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 2014. 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 overnight speeds 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 2014 (estimated at $17.67 per hour of person travel and $94.04 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.

The Mobility Data for Chicago IL-IN

Inventory Measures	2014	2013	2012	2011	2010
Urban Area Information					
Population (1000s)	8,700	8,675	8,650	8,620	8,583
Rank	3	3	3	3	3
Commuters (1000s)	3,445	3,573	3,638	3,673	3,705
Daily Vehicle-Miles of Travel (1000s)					
Freeway	57,279	56,433	55,380	62,791	60,800
Arterial Streets	79,284	76,308	48,145	51,500	49,326
Cost Components					
Value of Time ($/hour)	17.67	17.39	17.14	16.79	16.30
Commercial Cost ($/hour)	94.04	89.60	89.56	86.81	88.12
Gasoline ($/gallon)	3.37	3.78	3.73	3.51	2.79
Diesel ($/gallon)	3.70	3.98	3.92	3.74	3.04
System Performance	**2014**	**2013**	**2012**	**2011**	**2010**
Congested Travel (% of peak VMT)	35	--	--	--	--
Congested System (% of lane-miles)	26	--	--	--	--
Congested Time (number of "Rush Hours")	4.70	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	147,031	146,370	144,252	143,592	141,451
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	29	29	29	29	28
Rank	5	4	4	4	4
Annual Delay					
Total Delay (1000s of person-hours)	302,609	301,248	296,890	295,531	291,125
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	61	59	57	57	55
Rank	8	9	9	8	9
Travel Time Index	1.31	1.30	1.29	1.29	1.28
Rank	14	14	15	13	14
Commuter Stress Index	1.34	1.34	1.33	1.32	1.32
Rank	19	19	19	19	19
Freeway Planning Time Index (95th Pctile)	3.16	--	--	--	--
Rank	10	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	7,222	7,306	7,306	7,423	7,543
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,445	1,462	1,462	1,485	1,509
Rank	7	7	6	5	5

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	2009	2008	2007	2006	2005
Urban Area Information					
Population (1000s)	8,519	8,460	8,440	8,420	8,400
Rank	3	3	3	3	3
Commuters (1000s)	3,670	3,632	3,616	3,601	3,579
Daily Vehicle-Miles of Travel (1000s)					
Freeway	57,500	55,525	55,150	55,350	55,050
Arterial Streets	48,838	49,835	50,200	50,400	50,500
Cost Components					
Value of Time ($/hour)	16.01	16.10	15.47	15.06	14.58
Commercial Cost ($/hour)	89.75	81.52	82.56	80.43	78.05
Gasoline ($/gallon)	2.31	3.58	3.24	2.73	2.34
Diesel ($/gallon)	2.63	4.24	3.52	2.93	2.58
System Performance	**2009**	**2008**	**2007**	**2006**	**2005**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	139,543	141,894	147,281	144,954	142,573
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	28	28	29	29	29
Rank	4	4	4	4	4
Annual Delay					
Total Delay (1000s of person-hours)	287,198	292,037	303,123	298,334	293,434
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	55	57	59	58	58
Rank	8	9	8	8	7
Travel Time Index	1.28	1.29	1.30	1.30	1.29
Rank	14	16	13	13	13
Commuter Stress Index	1.32	1.32	1.34	1.33	1.33
Rank	19	19	18	17	18
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	7,565	7,664	8,262	8,353	8,490
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,514	1,534	1,653	1,671	1,699
Rank	5	5	5	5	5

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	2004	2003	2002	2001	2000
Urban Area Information					
Population (1000s)	8,340	8,275	8,210	8,150	8,090
Rank	3	3	3	3	3
Commuters (1000s)	3,534	3,487	3,433	3,337	3,242
Daily Vehicle-Miles of Travel (1000s)					
Freeway	54,000	52,010	51,425	49,865	49,000
Arterial Streets	50,000	49,000	48,425	47,005	46,975
Cost Components					
Value of Time ($/hour)	14.10	13.73	13.43	13.22	12.85
Commercial Cost ($/hour)	74.17	72.23	70.86	71.38	70.47
Gasoline ($/gallon)	1.95	1.57	1.46	1.50	1.70
Diesel ($/gallon)	2.03	1.56	1.43	1.62	1.60
System Performance	**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)	139,334	130,804	127,601	124,457	119,204
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	28	26	26	25	24
Rank	4	4	4	3	3
Annual Delay					
Total Delay (1000s of person-hours)	286,768	269,213	262,619	256,150	245,337
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	57	54	54	53	52
Rank	7	7	7	7	7
Travel Time Index	1.29	1.27	1.27	1.27	1.27
Rank	13	15	14	14	11
Commuter Stress Index	1.33	1.31	1.31	1.31	1.30
Rank	16	23	20	20	20
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	8,577	8,267	8,248	8,172	8,050
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,716	1,654	1,650	1,635	1,611
Rank	5	5	5	5	5

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	1999	1998	1997	1996	1995
Urban Area Information					
Population (1000s)	8,075	8,060	7,950	7,880	7,745
Rank	3	3	3	3	3
Commuters (1000s)	3,172	3,102	2,997	2,908	2,797
Daily Vehicle-Miles of Travel (1000s)					
Freeway	48,600	48,425	46,760	46,930	44,490
Arterial Streets	46,510	46,015	45,095	42,580	40,765
Cost Components					
Value of Time ($/hour)	12.43	12.17	11.98	11.71	11.37
Commercial Cost ($/hour)	66.76	65.76	66.83	66.20	64.27
Gasoline ($/gallon)	1.17	1.15	1.21	1.39	1.28
Diesel ($/gallon)	1.17	1.21	1.30	1.48	1.36
System Performance	**1999**	**1998**	**1997**	**1996**	**1995**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	114,865	110,762	105,794	99,499	94,433
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	23	22	21	20	19
Rank	4	4	3	4	4
Annual Delay					
Total Delay (1000s of person-hours)	236,408	227,963	217,739	204,782	194,357
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	51	50	49	48	47
Rank	9	9	8	8	8
Travel Time Index	1.26	1.25	1.25	1.24	1.24
Rank	9	10	9	9	8
Commuter Stress Index	1.30	1.29	1.29	1.28	1.27
Rank	19	19	16	18	19
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	8,018	7,902	7,665	7,374	7,206
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,604	1,581	1,534	1,476	1,442
Rank	6	6	6	6	6

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	1994	1993	1992	1991	1990
Urban Area Information					
Population (1000s)	7,700	7,600	7,515	7,515	7,510
Rank	3	3	3	3	3
Commuters (1000s)	2,726	2,636	2,553	2,500	2,445
Daily Vehicle-Miles of Travel (1000s)					
Freeway	42,120	40,965	39,000	37,695	36,225
Arterial Streets	40,970	40,525	39,910	39,250	38,740
Cost Components					
Value of Time ($/hour)	11.06	10.78	10.47	10.17	9.75
Commercial Cost ($/hour)	62.23	60.84	59.01	57.31	55.03
Gasoline ($/gallon)	1.11	1.16	1.19	1.19	1.16
Diesel ($/gallon)	1.18	1.23	1.26	1.30	1.19
System Performance	**1994**	**1993**	**1992**	**1991**	**1990**
Congested Travel (% of peak VMT)	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--
Annual Excess Fuel Consumed					
Total Fuel (1000 gallons)	90,117	84,997	80,500	76,837	72,408
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	18	17	16	15	14
Rank	4	4	4	6	5
Annual Delay					
Total Delay (1000s of person-hours)	185,472	174,935	165,680	158,141	149,025
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	46	44	43	42	40
Rank	8	8	8	8	9
Travel Time Index	1.23	1.22	1.22	1.21	1.20
Rank	7	7	6	8	9
Commuter Stress Index	1.27	1.26	1.25	1.25	1.24
Rank	16	19	19	19	19
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	7,071	6,840	6,673	6,560	6,442
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,415	1,369	1,335	1,313	1,289
Rank	5	5	5	5	7

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	1989	1988	1987	1986	1985
Urban Area Information					
Population (1000s)	7,405	7,330	7,240	7,195	7,150
Rank	3	3	3	3	3
Commuters (1000s)	2,387	2,345	2,294	2,257	2,225
Daily Vehicle-Miles of Travel (1000s)					
Freeway	34,000	32,200	30,255	29,005	27,715
Arterial Streets	38,325	38,000	37,340	36,975	36,020
Cost Components					
Value of Time ($/hour)	9.25	8.83	8.48	8.18	8.03
Commercial Cost ($/hour)	52.81	50.04	48.53	46.57	47.83
Gasoline ($/gallon)	1.13	1.04	1.05	1.02	1.34
Diesel ($/gallon)	1.07	0.99	0.99	0.97	1.27
System Performance	**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)	68,658	66,171	63,085	60,292	57,337
Rank	3	3	3	3	3
Fuel per Peak Auto Commuter (gallons)	14	13	13	12	11
Rank	5	5	4	5	5
Annual Delay					
Total Delay (1000s of person-hours)	141,307	136,189	129,836	124,090	118,006
Rank	3	3	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	39	38	37	36	34
Rank	10	10	10	9	11
Travel Time Index	1.20	1.19	1.19	1.18	1.17
Rank	8	9	8	8	9
Commuter Stress Index	1.23	1.23	1.22	1.22	1.21
Rank	20	18	19	19	19
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--
Rank	--	--	--	--	--
Congestion Cost (constant 2014 $)					
Total Cost ($ millions)	6,439	6,504	6,458	6,397	6,197
Rank	3	3	3	3	3
Cost per Peak Auto Commuter ($)	1,288	1,302	1,292	1,280	1,240
Rank	6	6	6	6	5

* Note: Cells containing "--" indicate no available data.

The Mobility Data for Chicago IL-IN

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	7,100	7,100	7,080
Rank	3	3	3
Commuters (1000s)	2,187	2,171	2,142
Daily Vehicle-Miles of Travel (1000s)			
Freeway	25,605	24,795	24,325
Arterial Streets	35,590	35,400	35,100
Cost Components			
Value of Time ($/hour)	7.75	7.43	7.20
Commercial Cost ($/hour)	46.47	44.23	43.08
Gasoline ($/gallon)	1.35	1.38	1.44
Diesel ($/gallon)	1.28	1.31	1.37
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)	54,369	52,093	49,737
Rank	3	3	3
Fuel per Peak Auto Commuter (gallons)	11	10	10
Rank	3	4	4
Annual Delay			
Total Delay (1000s of person-hours)	111,900	107,214	102,365
Rank	3	3	3
Delay per Peak Auto Commuter (pers-hrs)	33	32	31
Rank	11	10	10
Travel Time Index	1.17	1.16	1.16
Rank	7	7	7
Commuter Stress Index	1.20	1.20	1.19
Rank	19	18	18
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost (constant 2014 $)			
Total Cost ($ millions)	6,085	6,082	5,994
Rank	3	3	3
Cost per Peak Auto Commuter ($)	1,218	1,217	1,199
Rank	4	5	6

* Note: Cells containing "--" indicate no available data.