

Performance Measure Summary - Honolulu HI

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 Honolulu HI

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	850	845	840	840	835	820
Rank	53	53	53	53	53	53
Commuters (1000s)	384	382	379	379	381	374
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,488	6,484	6,050	6,066	5,959	5,855
Arterial Streets	3,267	3,316	3,351	3,252	3,139	3,125
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)	3.07	2.73	2.90	4.21	4.35	4.11
Diesel (\$/gallon)	4.04	4.06	4.25	4.86	4.91	4.79
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	48.8	--	--	--	--	--
Congested System (% of lane-miles)	44.2	--	--	--	--	--
Congested Time (number of "Rush Hours")	5.8	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	15,689	15,114	14,475	14,118	13,950	13,737
Rank	41	42	43	44	44	44
Fuel per Peak Auto Commuter (gallons)	29	29	28	26	26	25
Rank	13	13	12	14	13	13
Annual Delay						
Total Delay (1000s of person-hours)	36,378	34,660	32,628	31,546	30,625	29,888
Rank	43	44	45	45	45	45
Delay per Auto Commuter (pers-hrs)	64	62	60	59	57	56
Rank	16	17	17	16	18	16
Travel Time Index						
Rank	1.40	1.40	1.40	1.39	1.39	1.38
Rank	4	4	4	4	3	3
Commuter Stress Index						
Rank	1.47	--	--	--	--	--
Rank	6	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	2.29	--	--	--	--	--
Rank	6	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	753	704	655	647	619	593
Rank	43	44	44	44	44	45
Cost per Auto Commuter (\$)	1,374	1,320	1,234	1,187	1,162	1,150
Rank	14	14	16	16	17	15
Truck Congestion						
Annual Person-Hours of Delay (000)	1,528	1,456	1,370	1,325	1,286	1,255
Rank	43	44	45	45	45	45
Annual Gallons of Wasted Fuel (000)	3,326	3,204	3,069	2,993	2,957	2,912
Rank	41	42	43	44	44	44
Annual Congestion Cost (\$ million)	83	77	69	67	61	58
Rank	42	43	43	43	44	43

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

Mobility Data for Honolulu HI

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	800	780	760	745	735	725
Rank	53	53	54	54	55	55
Commuters (1000s)	364	354	344	336	329	323
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,265	6,213	6,200	6,150	6,275	6,080
Arterial Streets	3,148	3,110	3,100	3,095	3,170	3,200
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)	3.66	3.47	2.87	3.74	3.41	3.09
Diesel (\$/gallon)	4.43	4.04	3.86	4.34	4.00	3.51
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)	13,477	13,156	12,635	12,954	12,766	12,375
Rank	44	44	45	46	45	45
Fuel per Peak Auto Commuter (gallons)	26	25	22	24	24	24
Rank	11	11	14	9	10	10
Annual Delay						
Total Delay (1000s of person-hours)	28,795	27,593	26,004	25,391	25,022	24,256
Rank	45	46	46	46	46	46
Delay per Auto Commuter (pers-hrs)	55	55	53	52	52	52
Rank	13	11	13	13	14	14
Travel Time Index						
Rank	3	3	3	3	3	3
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	562	521	478	479	452	423
Rank	44	45	46	46	46	45
Cost per Auto Commuter (\$)	1,144	1,129	1,082	1,050	1,074	1,069
Rank	14	15	15	16	17	17
Truck Congestion						
Annual Person-Hours of Delay (000)	1,209	1,159	1,092	1,066	1,051	1,019
Rank	45	46	46	46	46	45
Annual Gallons of Wasted Fuel (000)	2,857	2,789	2,679	2,746	2,706	2,623
Rank	44	44	45	46	45	45
Annual Congestion Cost (\$ million)	60	54	50	50	47	43
Rank	44	44	45	46	45	45

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

Mobility Data for Honolulu HI

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	720	715	710	700	700	695
Rank	54	54	54	54	53	53
Commuters (1000s)	319	315	311	303	299	293
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,015	6,000	5,930	5,775	5,740	5,625
Arterial Streets	3,250	3,200	3,175	3,155	3,135	3,115
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)	2.63	2.38	2.03	1.72	2.00	1.86
Diesel (\$/gallon)	2.93	2.50	1.22	2.00	2.12	2.02
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)	11,972	11,104	10,599	10,117	9,904	9,585
Rank	46	46	46	46	45	44
Fuel per Peak Auto Commuter (gallons)	24	21	20	18	19	17
Rank	10	14	17	27	13	24
Annual Delay						
Total Delay (1000s of person-hours)	23,466	21,764	20,775	19,830	19,413	18,787
Rank	45	46	46	46	46	46
Delay per Auto Commuter (pers-hrs)	51	48	46	45	44	44
Rank	15	18	20	21	20	16
Travel Time Index						
Rank	1.37	1.35	1.33	1.33	1.32	1.32
Rank	3	5	5	4	5	4
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	392	349	319	297	288	270
Rank	45	46	46	46	46	46
Cost per Auto Commuter (\$)	1,069	1,025	1,006	982	973	970
Rank	17	19	19	19	18	17
Truck Congestion						
Annual Person-Hours of Delay (000)	986	914	873	833	815	789
Rank	45	46	46	46	46	46
Annual Gallons of Wasted Fuel (000)	2,538	2,354	2,247	2,145	2,100	2,032
Rank	46	46	46	46	45	44
Annual Congestion Cost (\$ million)	39	34	29	28	27	25
Rank	45	46	46	46	46	46

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

Mobility Data for Honolulu HI

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	695	700	705	705	700	695
Rank	53	51	50	49	49	49
Commuters (1000s)	289	288	286	283	277	272
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,715	5,725	5,720	5,680	5,635	5,615
Arterial Streets	3,100	3,080	3,100	3,175	3,170	3,090
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)	1.53	1.63	1.67	1.68	1.57	1.52
Diesel (\$/gallon)	1.88	1.83	1.83	1.88	1.75	1.70
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)	9,394	8,990	8,832	8,434	8,082	7,411
Rank	42	42	40	38	38	38
Fuel per Peak Auto Commuter (gallons)	18	16	17	16	16	15
Rank	12	18	9	10	10	9
Annual Delay						
Total Delay (1000s of person-hours)	18,414	17,621	17,312	16,532	15,842	14,527
Rank	46	45	44	43	38	39
Delay per Auto Commuter (pers-hrs)	43	41	41	39	38	35
Rank	16	17	16	15	14	17
Travel Time Index						
Rank	4	4	4	4	4	5
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	254	239	232	217	202	180
Rank	46	44	43	40	38	38
Cost per Auto Commuter (\$)	982	962	957	937	923	875
Rank	17	16	14	13	13	13
Truck Congestion						
Annual Person-Hours of Delay (000)	773	740	727	694	665	610
Rank	46	45	44	43	38	39
Annual Gallons of Wasted Fuel (000)	1,992	1,906	1,872	1,788	1,713	1,571
Rank	42	42	40	38	38	38
Annual Congestion Cost (\$ million)	24	22	22	20	19	17
Rank	40	42	38	38	37	38

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Mobility Data for Honolulu HI

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	690	685	670	665	665	660
Rank	49	49	49	48	46	46
Commuters (1000s)	267	261	252	247	245	242
Daily Vehicle-Miles of Travel (1000s)						
Freeway	5,505	5,555	5,365	5,225	5,155	4,940
Arterial Streets	3,070	2,935	2,785	2,700	2,690	2,615
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)	1.50	1.47	1.46	1.36	1.36	1.26
Diesel (\$/gallon)	1.68	1.69	1.68	1.57	1.57	1.45
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)	7,144	6,921	6,264	6,014	5,527	5,418
Rank	38	38	38	37	37	36
Fuel per Peak Auto Commuter (gallons)	13	14	11	12	10	11
Rank	12	8	13	9	11	9
Annual Delay						
Total Delay (1000s of person-hours)	14,003	13,566	12,279	11,789	10,834	10,620
Rank	38	37	38	37	37	37
Delay per Auto Commuter (pers-hrs)	35	34	32	31	29	29
Rank	14	14	14	15	16	16
Travel Time Index						
Rank	1.25	1.25	1.23	1.23	1.21	1.21
Rank	4	4	4	4	5	5
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	170	160	141	130	114	107
Rank	38	37	38	37	37	37
Cost per Auto Commuter (\$)	862	860	806	805	784	809
Rank	12	12	13	13	15	14
Truck Congestion						
Annual Person-Hours of Delay (000)	588	570	516	495	455	446
Rank	38	37	38	37	37	37
Annual Gallons of Wasted Fuel (000)	1,515	1,467	1,328	1,275	1,172	1,149
Rank	38	38	38	37	37	36
Annual Congestion Cost (\$ million)	16	16	14	13	12	12
Rank	37	37	37	36	37	34

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Mobility Data for Honolulu HI

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	620	595	590	590	585	570
Rank	47	49	50	50	50	50
Commuters (1000s)	225	214	211	209	206	198
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,540	4,105	3,965	3,865	3,700	3,320
Arterial Streets	2,600	2,555	2,555	2,505	2,455	2,410
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)	1.26	1.23	1.61	1.62	1.66	1.74
Diesel (\$/gallon)	1.45	1.42	1.85	1.87	1.92	2.00
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)	4,944	4,403	4,024	3,733	3,419	3,233
Rank	36	35	35	34	34	34
Fuel per Peak Auto Commuter (gallons)	10	9	8	8	6	6
Rank	10	11	13	11	13	10
Annual Delay						
Total Delay (1000s of person-hours)	9,690	8,630	7,888	7,317	6,702	6,337
Rank	37	38	38	37	36	34
Delay per Auto Commuter (pers-hrs)	28	26	24	23	21	21
Rank	16	15	15	13	14	14
Travel Time Index						
Rank	1.20	1.19	1.18	1.16	1.15	1.15
Rank	5	7	8	9	10	8
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	94	81	74	67	59	55
Rank	37	38	37	35	36	34
Cost per Auto Commuter (\$)	772	716	666	634	605	591
Rank	15	15	15	14	14	14
Truck Congestion						
Annual Person-Hours of Delay (000)	407	362	331	307	281	266
Rank	37	38	38	37	36	34
Annual Gallons of Wasted Fuel (000)	1,048	933	853	791	725	685
Rank	36	35	35	34	34	34
Annual Congestion Cost (\$ million)	10	9	9	8	7	7
Rank	37	36	32	32	34	30

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