

# Performance Measure Summary - Chicago IL-IN

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 Chicago IL-IN

Inventory Measures	2017	2016	2015	2014	2013	2012
<b>Urban Area Information</b>						
Population (1000s)	8,720	8,715	8,705	8,700	8,675	8,650
Rank	3	3	3	3	3	3
Commuters (1000s)	3,450	3,447	3,443	3,445	3,573	3,638
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	60,644	58,907	56,308	54,912	56,433	55,380
Arterial Streets	74,827	74,182	74,084	74,764	76,300	76,250
<b>Cost Components</b>						
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)	2.39	2.25	2.42	3.37	3.78	3.73
Diesel (\$/gallon)	2.46	2.29	2.51	3.70	3.98	3.92
System Performance	2017	2016	2015	2014	2013	2012
<b>Congested Travel (% of peak VMT)</b>	24.0	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	13.4	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	3.6	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	144,987	144,462	143,544	142,494	141,979	139,925
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	30	30	29	29	29	29
Rank	12	9	10	8	6	5
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	352,759	344,891	339,747	334,329	330,198	319,661
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	73	72	70	70	67	63
Rank	10	10	10	8	9	10
<b>Travel Time Index</b>						
Rank	1.32	1.32	1.31	1.31	1.30	1.29
Rank	16	16	16	16	16	17
<b>Commuter Stress Index</b>						
Rank	1.33	--	--	--	--	--
Rank	19	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	1.85	--	--	--	--	--
Rank	21	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	7,150	6,882	6,694	6,702	6,545	6,244
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,431	1,407	1,379	1,349	1,346	1,320
Rank	11	11	11	11	11	10
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	14,816	14,485	14,269	14,042	13,868	13,426
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	30,737	30,626	30,431	30,209	30,100	29,664
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	753	708	663	664	621	583
Rank	3	3	3	3	3	3

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

# Mobility Data for Chicago IL-IN

Inventory Measures	2011	2010	2009	2008	2007	2006
<b>Urban Area Information</b>						
Population (1000s)	8,620	8,583	8,519	8,460	8,440	8,420
Rank	3	3	3	3	3	3
Commuters (1000s)	3,673	3,705	3,670	3,632	3,616	3,601
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	62,791	60,800	57,500	55,525	55,150	55,350
Arterial Streets	76,100	76,000	75,800	75,300	75,000	74,800
<b>Cost Components</b>						
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)	3.51	2.79	2.31	3.58	3.24	2.73
Diesel (\$/gallon)	3.74	3.04	2.63	4.24	3.52	2.93
System Performance	2011	2010	2009	2008	2007	2006
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	139,285	137,208	135,357	137,638	142,863	140,606
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	29	28	28	27	29	29
Rank	4	5	4	4	4	4
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	312,465	302,159	292,511	283,276	294,029	289,384
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	62	59	58	57	59	58
Rank	9	9	9	8	8	7
<b>Travel Time Index</b>						
Rank	1.29	1.28	1.28	1.29	1.30	1.30
Rank	15	16	15	15	13	13
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	6,035	5,576	5,259	5,299	5,255	4,969
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,331	1,328	1,308	1,255	1,354	1,368
Rank	10	9	9	9	7	7
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	13,124	12,691	12,285	11,898	12,349	12,154
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	29,528	29,088	28,696	29,179	30,287	29,808
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	624	562	526	549	532	491
Rank	3	3	3	3	3	3

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

# Mobility Data for Chicago IL-IN

Inventory Measures	2005	2004	2003	2002	2001	2000
<b>Urban Area Information</b>						
Population (1000s)	8,400	8,340	8,275	8,210	8,150	8,090
Rank	3	3	3	3	3	3
Commuters (1000s)	3,579	3,534	3,487	3,433	3,337	3,242
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	55,050	54,000	52,010	51,425	49,865	49,000
Arterial Streets	75,400	74,500	74,200	74,000	73,600	73,300
<b>Cost Components</b>						
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)	2.34	1.95	1.57	1.46	1.50	1.70
Diesel (\$/gallon)	2.58	2.03	1.56	1.43	1.62	1.60
System Performance	2005	2004	2003	2002	2001	2000
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	138,296	135,155	126,881	123,773	120,724	115,628
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	30	30	27	27	26	25
Rank	4	3	4	4	4	3
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	284,631	278,165	261,137	254,740	248,466	237,977
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	58	57	54	54	53	52
Rank	7	7	8	8	8	8
<b>Travel Time Index</b>						
Rank	1.29	1.29	1.27	1.27	1.27	1.27
Rank	13	13	15	14	14	11
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	4,689	4,384	3,960	3,764	3,619	3,390
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,391	1,406	1,356	1,351	1,336	1,315
Rank	7	7	8	8	7	7
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	11,955	11,683	10,968	10,699	10,436	9,995
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	29,319	28,653	26,899	26,240	25,594	24,513
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	459	419	368	344	330	306
Rank	3	3	3	3	3	3

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

# Mobility Data for Chicago IL-IN

Inventory Measures	1999	1998	1997	1996	1995	1994
<b>Urban Area Information</b>						
Population (1000s)	8,075	8,060	7,950	7,880	7,745	7,700
Rank	3	3	3	3	3	3
Commuters (1000s)	3,172	3,102	2,997	2,908	2,797	2,726
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	48,600	48,425	46,760	46,930	44,490	42,120
Arterial Streets	73,000	72,000	70,000	68,500	66,700	65,000
<b>Cost Components</b>						
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)	1.17	1.15	1.21	1.39	1.28	1.11
Diesel (\$/gallon)	1.17	1.21	1.30	1.48	1.36	1.18
System Performance	1999	1998	1997	1996	1995	1994
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	111,420	107,440	102,621	96,514	91,601	87,413
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	24	23	22	21	20	19
Rank	4	5	4	5	4	5
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	229,316	221,124	211,207	198,639	188,526	179,908
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	51	50	49	48	47	46
Rank	9	9	8	8	8	8
<b>Travel Time Index</b>						
Rank	1.26	1.25	1.25	1.24	1.24	1.23
Rank	9	10	9	9	8	7
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	3,108	2,938	2,772	2,570	2,365	2,186
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,311	1,294	1,254	1,207	1,181	1,161
Rank	7	8	8	8	8	8
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	9,631	9,287	8,871	8,343	7,918	7,556
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	23,621	22,777	21,756	20,461	19,419	18,532
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	275	263	250	236	219	203
Rank	3	3	3	3	3	3

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

# Mobility Data for Chicago IL-IN

Inventory Measures	1993	1992	1991	1990	1989	1988
<b>Urban Area Information</b>						
Population (1000s)	7,600	7,515	7,515	7,510	7,405	7,330
Rank	3	3	3	3	3	3
Commuters (1000s)	2,636	2,553	2,500	2,445	2,387	2,345
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	40,965	39,000	37,695	36,225	34,000	32,200
Arterial Streets	63,000	61,700	59,800	58,000	57,100	56,000
<b>Cost Components</b>						
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)	1.16	1.19	1.19	1.16	1.13	1.04
Diesel (\$/gallon)	1.23	1.26	1.30	1.19	1.07	0.99
System Performance	1993	1992	1991	1990	1989	1988
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	82,447	78,085	74,532	70,236	66,598	64,186
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	18	17	16	15	15	14
Rank	5	4	5	4	5	5
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	169,687	160,710	153,397	144,554	137,068	132,103
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	44	43	42	40	39	38
Rank	8	8	8	9	10	10
<b>Travel Time Index</b>						
Rank	1.22	1.22	1.21	1.20	1.20	1.19
Rank	7	6	8	9	8	9
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	2,018	1,864	1,734	1,570	1,418	1,306
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,124	1,097	1,081	1,064	1,066	1,081
Rank	7	7	7	7	7	7
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	7,127	6,750	6,443	6,071	5,757	5,548
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	17,479	16,554	15,801	14,890	14,119	13,607
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	190	179	169	156	144	136
Rank	3	3	3	3	3	3

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

# Mobility Data for Chicago IL-IN

Inventory Measures	1987	1986	1985	1984	1983	1982
<b>Urban Area Information</b>						
Population (1000s)	7,240	7,195	7,150	7,100	7,100	7,080
Rank	3	3	3	3	3	3
Commuters (1000s)	2,294	2,257	2,225	2,187	2,171	2,142
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	30,255	29,005	27,715	25,605	24,795	24,325
Arterial Streets	55,300	54,800	54,300	53,900	53,250	53,000
<b>Cost Components</b>						
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)	1.05	1.02	1.34	1.35	1.38	1.44
Diesel (\$/gallon)	0.99	0.97	1.27	1.28	1.31	1.37
System Performance	1987	1986	1985	1984	1983	1982
<b>Congested Travel (% of peak VMT)</b>	--	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	--	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	--	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	61,192	58,484	55,617	52,739	50,530	48,245
Rank	3	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	14	13	12	11	10	10
Rank	5	4	5	5	4	5
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	125,941	120,367	114,466	108,543	103,998	99,294
Rank	3	3	3	3	3	3
Delay per Auto Commuter (pers-hrs)	37	36	34	33	32	31
Rank	10	9	11	11	10	10
<b>Travel Time Index</b>						
Rank	1.19	1.18	1.17	1.17	1.16	1.16
Rank	8	8	9	7	7	7
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	1,202	1,111	1,057	972	900	839
Rank	3	3	3	3	3	3
Cost per Auto Commuter (\$)	1,075	1,068	1,033	1,016	1,019	1,004
Rank	7	7	7	9	6	6
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	5,290	5,055	4,808	4,559	4,368	4,170
Rank	3	3	3	3	3	3
Annual Gallons of Wasted Fuel (000)	12,973	12,399	11,791	11,181	10,712	10,228
Rank	3	3	3	3	3	3
Annual Congestion Cost (\$ million)	129	121	117	110	105	99
Rank	3	3	3	3	3	3

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