	49	49	48
Congested System (% of lane-miles)	51	51	50	50	47
Congested Time (number of "Rush Hours")	6.2	5.8	5.8	5.6	5.6
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	85	68	74	54	72
Transit Riders or Carpoolers (millions)	23	18	19	14	18
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	10,191	9,614	8,441	7,854	7,596
Rank	30	30	31	31	30
Fuel per Peak Traveler (gallons)	25	25	23	22	22
Rank	13	10	12	14	14
Annual Delay					
Total Delay (1000s of person-hours)	15,915	15,419	13,696	12,781	12,273
Rank	30	31	30	30	28
Delay per Peak Traveler (person-hours)	40	40	37	36	35
Rank	10	10	11	11	13
Delay due to Incidents (percent)	54	54	54	53	54
Travel Time Index	1.20	1.20	1.18	1.17	1.17
Rank	21	18	20	22	20
Congestion Cost					
Total Cost (\$ millions)	233	217	187	170	159
Rank	30	30	31	31	29
Cost per Peak Traveler (\$)	581	562	502	475	456
Rank	13	10	12	13	14

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 Jacksonville FL, Continued

Inventory Measures	1991	1990	1989	1988	1987
Urban Area Information					
Population (1000s)	750	720	715	690	660
Rank	42	42	42	43	44
Urban Area (square miles)	540	540	540	535	535
Population Density (persons/sq mile)	1,389	1,333	1,324	1,290	1,234
Peak Travelers (1000s)	338	319	315	301	286
Freeway					
Daily Vehicle-Miles of Travel (1000s)	5,470	5,375	5,010	5,205	4,715
Lane-Miles	460	440	430	430	430
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	7,810	7,470	7,280	7,115	6,775
Lane-Miles	1,405	1,400	1,390	1,385	1,375
Public Transportation					
Annual Psgr-Miles of Travel (millions)	46	46	47	42	42
Annual Unlinked Psgr Trips (millions)	10	9	8	8	8
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)	42	42	37	36	32
Congested System (% of lane-miles)	41	41	40	39	39
Congested Time (number of "Rush Hours")	5.4	5.4	5.2	5.2	4.4
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	57	58	39	54	44
Transit Riders or Carpoolers (millions)	14	14	9	13	10
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	6,387	6,008	5,241	4,857	4,074
Rank	31	31	30	32	34
Fuel per Peak Traveler (gallons)	19	19	17	16	14
Rank	18	17	19	18	19
Annual Delay					
Total Delay (1000s of person-hours)	10,330	9,717	8,836	8,019	6,836
Rank	29	29	29	31	32
Delay per Peak Traveler (person-hours)	31	30	28	27	24
Rank	14	16	18	16	16
Delay due to Incidents (percent)	54	54	53	53	53
Travel Time Index	1.15	1.14	1.13	1.12	1.11
Rank	23	24	22	24	27
Congestion Cost					
Total Cost (\$ millions)	129	117	100	87	72
Rank	30	30	30	31	32
Cost per Peak Traveler (\$)	384	367	318	289	251
Rank	16	18	18	18	21

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.

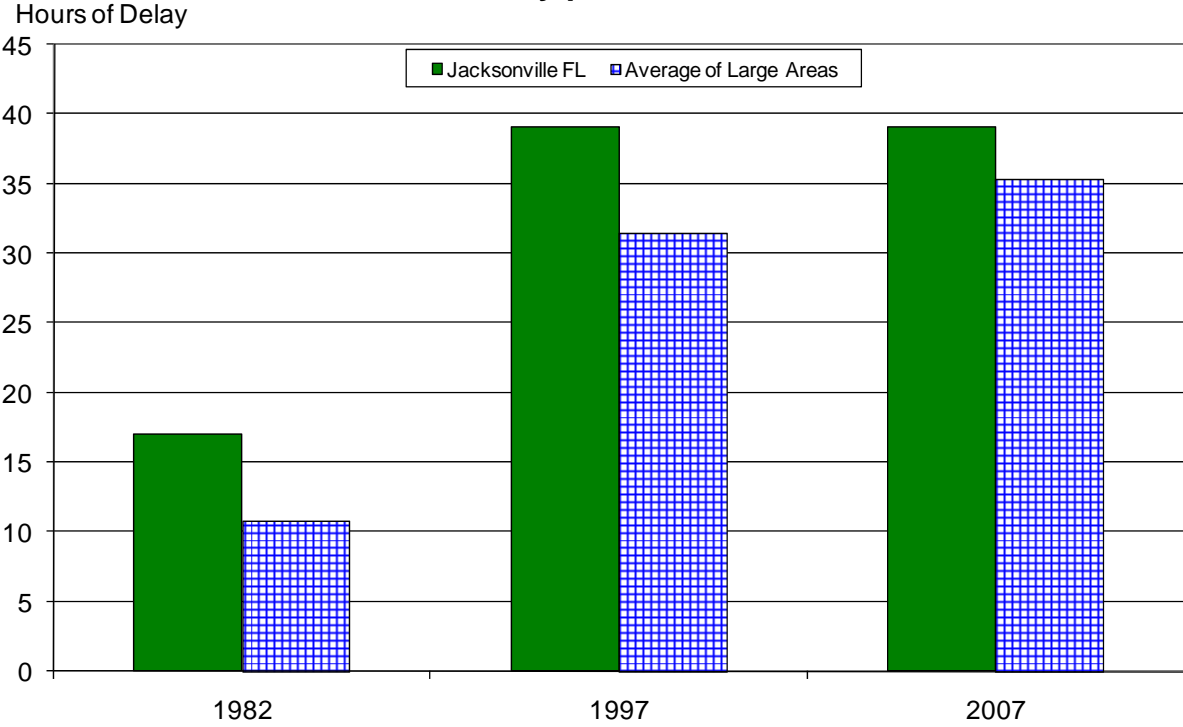
The Mobility Data for Jacksonville FL, Continued

Inventory Measures	1986	1985	1984	1983	1982
Urban Area Information					
Population (1000s)	650	645	630	620	615
Rank	44	44	44	44	44
Urban Area (square miles)	535	530	530	520	520
Population Density (persons/sq mile)	1,215	1,217	1,189	1,192	1,183
Peak Travelers (1000s)	279	275	266	260	255
Freeway					
Daily Vehicle-Miles of Travel (1000s)	4,720	4,480	4,505	4,085	3,900
Lane-Miles	425	420	410	390	390
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	6,710	6,520	6,555	6,565	6,285
Lane-Miles	1,375	1,365	1,360	1,360	1,350
Public Transportation					
Annual Psgr-Miles of Travel (millions)	42	42	44	44	44
Annual Unlinked Psgr Trips (millions)	8	10	10	10	10
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)	31	27	27	25	21
Congested System (% of lane-miles)	38	37	36	32	28
Congested Time (number of "Rush Hours")	4.4	4.2	4.4	4.2	3.6
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	--	--	--	--	--
Transit Riders or Carpoolers (millions)	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	3,942	3,472	3,588	3,141	2,436
Rank	31	30	28	30	32
Fuel per Peak Traveler (gallons)	14	13	13	12	10
Rank	13	14	12	9	14
Annual Delay					
Total Delay (1000s of person-hours)	6,696	5,962	6,241	5,514	4,259
Rank	29	30	28	28	31
Delay per Peak Traveler (person-hours)	24	22	23	21	17
Rank	11	12	11	9	15
Delay due to Incidents (percent)	53	53	53	53	53
Travel Time Index	1.10	1.10	1.10	1.09	1.07
Rank	24	23	20	20	26
Congestion Cost					
Total Cost (\$ millions)	68	61	62	53	40
Rank	30	30	27	29	32
Cost per Peak Traveler (\$)	243	222	233	204	157
Rank	15	16	11	12	16

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

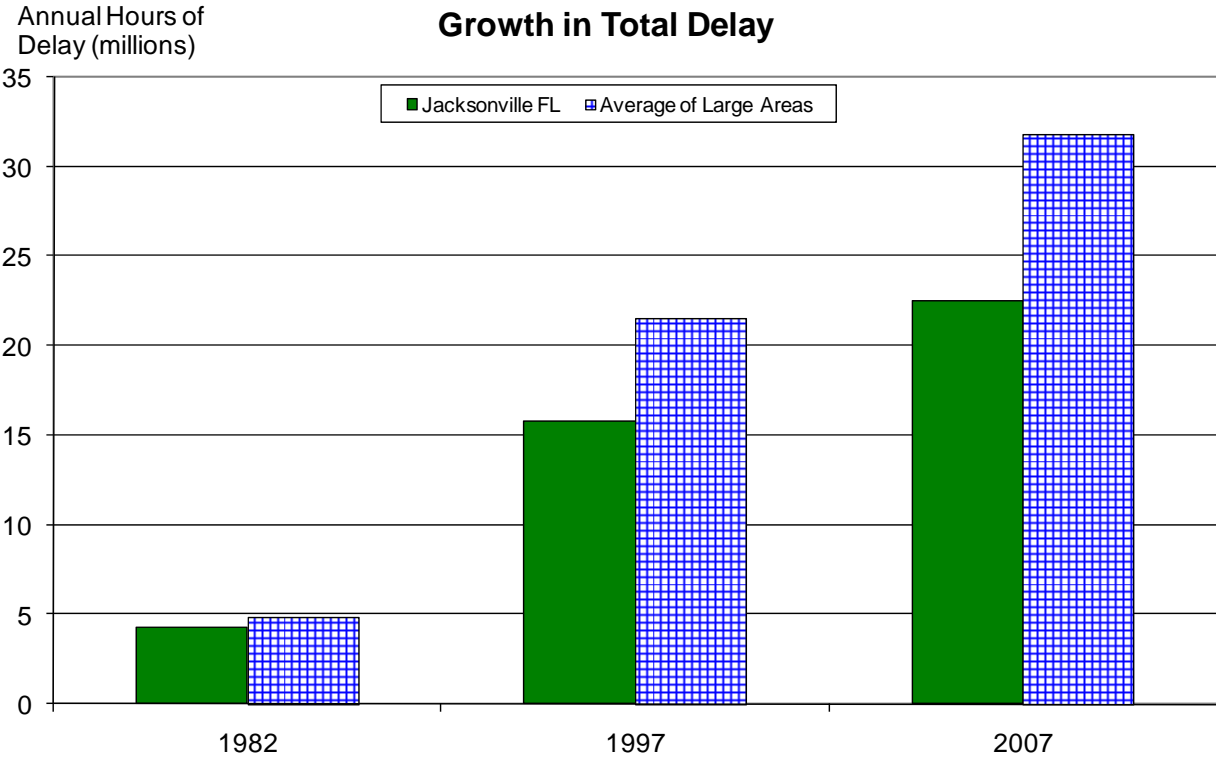
Note: Zeroes in the table reflect values less than 0.5.

Growth in Delay per Peak Traveler



Note: Large areas have populations between 1 and 3 million

Growth in Total Delay



Note: Large areas have populations between 1 and 3 million

**Benefits from Public Transportation Service and Operations Strategies in
Jacksonville 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	13	13	13	13
Service Patrols				
Percent of Roadway Miles	100	100	100	100
Annual Delay Reduction (1000 hours)	766	566	391	410
Arterial Signal Coordination				
Percent of Roadway Miles	76	76	72	72
Annual Delay Reduction (1000 hours)	156	166	140	158
Arterial Access Management				
Percent of Roadway Miles	38	38	32	32
Annual Delay Reduction (1000 hours)	553	544	495	432
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	1,475	1,276	1,026	999
Annual Delay Saved per Peak Traveler (hours)	3	2	2	2
Annual Congestion Cost Savings (\$million)	30.1	25.0	19.3	17.8
Travel Time Index with Strategies	1.230	1.215	1.215	1.217
Travel Time Index (Base)	1.243	1.227	1.225	1.227
Public Transportation Service	2007	2006	2005	2004
Existing Service				
Annual Passenger-miles of travel (million)	64	68	67	66
Unlinked Passenger Trips (million)	12	12	11	10
Travel Time Index (combined road and transit)	1.241	1.225	1.223	1.225
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.246	1.230	1.227	1.230
Annual Increase				
Delay (1000 hours)	511	530	457	551
Delay per Peak Traveler (hours)	1	1	1	1
Congestion Cost (\$million)	10.4	10.3	8.5	9.7

**Benefits from Public Transportation Service and Operations Strategies in
Jacksonville 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	14	14	14	14
Service Patrols				
Percent of Roadway Miles	100	100	86	65
Annual Delay Reduction (1000 hours)	426	342	236	143
Arterial Signal Coordination				
Percent of Roadway Miles	72	61	61	61
Annual Delay Reduction (1000 hours)	177	118	81	82
Arterial Access Management				
Percent of Roadway Miles	32	24	24	24
Annual Delay Reduction (1000 hours)	334	325	211	223
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	938	785	528	448
Annual Delay Saved per Peak Traveler (hours)	2	2	1	1
Annual Congestion Cost Savings (\$million)	16.0	13.0	8.7	7.2
Travel Time Index with Strategies	1.209	1.193	1.170	1.167
Travel Time Index (Base)	1.218	1.201	1.176	1.172
Public Transportation Service	2003	2002	2001	2000
Existing Service				
Annual Passenger-miles of travel (million)	68	59	60	48
Unlinked Passenger Trips (million)	10	9	9	9
Travel Time Index (combined road and transit)	1.216	1.200	1.174	1.171
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.222	1.205	1.178	1.175
Annual Increase				
Delay (1000 hours)	608	526	412	409
Delay per Peak Traveler (hours)	1	1	1	1
Congestion Cost (\$million)	10.3	8.6	6.7	6.5

**Comparison of Several Key Mobility Performance Measures
Large Group – 1 million to 3 million population urban areas**

Urban Area	Delay per Traveler	Travel Time Index	Total Delay	1982 to 2007	
				Delay per Traveler	Total Delay
San Diego, CA	H+	H+	H+	F+	F+
Minneapolis-St., Paul MN	H	0	H+	F+	F+
Baltimore, MD	H+	H+	H+	F+	F+
Tampa-St. Petersburg, FL	H+	H+	H+	0	F+
St. Louis, MO-IL	L-	L-	0	S-	S
Denver-Aurora, CO	H+	H+	H+	F	F+
Riverside-San Bernardino, CA	H+	H+	H+	F+	F+
Sacramento, CA	H	H+	H	0	F+
Pittsburgh, PA	L-	L-	L-	S-	S-
Portland, OR-WA	0	H	0	0	F
Cleveland, OH	L-	L-	L-	S-	S-
San Jose, CA	H+	H+	H+	F	F+
Cincinnati, OH-KY-IN	L-	L	L	S	S-
Virginia Beach, VA	L	L	L	S-	S-
Kansas City, MO-KS	L-	L-	L-	S-	S-
Milwaukee, WI	L-	L-	L-	S-	S-
San Antonio, TX	H	0	0	F+	F
Las Vegas, NV	H+	H	0	F+	F+
Orlando, FL	H+	H	H	F+	F+
Providence, RI-MA	L	L	L	0	S-
Columbus, OH	L	L	L	0	S-
Buffalo, NY	L-	L-	L-	S-	S-
New Orleans, LA	L-	L	L-	S-	S-
Charlotte, NC-SC	H	0	L	F	S-
Indianapolis, IN	H	0	L	S	S-
Jacksonville, FL	H	0	L	0	S-
Austin, TX	H	H	L	F	S-
Memphis, TN-MS-AR	L-	L-	L-	S	S-
Raleigh-Durham, NC	0	L	L-	0	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