

Performance Measure Summary - Pittsburgh PA

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 Pittsburgh PA

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	1,760	1,760	1,765	1,765	1,770	1,770
Rank	28	28	28	28	28	28
Commuters (1000s)	852	852	854	854	852	852
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,593	11,529	10,886	9,809	8,820	8,800
Arterial Streets	14,523	14,702	14,991	14,956	15,056	15,700
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)	2.57	2.32	2.44	3.38	3.52	3.55
Diesel (\$/gallon)	2.94	2.59	2.80	3.73	3.93	4.00
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	15.7	--	--	--	--	--
Congested System (% of lane-miles)	1.7	--	--	--	--	--
Congested Time (number of "Rush Hours")	1.2	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	23,298	23,118	22,820	22,663	22,554	22,278
Rank	32	32	31	31	31	30
Fuel per Peak Auto Commuter (gallons)	21	21	21	21	20	20
Rank	41	37	36	30	37	33
Annual Delay						
Total Delay (1000s of person-hours)	51,370	50,221	48,728	47,549	46,902	45,502
Rank	35	34	34	34	33	33
Delay per Auto Commuter (pers-hrs)	46	46	45	44	43	41
Rank	47	47	45	44	46	50
Travel Time Index						
Rank	1.19	1.19	1.19	1.19	1.19	1.18
Rank	41	40	39	39	39	40
Commuter Stress Index						
Rank	1.20	--	--	--	--	--
Rank	47	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.44	--	--	--	--	--
Rank	50	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,052	1,010	967	962	934	895
Rank	34	34	34	33	33	33
Cost per Auto Commuter (\$)	908	894	863	836	833	819
Rank	42	41	43	42	41	41
Truck Congestion						
Annual Person-Hours of Delay (000)	2,158	2,109	2,047	1,997	1,970	1,911
Rank	34	34	34	34	33	33
Annual Gallons of Wasted Fuel (000)	4,939	4,901	4,838	4,804	4,781	4,723
Rank	32	32	31	31	31	30
Annual Congestion Cost (\$ million)	113	106	98	96	90	85
Rank	33	33	33	33	33	33

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

Mobility Data for Pittsburgh PA

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,775	1,775	1,775	1,775	1,775	1,775
Rank	28	28	26	25	25	24
Commuters (1000s)	853	850	848	845	844	842
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,431	11,754	11,524	11,880	12,405	12,155
Arterial Streets	16,218	16,200	16,606	17,120	17,360	17,420
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)	3.41	2.78	2.33	3.42	2.97	2.68
Diesel (\$/gallon)	3.79	3.12	2.73	4.41	3.56	2.93
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)	21,795	21,252	20,379	21,264	21,812	21,471
Rank	31	32	32	31	31	31
Fuel per Peak Auto Commuter (gallons)	21	20	17	19	20	19
Rank	25	29	43	37	28	36
Annual Delay						
Total Delay (1000s of person-hours)	43,706	42,223	39,731	39,482	40,500	39,867
Rank	33	33	33	33	32	31
Delay per Auto Commuter (pers-hrs)	39	39	36	36	37	36
Rank	54	53	61	61	54	56
Travel Time Index						
Rank	1.18	1.17	1.17	1.18	1.18	1.18
Rank	40	43	45	44	44	43
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	851	785	720	744	726	689
Rank	33	33	33	33	32	31
Cost per Auto Commuter (\$)	812	809	774	762	813	821
Rank	43	45	46	44	43	39
Truck Congestion						
Annual Person-Hours of Delay (000)	1,836	1,773	1,669	1,658	1,701	1,674
Rank	33	33	33	33	32	31
Annual Gallons of Wasted Fuel (000)	4,621	4,506	4,320	4,508	4,624	4,552
Rank	31	32	32	31	31	31
Annual Congestion Cost (\$ million)	89	80	73	79	75	69
Rank	33	33	33	32	31	31

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

Mobility Data for Pittsburgh PA

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,775	1,775	1,775	1,775	1,775	1,775
Rank	24	24	23	23	23	23
Commuters (1000s)	839	836	832	826	806	787
Daily Vehicle-Miles of Travel (1000s)						
Freeway	12,330	12,500	12,210	11,700	11,310	11,130
Arterial Streets	17,760	17,985	18,070	17,805	17,600	17,350
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)	2.28	1.94	1.51	1.36	1.54	1.51
Diesel (\$/gallon)	2.58	2.03	1.59	1.43	1.59	1.57
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)	21,156	20,407	20,211	20,006	19,481	18,835
Rank	30	30	29	27	26	26
Fuel per Peak Auto Commuter (gallons)	20	18	18	18	19	18
Rank	25	38	30	27	13	16
Annual Delay						
Total Delay (1000s of person-hours)	39,282	37,891	37,527	37,147	36,172	34,973
Rank	31	32	32	31	31	31
Delay per Auto Commuter (pers-hrs)	36	34	34	34	34	33
Rank	53	60	58	54	51	56
Travel Time Index						
Rank	1.18	1.17	1.17	1.17	1.17	1.16
Rank	41	47	45	41	38	45
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	651	601	571	550	530	498
Rank	31	32	31	31	31	30
Cost per Auto Commuter (\$)	837	835	849	861	849	844
Rank	40	39	36	32	30	27
Truck Congestion						
Annual Person-Hours of Delay (000)	1,650	1,591	1,576	1,560	1,519	1,469
Rank	31	32	32	31	31	31
Annual Gallons of Wasted Fuel (000)	4,485	4,326	4,285	4,241	4,130	3,993
Rank	30	30	29	27	26	26
Annual Congestion Cost (\$ million)	64	58	54	51	49	45
Rank	31	31	31	31	31	30

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Mobility Data for Pittsburgh PA

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	1,775	1,775	1,785	1,780	1,775	1,770
Rank	23	23	22	21	21	21
Commuters (1000s)	769	750	737	716	698	679
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,300	10,910	10,540	10,310	10,105	9,420
Arterial Streets	17,200	17,080	17,175	17,515	17,505	17,275
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)	1.11	1.06	1.19	1.26	1.19	1.04
Diesel (\$/gallon)	1.19	1.20	1.30	1.39	1.32	1.15
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)	17,861	17,138	16,657	16,450	15,902	15,497
Rank	26	26	26	26	25	22
Fuel per Peak Auto Commuter (gallons)	17	15	15	16	14	15
Rank	17	25	17	10	15	9
Annual Delay						
Total Delay (1000s of person-hours)	33,163	31,822	30,927	30,544	29,527	28,774
Rank	31	30	29	28	28	25
Delay per Auto Commuter (pers-hrs)	32	31	31	31	31	31
Rank	57	56	49	46	41	31
Travel Time Index						
Rank	41	44	41	40	35	34
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	451	424	408	395	371	350
Rank	31	30	29	28	28	26
Cost per Auto Commuter (\$)	828	811	801	808	807	811
Rank	25	23	21	21	19	18
Truck Congestion						
Annual Person-Hours of Delay (000)	1,393	1,337	1,299	1,283	1,240	1,209
Rank	31	30	29	28	28	25
Annual Gallons of Wasted Fuel (000)	3,786	3,633	3,531	3,487	3,371	3,285
Rank	26	26	26	26	25	22
Annual Congestion Cost (\$ million)	40	38	37	36	35	33
Rank	31	30	29	28	26	26

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Mobility Data for Pittsburgh PA

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	1,770	1,770	1,775	1,780	1,785	1,785
Rank	20	20	20	20	19	19
Commuters (1000s)	664	648	634	621	617	612
Daily Vehicle-Miles of Travel (1000s)						
Freeway	9,350	9,135	8,600	8,195	7,800	7,500
Arterial Streets	17,385	17,265	17,730	17,775	17,265	16,895
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	1.14	1.16	1.30	1.06	0.98
Diesel (\$/gallon)	1.21	1.28	1.29	1.08	1.03	0.95
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)	14,524	13,759	12,821	12,076	11,149	10,317
Rank	21	20	19	18	18	18
Fuel per Peak Auto Commuter (gallons)	14	13	13	12	11	11
Rank	10	12	9	9	9	9
Annual Delay						
Total Delay (1000s of person-hours)	26,967	25,547	23,806	22,422	20,700	19,157
Rank	24	24	24	23	23	23
Delay per Auto Commuter (pers-hrs)	29	28	27	25	24	22
Rank	33	32	30	35	29	32
Travel Time Index						
Rank	1.14	1.14	1.13	1.13	1.12	1.11
Rank	35	34	33	33	32	32
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	322	297	270	246	215	190
Rank	24	24	24	23	23	23
Cost per Auto Commuter (\$)	778	762	732	717	702	684
Rank	18	19	18	18	18	19
Truck Congestion						
Annual Person-Hours of Delay (000)	1,133	1,073	1,000	942	869	805
Rank	24	24	24	23	23	23
Annual Gallons of Wasted Fuel (000)	3,079	2,917	2,718	2,560	2,364	2,187
Rank	21	20	19	18	18	18
Annual Congestion Cost (\$ million)	31	29	27	24	22	20
Rank	23	23	23	23	23	23

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Mobility Data for Pittsburgh PA

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	1,790	1,790	1,790	1,795	1,800	1,810
Rank	19	18	18	17	15	15
Commuters (1000s)	608	602	597	593	590	587
Daily Vehicle-Miles of Travel (1000s)						
Freeway	7,190	6,900	6,655	6,460	6,110	5,635
Arterial Streets	16,170	16,030	15,500	15,065	14,655	14,825
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)	0.98	0.96	1.25	1.27	1.30	1.35
Diesel (\$/gallon)	0.95	0.93	1.22	1.23	1.26	1.32
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)	8,796	7,961	7,025	6,160	5,674	5,060
Rank	22	23	22	22	22	22
Fuel per Peak Auto Commuter (gallons)	9	8	7	7	6	5
Rank	13	14	15	12	13	16
Annual Delay						
Total Delay (1000s of person-hours)	16,332	14,782	13,044	11,438	10,536	9,396
Rank	25	25	25	25	25	25
Delay per Auto Commuter (pers-hrs)	19	17	15	13	12	11
Rank	43	47	50	52	51	53
Travel Time Index						
Rank	1.09	1.08	1.08	1.07	1.06	1.05
Rank	40	42	39	42	46	51
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	156	137	121	103	92	80
Rank	25	25	25	25	25	25
Cost per Auto Commuter (\$)	609	574	514	465	452	413
Rank	19	19	21	23	22	24
Truck Congestion						
Annual Person-Hours of Delay (000)	686	621	548	480	443	395
Rank	25	25	25	25	25	25
Annual Gallons of Wasted Fuel (000)	1,865	1,688	1,489	1,306	1,203	1,073
Rank	22	23	22	22	22	22
Annual Congestion Cost (\$ million)	17	15	13	12	11	9
Rank	25	25	25	25	25	25

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