

# Performance Measure Summary - Bakersfield CA

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2017. 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 2017 (estimated at \$18.29 per hour of person travel and \$59.94 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.

# Mobility Data for Bakersfield CA

Inventory Measures	2017	2016	2015	2014	2013	2012
<b>Urban Area Information</b>						
Population (1000s)	560	550	535	525	520	515
Rank	75	76	77	77	78	77
Commuters (1000s)	289	284	276	271	273	271
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	2,714	2,714	2,631	2,015	2,240	2,205
Arterial Streets	4,779	4,728	4,291	5,345	5,187	4,500
<b>Cost Components</b>						
Value of Time (\$/hour)	18.12	17.91	17.69	17.67	17.39	17.14
Commercial Cost (\$/hour)	52.14	50.20	46.87	44.82	41.23	39.66
Gasoline (\$/gallon)	2.96	2.78	3.18	3.63	3.89	3.89
Diesel (\$/gallon)	2.95	2.68	2.86	3.85	4.12	4.20
System Performance	2017	2016	2015	2014	2013	2012
<b>Congested Travel (% of peak VMT)</b>	15.4	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	9.3	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	1.3	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	3,521	3,393	3,289	3,222	2,988	2,964
Rank	90	90	90	90	91	91
Fuel per Peak Auto Commuter (gallons)	10	9	9	10	7	7
Rank	98	98	98	97	98	98
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	8,896	8,467	8,067	7,834	7,201	7,079
Rank	90	91	91	90	92	90
Delay per Auto Commuter (pers-hrs)	24	23	22	22	18	18
Rank	99	99	99	97	99	99
<b>Travel Time Index</b>						
Rank	1.13	1.13	1.13	1.12	1.12	1.11
Rank	83	83	83	92	92	94
<b>Commuter Stress Index</b>						
Rank	1.16	--	--	--	--	--
Rank	72	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	1.37	--	--	--	--	--
Rank	59	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	182	170	161	157	143	138
Rank	90	91	91	91	91	91
Cost per Auto Commuter (\$)	504	481	456	443	410	408
Rank	96	97	97	97	98	98
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	374	356	339	329	302	297
Rank	90	91	91	90	92	90
Annual Gallons of Wasted Fuel (000)	747	719	697	683	633	628
Rank	90	90	90	90	91	91
Annual Congestion Cost (\$ million)	19	18	16	16	14	13
Rank	91	90	91	88	90	90

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

# Mobility Data for Bakersfield CA

Inventory Measures	2011	2010	2009	2008	2007	2006
<b>Urban Area Information</b>						
Population (1000s)	510	508	505	500	495	485
Rank	76	77	76	75	75	75
Commuters (1000s)	267	265	263	259	255	249
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	2,173	2,149	2,191	2,215	2,275	2,235
Arterial Streets	4,481	4,432	4,756	4,710	4,600	4,700
<b>Cost Components</b>						
Value of Time (\$/hour)	16.79	16.28	16.01	16.07	15.47	15.06
Commercial Cost (\$/hour)	44.62	42.50	41.83	40.77	39.30	37.88
Gasoline (\$/gallon)	3.51	3.05	2.61	3.84	3.24	2.88
Diesel (\$/gallon)	4.02	3.20	2.71	4.39	3.60	3.17
System Performance	2011	2010	2009	2008	2007	2006
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	2,836	2,690	2,506	2,867	2,552	2,287
Rank	92	94	94	92	94	96
Fuel per Peak Auto Commuter (gallons)	7	8	5	8	7	7
Rank	98	97	101	97	99	99
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	6,592	6,138	5,611	6,114	5,442	4,877
Rank	92	93	95	92	95	96
Delay per Auto Commuter (pers-hrs)	17	16	15	16	15	13
Rank	99	100	100	99	100	100
<b>Travel Time Index</b>						
Rank	1.11	1.11	1.10	1.10	1.09	1.08
Rank	93	93	98	97	99	100
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	127	114	101	115	97	84
Rank	92	94	95	90	95	96
Cost per Auto Commuter (\$)	393	377	350	380	351	323
Rank	98	98	100	98	99	99
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	277	258	236	257	229	205
Rank	92	93	95	92	95	96
Annual Gallons of Wasted Fuel (000)	601	570	531	608	541	485
Rank	92	94	94	92	94	96
Annual Congestion Cost (\$ million)	13	11	10	12	10	8
Rank	91	95	95	88	95	96

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

# Mobility Data for Bakersfield CA

Inventory Measures	2005	2004	2003	2002	2001	2000
<b>Urban Area Information</b>						
Population (1000s)	470	455	440	425	410	405
Rank	75	74	74	75	77	77
Commuters (1000s)	239	230	222	212	202	196
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	2,065	2,035	2,000	2,045	1,985	1,930
Arterial Streets	4,930	4,725	4,500	4,300	4,150	4,030
<b>Cost Components</b>						
Value of Time (\$/hour)	14.58	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	36.51	35.19	33.92	32.69	31.51	30.38
Gasoline (\$/gallon)	2.62	2.28	1.78	1.66	1.93	1.72
Diesel (\$/gallon)	2.93	2.27	1.79	1.58	1.78	1.68
System Performance	2005	2004	2003	2002	2001	2000
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	2,085	1,871	1,470	1,195	1,062	865
Rank	96	96	96	97	97	98
Fuel per Peak Auto Commuter (gallons)	6	6	5	3	4	2
Rank	99	98	98	100	98	100
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	4,447	3,990	3,135	2,548	2,265	1,844
Rank	96	96	96	98	98	98
Delay per Auto Commuter (pers-hrs)	13	12	10	8	8	6
Rank	100	100	100	100	100	100
<b>Travel Time Index</b>						
Rank	100	100	100	100	100	100
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	74	63	48	38	33	26
Rank	96	96	96	98	97	98
Cost per Auto Commuter (\$)	302	283	227	188	169	143
Rank	99	99	100	100	100	100
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	187	168	132	107	95	77
Rank	96	96	96	98	98	98
Annual Gallons of Wasted Fuel (000)	442	397	312	253	225	183
Rank	96	96	96	97	97	98
Annual Congestion Cost (\$ million)	7	6	4	3	3	2
Rank	96	96	96	98	96	98

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

# Mobility Data for Bakersfield CA

Inventory Measures	1999	1998	1997	1996	1995	1994
<b>Urban Area Information</b>						
Population (1000s)	390	385	375	365	360	350
Rank	78	78	77	77	77	78
Commuters (1000s)	187	182	175	168	164	158
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	1,760	1,725	1,630	1,595	1,575	1,570
Arterial Streets	3,960	3,900	3,780	3,620	3,550	3,400
<b>Cost Components</b>						
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37	11.06
Commercial Cost (\$/hour)	29.28	28.89	28.50	28.12	27.75	27.38
Gasoline (\$/gallon)	1.59	1.27	1.40	1.21	1.27	1.16
Diesel (\$/gallon)	1.50	1.39	1.51	1.24	1.31	1.19
System Performance	1999	1998	1997	1996	1995	1994
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	816	799	701	655	596	573
Rank	98	97	98	97	97	97
Fuel per Peak Auto Commuter (gallons)	2	2	2	2	1	1
Rank	99	99	99	98	100	100
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	1,739	1,704	1,494	1,397	1,270	1,222
Rank	98	98	98	98	98	98
Delay per Auto Commuter (pers-hrs)	6	6	6	5	5	5
Rank	100	100	100	101	101	99
<b>Travel Time Index</b>						
Rank	1.04	1.04	1.03	1.03	1.03	1.03
Rank	100	100	101	101	101	100
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	24	23	20	18	16	15
Rank	98	98	98	98	98	98
Cost per Auto Commuter (\$)	139	138	125	122	108	107
Rank	101	101	101	100	100	99
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	73	72	63	59	53	51
Rank	98	98	98	98	98	98
Annual Gallons of Wasted Fuel (000)	173	169	149	139	126	121
Rank	98	97	98	97	97	97
Annual Congestion Cost (\$ million)	2	2	2	2	1	1
Rank	97	96	96	96	98	98

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

# Mobility Data for Bakersfield CA

Inventory Measures	1993	1992	1991	1990	1989	1988
<b>Urban Area Information</b>						
Population (1000s)	335	325	315	300	295	285
Rank	78	79	80	82	82	83
Commuters (1000s)	149	143	137	128	125	120
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	1,500	1,520	1,530	1,460	1,410	1,375
Arterial Streets	3,330	3,200	3,050	2,900	2,800	2,650
<b>Cost Components</b>						
Value of Time (\$/hour)	10.78	10.47	10.17	9.75	9.25	8.83
Commercial Cost (\$/hour)	27.02	26.66	26.30	25.95	25.60	25.26
Gasoline (\$/gallon)	1.23	1.28	1.11	1.14	1.14	1.05
Diesel (\$/gallon)	1.26	1.25	1.25	1.19	1.09	1.01
System Performance	1993	1992	1991	1990	1989	1988
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	522	419	372	322	298	280
Rank	97	98	99	99	99	99
Fuel per Peak Auto Commuter (gallons)	1	1	1	1	1	1
Rank	99	98	98	98	97	94
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	1,113	893	792	687	636	597
Rank	98	99	99	99	99	99
Delay per Auto Commuter (pers-hrs)	5	4	4	3	3	3
Rank	99	99	99	100	100	100
<b>Travel Time Index</b>						
Rank	1.03	1.02	1.02	1.02	1.02	1.02
Rank	100	101	101	101	100	98
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	13	10	9	7	7	6
Rank	98	99	99	99	99	99
Cost per Auto Commuter (\$)	104	90	79	69	69	72
Rank	99	99	99	99	99	100
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	47	38	33	29	27	25
Rank	98	99	99	99	99	99
Annual Gallons of Wasted Fuel (000)	111	89	79	68	63	59
Rank	97	98	99	99	99	99
Annual Congestion Cost (\$ million)	1	1	1	1	1	1
Rank	97	97	96	93	91	90

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

# Mobility Data for Bakersfield CA

Inventory Measures	1987	1986	1985	1984	1983	1982
<b>Urban Area Information</b>						
Population (1000s)	280	265	255	250	240	230
Rank	83	84	84	83	84	84
Commuters (1000s)	117	110	105	102	97	92
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	1,260	1,220	1,215	1,135	925	880
Arterial Streets	2,550	2,400	2,200	2,050	2,000	1,900
<b>Cost Components</b>						
Value of Time (\$/hour)	8.48	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	24.93	24.60	24.27	23.94	23.63	23.31
Gasoline (\$/gallon)	1.05	1.03	1.35	1.36	1.39	1.46
Diesel (\$/gallon)	1.01	0.99	1.29	1.31	1.34	1.40
System Performance	1987	1986	1985	1984	1983	1982
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	209	146	132	114	98	93
Rank	99	99	99	99	99	99
Fuel per Peak Auto Commuter (gallons)	1	1	1	1	1	1
Rank	93	91	90	87	86	82
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	447	312	281	244	209	199
Rank	99	99	99	99	99	99
Delay per Auto Commuter (pers-hrs)	2	2	2	1	1	1
Rank	100	100	100	101	101	101
<b>Travel Time Index</b>						
Rank	100	100	100	99	99	98
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	4	3	3	2	2	2
Rank	99	99	99	99	99	99
Cost per Auto Commuter (\$)	51	34	41	30	23	21
Rank	99	100	101	101	101	101
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	19	13	12	10	9	8
Rank	99	99	99	99	99	99
Annual Gallons of Wasted Fuel (000)	44	31	28	24	21	20
Rank	99	99	99	99	99	99
Annual Congestion Cost (\$ million)	-	-	-	-	-	-
Rank	99	99	99	98	96	95

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