

Performance Measure Summary - Boise ID

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 Boise ID

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	390	385	380	375	365	355
Rank	86	86	86	86	88	90
Commuters (1000s)	196	192	189	186	182	177
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,928	1,892	1,714	1,674	1,674	1,520
Arterial Streets	4,261	4,243	4,407	4,246	4,173	4,170
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)	2.58	2.37	2.64	3.57	3.68	3.35
Diesel (\$/gallon)	2.74	2.50	2.63	3.81	4.02	4.01
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	18.1	--	--	--	--	--
Congested System (% of lane-miles)	14.3	--	--	--	--	--
Congested Time (number of "Rush Hours")	1.3	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,869	4,773	4,469	4,670	4,560	4,429
Rank	82	81	82	81	81	80
Fuel per Peak Auto Commuter (gallons)	20	21	18	19	18	15
Rank	47	37	58	47	54	78
Annual Delay						
Total Delay (1000s of person-hours)	12,254	11,795	10,855	11,145	10,690	10,196
Rank	80	80	81	81	81	81
Delay per Auto Commuter (pers-hrs)	45	44	43	41	39	36
Rank	55	53	55	59	63	72
Travel Time Index						
Rank	1.16	1.16	1.15	1.15	1.14	1.14
Rank	61	61	69	71	78	79
Commuter Stress Index						
Rank	1.19	--	--	--	--	--
Rank	50	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.28	--	--	--	--	--
Rank	75	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	249	236	214	224	211	198
Rank	80	80	81	80	81	81
Cost per Auto Commuter (\$)	772	747	683	697	678	654
Rank	61	65	75	66	67	68
Truck Congestion						
Annual Person-Hours of Delay (000)	515	495	456	468	449	428
Rank	80	80	81	81	81	81
Annual Gallons of Wasted Fuel (000)	1,032	1,012	947	990	967	939
Rank	82	81	82	81	81	80
Annual Congestion Cost (\$ million)	26	24	21	22	20	19
Rank	80	80	81	80	80	80

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

Mobility Data for Boise ID

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	345	335	325	315	305	290
Rank	91	91	92	94	94	94
Commuters (1000s)	172	166	161	155	150	141
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,617	1,592	1,540	1,500	1,620	1,575
Arterial Streets	4,225	4,159	4,011	3,905	4,045	3,810
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)	3.31	2.84	2.22	3.40	3.22	2.60
Diesel (\$/gallon)	3.77	3.11	2.61	4.21	3.67	3.00
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)	4,334	4,248	4,160	4,371	4,450	4,144
Rank	80	80	81	80	80	80
Fuel per Peak Auto Commuter (gallons)	14	14	12	14	15	14
Rank	79	80	83	80	73	78
Annual Delay						
Total Delay (1000s of person-hours)	9,886	9,599	9,226	9,232	9,398	8,753
Rank	81	81	80	81	81	81
Delay per Auto Commuter (pers-hrs)	36	35	36	36	38	37
Rank	69	71	61	61	48	52
Travel Time Index						
Rank	1.14	1.15	1.15	1.15	1.16	1.16
Rank	77	68	71	72	63	62
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	190	177	165	172	168	150
Rank	81	81	80	81	81	81
Cost per Auto Commuter (\$)	653	656	640	633	672	644
Rank	68	67	68	66	63	65
Truck Congestion						
Annual Person-Hours of Delay (000)	415	403	388	388	395	368
Rank	81	81	80	81	81	81
Annual Gallons of Wasted Fuel (000)	919	901	882	927	943	879
Rank	80	80	81	80	80	80
Annual Congestion Cost (\$ million)	20	18	17	18	17	15
Rank	80	80	80	81	81	81

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

Mobility Data for Boise ID

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	280	270	260	250	240	230
Rank	94	94	94	94	94	95
Commuters (1000s)	136	130	124	118	111	105
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,530	1,465	1,375	1,340	1,300	1,250
Arterial Streets	3,680	3,500	3,470	3,385	3,310	3,190
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)	2.30	2.04	1.61	1.43	1.65	1.62
Diesel (\$/gallon)	2.74	2.17	1.62	1.44	1.65	1.55
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)	3,827	3,554	3,204	2,985	2,765	2,376
Rank	81	82	83	82	82	85
Fuel per Peak Auto Commuter (gallons)	13	12	11	11	10	9
Rank	81	83	86	84	85	84
Annual Delay						
Total Delay (1000s of person-hours)	8,083	7,507	6,766	6,305	5,839	5,019
Rank	81	82	83	83	83	85
Delay per Auto Commuter (pers-hrs)	36	34	32	32	31	28
Rank	53	60	69	67	68	76
Travel Time Index						
Rank	1.15	1.15	1.13	1.13	1.13	1.11
Rank	71	66	76	75	73	80
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	133	118	103	93	85	71
Rank	81	82	83	83	83	85
Cost per Auto Commuter (\$)	613	587	546	522	485	428
Rank	73	80	84	83	84	87
Truck Congestion						
Annual Person-Hours of Delay (000)	339	315	284	265	245	211
Rank	81	82	83	83	83	85
Annual Gallons of Wasted Fuel (000)	811	754	679	633	586	504
Rank	81	82	83	82	82	85
Annual Congestion Cost (\$ million)	13	11	10	9	8	6
Rank	81	81	80	79	81	85

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Mobility Data for Boise ID

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	220	215	210	200	195	190
Rank	96	97	97	97	97	97
Commuters (1000s)	99	95	92	86	83	79
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,200	1,170	1,005	915	870	830
Arterial Streets	3,095	2,750	2,620	2,450	2,310	2,240
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)	1.28	1.15	1.36	1.33	1.20	1.15
Diesel (\$/gallon)	1.28	1.22	1.42	1.36	1.22	1.18
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)	2,072	1,770	1,571	1,426	1,258	1,128
Rank	86	88	89	90	91	92
Fuel per Peak Auto Commuter (gallons)	8	7	6	6	4	4
Rank	88	87	88	85	90	91
Annual Delay						
Total Delay (1000s of person-hours)	4,377	3,739	3,318	3,012	2,657	2,382
Rank	86	89	92	91	93	93
Delay per Auto Commuter (pers-hrs)	26	23	21	20	18	17
Rank	78	83	86	85	87	87
Travel Time Index						
Rank	1.10	1.08	1.07	1.07	1.06	1.05
Rank	84	90	94	91	93	96
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	59	50	44	39	33	29
Rank	86	88	90	91	93	93
Cost per Auto Commuter (\$)	386	337	307	283	262	235
Rank	88	91	92	92	93	94
Truck Congestion						
Annual Person-Hours of Delay (000)	184	157	139	127	112	100
Rank	86	89	92	91	93	93
Annual Gallons of Wasted Fuel (000)	439	375	333	302	267	239
Rank	86	88	89	90	91	92
Annual Congestion Cost (\$ million)	5	4	4	4	3	3
Rank	84	88	86	82	88	85

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Mobility Data for Boise ID

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	180	175	170	170	165	165
Rank	97	97	97	97	97	97
Commuters (1000s)	74	71	68	67	64	64
Daily Vehicle-Miles of Travel (1000s)						
Freeway	790	750	700	675	650	625
Arterial Streets	2,145	2,065	1,800	1,685	1,565	1,480
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)	1.13	1.21	1.12	1.15	1.10	1.02
Diesel (\$/gallon)	1.16	1.21	1.12	1.07	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)	1,062	989	925	906	733	615
Rank	90	89	89	88	89	89
Fuel per Peak Auto Commuter (gallons)	3	3	3	4	2	3
Rank	90	90	90	81	90	81
Annual Delay						
Total Delay (1000s of person-hours)	2,243	2,089	1,954	1,913	1,548	1,299
Rank	92	91	91	89	90	91
Delay per Auto Commuter (pers-hrs)	17	16	16	16	13	11
Rank	85	85	83	81	84	86
Travel Time Index						
Rank	1.05	1.05	1.04	1.04	1.03	1.03
Rank	93	92	94	94	95	94
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	27	24	22	21	16	13
Rank	92	91	91	88	90	90
Cost per Auto Commuter (\$)	234	223	214	217	181	160
Rank	92	92	92	88	93	93
Truck Congestion						
Annual Person-Hours of Delay (000)	94	88	82	80	65	55
Rank	92	91	91	89	90	90
Annual Gallons of Wasted Fuel (000)	225	210	196	192	155	130
Rank	89	89	89	88	89	89
Annual Congestion Cost (\$ million)	2	2	2	2	2	1
Rank	92	90	85	83	82	90

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Mobility Data for Boise ID

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	160	160	155	155	150	150
Rank	97	97	97	97	97	97
Commuters (1000s)	61	61	58	58	56	55
Daily Vehicle-Miles of Travel (1000s)						
Freeway	600	580	550	520	490	475
Arterial Streets	1,455	1,460	1,440	1,435	1,050	990
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)	1.06	1.04	1.36	1.37	1.41	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)	469	452	435	421	335	231
Rank	92	92	92	92	92	94
Fuel per Peak Auto Commuter (gallons)	2	1	1	1	1	1
Rank	86	91	90	87	86	82
Annual Delay						
Total Delay (1000s of person-hours)	990	954	919	890	707	489
Rank	95	95	93	92	93	94
Delay per Auto Commuter (pers-hrs)	9	9	9	8	7	5
Rank	88	87	83	83	85	95
Travel Time Index						
Rank	100	100	100	101	101	101
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	9	9	8	8	6	4
Rank	95	91	93	89	93	94
Cost per Auto Commuter (\$)	125	130	123	132	118	71
Rank	96	96	96	92	91	98
Truck Congestion						
Annual Person-Hours of Delay (000)	42	40	39	37	30	21
Rank	95	95	93	92	93	94
Annual Gallons of Wasted Fuel (000)	99	96	92	89	71	49
Rank	92	92	92	92	92	94
Annual Congestion Cost (\$ million)	1	1	1	1	1	1
Rank	87	84	83	81	78	75

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