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 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 Spokane WA

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	420	420	415	405	400	395
Rank	84	84	85	85	85	85
Commuters (1000s)	215	215	212	207	203	200
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,023	2,542	2,505	2,417	2,391	2,311
Arterial Streets	3,584	4,502	4,475	4,442	4,425	4,348
Cost Components						
Value of Time ($/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost ($/hour)	55.24	49.49	54.71	52.14	50.20	46.87
Gasoline ($/gallon)	3.08	3.21	3.47	2.83	2.56	2.71
Diesel ($/gallon)	3.23	3.26	3.43	2.84	2.58	2.77
System Performance	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**
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)	2,480	5,777	5,720	5,610	5,464	5,315
Rank	85	76	77	76	76	76
Fuel per Peak Auto Commuter (gallons)	11	26	26	26	25	24
Rank	51	16	16	15	16	20
Annual Delay						
Total Delay (1000s of person-hours)	5,114	11,913	11,475	10,900	10,486	10,113
Rank	87	81	81	82	83	83
Delay per Auto Commuter (pers-hrs)	20	47	46	45	44	43
Rank	81	51	49	55	53	55
Travel Time Index	1.07	1.16	1.16	1.16	1.16	1.16
Rank	57	59	57	59	58	57
Commuter Stress Index	1.08	1.17	1.17	1.17	--	--
Rank	58	67	67	66	--	--
Freeway Planning Time Index (95th Pctile)	--	1.29	1.27	1.29	--	--
Rank	--	70	72	72	--	--
Congestion Cost						
Total Cost ($ millions)	119	263	257	240	227	216
Rank	86	81	81	81	82	83
Cost per Auto Commuter ($)	423	937	928	887	861	825
Rank	77	52	49	48	51	55
Truck Congestion						
Annual Person-Hours of Delay (000)	273	548	527	514	495	477
Rank	82	82	81	82	82	82
Annual Gallons of Wasted Fuel (000)	474	952	938	917	893	869
Rank	83	82	82	81	81	82
Annual Congestion Cost ($ million)	15	27	29	28	25	23
Rank	81	83	81	81	83	82
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	24,742	57,631	--	--	--	--
Rank	85	76	--	--	--	--
Due to All Travel (tons)	657,898	1,532,438	--	--	--	--
Rank	87	84	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	5,179	10,392	--	--	--	--
Rank	82	81	--	--	--	--
Due to Truck Travel (tons)	158,100	317,262	--	--	--	--
Rank	86	87	--	--	--	--

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

Mobility Data for Spokane WA

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	390	385	385	385	380	375
Rank	85	85	85	85	85	86
Commuters (1000s)	197	191	191	191	188	185
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,194	2,153	2,135	2,369	2,300	2,150
Arterial Streets	4,269	4,233	4,145	4,262	4,240	4,381
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 ($/gallon)	3.54	3.74	3.68	3.60	2.95	2.51
Diesel ($/gallon)	3.77	4.02	4.11	3.96	3.24	2.73
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)	5,241	5,150	5,052	4,979	4,928	4,933
Rank	76	76	76	76	76	76
Fuel per Peak Auto Commuter (gallons)	23	23	22	22	22	21
Rank	19	17	21	18	20	15
Annual Delay						
Total Delay (1000s of person-hours)	9,800	9,462	9,198	8,820	8,648	8,496
Rank	83	83	83	83	82	81
Delay per Auto Commuter (pers-hrs)	42	41	40	39	39	38
Rank	55	52	55	54	53	54
Travel Time Index	1.16	1.16	1.16	1.16	1.16	1.16
Rank	58	55	57	56	54	55
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	213	203	194	185	173	165
Rank	83	83	83	83	81	80
Cost per Auto Commuter ($)	793	775	764	755	763	765
Rank	54	55	54	55	54	49
Truck Congestion						
Annual Person-Hours of Delay (000)	462	446	434	415	408	400
Rank	83	83	82	82	82	82
Annual Gallons of Wasted Fuel (000)	857	841	826	814	805	806
Rank	81	81	81	81	80	80
Annual Congestion Cost ($ million)	23	21	20	21	19	18
Rank	82	82	82	82	82	81
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 Spokane WA

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	370	365	360	360	360	355
Rank	86	86	85	85	85	84
Commuters (1000s)	182	178	175	173	172	169
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,040	2,125	2,070	2,030	1,980	1,900
Arterial Streets	4,470	4,515	4,405	4,450	4,330	4,180
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 ($/gallon)	3.60	3.18	2.80	2.32	2.11	1.63
Diesel ($/gallon)	4.38	3.39	2.62	2.83	2.22	1.66
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)	5,055	4,972	4,882	4,768	4,631	4,576
Rank	76	76	75	75	74	73
Fuel per Peak Auto Commuter (gallons)	22	22	23	22	21	22
Rank	19	19	14	15	14	11
Annual Delay						
Total Delay (1000s of person-hours)	8,290	8,156	8,007	7,820	7,594	7,505
Rank	82	82	82	80	79	79
Delay per Auto Commuter (pers-hrs)	38	38	37	37	37	37
Rank	47	48	52	48	47	45
Travel Time Index	1.16	1.16	1.16	1.16	1.16	1.16
Rank	61	59	58	57	55	52
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	169	158	149	139	130	123
Rank	81	81	81	80	79	79
Cost per Auto Commuter ($)	738	753	758	769	774	786
Rank	51	54	54	51	50	45
Truck Congestion						
Annual Person-Hours of Delay (000)	391	385	378	369	358	354
Rank	83	84	82	81	80	77
Annual Gallons of Wasted Fuel (000)	826	812	798	779	757	748
Rank	81	81	81	79	77	77
Annual Congestion Cost ($ million)	19	17	15	15	13	12
Rank	81	81	83	78	78	75
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	--	--	--	--	--	--

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Mobility Data for Spokane WA

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	330	330	330	330	325	325
Rank	86	85	83	83	83	82
Commuters (1000s)	155	153	150	148	144	141
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,800	1,700	1,600	1,500	1,420	1,335
Arterial Streets	4,105	4,060	4,070	4,105	4,040	3,985
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 ($/gallon)	1.48	1.63	1.63	1.40	1.13	1.33
Diesel ($/gallon)	1.43	1.66	1.60	1.33	1.21	1.39
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)	4,114	3,875	3,812	3,635	3,449	3,236
Rank	73	74	73	73	73	72
Fuel per Peak Auto Commuter (gallons)	19	17	18	17	16	15
Rank	18	31	16	17	18	17
Annual Delay						
Total Delay (1000s of person-hours)	6,748	6,357	6,251	5,961	5,656	5,309
Rank	80	80	77	76	75	76
Delay per Auto Commuter (pers-hrs)	37	35	35	34	33	31
Rank	42	45	45	45	46	49
Travel Time Index	1.16	1.16	1.16	1.16	1.16	1.16
Rank	50	48	43	39	36	36
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	107	100	96	87	80	75
Rank	80	79	77	76	75	75
Cost per Auto Commuter ($)	722	687	694	685	667	636
Rank	53	55	54	54	51	51
Truck Congestion						
Annual Person-Hours of Delay (000)	318	299	295	281	267	250
Rank	78	77	77	76	76	75
Annual Gallons of Wasted Fuel (000)	672	633	623	594	563	529
Rank	78	76	74	73	73	74
Annual Congestion Cost ($ million)	11	10	9	8	8	7
Rank	75	77	77	76	75	75
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	--	--	--	--	--	--

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Mobility Data for Spokane WA

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	320	320	315	305	300	295
Rank	82	82	82	83	83	83
Commuters (1000s)	137	135	131	125	121	117
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,295	1,280	1,230	1,185	1,110	995
Arterial Streets	3,875	3,795	3,980	3,850	3,625	3,425
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 ($/gallon)	1.35	1.25	1.16	1.19	1.22	1.14
Diesel ($/gallon)	1.39	1.28	1.20	1.23	1.24	1.26
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)	3,041	2,945	2,774	2,590	2,358	2,154
Rank	72	72	72	71	71	71
Fuel per Peak Auto Commuter (gallons)	13	14	13	12	11	11
Rank	29	15	15	16	16	13
Annual Delay						
Total Delay (1000s of person-hours)	4,987	4,831	4,549	4,249	3,868	3,533
Rank	75	75	75	75	75	75
Delay per Auto Commuter (pers-hrs)	30	29	28	27	26	24
Rank	49	48	48	45	41	43
Travel Time Index	1.16	1.16	1.16	1.16	1.16	1.16
Rank	34	32	30	26	23	21
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	69	65	59	54	48	43
Rank	75	74	75	75	75	75
Cost per Auto Commuter ($)	607	607	586	565	532	501
Rank	50	48	44	44	45	45
Truck Congestion						
Annual Person-Hours of Delay (000)	235	228	215	201	182	166
Rank	75	75	75	74	77	77
Annual Gallons of Wasted Fuel (000)	497	481	453	423	386	352
Rank	74	74	74	75	75	75
Annual Congestion Cost ($ million)	7	7	6	6	5	5
Rank	75	73	74	72	73	70
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 Spokane WA

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	290	290	290	290	285	285
Rank	83	83	82	81	81	79
Commuters (1000s)	113	113	112	111	108	107
Daily Vehicle-Miles of Travel (1000s)						
Freeway	925	885	835	870	950	905
Arterial Streets	3,210	3,050	2,960	2,820	2,725	2,575
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 ($/gallon)	1.09	1.10	1.02	1.02	0.99	1.30
Diesel ($/gallon)	1.17	1.15	1.06	1.60	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)	1,909	1,778	1,620	1,499	1,365	1,263
Rank	72	69	68	69	68	68
Fuel per Peak Auto Commuter (gallons)	9	9	8	8	6	6
Rank	23	19	20	18	28	22
Annual Delay						
Total Delay (1000s of person-hours)	3,130	2,916	2,658	2,458	2,240	2,073
Rank	77	76	76	77	76	75
Delay per Auto Commuter (pers-hrs)	22	20	19	17	16	15
Rank	46	48	49	51	52	50
Travel Time Index	1.16	1.16	1.16	1.16	1.16	1.16
Rank	19	17	16	16	14	10
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	36	32	28	25	22	21
Rank	76	76	76	75	75	74
Cost per Auto Commuter ($)	463	462	434	417	402	383
Rank	48	43	49	48	45	39
Truck Congestion						
Annual Person-Hours of Delay (000)	148	137	125	116	106	98
Rank	78	74	76	75	75	73
Annual Gallons of Wasted Fuel (000)	312	291	265	245	223	207
Rank	76	74	74	75	75	74
Annual Congestion Cost ($ million)	4	4	3	3	3	2
Rank	71	68	71	68	67	73
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 Spokane WA

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	285	280	275
Rank	78	78	78
Commuters (1000s)	106	104	101
Daily Vehicle-Miles of Travel (1000s)			
Freeway	850	835	815
Arterial Streets	2,415	2,290	2,180
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	1.40	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)	1,222	1,150	1,126
Rank	68	66	64
Fuel per Peak Auto Commuter (gallons)	5	5	4
Rank	27	22	19
Annual Delay			
Total Delay (1000s of person-hours)	2,004	1,885	1,847
Rank	72	71	69
Delay per Auto Commuter (pers-hrs)	15	14	14
Rank	45	44	40
Travel Time Index	1.16	1.16	1.16
Rank	8	7	7
Commuter Stress Index	--	--	--
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost			
Total Cost ($ millions)	19	18	17
Rank	72	70	68
Cost per Auto Commuter ($)	378	373	381
Rank	38	37	33
Truck Congestion			
Annual Person-Hours of Delay (000)	94	89	87
Rank	71	69	69
Annual Gallons of Wasted Fuel (000)	199	188	184
Rank	73	72	69
Annual Congestion Cost ($ million)	2	2	2
Rank	71	68	65
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.