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 2020. 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 2020 (estimated at $20.17 per hour of person travel and $55.24 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.

Annual Greenhouse Gases (CO2) Produced -Tons of CO2 produced from all vehicle travel.

Excess Greenhouse Gases (CO2) Produced due to Congestion-Tons of CO2 produced due to congested portion of travel. The excess CO2 is a subset of the total CO2 produced.

Mobility Data for Boise ID

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	405	405	400	390	385	380
Rank	86	86	86	86	86	86
Commuters (1000s)	204	204	201	196	192	189
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,818	2,040	2,003	1,928	1,892	1,714
Arterial Streets	4,023	4,515	4,416	4,261	4,243	4,407
Cost Components						
Value of Time ($/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost ($/hour)	55.24	61.03	54.71	52.14	50.20	46.87
Gasoline ($/gallon)	2.56	2.76	3.14	2.58	2.37	2.64
Diesel ($/gallon)	2.97	2.90	3.49	2.74	2.50	2.63
System Performance	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**
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)	2,305	5,659	5,036	4,869	4,773	4,469
Rank	86	78	81	81	81	81
Fuel per Peak Auto Commuter (gallons)	9	22	20	20	21	18
Rank	70	39	47	47	37	58
Annual Delay						
Total Delay (1000s of person-hours)	5,102	12,525	12,261	12,254	11,795	10,855
Rank	88	79	79	78	78	80
Delay per Auto Commuter (pers-hrs)	18	44	44	45	44	43
Rank	87	64	60	55	53	55
Travel Time Index	1.05	1.18	1.16	1.16	1.16	1.15
Rank	85	41	57	59	58	67
Commuter Stress Index	1.07	1.22	1.20	1.19	--	--
Rank	75	41	47	50	--	--
Freeway Planning Time Index (95th Pctile)	--	1.38	1.29	1.28	--	--
Rank	--	55	68	75	--	--
Congestion Cost						
Total Cost ($ millions)	114	275	267	263	249	226
Rank	88	78	78	78	78	79
Cost per Auto Commuter ($)	341	822	807	814	788	720
Rank	93	69	69	61	65	75
Truck Congestion						
Annual Person-Hours of Delay (000)	191	486	465	515	495	456
Rank	93	86	86	81	82	84
Annual Gallons of Wasted Fuel (000)	357	906	854	1,032	1,012	947
Rank	91	85	85	77	77	78
Annual Congestion Cost ($ million)	10	29	26	28	26	22
Rank	91	80	85	81	82	83
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	22,895	56,205	--	--	--	--
Rank	86	78	--	--	--	--
Due to All Travel (tons)	514,514	1,263,082	--	--	--	--
Rank	91	89	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	3,897	9,901	--	--	--	--
Rank	91	84	--	--	--	--
Due to Truck Travel (tons)	107,574	273,294	--	--	--	--
Rank	94	91	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	375	365	355	345	335	325
Rank	86	88	90	91	91	92
Commuters (1000s)	186	182	177	172	166	161
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,674	1,674	1,520	1,617	1,592	1,540
Arterial Streets	4,246	4,173	4,170	4,225	4,159	4,011
Cost Components						
Value of Time ($/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost ($/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline ($/gallon)	3.57	3.68	3.35	3.31	2.84	2.22
Diesel ($/gallon)	3.81	4.02	4.01	3.77	3.11	2.61
System Performance	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,670	4,560	4,429	4,334	4,248	4,160
Rank	81	81	80	80	80	79
Fuel per Peak Auto Commuter (gallons)	19	18	15	14	14	12
Rank	47	54	78	79	80	83
Annual Delay						
Total Delay (1000s of person-hours)	11,145	10,690	10,196	9,886	9,599	9,226
Rank	78	78	79	79	79	78
Delay per Auto Commuter (pers-hrs)	41	39	36	36	35	36
Rank	59	63	72	69	71	61
Travel Time Index	1.15	1.14	1.14	1.14	1.15	1.15
Rank	68	76	77	75	65	68
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	236	223	209	200	187	174
Rank	78	78	79	79	78	78
Cost per Auto Commuter ($)	735	715	690	689	692	675
Rank	66	67	68	68	67	68
Truck Congestion						
Annual Person-Hours of Delay (000)	468	449	428	415	403	388
Rank	82	82	83	82	83	83
Annual Gallons of Wasted Fuel (000)	990	967	939	919	901	882
Rank	77	77	78	78	78	78
Annual Congestion Cost ($ million)	23	21	20	21	19	17
Rank	82	82	82	82	82	83
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	315	305	290	280	270	260
Rank	94	94	94	94	94	94
Commuters (1000s)	155	150	141	136	130	124
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,500	1,620	1,575	1,530	1,465	1,375
Arterial Streets	3,905	4,045	3,810	3,680	3,500	3,470
Cost Components						
Value of Time ($/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost ($/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline ($/gallon)	3.40	3.22	2.60	2.30	2.04	1.61
Diesel ($/gallon)	4.21	3.67	3.00	2.74	2.17	1.62
System Performance	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	4,371	4,450	4,144	3,827	3,554	3,204
Rank	79	79	79	80	80	81
Fuel per Peak Auto Commuter (gallons)	14	15	14	13	12	11
Rank	80	73	78	81	83	86
Annual Delay						
Total Delay (1000s of person-hours)	9,232	9,398	8,753	8,083	7,507	6,766
Rank	78	78	79	79	81	81
Delay per Auto Commuter (pers-hrs)	36	38	37	36	34	32
Rank	61	48	52	53	60	69
Travel Time Index	1.15	1.16	1.16	1.15	1.15	1.13
Rank	69	59	58	68	64	75
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	181	177	158	140	125	108
Rank	78	78	78	79	81	81
Cost per Auto Commuter ($)	668	709	679	647	619	576
Rank	66	63	65	73	80	84
Truck Congestion						
Annual Person-Hours of Delay (000)	388	395	368	339	315	284
Rank	84	82	84	83	85	85
Annual Gallons of Wasted Fuel (000)	927	943	879	811	754	679
Rank	78	76	77	77	78	79
Annual Congestion Cost ($ million)	19	18	16	14	12	10
Rank	81	79	79	82	82	83
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	250	240	230	220	215	210
Rank	94	94	95	95	96	96
Commuters (1000s)	118	111	105	99	95	92
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,340	1,300	1,250	1,200	1,170	1,005
Arterial Streets	3,385	3,310	3,190	3,095	2,750	2,620
Cost Components						
Value of Time ($/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost ($/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline ($/gallon)	1.43	1.65	1.62	1.28	1.15	1.36
Diesel ($/gallon)	1.44	1.65	1.55	1.28	1.22	1.42
System Performance	**2002**	**2001**	**2000**	**1999**	**1998**	**1997**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,985	2,765	2,376	2,072	1,770	1,571
Rank	81	82	85	86	88	88
Fuel per Peak Auto Commuter (gallons)	11	10	9	8	7	6
Rank	84	85	84	88	87	88
Annual Delay						
Total Delay (1000s of person-hours)	6,305	5,839	5,019	4,377	3,739	3,318
Rank	82	82	84	84	88	91
Delay per Auto Commuter (pers-hrs)	32	31	28	26	23	21
Rank	67	68	76	78	83	86
Travel Time Index	1.13	1.13	1.11	1.10	1.08	1.07
Rank	75	73	79	83	89	93
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	98	90	75	63	52	46
Rank	82	82	84	84	89	91
Cost per Auto Commuter ($)	551	512	451	407	355	324
Rank	83	84	87	88	91	92
Truck Congestion						
Annual Person-Hours of Delay (000)	265	245	211	184	157	139
Rank	85	85	87	87	89	90
Annual Gallons of Wasted Fuel (000)	633	586	504	439	375	333
Rank	80	82	86	87	87	88
Annual Congestion Cost ($ million)	9	8	7	6	5	4
Rank	83	84	84	84	86	87
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	200	195	190	180	175	170
Rank	96	96	96	96	96	96
Commuters (1000s)	86	83	79	74	71	68
Daily Vehicle-Miles of Travel (1000s)						
Freeway	915	870	830	790	750	700
Arterial Streets	2,450	2,310	2,240	2,145	2,065	1,800
Cost Components						
Value of Time ($/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost ($/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline ($/gallon)	1.33	1.20	1.15	1.13	1.21	1.12
Diesel ($/gallon)	1.36	1.22	1.18	1.16	1.21	1.12
System Performance	**1996**	**1995**	**1994**	**1993**	**1992**	**1991**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,426	1,258	1,128	1,062	989	925
Rank	92	92	92	92	91	91
Fuel per Peak Auto Commuter (gallons)	6	4	4	3	3	3
Rank	85	90	91	90	90	90
Annual Delay						
Total Delay (1000s of person-hours)	3,012	2,657	2,382	2,243	2,089	1,954
Rank	92	92	93	92	91	91
Delay per Auto Commuter (pers-hrs)	20	18	17	17	16	16
Rank	85	87	87	85	85	83
Travel Time Index	1.07	1.06	1.05	1.05	1.05	1.04
Rank	90	93	96	93	92	94
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	41	35	31	28	26	23
Rank	91	92	93	92	91	91
Cost per Auto Commuter ($)	299	276	248	247	235	226
Rank	92	93	94	92	92	92
Truck Congestion						
Annual Person-Hours of Delay (000)	127	112	100	94	88	82
Rank	91	92	92	91	90	90
Annual Gallons of Wasted Fuel (000)	302	267	239	225	210	196
Rank	88	89	89	87	87	88
Annual Congestion Cost ($ million)	4	3	3	3	2	2
Rank	86	89	86	85	90	88
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	170	165	165	160	160	155
Rank	96	96	96	96	96	96
Commuters (1000s)	67	64	64	61	61	58
Daily Vehicle-Miles of Travel (1000s)						
Freeway	675	650	625	600	580	550
Arterial Streets	1,685	1,565	1,480	1,455	1,460	1,440
Cost Components						
Value of Time ($/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost ($/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline ($/gallon)	1.15	1.10	1.02	1.02	0.99	1.30
Diesel ($/gallon)	1.07	1.15	1.06	1.06	1.04	1.36
System Performance	**1990**	**1989**	**1988**	**1987**	**1986**	**1985**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	906	733	615	469	452	435
Rank	89	90	90	91	91	91
Fuel per Peak Auto Commuter (gallons)	4	2	3	2	1	1
Rank	81	90	81	86	91	90
Annual Delay						
Total Delay (1000s of person-hours)	1,913	1,548	1,299	990	954	919
Rank	88	90	91	94	93	92
Delay per Auto Commuter (pers-hrs)	16	13	11	9	9	9
Rank	81	84	86	88	87	83
Travel Time Index	1.04	1.03	1.03	1.01	1.01	1.01
Rank	94	95	94	100	100	100
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	22	17	14	10	9	9
Rank	86	89	91	94	93	91
Cost per Auto Commuter ($)	229	191	169	132	137	130
Rank	88	93	93	96	96	96
Truck Congestion						
Annual Person-Hours of Delay (000)	80	65	55	42	40	39
Rank	88	89	89	93	93	91
Annual Gallons of Wasted Fuel (000)	192	155	130	99	96	92
Rank	86	88	88	90	89	89
Annual Congestion Cost ($ million)	2	2	1	1	1	1
Rank	85	84	89	86	86	86
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

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

Mobility Data for Boise ID

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	155	150	150
Rank	96	96	96
Commuters (1000s)	58	56	55
Daily Vehicle-Miles of Travel (1000s)			
Freeway	520	490	475
Arterial Streets	1,435	1,050	990
Cost Components			
Value of Time ($/hour)	7.75	7.43	7.20
Commercial Cost ($/hour)	23.94	23.63	23.31
Gasoline ($/gallon)	1.31	1.34	1.41
Diesel ($/gallon)	1.37	1.41	1.47
System Performance	**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)	421	335	231
Rank	90	90	93
Fuel per Peak Auto Commuter (gallons)	1	1	1
Rank	87	86	82
Annual Delay			
Total Delay (1000s of person-hours)	890	707	489
Rank	91	92	94
Delay per Auto Commuter (pers-hrs)	8	7	5
Rank	83	85	95
Travel Time Index	1.00	1.00	1.00
Rank	101	101	100
Commuter Stress Index	--	--	--
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost			
Total Cost ($ millions)	8	6	4
Rank	91	92	94
Cost per Auto Commuter ($)	139	124	75
Rank	92	91	98
Truck Congestion			
Annual Person-Hours of Delay (000)	37	30	21
Rank	90	91	93
Annual Gallons of Wasted Fuel (000)	89	71	49
Rank	89	89	93
Annual Congestion Cost ($ million)	1	1	1
Rank	82	79	78
Annual Greenhouse Gases (CO2) Produced			
Excess Due to Congestion (tons)	--	--	--
Rank	--	--	--
Due to All Travel (tons)	--	--	--
Rank	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced			
Excess Due to Truck Congestion (tons)	--	--	--
Rank	--	--	--
Due to Truck Travel (tons)	--	--	--
Rank	--	--	--

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