Performance Measure Summary - Memphis TN-MS-AR

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2020. 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 2020 (estimated at \$20.17 per hour of person travel and \$55.24 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.

Annual Greenhouse Gases (CO2) Produced -Tons of CO2 produced from all vehicle travel.

Excess Greenhouse Gases (CO2) Produced due to Congestion-Tons of CO2 produced due to congested portion of travel. The excess CO2 is a subset of the total CO2 produced.

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	1,090	1,090	1,090	1,090	1,090	1,085
Rank	44	44	44	44	44	44
Commuters (1000s)	575	575	575	575	575	572
Daily Vehicle-Miles of Travel (1000s)						
Freeway	8,840	10,000	9,922	10,000	9,453	9,205
Arterial Streets	13,677	15,472	15,220	14,320	13,736	13,850
Cost Components						
Value of Time (\$/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost (\$/hour)	55.24	61.03	54.71	52.14	50.20	46.87
Gasoline (\$/gallon)	2.15	2.37	2.65	2.14	2.00	2.06
Diesel (\$/gallon)	2.68	2.84	3.05	2.35	2.13	2.37
System Performance	2020	2019	2018	2017	2016	2015
Congested Travel (% of peak VMT)				12.3		
Congested System (% of lane-miles)				6.6		
Congested Time (number of "Rush Hours")				1.2		
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	7,747	15,133	14,333	12,797	12,652	12,517
Rank	44	44	45	47	47	47
Fuel per Peak Auto Commuter (gallons)	11	21	20	18	18	18
Rank	51	43	47	63	60	58
Annual Delay						
Total Delay (1000s of person-hours)	16,285	31,809	29,769	28,315	27,523	26,996
Rank	47	46	48	49	49	49
Delay per Auto Commuter (pers-hrs)	28	54	50	48	47	45
Rank	36	31	40	42	43	45
Travel Time Index	1.08	1.18	1.18	1.18	1.18	1.18
Rank	44	41	41	43	43	41
Commuter Stress Index	1.08	1.19	1.19	1.19		
Rank	58	54	51	50		
Freeway Planning Time Index (95th Pctile)		1.26	1.29	1.27		
Rank		77	68	78		
Congestion Cost						
Total Cost (\$ millions)	387	730	673	622	593	570
Rank	46	46	47	49	49	49
Cost per Auto Commuter (\$)	427	806	743	687	677	661
Rank	76	73	85	87	85	84
Truck Congestion						
Annual Person-Hours of Delay (000)	1,427	2,183	1,953	1,777	1,656	1,534
Rank	34	38	42	43	2 (21	45
Annual Gallons of Wasted Fuel (000)	2,698	4,128	3,575	2,859	2,631	2,481
Rank	30	35	36	45	46	47
Annual Congestion Cost (\$ million)	76	130	108	93	83	73
Rank	34	34	41	44	44	45
Annual Greenhouse Gases (CO2) Produced	70.535	150 501		ı	ı	
Excess Due to Congestion (tons)	78,632	153,591				
Rank	45	5 422 000				
Due to All Travel (tons)	2,780,946	5,432,000				
Rank	38	37				
Truck Annual Greenhouse Gases (CO2) Produced	20.017	45.775		ı	ı	
Excess Due to Truck Congestion (tons)	29,917	45,775				
Rank Due to Truck Travel (tons)	1 167 400	1 786 204				
Due to Truck Travel (tons)	1,167,400	1,786,204				
Rank	20	26				

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

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	1,085	1,070	1,065	1,060	1,050	1,045
Rank	43	43	42	42	42	41
Commuters (1000s)	572	576	573	569	562	557
Daily Vehicle-Miles of Travel (1000s)						
Freeway	9,176	9,237	8,530	8,541	8,493	8,400
Arterial Streets	13,269	12,979	12,725	12,832	12,759	12,945
Cost Components	,	,		,		
Value of Time (\$/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost (\$/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline (\$/gallon)	3.06	3.29	3.32	3.21	2.58	2.15
Diesel (\$/gallon)	3.49	3.78	3.75	3.57	2.84	2.45
System Performance	2014	2013	2012	2011	2010	2009
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	12,215	12,007	11,913	11,785	11,815	11,732
Rank	47	47	47	47	47	47
Fuel per Peak Auto Commuter (gallons)	18	18	18	18	18	17
Rank	57	54	52	49	46	43
Annual Delay						
Total Delay (1000s of person-hours)	25,891	25,003	24,364	23,664	23,506	22,904
Rank	50	50	50	49	49	48
Delay per Auto Commuter (pers-hrs)	44	43	42	40	40	38
Rank	44	46	46	49	48	54
Travel Time Index	1.18	1.17	1.17	1.17	1.17	1.17
Rank	39	48	47	43	41	43
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	555	526	504	483	458	435
Rank	49	50	50	50	49	48
Cost per Auto Commuter (\$)	632	615	607	609	623	618
Rank	84	86	86	84	83	78
Truck Congestion						
Annual Person-Hours of Delay (000)	1,387	1,250	1,123	994	987	962
Rank	45	47	48	52	51	50
Annual Gallons of Wasted Fuel (000)	2,347	2,307	2,289	2,264	2,270	2,254
Rank	48	48	48	48	48	48
Annual Congestion Cost (\$ million)	66	57	50	50	46	43
Rank	46	47	48	49	50	49
Annual Greenhouse Gases (CO2) Produced				ı	, ,	
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced				ı	, ,	
Excess Due to Truck Congestion (tons)						
Rank						
Due to Truck Travel (tons)						
Rank						

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

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	1,040	1,035	1,025	1,020	1,010	1,000
Rank	42	41	40	41	41	41
Commuters (1000s)	553	546	537	530	522	514
Daily Vehicle-Miles of Travel (1000s)						
Freeway	8,300	8,640	8,660	8,600	8,470	7,815
Arterial Streets	13,115	13,640	13,680	13,590	13,360	13,260
Cost Components		,	,			
Value of Time (\$/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost (\$/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline (\$/gallon)	3.32	2.98	2.54	2.24	1.86	1.46
Diesel (\$/gallon)	4.03	3.26	2.72	2.39	1.87	1.44
System Performance	2008	2007	2006	2005	2004	2003
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	12,078	11,709	11,499	11,397	11,071	10,704
Rank	47	48	48	47	46	45
Fuel per Peak Auto Commuter (gallons)	19	19	19	19	19	18
Rank	37	40	36	34	27	30
Annual Delay						
Total Delay (1000s of person-hours)	22,457	21,770	21,381	21,190	20,584	19,902
Rank	49	48	47	47	47	47
Delay per Auto Commuter (pers-hrs)	37	36	36	36	36	35
Rank	54	59	56	53	52	53
Travel Time Index	1.18	1.17	1.17	1.17	1.17	1.17
Rank	43	54	51	49	46	44
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	444	411	388	370	343	319
Rank	49	49	47	47	47	47
Cost per Auto Commuter (\$)	600	605	612	626	629	623
Rank	79	85	82	80	77	75
Truck Congestion						
Annual Person-Hours of Delay (000)	943	914	898	890	865	836
Rank	51	51	50	49	48	48
Annual Gallons of Wasted Fuel (000)	2,320	2,250	2,209	2,190	2,127	2,056
Rank	47	49	48	46	45	45
Annual Congestion Cost (\$ million)	45	41	38	36	32	29
Rank	50	49	48	47	48	47
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)			· I			
Rank		 	 			
Due to All Travel (tons)		 		 	 	
Due to All Travel (tons)	 	 	 	 		
Due to All Travel (tons) Rank	 	 	 	 		
Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced	 	 	 	 		
Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)	 	 	 	 		

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

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	990	980	975	975	970	960
Rank	40	40	40	40	40	40
Commuters (1000s)	502	488	479	470	461	449
Daily Vehicle-Miles of Travel (1000s)						
Freeway	7,500	7,300	6,900	6,600	6,370	5,920
Arterial Streets	12,135	12,085	12,000	12,015	11,825	11,630
Cost Components						
Value of Time (\$/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost (\$/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline (\$/gallon)	1.32	1.45	1.47	1.07	1.03	1.13
Diesel (\$/gallon)	1.30	1.47	1.42	1.06	1.11	1.20
System Performance	2002	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	10,426	10,068	9,780	9,409	8,806	8,051
Rank	45	43	43	42	43	43
Fuel per Peak Auto Commuter (gallons)	19	18	18	17	16	15
Rank	18	23	16	17	18	17
Annual Delay						
Total Delay (1000s of person-hours)	19,385	18,719	18,184	17,495	16,372	14,968
Rank	46	46	47	46	46	47
Delay per Auto Commuter (pers-hrs)	35	35	35	35	34	34
Rank	51	45	45	41	40	38
Travel Time Index	1.17	1.16	1.16	1.16	1.15	1.15
Rank	40	48	43	39	43	41
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	302	288	273	250	229	207
Rank	47	47	47	46	46	47
Cost per Auto Commuter (\$)	621	609	607	605	579	537
Rank	71	71	68	65	65	69
Truck Congestion	014	706		50.5	600	(20
Annual Person-Hours of Delay (000)	814	786	764	735	688	629
Rank	2 003	1 024	1 270	47	1 602	46 1 547
Annual Gallons of Wasted Fuel (000) Rank	2,003	1,934 43	1,879 42	1,808 42	1,692 42	1,547 45
Rank Annual Congestion Cost (\$ million)	27	43 26	24	22	20	45 19
Rank	47	26 47	46	46	46	46
Annual Greenhouse Gases (CO2) Produced	7/	7/	TU		70	TU
Excess Due to Congestion (tons)				1		
Rank				<u></u>		
Due to All Travel (tons)			 	<u></u>		
Rank			 			
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)		_		_		
Rank						 -
Due to Truck Travel (tons)						
Rank		<u></u>				
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^{*} Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	950	930	905	885	880	865
Rank	40	40	40	40	39	39
Commuters (1000s)	437	421	403	388	380	367
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,725	5,640	5,480	5,150	5,070	4,725
Arterial Streets	11,715	11,450	11,180	10,850	9,695	8,700
Cost Components						
Value of Time (\$/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost (\$/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline (\$/gallon)	1.24	1.11	1.03	1.07	1.08	1.11
Diesel (\$/gallon)	1.33	1.21	1.10	1.14	1.18	1.20
System Performance	1996	1995	1994	1993	1992	1991
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	7,511	7,090	6,633	5,944	5,552	5,054
Rank	43	42	41	43	43	44
Fuel per Peak Auto Commuter (gallons)	14	13	12	11	10	9
Rank	18	19	21	22	24	27
Annual Delay						
Total Delay (1000s of person-hours)	13,966	13,181	12,334	11,053	10,322	9,398
Rank	47	48	48	48	49	47
Delay per Auto Commuter (pers-hrs)	33	32	31	29	27	25
Rank	38	34	31	33	38	39
Travel Time Index	1.14	1.14	1.13	1.12	1.12	1.11
Rank	45	41	43	45	41	46
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	190	174	158	139	126	112
Rank	47	48	48	48	49	47
Cost per Auto Commuter (\$)	513	498	480	442	426	399
Rank	68	66	64	66	65	65
Truck Congestion						
Annual Person-Hours of Delay (000)	587	554	518	464	434	395
Rank	46	47	47	47	48	47
Annual Gallons of Wasted Fuel (000)	1,443	1,362	1,274	1,142	1,067	971
Rank	45	45	43	44	42	42
Annual Congestion Cost (\$ million)	17	16 45	15	13	12	11
Rank	46	45	45	47	47	46
Annual Greenhouse Gases (CO2) Produced					I	
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced					ı	
Excess Due to Truck Congestion (tons)						
Rank						
Due to Truck Travel (tons)						
Rank						

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

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	860	850	830	815	800	775
Rank	38	38	38	38	38	40
Commuters (1000s)	359	352	341	332	323	311
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,575	4,286	3,975	3,750	3,270	3,050
Arterial Streets	8,210	7,705	7,405	7,095	6,755	6,195
Cost Components						
Value of Time (\$/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost (\$/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline (\$/gallon)	1.08	1.12	1.03	1.04	1.01	1.32
Diesel (\$/gallon)	1.07	1.02	0.94	0.94	0.92	1.20
System Performance	1990	1989	1988	1987	1986	1985
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,895	4,177	3,453	2,844	2,402	2,127
Rank	39	43	48	48	52	51
Fuel per Peak Auto Commuter (gallons)	9	8	7	6	5	4
Rank	23	26	27	32	40	50
Annual Delay						
Total Delay (1000s of person-hours)	9,101	7,767	6,420	5,287	4,466	3,955
Rank	46	49	51	52	57	56
Delay per Auto Commuter (pers-hrs)	25	22	18	16	13	12
Rank	35	40	52	55	64	63
Travel Time Index	1.11	1.09	1.08	1.07	1.06	1.05
Rank	42	49	49	54	56	64
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	104	85	67	53	44	39
Rank	45	48	51	52	56	55
Cost per Auto Commuter (\$)	404	364	320	271	239	214
Rank	62	64	71	78	80	82
Truck Congestion	202	226	270	222	100	1//
Annual Person-Hours of Delay (000)	382	326	270	222	188	166
Rank	45	47	49	52 546	56	56 400
Annual Gallons of Wasted Fuel (000) Rank	940	803 42	663 45	546 48	461 50	409
Rank Annual Congestion Cost (\$ million)	10	42 9	45 7	48	50	52 4
Rank	44	43	46	48	51	53
Annual Greenhouse Gases (CO2) Produced	7-7	43	40	40	J1	
Excess Due to Congestion (tons)				ı		
Rank			 			
Due to All Travel (tons)						 -
Rank			 			
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)		_		_		
Rank						 -
Due to Truck Travel (tons)						
Rank			 			<u></u>
Kulik						

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

Population (1000s)	Inventory Measures	1984	1983	1982
Rank	Urban Area Information			
Rank	Population (1000s)	770	770	760
Daily Vehicle-Miles of Travel (1000s) Freeway 3,035 3,240 3,200 Arterial Streets 6,630 5,820 5,150 Cost Components		40	40	40
Freeway Arterial Streets 3,035 (6,63) 3,240 (5,15) Cost Components Value of Time (S/hour) 7,75 (23,43) 7,20 (23,44) 23,63 (23,31) Commercial Cost (S/hour) 23,94 (23,63) 23,31 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,32 (23,31) 3,33 (23,31) 3,32 (23,31) 3,33 (23,31) 3,33 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31	Commuters (1000s)	307	305	297
Freeway Arterial Streets 3,035 (6,63) 3,240 (5,15) Cost Components Value of Time (S/hour) 7,75 (23,43) 7,20 (23,44) 23,63 (23,31) Commercial Cost (S/hour) 23,94 (23,63) 23,31 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,32 (23,31) 3,33 (23,31) 3,32 (23,31) 3,33 (23,31) 3,33 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,32 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,33 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31) 3,34 (23,31				
Arterial Streets		3.035	3,240	3,200
Cost Components 7.25 7.43 7.20 Value of Time (Srhour) 23.94 23.63 23.31 Gasoline (S/gallon) 1.34 1.37 1.43 Diesel (S/gallon) 1.22 1.24 1.30 System Performance 1984 1983 1982 Congested Travel (% of peak VMT)	-		· · · · · · · · · · · · · · · · · · ·	
Value of Time (\$Abour) 7.75 7.43 7.20 Commercial Cost (\$Abour) 23.94 23.63 23.31 Gasoline (\$Jgallon) 1.34 1.37 1.43 Diesel (\$Jgallon) 1.22 1.24 1.30 System Performance 1984 1983 1982 Congested Travel (\$\fota\$ of peak VMT)		,	,	
Commercial Cost (S/hour)	-	7 75	7 43	7.20
Gasoline (\$/gallon) 1.34 1.37 1.43 1.30 Diesel (\$/gallon) 1.22 1.24 1.30 System Performance 1984 1983 1982 Congested Travel (% of peak VMT) Congested System (% of lane-miles) Congested System (% of lane-miles) Congested Time (number of "Rush Hours") Annual Excess Fuel Consumed Total Fuel (1000 gallons) 2,002 1,885 1,694 Rank 51 50 51 Fuel per Peak Auto Commuter (gallons) 3 3 2 Rank 51 50 51 Fuel per Peak Auto Commuter (gallons) 3,722 3,505 3,149 Rank 54 52 53 Delay per Auto Commuter (pers-hrs) 12 11 10 Rank 55 56 58 Travel Time Index 1.05 1.05 1.04 Rank 57 55 61 Commuter Stress Index Rank Rank 57 55 61 Commuter Stress Index 54 52 53 Freeway Planning Time Index (95th Petile) Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.04 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 Rank 54 52 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 1.05 Rank 54 52 53 53 Cost per Auto Commuter (\$ 51 1.05 1.05 1.05 1.05 1.05 Rank 54 52 53 53 53 53 Cost per Auto Commuter	· · ·			
Diesel (\$/gallon)	` ´			
System Performance		-		_
Congested Travel (% of peak VMT) Congested System (% of lane-miles) Congested Signem (% of lane-miles) Congested Time (number of "Rush Hours") Congested Time (possible of person-hours) Congestion Cost Cost (Smillions) Cost (
Congested System (% of lane-miles) Congested Time (number of "Rush Hours") Annual Excess Fuel Consumed Total Fuel (1000 gallons) 2,002 1,885 1,694 Rank 51 50 51 Fuel per Peak Auto Commuter (gallons) 3 3 2 Rank 61 46 55 Annual Delay 3,722 3,505 3,149 Rank 54 52 53 Delay per Auto Commuter (pers-hrs) 12 11 10 Rank 56 56 58 Travel Time Index 1.05 1.05 1.04 Rank 57 55 61 Commuter Stress Index Rank Freeway Planning Time Index (95th Petile) Rank Tall Cost (\$\$\text	•	3, 0.1	1705	1702
Congested Time (number of "Rush Hours") - - - Annual Excess Fuel Consumed 2,002 1,885 1,694 Rank 51 50 51 Puel per Peak Auto Commuter (gallons) 3 3 2 Rank 61 46 55 Annual Delay 3,722 3,505 3,149 Rank 54 52 53 Delay per Auto Commuter (pers-hrs) 12 11 10 Rank 56 56 58 Travel Time Index 1.05 1.05 1.04 Rank 57 55 61 Commuter Stress Index - - - Rank - - - Freeway Planning Time Index (95th Petile) - - - Rank - - - Freeway Planning Time Index (95th Petile) 35 32 28 Rank 54 52 53 Congestion Cost 54 52				
Annual Excess Fuel Consumed Total Fuel (1000 gallons) 2,002 1,885 1,694 Rank 51 50 51 Fuel per Peak Auto Commuter (gallons) 3 3 2 Rank 61 46 55 54 52 53 722 3,505 3,149 73 722 73 73 73 73 73 7				
Total Fuel (1000 gallons)				
Rank		• • • •	4.00.	4 604
Fuel per Peak Auto Commuter (gallons)				
Rank				
Annual Delay Total Delay (1000s of person-hours) 3,722 3,505 3,149 Rank				
Total Delay (1000s of person-hours) 3,722 3,505 3,149 Rank 54 52 53 Delay per Auto Commuter (pers-hrs) 12 11 10 Rank 56 56 58 Travel Time Index 1.05 1.05 1.05 Rank 57 55 61 Commuter Stress Index Rank Rank Rank Rank Rank Total Cost (\$ millions) 35 32 28 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 54 52 54 Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Travel (tons) Truck Congestion		61	46	55
Rank 54 52 53 Delay per Auto Commuter (pers-hrs) 12 11 10 Rank 56 56 58 Travel Time Index 1.05 1.05 1.04 Rank 57 55 61 Commuter Stress Index Rank 57 55 61 Commuter Stress Index Rank Rank Rank Rank 54 52 53 Congestion Cost Total Cost (\$ millions) 35 32 28 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion 156 147 132 Rank 54 52 54 Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Truck Travel (tons) Rank Truck Travel (tons) Truck Travel (t				
Delay per Auto Commuter (pers-hrs)		3,722	3,505	3,149
Rank		54	52	
Travel Time Index				
Rank	Rank	56	56	58
Commuter Stress Index Rank Freeway Planning Time Index (95th Pctile) Rank Congestion Cost Total Cost (\$ millions) 35 32 28 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) <td>Travel Time Index</td> <td>1.05</td> <td>1.05</td> <td>1.04</td>	Travel Time Index	1.05	1.05	1.04
Rank	Rank	57	55	61
Freeway Planning Time Index (95th Pctile)	Commuter Stress Index			
Rank Congestion Cost Total Cost (\$ millions) 35 32 28 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced 2 Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced	Rank			
Congestion Cost 35 32 28 Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion 78 76 78 Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)	Freeway Planning Time Index (95th Pctile)			
Total Cost (\$ millions)	Rank			
Rank 54 52 53 Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion 78 76 78 Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced 50 47 50 Excess Due to Congestion (tons) Rank Due to All Travel (tons) Excess Due to Truck Congestion (tons) Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Congestion Cost			
Cost per Auto Commuter (\$) 211 210 192 Rank 78 76 78 Truck Congestion 385 76 78 Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons) Total Congestion (tons) Total Congestion (tons) Total Congestio	Total Cost (\$ millions)	35	32	28
Rank 78 76 78 Truck Congestion Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Rank	54	52	53
Truck Congestion 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Cost per Auto Commuter (\$)	211	210	192
Annual Person-Hours of Delay (000) 156 147 132 Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank	Rank	78	76	78
Rank 54 52 54 Annual Gallons of Wasted Fuel (000) 385 362 325 Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Truck Congestion			
Annual Gallons of Wasted Fuel (000) Rank Annual Congestion Cost (\$ million) Rank 50 48 49 Annual Congestion Cost (\$ million) Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank	Annual Person-Hours of Delay (000)	156	147	132
Rank 50 48 49 Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Rank	54	52	54
Annual Congestion Cost (\$ million) 4 4 4 3 Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Annual Gallons of Wasted Fuel (000)	385	362	325
Rank 50 47 50 Annual Greenhouse Gases (CO2) Produced Excess Due to Congestion (tons) Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Rank	50	48	49
Annual Greenhouse Gases (CO2) Produced	Annual Congestion Cost (\$ million)	4	4	3
Excess Due to Congestion (tons)	Rank	50	47	50
Excess Due to Congestion (tons)	Annual Greenhouse Gases (CO2) Produced			
Rank Due to All Travel (tons) Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)				
Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	- ' '			
Rank Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Due to All Travel (tons)			
Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)				
Excess Due to Truck Congestion (tons) Rank Due to Truck Travel (tons)	Truck Annual Greenhouse Gases (CO2) Produced			
Rank Due to Truck Travel (tons)	1 1			
Due to Truck Travel (tons)	- ' '			
	Rank			

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