

Performance Measure Summary – Oxnard-Ventura, CA

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 Oxnard-Ventura CA

Inventory Measures	2007	2006	2005	2004	2003	2002
Urban Area Information						
Population (1000s)	685	680	660	640	615	600
Rank	59	59	59	60	61	62
Urban Area (square miles)	265	260	250	240	230	225
Population Density (persons/sq mile)	2,585	2,615	2,640	2,667	2,674	2,667
Peak Travelers (1000s)	377	372	358	346	330	319
Freeway						
Daily Vehicle-Miles of Travel (1000s)	7,125	7,135	7,125	7,000	6,900	6,750
Lane-Miles	395	395	395	385	375	365
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	6,310	5,860	5,600	5,250	5,000	4,800
Lane-Miles	1,260	1,180	1,120	1,090	1,040	980
Public Transportation						
Annual Psgr-Miles of Travel (millions)	27.2	24.4	23.7	26.3	25.5	18.7
Annual Unlinked Psgr Trips (millions)	4.3	4.2	3.9	4.1	4.2	4.2
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)	3.24	2.88	2.62	2.28	1.78	1.66
System Performance	2007	2006	2005	2004	2003	2002
Congested Travel (% of peak VMT)	59	56	57	54	51	49
Congested System (% of lane-miles)	44	43	43	41	40	39
Congested Time (number of "Rush Hours")	7.4	7.6	7.6	7.6	7.6	7.6
Annual Increase Needed to Maintain Constant Congestion Level:						
Lane-miles	51	48	50	39	37	32
Transit Riders or Carpoolers (millions)	14	14	15	11	11	10
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	10,017	9,265	9,145	8,215	7,286	6,813
Rank	42	43	45	47	48	48
Fuel per Peak Traveler (gallons)	27	25	26	24	22	21
Rank	23	33	29	32	36	36
Annual Delay						
Total Delay (1000s of person-hours)	14,258	13,452	13,486	11,587	10,233	9,706
Rank	45	46	46	48	49	50
Delay per Peak Traveler (person-hours)	38	36	38	34	31	30
Rank	29	34	32	34	38	41
Delay due to Incidents (percent)	54	54	54	54	54	54
Travel Time Index	1.24	1.23	1.23	1.21	1.19	1.19
Rank	28	30	29	34	35	34
Congestion Cost						
Total Cost (\$ millions)	298	271	261	213	180	166
Rank	44	45	45	48	49	50
Cost per Peak Traveler (\$)	791	729	728	617	545	521
Rank	29	34	33	36	40	40

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 Oxnard-Ventura CA, Continued

Inventory Measures	2001	2000	1999	1998	1997
Urban Area Information					
Population (1000s)	580	560	545	540	530
Rank	62	62	64	64	64
Urban Area (square miles)	215	210	200	200	195
Population Density (persons/sq mile)	2,698	2,667	2,725	2,700	2,718
Peak Travelers (1000s)	304	290	278	273	264
Freeway					
Daily Vehicle-Miles of Travel (1000s)	6,625	6,375	6,275	6,080	5,950
Lane-Miles	355	355	355	355	350
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	4,545	4,435	4,460	4,380	4,320
Lane-Miles	955	935	850	800	750
Public Transportation					
Annual Psgr-Miles of Travel (millions)	21.5	22.3	20.2	17.4	15.7
Annual Unlinked Psgr Trips (millions)	4.4	4.3	4.0	3.8	3.6
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)	1.93	1.72	1.59	1.27	1.40
System Performance	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)	47	44	44	39	39
Congested System (% of lane-miles)	35	35	35	30	30
Congested Time (number of "Rush Hours")	7.6	7.4	7.4	7.4	7.4
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	23	20	20	23	21
Transit Riders or Carpoolers (millions)	7	6	6	7	7
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	6,267	5,416	5,232	4,219	4,046
Rank	50	52	53	56	57
Fuel per Peak Traveler (gallons)	21	19	19	15	15
Rank	32	37	38	46	44
Annual Delay					
Total Delay (1000s of person-hours)	8,847	7,570	7,264	5,915	5,640
Rank	50	54	56	61	59
Delay per Peak Traveler (person-hours)	29	26	26	22	21
Rank	41	45	45	50	52
Delay due to Incidents (percent)	54	54	54	53	53
Travel Time Index	1.18	1.16	1.15	1.12	1.12
Rank	34	40	44	49	49
Congestion Cost					
Total Cost (\$ millions)	151	126	116	91	87
Rank	50	53	53	61	58
Cost per Peak Traveler (\$)	497	436	416	334	328
Rank	41	45	44	51	50

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 Oxnard-Ventura CA, Continued

Inventory Measures	1996	1995	1994	1993	1992
Urban Area Information					
Population (1000s)	525	525	520	510	505
Rank	64	63	63	63	63
Urban Area (square miles)	190	190	190	190	190
Population Density (persons/sq mile)	2,763	2,763	2,737	2,684	2,658
Peak Travelers (1000s)	258	255	250	242	236
Freeway					
Daily Vehicle-Miles of Travel (1000s)	5,930	5,850	5,795	5,390	5,305
Lane-Miles	350	350	350	350	350
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	4,295	4,160	4,080	4,070	4,060
Lane-Miles	705	685	650	620	600
Public Transportation					
Annual Psgr-Miles of Travel (millions)	16.0	11.3	11.7	12.5	11.0
Annual Unlinked Psgr Trips (millions)	3.4	2.7	2.8	2.9	2.6
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)	1.21	1.27	1.16	1.23	1.28
System Performance	1996	1995	1994	1993	1992
Congested Travel (% of peak VMT)	39	37	37	32	30
Congested System (% of lane-miles)	30	27	27	25	22
Congested Time (number of "Rush Hours")	7.4	7.4	7.4	7.2	7.2
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	21	15	17	16	24
Transit Riders or Carpoolers (millions)	7	5	6	5	8
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	4,432	3,837	3,668	2,733	2,423
Rank	51	54	52	56	57
Fuel per Peak Traveler (gallons)	17	15	15	11	10
Rank	37	42	40	48	48
Annual Delay					
Total Delay (1000s of person-hours)	6,338	5,282	5,083	3,882	3,500
Rank	56	57	54	63	63
Delay per Peak Traveler (person-hours)	25	21	20	16	15
Rank	41	47	46	57	54
Delay due to Incidents (percent)	53	53	52	52	52
Travel Time Index	1.13	1.12	1.11	1.09	1.08
Rank	45	47	46	52	53
Congestion Cost					
Total Cost (\$ millions)	95	77	72	54	47
Rank	56	57	54	63	62
Cost per Peak Traveler (\$)	367	303	289	222	199
Rank	41	48	46	56	55

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 Oxnard-Ventura CA, Continued

Inventory Measures	1991	1990	1989	1988	1987
Urban Area Information					
Population (1000s)	495	480	465	460	450
Rank	63	65	65	65	65
Urban Area (square miles)	185	185	185	185	180
Population Density (persons/sq mile)	2,676	2,595	2,514	2,486	2,500
Peak Travelers (1000s)	229	219	210	207	200
Freeway					
Daily Vehicle-Miles of Travel (1000s)	5,200	5,120	5,040	4,925	4,745
Lane-Miles	350	345	345	340	340
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	4,055	4,170	4,010	3,815	3,560
Lane-Miles	590	580	575	560	550
Public Transportation					
Annual Psgr-Miles of Travel (millions)	10.4	9.6	9.5	9.5	9.0
Annual Unlinked Psgr Trips (millions)	2.5	2.2	2.0	1.6	1.6
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)	1.11	1.14	1.14	1.05	1.05
System Performance	1991	1990	1989	1988	1987
Congested Travel (% of peak VMT)	25	23	23	23	22
Congested System (% of lane-miles)	20	17	17	17	17
Congested Time (number of "Rush Hours")	7.2	7.2	7.2	7.2	6.6
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	32	45	57	59	63
Transit Riders or Carpoolers (millions)	11	16	19	20	20
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,948	1,894	1,711	1,576	1,527
Rank	61	60	60	58	57
Fuel per Peak Traveler (gallons)	9	9	8	8	8
Rank	50	50	51	46	44
Annual Delay					
Total Delay (1000s of person-hours)	2,810	2,723	2,406	2,213	2,179
Rank	63	63	62	62	60
Delay per Peak Traveler (person-hours)	12	12	11	11	11
Rank	59	58	58	56	53
Delay due to Incidents (percent)	53	53	54	54	55
Travel Time Index	1.06	1.06	1.06	1.05	1.06
Rank	56	56	56	59	51
Congestion Cost					
Total Cost (\$ millions)	36	34	29	25	24
Rank	63	61	61	62	60
Cost per Peak Traveler (\$)	159	155	136	121	119
Rank	59	58	58	57	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.

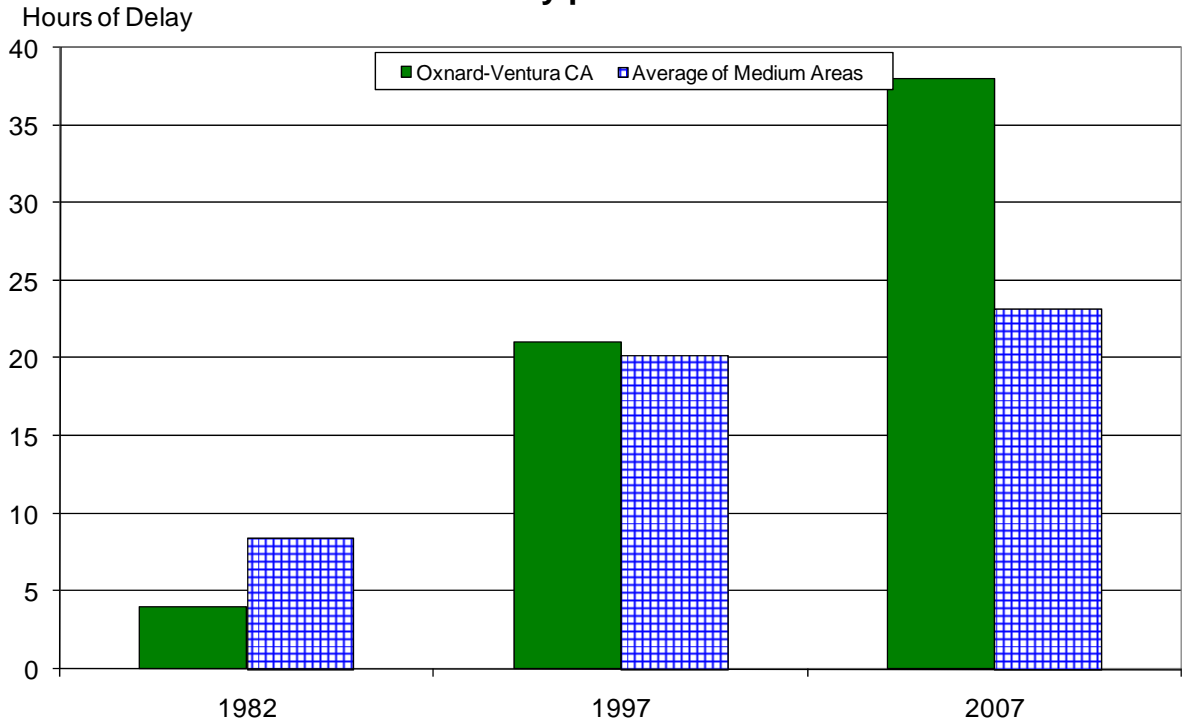
The Mobility Data for Oxnard-Ventura CA, Continued

Inventory Measures	1986	1985	1984	1983	1982
Urban Area Information					
Population (1000s)	440	430	420	410	400
Rank	64	65	65	65	65
Urban Area (square miles)	180	175	175	170	170
Population Density (persons/sq mile)	2,444	2,457	2,400	2,412	2,353
Peak Travelers (1000s)	194	189	183	177	171
Freeway					
Daily Vehicle-Miles of Travel (1000s)	4,425	4,110	3,595	3,370	3,005
Lane-Miles	330	325	315	310	300
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	3,420	3,215	3,110	3,000	2,905
Lane-Miles	545	530	525	510	500
Public Transportation					
Annual Psgr-Miles of Travel (millions)	9.0	8.6	8.9	8.9	8.9
Annual Unlinked Psgr Trips (millions)	1.6	1.5	1.5	1.5	1.5
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)	1.03	1.35	1.36	1.39	1.46
System Performance	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	17	16	14	13	12
Congested System (% of lane-miles)	12	12	12	12	12
Congested Time (number of "Rush Hours")	6.4	5.8	5.2	4.8	4.2
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	--	--	--	--	--
Transit Riders or Carpoolers (millions)	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,242	1,039	870	707	509
Rank	58	60	61	64	68
Fuel per Peak Traveler (gallons)	6	6	5	4	3
Rank	53	49	52	55	58
Annual Delay					
Total Delay (1000s of person-hours)	1,749	1,454	1,226	1,011	760
Rank	63	64	64	66	70
Delay per Peak Traveler (person-hours)	9	8	7	6	4
Rank	60	58	60	59	69
Delay due to Incidents (percent)	55	56	55	55	54
Travel Time Index	1.05	1.04	1.04	1.03	1.03
Rank	55	59	55	63	62
Congestion Cost					
Total Cost (\$ millions)	18	16	13	10	7
Rank	62	63	63	65	70
Cost per Peak Traveler (\$)	95	83	70	57	44
Rank	59	58	62	63	67

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.

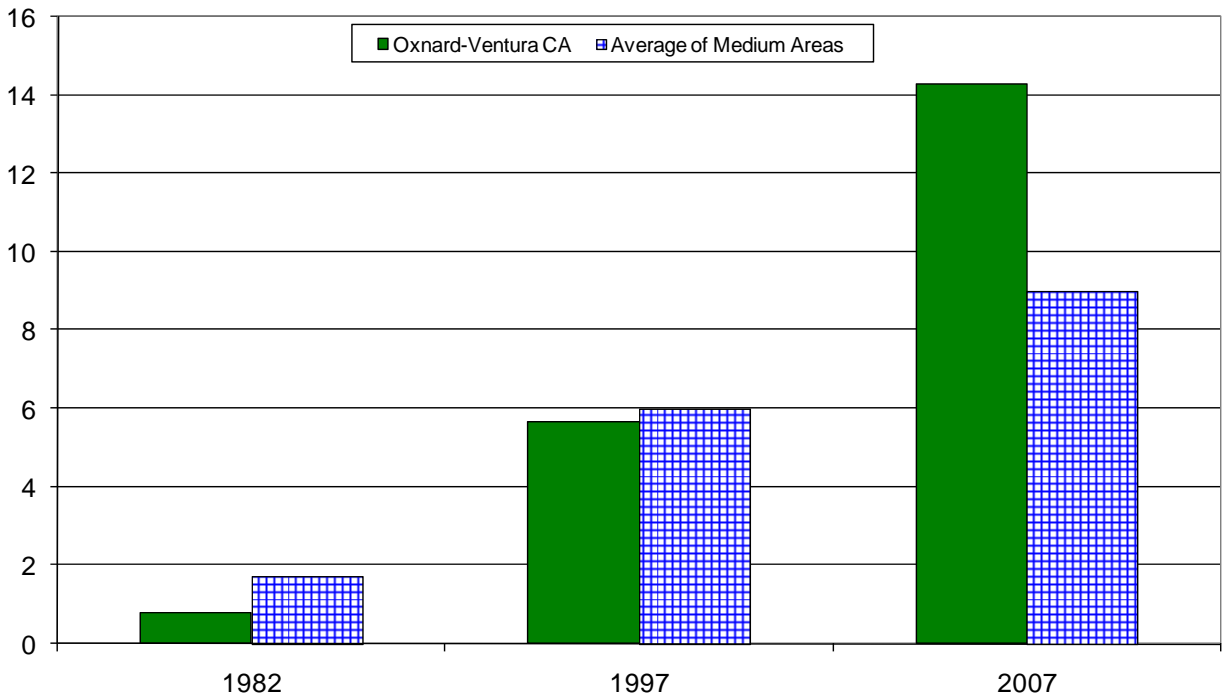
Growth in Delay per Peak Traveler



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
Oxnard-Ventura CA**

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	23	23	25	25
Service Patrols				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	15	17	18	15
Arterial Signal Coordination				
Percent of Roadway Miles	69	64	63	64
Annual Delay Reduction (1000 hours)	66	92	87	73
Arterial Access Management				
Percent of Roadway Miles	45	44	42	43
Annual Delay Reduction (1000 hours)	386	315	167	159
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	468	424	272	247
Annual Delay Saved per Peak Traveler (hours)	1	1	1	1
Annual Congestion Cost Savings (\$million)	9.3	8.2	5.1	4.5
Travel Time Index with Strategies	1.241	1.229	1.232	1.215
Travel Time Index (Base)	1.246	1.235	1.235	1.218
Public Transportation Service	2007	2006	2005	2004
Existing Service				
Annual Passenger-miles of travel (million)	27.2	24.4	23.7	26.3
Unlinked Passenger Trips (million)	4.3	4.2	3.9	4.1
Travel Time Index (combined road and transit)	1.245	1.233	1.234	1.217
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.249	1.236	1.237	1.220
Annual Increase				
Delay (1000 hours)	257	202	203	179
Delay per Peak Traveler (hours)	1	1	1	1
Congestion Cost (\$million)	5.3	4.0	3.9	3.2

**Benefits from Public Transportation Service and Operations Strategies in
Oxnard-Ventura CA, 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	25	25	--	--
Service Patrols				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	12	11	--	--
Arterial Signal Coordination				
Percent of Roadway Miles	67	71	73	75
Annual Delay Reduction (1000 hours)	74	72	68	65
Arterial Access Management				
Percent of Roadway Miles	45	48	49	47
Annual Delay Reduction (1000 hours)	133	155	173	183
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	219	237	241	248
Annual Delay Saved per Peak Traveler (hours)	1	1	1	1
Annual Congestion Cost Savings (\$million)	3.8	4.0	4.0	4.0
Travel Time Index with Strategies	1.195	1.187	1.177	1.157
Travel Time Index (Base)	1.198	1.191	1.180	1.160
Public Transportation Service	2003	2002	2001	2000
Existing Service				
Annual Passenger-miles of travel (million)	25.5	18.7	21.5	22.3
Unlinked Passenger Trips (million)	4.2	4.2	4.4	4.3
Travel Time Index (combined road and transit)	1.197	1.190	1.179	1.159
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.200	1.192	1.181	1.161
Annual Increase				
Delay (1000 hours)	179	136	123	118
Delay per Peak Traveler (hours)	1	0	0	0
Congestion Cost (\$million)	3.1	2.3	2.1	1.9

**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