

Performance Measure Summary - Las Vegas-Henderson NV

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 Las Vegas-Henderson NV

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	2,070	2,030	2,000	1,975	1,925	1,880
Rank	22	22	24	24	24	24
Commuters (1000s)	1,025	1,009	994	982	968	953
Daily Vehicle-Miles of Travel (1000s)						
Freeway	12,787	12,320	12,031	11,392	11,011	10,990
Arterial Streets	16,510	15,821	15,149	15,005	14,499	15,150
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)	2.63	2.48	2.96	3.43	3.62	3.54
Diesel (\$/gallon)	2.69	2.49	2.72	3.71	3.89	3.93
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	22.7	--	--	--	--	--
Congested System (% of lane-miles)	12.1	--	--	--	--	--
Congested Time (number of "Rush Hours")	3.0	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	26,830	25,996	25,804	25,421	25,123	24,494
Rank	27	28	29	29	29	29
Fuel per Peak Auto Commuter (gallons)	20	19	18	18	18	18
Rank	47	53	58	57	54	52
Annual Delay						
Total Delay (1000s of person-hours)	67,761	64,585	63,559	61,537	59,749	57,732
Rank	28	28	27	27	27	27
Delay per Auto Commuter (pers-hrs)	51	50	49	47	46	46
Rank	34	33	33	34	34	34
Travel Time Index						
Rank	1.26	1.26	1.25	1.25	1.25	1.25
Rank	23	23	24	25	24	23
Commuter Stress Index						
Rank	1.27	--	--	--	--	--
Rank	27	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.63	--	--	--	--	--
Rank	36	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,377	1,292	1,262	1,232	1,179	1,121
Rank	27	27	27	27	27	27
Cost per Auto Commuter (\$)	932	892	874	843	825	808
Rank	41	43	41	41	43	45
Truck Congestion						
Annual Person-Hours of Delay (000)	2,846	2,713	2,669	2,585	2,509	2,425
Rank	28	28	27	27	27	27
Annual Gallons of Wasted Fuel (000)	5,688	5,511	5,470	5,389	5,326	5,193
Rank	27	28	29	29	29	29
Annual Congestion Cost (\$ million)	145	133	125	122	111	105
Rank	27	27	27	27	27	27

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

Mobility Data for Las Vegas-Henderson NV

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,830	1,800	1,745	1,715	1,685	1,650
Rank	25	25	29	29	29	29
Commuters (1000s)	940	924	893	874	853	829
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,980	11,600	11,200	10,805	11,510	10,700
Arterial Streets	15,145	14,700	14,000	13,695	14,255	14,400
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)	3.40	2.86	2.48	3.56	3.20	2.79
Diesel (\$/gallon)	3.73	3.00	2.59	4.14	3.51	2.98
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)	24,229	24,421	24,739	26,139	25,550	24,481
Rank	28	27	26	25	26	26
Fuel per Peak Auto Commuter (gallons)	18	18	18	20	20	19
Rank	49	46	34	31	28	36
Annual Delay						
Total Delay (1000s of person-hours)	56,079	55,487	55,157	55,504	54,253	51,984
Rank	27	26	26	26	26	26
Delay per Auto Commuter (pers-hrs)	45	44	43	45	45	44
Rank	34	33	31	27	29	29
Travel Time Index						
Rank	1.25	1.26	1.27	1.29	1.29	1.28
Rank	22	21	21	15	15	18
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	1,078	1,023	993	1,034	966	892
Rank	27	26	26	26	26	26
Cost per Auto Commuter (\$)	809	826	835	833	845	833
Rank	44	42	38	35	36	37
Truck Congestion						
Annual Person-Hours of Delay (000)	2,355	2,330	2,317	2,331	2,279	2,183
Rank	27	26	26	26	26	26
Annual Gallons of Wasted Fuel (000)	5,137	5,177	5,245	5,541	5,417	5,190
Rank	28	27	26	25	26	26
Annual Congestion Cost (\$ million)	111	102	99	106	98	88
Rank	27	26	26	26	26	26

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

Mobility Data for Las Vegas-Henderson NV

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,620	1,575	1,545	1,500	1,455	1,410
Rank	28	30	30	29	30	32
Commuters (1000s)	808	782	763	730	696	664
Daily Vehicle-Miles of Travel (1000s)						
Freeway	10,000	9,400	8,700	8,000	7,730	6,850
Arterial Streets	13,600	12,900	12,310	11,790	11,225	11,285
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)	2.55	2.16	1.70	1.60	1.71	1.71
Diesel (\$/gallon)	2.77	2.15	1.65	1.54	1.69	1.66
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)	23,808	22,416	21,165	19,588	18,056	16,905
Rank	28	28	28	28	29	29
Fuel per Peak Auto Commuter (gallons)	19	19	18	16	15	14
Rank	34	27	30	42	47	50
Annual Delay						
Total Delay (1000s of person-hours)	50,555	47,599	44,943	41,594	38,341	35,896
Rank	26	26	27	28	29	29
Delay per Auto Commuter (pers-hrs)	44	44	43	43	42	41
Rank	27	27	27	27	26	24
Travel Time Index						
Rank	1.28	1.27	1.27	1.26	1.25	1.25
Rank	16	19	15	18	18	17
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	836	753	683	616	561	511
Rank	26	26	27	28	29	29
Cost per Auto Commuter (\$)	838	815	790	748	699	671
Rank	39	40	41	44	49	51
Truck Congestion						
Annual Person-Hours of Delay (000)	2,123	1,999	1,888	1,747	1,610	1,508
Rank	26	26	27	28	29	29
Annual Gallons of Wasted Fuel (000)	5,047	4,752	4,487	4,153	3,828	3,584
Rank	28	28	28	28	29	29
Annual Congestion Cost (\$ million)	82	72	64	56	51	46
Rank	26	26	26	27	29	29

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Mobility Data for Las Vegas-Henderson NV

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	1,360	1,300	1,270	1,200	1,100	1,020
Rank	32	32	33	33	34	36
Commuters (1000s)	629	592	569	529	477	436
Daily Vehicle-Miles of Travel (1000s)						
Freeway	6,270	5,880	5,485	5,580	4,870	4,540
Arterial Streets	11,140	10,560	10,475	9,825	8,900	7,930
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)	1.57	1.22	1.38	1.39	1.29	1.25
Diesel (\$/gallon)	1.45	1.35	1.47	1.44	1.34	1.29
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)	15,901	14,492	13,657	12,528	11,158	9,920
Rank	31	31	30	30	32	34
Fuel per Peak Auto Commuter (gallons)	13	12	11	10	9	9
Rank	51	53	54	57	59	56
Annual Delay						
Total Delay (1000s of person-hours)	33,765	30,773	29,000	26,603	23,692	21,064
Rank	30	31	31	31	32	34
Delay per Auto Commuter (pers-hrs)	41	39	38	37	37	35
Rank	21	22	19	19	17	17
Travel Time Index						
Rank	17	14	15	10	13	16
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	463	410	382	344	297	257
Rank	30	31	31	31	32	33
Cost per Auto Commuter (\$)	654	610	582	547	502	459
Rank	53	57	55	58	60	63
Truck Congestion						
Annual Person-Hours of Delay (000)	1,418	1,292	1,218	1,117	995	885
Rank	30	31	31	31	32	34
Annual Gallons of Wasted Fuel (000)	3,371	3,072	2,895	2,656	2,365	2,103
Rank	31	31	30	30	32	34
Annual Congestion Cost (\$ million)	41	37	35	31	27	24
Rank	29	31	31	32	32	33

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Mobility Data for Las Vegas-Henderson NV

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	935	860	780	700	650	610
Rank	39	40	43	45	48	50
Commuters (1000s)	393	356	317	280	259	240
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,100	3,800	3,505	3,320	2,590	2,220
Arterial Streets	7,435	6,690	5,980	5,730	5,395	5,350
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)	1.28	1.32	1.17	1.20	1.23	1.14
Diesel (\$/gallon)	1.32	1.33	1.27	1.24	1.22	1.13
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)	8,731	7,471	6,330	5,229	4,352	3,733
Rank	35	35	37	39	41	43
Fuel per Peak Auto Commuter (gallons)	8	7	6	5	5	4
Rank	58	59	67	72	63	71
Annual Delay						
Total Delay (1000s of person-hours)	18,540	15,864	13,442	11,104	9,242	7,926
Rank	35	36	36	39	41	44
Delay per Auto Commuter (pers-hrs)	34	32	30	28	26	24
Rank	16	17	20	21	23	26
Travel Time Index						
Rank	15	15	16	17	19	21
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	221	185	152	121	96	79
Rank	35	36	36	39	41	43
Cost per Auto Commuter (\$)	415	367	321	276	245	221
Rank	69	73	76	82	85	86
Truck Congestion						
Annual Person-Hours of Delay (000)	779	666	565	466	388	333
Rank	35	36	36	39	41	44
Annual Gallons of Wasted Fuel (000)	1,851	1,584	1,342	1,109	923	791
Rank	35	35	37	39	41	43
Annual Congestion Cost (\$ million)	21	18	15	12	10	8
Rank	35	36	36	38	39	42

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Mobility Data for Las Vegas-Henderson NV

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	570	525	490	475	460	450
Rank	53	55	57	59	60	60
Commuters (1000s)	223	204	189	182	175	169
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,990	1,580	1,220	1,000	970	950
Arterial Streets	5,160	4,985	4,945	4,675	4,380	4,085
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)	1.14	1.11	1.45	1.47	1.50	1.57
Diesel (\$/gallon)	1.13	1.10	1.44	1.46	1.49	1.56
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)	3,169	2,518	2,031	1,734	1,676	1,366
Rank	45	53	56	60	56	63
Fuel per Peak Auto Commuter (gallons)	4	2	2	1	1	1
Rank	61	84	84	87	86	82
Annual Delay						
Total Delay (1000s of person-hours)	6,729	5,347	4,312	3,682	3,560	2,900
Rank	46	50	55	58	54	60
Delay per Auto Commuter (pers-hrs)	22	19	16	14	14	12
Rank	28	35	45	48	44	47
Travel Time Index						
Rank	1.13	1.11	1.10	1.09	1.09	1.07
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	64	50	40	33	31	25
Rank	46	49	55	57	54	58
Cost per Auto Commuter (\$)	196	160	132	117	117	101
Rank	86	92	93	94	92	92
Truck Congestion						
Annual Person-Hours of Delay (000)	283	225	181	155	150	122
Rank	46	49	55	58	54	60
Annual Gallons of Wasted Fuel (000)	672	534	431	368	355	290
Rank	45	53	56	60	56	63
Annual Congestion Cost (\$ million)	7	5	4	4	4	3
Rank	43	50	55	49	47	52

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