

Performance Measure Summary - Columbia SC

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 Columbia SC

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	590	590	585	585	575	565
Rank	73	72	72	72	72	73
Commuters (1000s)	298	297	294	293	293	288
Daily Vehicle-Miles of Travel (1000s)						
Freeway	7,303	7,187	6,970	6,588	5,846	5,790
Arterial Streets	6,055	6,014	5,978	5,926	5,270	5,150
Cost Components						
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)	2.09	1.96	1.98	3.00	3.23	3.27
Diesel (\$/gallon)	2.33	2.10	2.33	3.43	3.70	3.72
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	13.7	--	--	--	--	--
Congested System (% of lane-miles)	1.8	--	--	--	--	--
Congested Time (number of "Rush Hours")	1.0	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,802	6,746	6,704	6,635	6,579	6,497
Rank	73	73	73	73	70	70
Fuel per Peak Auto Commuter (gallons)	19	19	19	19	18	18
Rank	55	53	50	47	54	52
Annual Delay						
Total Delay (1000s of person-hours)	16,331	16,061	15,687	15,392	15,128	14,674
Rank	71	71	71	71	71	71
Delay per Auto Commuter (pers-hrs)	44	44	44	43	43	42
Rank	59	53	49	49	46	46
Travel Time Index						
Rank	1.15	1.15	1.15	1.16	1.16	1.15
Rank	71	71	69	61	58	71
Commuter Stress Index						
Rank	1.16	--	--	--	--	--
Rank	72	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.33	--	--	--	--	--
Rank	66	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	329	319	307	306	297	284
Rank	71	71	71	71	71	71
Cost per Auto Commuter (\$)	765	759	736	719	714	700
Rank	65	62	61	61	59	59
Truck Congestion						
Annual Person-Hours of Delay (000)	686	675	659	646	635	616
Rank	71	71	71	71	71	71
Annual Gallons of Wasted Fuel (000)	1,442	1,430	1,421	1,407	1,395	1,377
Rank	73	73	73	73	70	70
Annual Congestion Cost (\$ million)	35	33	30	30	28	27
Rank	71	71	71	71	71	71

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

Mobility Data for Columbia SC

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	555	545	530	515	500	480
Rank	73	73	73	74	74	76
Commuters (1000s)	282	276	268	259	250	239
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,106	6,056	5,900	5,730	5,895	5,770
Arterial Streets	5,174	5,132	5,125	5,125	5,180	5,035
Cost Components						
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)	3.14	2.56	2.12	3.30	2.82	2.49
Diesel (\$/gallon)	3.53	2.80	2.39	4.00	3.20	2.68
System Performance	2011	2010	2009	2008	2007	2006
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,333	6,281	6,235	6,383	6,110	5,388
Rank	71	71	71	73	73	75
Fuel per Peak Auto Commuter (gallons)	18	18	17	19	19	17
Rank	49	46	43	37	40	56
Annual Delay						
Total Delay (1000s of person-hours)	14,046	13,675	13,322	12,988	12,434	10,964
Rank	71	71	70	71	72	73
Delay per Auto Commuter (pers-hrs)	41	41	41	41	41	38
Rank	45	42	38	35	36	45
Travel Time Index						
Rank	1.15	1.15	1.16	1.17	1.16	1.15
Rank	70	68	58	53	63	72
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	269	251	238	241	220	187
Rank	71	71	70	71	72	73
Cost per Auto Commuter (\$)	693	694	689	666	662	599
Rank	62	62	61	60	64	78
Truck Congestion						
Annual Person-Hours of Delay (000)	590	574	560	545	522	461
Rank	71	71	70	71	72	73
Annual Gallons of Wasted Fuel (000)	1,343	1,331	1,322	1,353	1,295	1,142
Rank	71	71	71	73	73	75
Annual Congestion Cost (\$ million)	28	25	24	25	22	18
Rank	71	70	70	71	72	74

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

Mobility Data for Columbia SC

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	465	450	440	425	420	415
Rank	76	75	74	75	75	75
Commuters (1000s)	230	221	215	205	199	194
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,635	5,300	5,075	4,820	4,600	4,500
Arterial Streets	4,940	4,900	4,805	4,720	4,610	4,530
Cost Components						
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)	2.19	1.83	1.39	1.25	1.38	1.41
Diesel (\$/gallon)	2.35	1.84	1.42	1.26	1.39	1.37
System Performance	2005	2004	2003	2002	2001	2000
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,878	4,526	4,201	3,901	3,701	3,495
Rank	75	76	76	76	76	76
Fuel per Peak Auto Commuter (gallons)	15	14	13	12	11	11
Rank	64	71	74	78	78	74
Annual Delay						
Total Delay (1000s of person-hours)	9,926	9,210	8,549	7,937	7,531	7,111
Rank	75	76	76	76	76	76
Delay per Auto Commuter (pers-hrs)	35	34	32	31	30	29
Rank	59	60	69	72	71	71
Travel Time Index						
Rank	1.14	1.14	1.13	1.13	1.12	1.12
Rank	76	74	76	75	78	77
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	163	145	129	117	109	100
Rank	75	76	76	76	76	76
Cost per Auto Commuter (\$)	559	537	515	488	466	457
Rank	84	86	86	88	87	84
Truck Congestion						
Annual Person-Hours of Delay (000)	417	387	359	333	316	299
Rank	75	76	76	76	76	76
Annual Gallons of Wasted Fuel (000)	1,034	959	891	827	785	741
Rank	75	76	76	76	76	76
Annual Congestion Cost (\$ million)	16	14	12	11	10	9
Rank	75	75	76	76	76	76

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Mobility Data for Columbia SC

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	410	405	395	385	370	355
Rank	75	75	75	75	75	76
Commuters (1000s)	189	184	176	169	160	151
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,215	4,035	3,840	3,655	3,615	3,280
Arterial Streets	4,400	4,290	4,210	4,055	3,950	3,850
Cost Components						
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)	1.00	0.97	1.07	1.16	1.07	0.95
Diesel (\$/gallon)	1.01	1.05	1.16	1.26	1.16	1.03
System Performance	1999	1998	1997	1996	1995	1994
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	3,106	2,685	2,632	2,376	2,109	1,995
Rank	77	78	77	78	78	79
Fuel per Peak Auto Commuter (gallons)	10	8	8	8	6	6
Rank	77	83	79	76	85	84
Annual Delay						
Total Delay (1000s of person-hours)	6,320	5,463	5,356	4,834	4,291	4,060
Rank	76	77	77	77	78	78
Delay per Auto Commuter (pers-hrs)	27	23	24	22	21	21
Rank	74	83	76	79	78	75
Travel Time Index						
Rank	1.11	1.09	1.10	1.09	1.08	1.08
Rank	78	84	80	79	84	80
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	85	72	70	62	53	49
Rank	76	77	77	77	78	78
Cost per Auto Commuter (\$)	420	372	369	340	311	303
Rank	85	86	85	86	88	87
Truck Congestion						
Annual Person-Hours of Delay (000)	265	229	225	203	180	171
Rank	76	77	77	77	78	78
Annual Gallons of Wasted Fuel (000)	658	569	558	504	447	423
Rank	77	78	77	78	78	79
Annual Congestion Cost (\$ million)	7	6	6	6	5	5
Rank	77	77	77	77	77	77

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

Mobility Data for Columbia SC

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	340	340	335	335	330	330
Rank	77	75	75	75	74	74
Commuters (1000s)	143	141	136	134	131	130
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,135	2,955	2,740	2,655	2,500	2,485
Arterial Streets	3,800	3,795	3,750	3,715	3,630	3,550
Cost Components						
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)	1.00	1.00	1.06	1.03	1.08	1.00
Diesel (\$/gallon)	1.08	1.09	1.15	1.04	1.00	0.92
System Performance	1993	1992	1991	1990	1989	1988
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,887	1,791	1,591	1,561	1,495	1,273
Rank	78	78	80	77	77	78
Fuel per Peak Auto Commuter (gallons)	5	6	4	4	5	4
Rank	82	69	85	81	63	71
Annual Delay						
Total Delay (1000s of person-hours)	3,840	3,645	3,238	3,176	3,043	2,590
Rank	77	77	78	77	77	78
Delay per Auto Commuter (pers-hrs)	21	20	18	18	17	15
Rank	71	67	72	66	62	67
Travel Time Index						
Rank	77	76	81	76	66	74
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	45	42	36	34	31	26
Rank	77	77	78	77	77	78
Cost per Auto Commuter (\$)	291	290	266	272	270	247
Rank	86	85	85	83	79	83
Truck Congestion						
Annual Person-Hours of Delay (000)	161	153	136	133	128	109
Rank	77	77	78	77	77	78
Annual Gallons of Wasted Fuel (000)	400	380	337	331	317	270
Rank	78	78	80	77	77	78
Annual Congestion Cost (\$ million)	4	4	4	3	3	3
Rank	77	77	77	77	76	73

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Mobility Data for Columbia SC

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	325	325	320	320	315	315
Rank	74	74	74	74	74	74
Commuters (1000s)	127	126	123	122	120	118
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,215	1,800	1,655	1,445	1,400	1,375
Arterial Streets	3,520	3,410	3,380	3,205	2,900	2,595
Cost Components						
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)	1.00	0.98	1.28	1.29	1.32	1.38
Diesel (\$/gallon)	0.92	0.90	1.18	1.19	1.22	1.28
System Performance	1987	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,233	1,078	993	919	631	547
Rank	78	77	78	76	79	81
Fuel per Peak Auto Commuter (gallons)	3	3	3	4	2	2
Rank	80	74	66	41	69	55
Annual Delay						
Total Delay (1000s of person-hours)	2,509	2,194	2,020	1,870	1,285	1,113
Rank	77	77	77	76	82	82
Delay per Auto Commuter (pers-hrs)	15	13	12	11	8	7
Rank	60	64	63	64	76	82
Travel Time Index						
Rank	66	74	64	57	80	76
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	24	20	19	17	11	9
Rank	76	77	76	74	80	82
Cost per Auto Commuter (\$)	243	228	208	203	145	137
Rank	81	79	80	77	86	86
Truck Congestion						
Annual Person-Hours of Delay (000)	105	92	85	79	54	47
Rank	77	77	76	76	81	82
Annual Gallons of Wasted Fuel (000)	261	229	210	195	134	116
Rank	78	77	78	76	79	81
Annual Congestion Cost (\$ million)	3	2	2	2	1	1
Rank	69	75	73	70	78	75

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