Performance Measure Summary – Indio-Cathedral City-Palm Springs, 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 Indio-Cathedral City-Palm Springs CA

Inventory Measures	2007	2006	2005	2004	2003	2002
Urban Area Information						
Population (1000s)	555	550	510	470	440	410
Rank	70	70	71	74	74	78
Urban Area (square miles)	185	180	180	175	180	170
Population Density (persons/sq mile)	3,000	3,056	2,833	2,686	2,444	2,412
Peak Travelers (1000s)	305	301	277	254	236	218
Freeway						
Daily Vehicle-Miles of Travel (1000s)	1,135	1,155	1,100	1,020	880	800
Lane-Miles	110	110	105	100	90	85
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	4,140	3,970	3,700	3,400	3,200	2,975
Lane-Miles	775	720	710	690	675	660
Public Transportation						
Annual Psgr-Miles of Travel (millions)	21.8	22.0	21.3	30.0	29.9	26.3
Annual Unlinked Psgr Trips (millions)	3.5	3.6	3.4	3.6	3.6	3.8
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 ($/gallon)	3.24	2.88	2.62	2.28	1.78	1.66
System Performance	**2007**	**2006**	**2005**	**2004**	**2003**	**2002**
Congested Travel (% of peak VMT)	38	41	39	36	35	30
Congested System (% of lane-miles)	40	44	44	44	45	40
Congested Time (number of "Rush Hours")	5.4	5.6	5.2	4.6	4.2	3.8
Annual Increase Needed to Maintain Constant Congestion Level:						
Lane-miles	62	59	52	41	33	25
Transit Riders or Carpoolers (millions)	13	13	10	8	6	4
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,338	2,557	2,254	1,809	1,614	1,224
Rank	77	77	77	79	78	79
Fuel per Peak Traveler (gallons)	8	8	8	7	7	6
Rank	74	75	74	78	75	78
Annual Delay						
Total Delay (1000s of person-hours)	4,049	4,424	3,906	3,098	2,774	2,097
Rank	74	73	74	78	77	79
Delay per Peak Traveler (person-hours)	13	15	14	12	12	10
Rank	75	72	73	76	77	81
Delay due to Incidents (percent)	52	52	52	52	52	52
Travel Time Index	1.14	1.16	1.15	1.13	1.12	1.10
Rank	50	45	49	53	55	61
Congestion Cost						
Total Cost ($ millions)	82	86	73	55	47	35
Rank	75	73	74	79	77	79
Cost per Peak Traveler ($)	269	287	265	218	201	160
Rank	75	73	74	77	79	84

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 Indio-Cathedral City-Palm Springs CA, Continued

Inventory Measures	2001	2000	1999	1998	1997
Urban Area Information					
Population (1000s)	390	365	330	300	285
Rank	78	78	78	81	82
Urban Area (square miles)	165	160	155	150	145
Population Density (persons/sq mile)	2,364	2,281	2,129	2,000	1,966
Peak Travelers (1000s)	204	189	169	152	142
Freeway					
Daily Vehicle-Miles of Travel (1000s)	750	700	660	600	585
Lane-Miles	80	75	70	65	60
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	2,900	2,840	2,760	2,700	2,630
Lane-Miles	640	620	595	580	560
Public Transportation					
Annual Psgr-Miles of Travel (millions)	25.0	24.0	22.7	21.0	19.7
Annual Unlinked Psgr Trips (millions)	3.9	3.9	3.8	3.5	3.0
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 ($/gallon)	1.93	1.72	1.59	1.27	1.40
System Performance	**2001**	**2000**	**1999**	**1998**	**1997**
Congested Travel (% of peak VMT)	30	31	32	33	34
Congested System (% of lane-miles)	41	41	41	41	41
Congested Time (number of "Rush Hours")	3.8	4.0	4.2	4.2	4.4
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	21	20	19	17	17
Transit Riders or Carpoolers (millions)	4	4	3	3	3
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,229	1,206	1,222	1,200	1,230
Rank	78	78	78	78	77
Fuel per Peak Traveler (gallons)	6	6	7	8	9
Rank	78	80	76	71	66
Annual Delay					
Total Delay (1000s of person-hours)	2,103	2,052	2,078	2,037	2,086
Rank	78	78	78	78	77
Delay per Peak Traveler (person-hours)	10	11	12	13	15
Rank	80	78	76	71	65
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.10	1.10	1.11	1.11	1.12
Rank	62	63	59	57	49
Congestion Cost					
Total Cost ($ millions)	35	33	32	30	31
Rank	78	78	78	78	77
Cost per Peak Traveler ($)	171	176	190	201	219
Rank	81	79	76	71	66

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 Indio-Cathedral City-Palm Springs CA, Continued

Inventory Measures	1996	1995	1994	1993	1992
Urban Area Information					
Population (1000s)	270	255	245	230	215
Rank	82	83	83	84	84
Urban Area (square miles)	140	135	135	130	125
Population Density (persons/sq mile)	1,929	1,889	1,815	1,769	1,720
Peak Travelers (1000s)	133	124	118	109	101
Freeway					
Daily Vehicle-Miles of Travel (1000s)	580	575	550	525	515
Lane-Miles	60	60	55	55	55
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	2,580	2,500	2,425	2,390	2,300
Lane-Miles	550	535	520	505	485
Public Transportation					
Annual Psgr-Miles of Travel (millions)	19.2	19.4	17.2	21.3	20.1
Annual Unlinked Psgr Trips (millions)	2.9	2.7	3.0	3.0	3.1
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 ($/gallon)	1.21	1.27	1.16	1.23	1.28
System Performance	**1996**	**1995**	**1994**	**1993**	**1992**
Congested Travel (% of peak VMT)	31	31	31	31	31
Congested System (% of lane-miles)	37	36	37	37	36
Congested Time (number of "Rush Hours")	4.4	4.2	4.4	4.4	4.4
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	18	17	17	17	16
Transit Riders or Carpoolers (millions)	3	3	3	3	3
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,117	1,066	1,082	1,077	1,033
Rank	77	77	75	72	71
Fuel per Peak Traveler (gallons)	8	9	9	10	10
Rank	66	62	58	52	48
Annual Delay					
Total Delay (1000s of person-hours)	1,915	1,828	1,864	1,868	1,788
Rank	77	77	76	71	72
Delay per Peak Traveler (person-hours)	14	15	16	17	18
Rank	65	62	58	52	46
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.11	1.10	1.11	1.11	1.11
Rank	50	53	46	45	41
Congestion Cost					
Total Cost ($ millions)	28	26	26	25	23
Rank	77	77	73	71	73
Cost per Peak Traveler ($)	210	209	217	230	233
Rank	64	63	59	53	48

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 Indio-Cathedral City-Palm Springs CA, Continued

Inventory Measures	1991	1990	1989	1988	1987
Urban Area Information					
Population (1000s)	205	195	180	175	160
Rank	85	85	86	86	87
Urban Area (square miles)	120	110	105	100	95
Population Density (persons/sq mile)	1,708	1,773	1,714	1,750	1,684
Peak Travelers (1000s)	95	89	81	79	71
Freeway					
Daily Vehicle-Miles of Travel (1000s)	500	495	480	470	450
Lane-Miles	50	50	50	50	45
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	2,250	2,180	2,100	2,060	2,000
Lane-Miles	470	450	435	420	410
Public Transportation					
Annual Psgr-Miles of Travel (millions)	17.2	17.8	12.4	10.9	7.4
Annual Unlinked Psgr Trips (millions)	2.7	2.8	1.9	1.4	1.1
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 ($/gallon)	1.11	1.14	1.14	1.05	1.05
System Performance	**1991**	**1990**	**1989**	**1988**	**1987**
Congested Travel (% of peak VMT)	33	33	29	30	31
Congested System (% of lane-miles)	37	37	36	36	37
Congested Time (number of "Rush Hours")	4.6	4.6	4.6	4.6	4.8
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	17	17	17	18	19
Transit Riders or Carpoolers (millions)	3	3	3	3	4
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	1,049	1,016	867	855	856
Rank	70	69	69	68	67
Fuel per Peak Traveler (gallons)	11	11	11	11	12
Rank	44	43	37	35	26
Annual Delay					
Total Delay (1000s of person-hours)	1,803	1,739	1,488	1,464	1,462
Rank	69	68	68	69	67
Delay per Peak Traveler (person-hours)	19	20	18	19	21
Rank	39	37	37	29	23
Delay due to Incidents (percent)	52	52	52	52	52
Travel Time Index	1.11	1.11	1.10	1.10	1.10
Rank	39	36	37	35	33
Congestion Cost					
Total Cost ($ millions)	23	21	17	16	16
Rank	69	68	68	69	66
Cost per Peak Traveler ($)	241	239	212	206	219
Rank	40	38	37	32	27

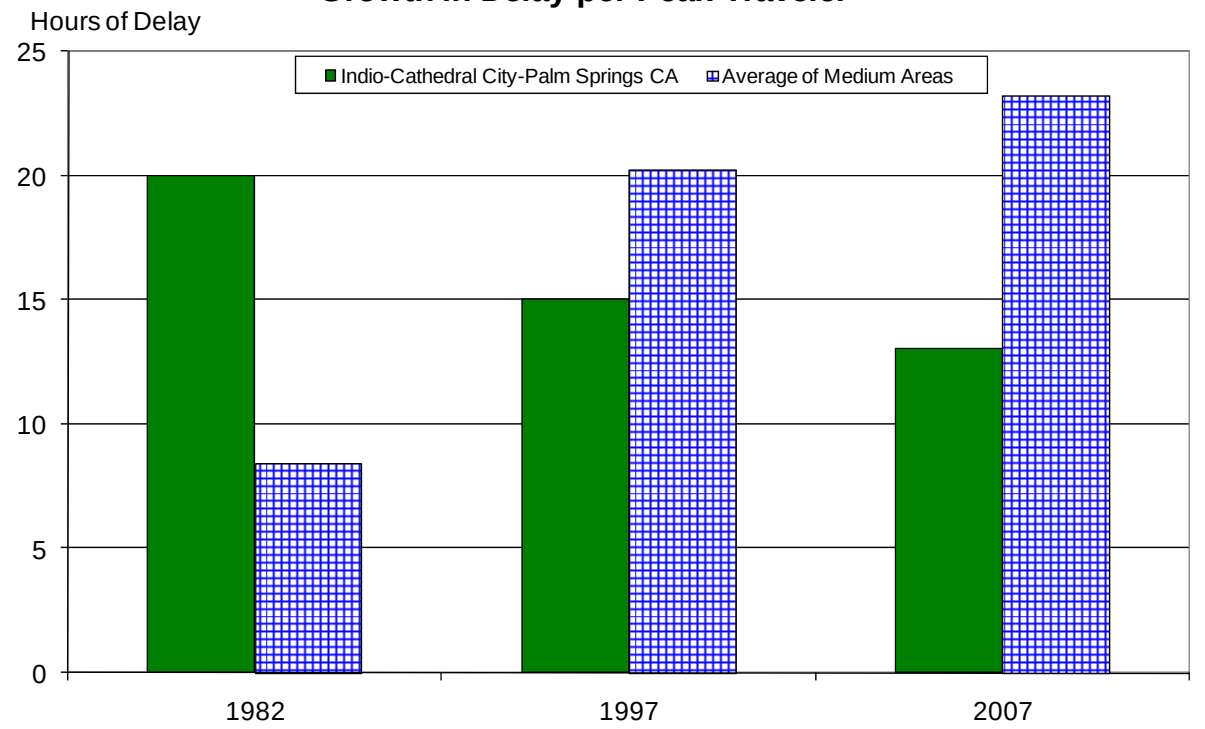
Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.
Note: Zeroes in the table reflect values less than 0.5.

The Mobility Data for Indio-Cathedral City-Palm Springs CA, Continued

Inventory Measures	1986	1985	1984	1983	1982
Urban Area Information					
Population (1000s)	150	140	130	115	105
Rank	87	87	87	87	87
Urban Area (square miles)	90	85	80	75	75
Population Density (persons/sq mile)	1,667	1,647	1,625	1,533	1,400
Peak Travelers (1000s)	66	61	57	50	45
Freeway					
Daily Vehicle-Miles of Travel (1000s)	440	420	410	400	390
Lane-Miles	45	45	45	45	45
Arterial Streets					
Daily Vehicle-Miles of Travel (1000s)	1,910	1,850	1,775	1,700	1,600
Lane-Miles	400	390	375	360	345
Public Transportation					
Annual Psgr-Miles of Travel (millions)	6.6	9.5	16.7	16.7	16.7
Annual Unlinked Psgr Trips (millions)	1.0	1.3	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 ($/gallon)	1.03	1.35	1.36	1.39	1.46
System Performance	**1986**	**1985**	**1984**	**1983**	**1982**
Congested Travel (% of peak VMT)	29	26	25	25	23
Congested System (% of lane-miles)	36	32	32	32	32
Congested Time (number of "Rush Hours")	4.4	4.2	4.2	4.0	3.8
Annual Increase Needed to Maintain Constant Congestion Level:					
Lane-miles	- -	- -	- -	- -	- -
Transit Riders or Carpoolers (millions)	- -	- -	- -	- -	- -
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	783	659	616	576	521
Rank	68	68	67	66	66
Fuel per Peak Traveler (gallons)	12	11	11	12	12
Rank	22	22	18	9	9
Annual Delay					
Total Delay (1000s of person-hours)	1,341	1,132	1,057	989	898
Rank	67	68	67	67	67
Delay per Peak Traveler (person-hours)	20	18	19	20	20
Rank	22	24	18	11	9
Delay due to Incidents (percent)	52	52	52	53	53
Travel Time Index	1.10	1.09	1.08	1.08	1.08
Rank	24	30	30	26	22
Congestion Cost					
Total Cost ($ millions)	14	12	11	10	9
Rank	67	68	66	65	65
Cost per Peak Traveler ($)	208	192	190	195	192
Rank	23	24	19	14	10

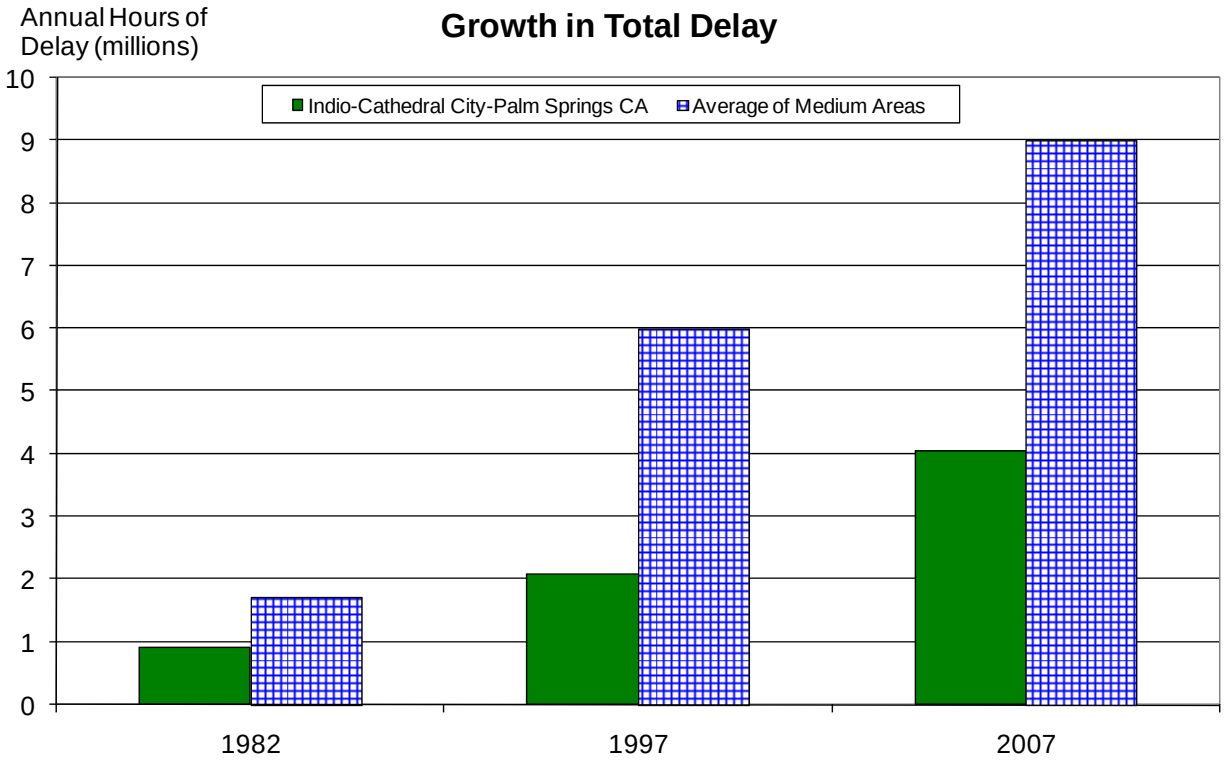
Note: System Performance statistics for 2000 through 2007 data reflect the effects of operational treatments.
Note: Zeroes in the table reflect values less than 0.5.

Growth in Delay per Peak Traveler



Note: Medium areas have populations between 0.5 and 1 million

Growth in Total Delay



Note: Medium areas have populations between 0.5 and 1 million

Benefits from Public Transportation Service and Operations Strategies in Indio-Cathedral City-Palm Springs 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	68	68	20	20
Service Patrols				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	0	0	0	0
Arterial Signal Coordination				
Percent of Roadway Miles	75	77	78	68
Annual Delay Reduction (1000 hours)	24	26	25	21
Arterial Access Management				
Percent of Roadway Miles	37	38	38	39
Annual Delay Reduction (1000 hours)	121	114	92	102
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	145	140	117	123
Annual Delay Saved per Peak Traveler (hours)	0	0	0	0
Annual Congestion Cost Savings ($million)	3.0	2.8	2.2	2.2
Travel Time Index with Strategies	1.137	1.156	1.146	1.126
Travel Time Index (Base)	1.141	1.160	1.150	1.130
Public Transportation Service	**2007**	**2006**	**2005**	**2004**
Existing Service				
Annual Passenger-miles of travel (million)	21.8	22.0	21.3	30.0
Unlinked Passenger Trips (million)	3.5	3.6	3.4	3.6
Travel Time Index (combined road and transit)	1.139	1.158	1.148	1.128
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.143	1.165	1.153	1.135
Annual Increase				
Delay (1000 hours)	118	198	155	186
Delay per Peak Traveler (hours)	0	1	1	1
Congestion Cost ($million)	2.4	3.9	2.9	3.3

Benefits from Public Transportation Service and Operations Strategies in Indio-Cathedral City-Palm Springs 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	22	25	--	--
Service Patrols				
Percent of Roadway Miles	--	--	--	--
Annual Delay Reduction (1000 hours)	0	0	--	--
Arterial Signal Coordination				
Percent of Roadway Miles	70	71	39	40
Annual Delay Reduction (1000 hours)	18	14	5	9
Arterial Access Management				
Percent of Roadway Miles	37	38	38	39
Annual Delay Reduction (1000 hours)	98	88	65	111
HOV Lanes				
Daily Passenger-miles of travel (1000s)	--	--	--	--
HOV User Delay Savings	--	--	--	--
Total Effect of Operations Treatments				
Annual Delay Reduction (1000 hours)	115	102	70	120
Annual Delay Saved per Peak Traveler (hours)	0	0	0	1
Annual Congestion Cost Savings ($million)	2.0	1.7	1.2	1.9
Travel Time Index with Strategies	1.121	1.098	1.101	1.102
Travel Time Index (Base)	1.125	1.102	1.104	1.108
Public Transportation Service	**2003**	**2002**	**2001**	**2000**
Existing Service				
Annual Passenger-miles of travel (million)	29.9	26.3	25.0	24.0
Unlinked Passenger Trips (million)	3.6	3.8	3.9	3.9
Travel Time Index (combined road and transit)	1.123	1.100	1.102	1.106
Condition if Public Transportation Service were Discontinued				
Travel Time Index	1.133	1.107	1.109	1.113
Annual Increase				
Delay (1000 hours)	235	167	140	152
Delay per Peak Traveler (hours)	1	1	1	1
Congestion Cost ($million)	4.0	2.8	2.3	2.5

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	
2007 Values	**Above 1M Population**	**Below 1M Population**
Delay per Traveler -	5 Hours	3 Hours
Travel Time Index -	5 Index Points	3 Index Points
Total Delay -	5 Hours x Average Population	3 Hours x Average Population
1982 to 2007 Trends		
Delay per Traveler -	5 Hours	3 Hours
Total Delay -	5 Hours x Average Population	3 Hours x Average Population