

Performance Measure Summary - Columbus OH

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 Columbus OH

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	1,495	1,480	1,470	1,455	1,440	1,410
Rank	35	35	35	36	36	36
Commuters (1000s)	760	756	750	740	747	731
Daily Vehicle-Miles of Travel (1000s)						
Freeway	17,182	17,037	15,405	15,674	16,182	15,245
Arterial Streets	13,137	12,927	11,912	11,872	11,241	9,855
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)	2.29	2.17	2.18	3.16	3.48	3.58
Diesel (\$/gallon)	2.53	2.29	2.49	3.67	3.91	3.87
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	24.6	--	--	--	--	--
Congested System (% of lane-miles)	16.0	--	--	--	--	--
Congested Time (number of "Rush Hours")	3.4	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	21,452	21,201	20,811	20,437	20,147	19,551
Rank	35	35	35	35	35	36
Fuel per Peak Auto Commuter (gallons)	21	21	20	20	21	20
Rank	41	37	42	38	30	33
Annual Delay						
Total Delay (1000s of person-hours)	51,381	49,973	48,216	46,936	45,865	43,720
Rank	34	35	35	35	35	35
Delay per Auto Commuter (pers-hrs)	50	48	47	47	45	44
Rank	37	39	39	34	41	38
Travel Time Index						
Rank	1.19	1.19	1.18	1.18	1.18	1.18
Rank	41	40	44	40	41	40
Commuter Stress Index						
Rank	1.21	--	--	--	--	--
Rank	41	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.59	--	--	--	--	--
Rank	40	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,041	996	947	939	906	853
Rank	35	35	35	35	35	35
Cost per Auto Commuter (\$)	1,054	1,033	991	960	947	913
Rank	31	31	31	31	31	30
Truck Congestion						
Annual Person-Hours of Delay (000)	2,158	2,099	2,025	1,971	1,926	1,836
Rank	34	35	35	35	35	35
Annual Gallons of Wasted Fuel (000)	4,548	4,495	4,412	4,333	4,271	4,145
Rank	35	35	35	35	35	36
Annual Congestion Cost (\$ million)	110	103	94	93	86	80
Rank	35	35	35	35	35	35

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

Mobility Data for Columbus OH

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,390	1,370	1,330	1,310	1,280	1,250
Rank	37	36	36	36	36	35
Commuters (1000s)	719	707	684	671	651	631
Daily Vehicle-Miles of Travel (1000s)						
Freeway	16,466	16,000	15,300	14,740	15,210	15,430
Arterial Streets	10,872	10,500	10,300	10,005	10,160	10,175
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)	3.25	2.64	2.19	3.40	2.88	2.58
Diesel (\$/gallon)	3.69	2.96	2.58	4.17	3.35	2.83
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)	18,448	18,157	17,459	17,990	17,774	17,582
Rank	36	36	35	36	35	34
Fuel per Peak Auto Commuter (gallons)	18	19	16	18	18	17
Rank	49	40	54	49	49	56
Annual Delay						
Total Delay (1000s of person-hours)	40,510	39,140	36,931	36,243	35,807	35,422
Rank	36	36	36	36	35	35
Delay per Auto Commuter (pers-hrs)	41	41	40	40	40	41
Rank	45	42	43	38	41	34
Travel Time Index						
Rank	1.17	1.17	1.17	1.18	1.18	1.18
Rank	45	43	45	44	44	43
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	780	721	663	677	635	607
Rank	36	36	36	36	35	35
Cost per Auto Commuter (\$)	874	871	836	812	835	849
Rank	34	33	37	40	39	35
Truck Congestion						
Annual Person-Hours of Delay (000)	1,701	1,644	1,551	1,522	1,504	1,488
Rank	36	36	36	36	35	35
Annual Gallons of Wasted Fuel (000)	3,911	3,849	3,701	3,814	3,768	3,727
Rank	36	36	35	36	35	34
Annual Congestion Cost (\$ million)	81	73	66	70	64	60
Rank	36	35	35	36	34	34

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

Mobility Data for Columbus OH

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,220	1,205	1,190	1,165	1,140	1,110
Rank	35	35	35	36	36	36
Commuters (1000s)	611	601	590	569	548	525
Daily Vehicle-Miles of Travel (1000s)						
Freeway	14,960	15,045	14,665	13,900	13,400	12,000
Arterial Streets	10,440	10,110	9,870	9,690	9,510	9,300
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)	2.24	1.81	1.52	1.38	1.30	1.55
Diesel (\$/gallon)	2.48	1.94	1.49	1.36	1.49	1.53
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)	17,101	16,665	16,189	15,598	14,938	13,904
Rank	35	35	34	34	34	34
Fuel per Peak Auto Commuter (gallons)	17	17	17	16	16	15
Rank	48	46	45	42	36	40
Annual Delay						
Total Delay (1000s of person-hours)	34,453	33,573	32,616	31,423	30,094	28,010
Rank	36	36	34	34	35	36
Delay per Auto Commuter (pers-hrs)	41	41	40	40	40	38
Rank	34	32	32	30	29	34
Travel Time Index						
Rank	1.18	1.18	1.18	1.18	1.18	1.17
Rank	41	38	38	37	36	37
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	567	528	494	464	436	398
Rank	36	36	34	34	34	36
Cost per Auto Commuter (\$)	853	860	856	843	820	784
Rank	37	37	34	35	33	34
Truck Congestion						
Annual Person-Hours of Delay (000)	1,447	1,410	1,370	1,320	1,264	1,176
Rank	36	36	34	34	34	36
Annual Gallons of Wasted Fuel (000)	3,625	3,533	3,432	3,307	3,167	2,948
Rank	35	35	34	34	34	34
Annual Congestion Cost (\$ million)	55	50	46	42	40	36
Rank	36	36	33	34	33	36

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Mobility Data for Columbus OH

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	1,090	1,065	1,045	1,025	1,010	995
Rank	37	38	38	38	38	37
Commuters (1000s)	507	487	471	454	440	427
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,650	11,500	11,315	10,980	10,650	10,330
Arterial Streets	9,150	9,005	8,850	8,375	7,735	7,215
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)	1.14	1.11	1.13	1.28	1.12	1.08
Diesel (\$/gallon)	1.15	1.17	1.25	1.39	1.22	1.17
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)	13,126	12,371	11,994	11,242	10,609	10,241
Rank	35	35	34	34	34	33
Fuel per Peak Auto Commuter (gallons)	14	12	13	12	11	11
Rank	42	53	38	38	41	37
Annual Delay						
Total Delay (1000s of person-hours)	26,445	24,924	24,163	22,648	21,373	20,633
Rank	36	36	36	36	36	35
Delay per Auto Commuter (pers-hrs)	37	36	36	35	34	34
Rank	35	35	28	25	24	19
Travel Time Index						
Rank	36	36	36	35	35	34
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	358	331	317	292	267	251
Rank	36	36	36	36	36	35
Cost per Auto Commuter (\$)	765	738	727	696	677	674
Rank	32	30	28	30	31	27
Truck Congestion						
Annual Person-Hours of Delay (000)	1,111	1,047	1,015	951	898	867
Rank	36	36	36	36	36	35
Annual Gallons of Wasted Fuel (000)	2,783	2,623	2,543	2,383	2,249	2,171
Rank	35	35	34	34	34	33
Annual Congestion Cost (\$ million)	32	30	29	27	25	23
Rank	36	36	35	36	35	35

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Mobility Data for Columbus OH

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	985	950	920	870	855	840
Rank	36	37	37	37	37	37
Commuters (1000s)	416	395	376	350	342	333
Daily Vehicle-Miles of Travel (1000s)						
Freeway	10,060	9,460	9,200	9,030	8,350	8,155
Arterial Streets	6,825	6,435	6,140	5,810	5,380	5,105
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)	1.09	1.11	1.13	1.06	1.08	1.00
Diesel (\$/gallon)	1.19	1.19	1.25	1.10	1.05	0.97
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)	9,565	8,610	7,593	6,748	6,201	5,845
Rank	32	32	33	34	35	34
Fuel per Peak Auto Commuter (gallons)	10	10	9	8	6	6
Rank	38	24	27	35	53	45
Annual Delay						
Total Delay (1000s of person-hours)	19,270	17,345	15,298	13,596	12,492	11,775
Rank	34	34	35	35	35	35
Delay per Auto Commuter (pers-hrs)	32	30	28	27	25	24
Rank	22	25	26	26	26	26
Travel Time Index						
Rank	1.14	1.14	1.13	1.12	1.11	1.11
Rank	35	34	33	34	36	32
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	229	201	173	147	129	116
Rank	34	34	35	35	35	35
Cost per Auto Commuter (\$)	645	599	545	508	493	490
Rank	27	28	29	34	35	32
Truck Congestion						
Annual Person-Hours of Delay (000)	809	728	643	571	525	495
Rank	34	34	35	35	35	35
Annual Gallons of Wasted Fuel (000)	2,028	1,825	1,610	1,431	1,315	1,239
Rank	32	32	33	34	35	34
Annual Congestion Cost (\$ million)	22	19	17	15	13	12
Rank	33	34	34	34	35	34

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Mobility Data for Columbus OH

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	840	835	835	835	835	835
Rank	37	37	37	37	37	36
Commuters (1000s)	330	325	323	321	318	315
Daily Vehicle-Miles of Travel (1000s)						
Freeway	7,915	7,565	6,960	6,805	6,550	6,200
Arterial Streets	4,825	4,515	4,175	3,835	3,420	3,010
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)	0.97	0.95	1.24	1.26	1.29	1.34
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)	5,517	4,993	4,729	4,579	4,371	3,838
Rank	34	33	31	29	28	28
Fuel per Peak Auto Commuter (gallons)	6	5	5	5	5	4
Rank	32	40	32	27	22	19
Annual Delay						
Total Delay (1000s of person-hours)	11,114	10,059	9,528	9,226	8,806	7,733
Rank	32	33	30	29	29	29
Delay per Auto Commuter (pers-hrs)	23	21	20	20	19	17
Rank	25	26	25	23	21	24
Travel Time Index						
Rank	36	38	35	29	33	35
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	106	93	88	83	76	65
Rank	32	32	30	28	28	29
Cost per Auto Commuter (\$)	479	451	437	439	439	394
Rank	28	30	28	26	24	26
Truck Congestion						
Annual Person-Hours of Delay (000)	467	422	400	387	370	325
Rank	32	33	30	29	29	29
Annual Gallons of Wasted Fuel (000)	1,170	1,059	1,003	971	927	814
Rank	33	33	31	29	28	28
Annual Congestion Cost (\$ million)	11	10	10	9	9	8
Rank	32	30	30	29	28	28

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