

Performance Measure Summary - Spokane WA

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 Spokane WA

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	405	400	395	390	385	385
Rank	85	85	85	85	85	85
Commuters (1000s)	207	203	200	197	191	191
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,417	2,391	2,311	2,194	2,153	2,135
Arterial Streets	4,442	4,425	4,348	4,269	4,233	4,145
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)	2.83	2.56	2.71	3.54	3.74	3.68
Diesel (\$/gallon)	2.84	2.58	2.77	3.77	4.02	4.11
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	12.4	--	--	--	--	--
Congested System (% of lane-miles)	8.5	--	--	--	--	--
Congested Time (number of "Rush Hours")	0.9	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	7,154	6,968	6,778	6,684	6,568	6,443
Rank	70	70	72	71	71	72
Fuel per Peak Auto Commuter (gallons)	26	25	24	23	23	22
Rank	15	16	20	19	17	21
Annual Delay						
Total Delay (1000s of person-hours)	13,900	13,372	12,896	12,497	12,066	11,730
Rank	79	79	79	78	79	78
Delay per Auto Commuter (pers-hrs)	45	44	43	42	41	40
Rank	55	53	55	55	52	55
Travel Time Index						
Rank	1.16	1.16	1.16	1.16	1.17	1.17
Rank	61	61	60	61	51	50
Commuter Stress Index						
Rank	1.17	--	--	--	--	--
Rank	66	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.29	--	--	--	--	--
Rank	72	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	288	272	259	256	244	234
Rank	78	78	78	78	78	78
Cost per Auto Commuter (\$)	841	816	782	752	735	724
Rank	48	51	55	54	55	54
Truck Congestion						
Annual Person-Hours of Delay (000)	584	562	542	525	507	493
Rank	79	79	79	78	79	78
Annual Gallons of Wasted Fuel (000)	1,517	1,477	1,437	1,417	1,392	1,366
Rank	70	70	72	71	71	72
Annual Congestion Cost (\$ million)	31	29	26	26	24	23
Rank	77	77	77	77	77	77

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

Mobility Data for Spokane WA

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	385	380	375	370	365	360
Rank	85	85	86	86	86	85
Commuters (1000s)	191	188	185	182	178	175
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,369	2,300	2,150	2,040	2,125	2,070
Arterial Streets	4,262	4,240	4,381	4,470	4,515	4,405
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)	3.60	2.95	2.51	3.60	3.18	2.80
Diesel (\$/gallon)	3.96	3.24	2.73	4.38	3.39	2.62
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)	6,349	6,284	6,291	6,446	6,341	6,226
Rank	70	70	70	71	71	70
Fuel per Peak Auto Commuter (gallons)	22	22	21	22	22	23
Rank	18	20	15	19	19	14
Annual Delay						
Total Delay (1000s of person-hours)	11,247	11,028	10,834	10,572	10,401	10,211
Rank	79	79	78	79	79	78
Delay per Auto Commuter (pers-hrs)	39	39	38	38	38	37
Rank	54	53	54	47	48	52
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)	223	208	199	203	190	179
Rank	78	78	78	78	77	77
Cost per Auto Commuter (\$)	716	723	725	700	714	719
Rank	55	54	49	51	54	54
Truck Congestion						
Annual Person-Hours of Delay (000)	472	463	455	444	437	429
Rank	79	79	78	79	79	78
Annual Gallons of Wasted Fuel (000)	1,346	1,332	1,334	1,367	1,344	1,320
Rank	70	70	70	71	71	70
Annual Congestion Cost (\$ million)	24	22	20	22	20	18
Rank	78	77	78	77	77	74

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

Mobility Data for Spokane WA

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	360	360	355	330	330	330
Rank	85	85	84	86	85	83
Commuters (1000s)	173	172	169	155	153	150
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,030	1,980	1,900	1,800	1,700	1,600
Arterial Streets	4,450	4,330	4,180	4,105	4,060	4,070
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)	2.32	2.11	1.63	1.48	1.63	1.63
Diesel (\$/gallon)	2.83	2.22	1.66	1.43	1.66	1.60
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)	6,080	5,905	5,835	5,246	4,942	4,861
Rank	70	70	67	70	71	69
Fuel per Peak Auto Commuter (gallons)	22	21	22	19	17	18
Rank	15	14	11	18	31	16
Annual Delay						
Total Delay (1000s of person-hours)	9,972	9,684	9,570	8,605	8,106	7,972
Rank	74	74	74	75	75	75
Delay per Auto Commuter (pers-hrs)	37	37	37	37	35	35
Rank	48	47	45	42	45	45
Travel Time Index						
Rank	1.17	1.17	1.17	1.17	1.16	1.16
Rank	50	47	45	41	51	45
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	167	156	147	129	120	115
Rank	74	74	74	74	75	73
Cost per Auto Commuter (\$)	729	734	745	684	651	658
Rank	51	50	45	53	55	54
Truck Congestion						
Annual Person-Hours of Delay (000)	419	407	402	361	340	335
Rank	74	74	74	75	75	75
Annual Gallons of Wasted Fuel (000)	1,289	1,252	1,237	1,112	1,048	1,030
Rank	70	70	67	70	71	69
Annual Congestion Cost (\$ million)	17	15	14	12	11	11
Rank	73	74	73	74	73	73

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

Mobility Data for Spokane WA

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	330	325	325	320	320	315
Rank	83	83	82	82	82	82
Commuters (1000s)	148	144	141	137	135	131
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,500	1,420	1,335	1,295	1,280	1,230
Arterial Streets	4,105	4,040	3,985	3,875	3,795	3,980
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)	1.40	1.13	1.33	1.35	1.25	1.16
Diesel (\$/gallon)	1.33	1.21	1.39	1.39	1.28	1.20
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)	4,635	4,398	4,127	3,878	3,756	3,537
Rank	70	68	68	68	66	66
Fuel per Peak Auto Commuter (gallons)	17	16	15	13	14	13
Rank	17	18	17	29	15	15
Annual Delay						
Total Delay (1000s of person-hours)	7,602	7,213	6,770	6,360	6,161	5,801
Rank	74	73	74	74	73	72
Delay per Auto Commuter (pers-hrs)	34	33	31	30	29	28
Rank	45	46	49	49	48	48
Travel Time Index						
Rank	1.15	1.15	1.14	1.13	1.13	1.13
Rank	52	44	47	50	47	42
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	105	97	90	83	78	71
Rank	73	73	73	73	73	72
Cost per Auto Commuter (\$)	649	632	603	575	575	556
Rank	54	51	51	50	48	44
Truck Congestion						
Annual Person-Hours of Delay (000)	319	303	284	267	259	244
Rank	74	73	74	73	73	72
Annual Gallons of Wasted Fuel (000)	983	932	875	822	796	750
Rank	70	68	68	68	66	66
Annual Congestion Cost (\$ million)	10	9	8	8	7	7
Rank	73	72	73	72	71	70

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Mobility Data for Spokane WA

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	305	300	295	290	290	290
Rank	83	83	83	83	83	82
Commuters (1000s)	125	121	117	113	113	112
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,185	1,110	995	925	885	835
Arterial Streets	3,850	3,625	3,425	3,210	3,050	2,960
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)	1.19	1.22	1.14	1.09	1.10	1.02
Diesel (\$/gallon)	1.23	1.24	1.26	1.17	1.15	1.06
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)	3,303	3,007	2,747	2,434	2,267	2,066
Rank	66	64	64	66	65	65
Fuel per Peak Auto Commuter (gallons)	12	11	11	9	9	8
Rank	16	16	13	23	19	20
Annual Delay						
Total Delay (1000s of person-hours)	5,418	4,932	4,505	3,992	3,719	3,389
Rank	72	72	72	75	69	72
Delay per Auto Commuter (pers-hrs)	27	26	24	22	20	19
Rank	45	41	43	46	48	49
Travel Time Index						
Rank	44	40	45	46	48	48
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	65	58	51	44	39	34
Rank	72	72	72	72	69	71
Cost per Auto Commuter (\$)	536	504	475	439	438	411
Rank	44	45	45	48	43	49
Truck Congestion						
Annual Person-Hours of Delay (000)	228	207	189	168	156	142
Rank	72	72	72	74	69	72
Annual Gallons of Wasted Fuel (000)	700	638	582	516	481	438
Rank	66	64	64	66	65	65
Annual Congestion Cost (\$ million)	6	6	5	4	4	4
Rank	72	69	70	71	69	64

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Mobility Data for Spokane WA

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	290	285	285	285	280	275
Rank	81	81	79	78	78	78
Commuters (1000s)	111	108	107	106	104	101
Daily Vehicle-Miles of Travel (1000s)						
Freeway	870	950	905	850	835	815
Arterial Streets	2,820	2,725	2,575	2,415	2,290	2,180
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)	1.02	0.99	1.30	1.31	1.34	1.41
Diesel (\$/gallon)	1.60	1.04	1.36	1.37	1.40	1.47
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)	1,911	1,741	1,611	1,558	1,466	1,436
Rank	66	65	64	63	63	59
Fuel per Peak Auto Commuter (gallons)	8	6	6	5	5	4
Rank	18	28	22	27	22	19
Annual Delay						
Total Delay (1000s of person-hours)	3,134	2,856	2,643	2,556	2,404	2,355
Rank	70	71	69	68	67	65
Delay per Auto Commuter (pers-hrs)	17	16	15	15	14	14
Rank	51	52	50	45	44	40
Travel Time Index						
Rank	44	49	48	42	46	43
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	31	27	25	23	21	20
Rank	69	70	68	67	65	65
Cost per Auto Commuter (\$)	395	381	363	358	354	361
Rank	48	45	39	38	37	33
Truck Congestion						
Annual Person-Hours of Delay (000)	132	120	111	107	101	99
Rank	70	71	69	68	67	65
Annual Gallons of Wasted Fuel (000)	405	369	342	330	311	304
Rank	66	65	64	63	63	59
Annual Congestion Cost (\$ million)	4	3	3	3	3	2
Rank	63	67	65	61	55	65

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