

# Performance Measure Summary - Toledo OH-MI

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 Toledo OH-MI

Inventory Measures	2017	2016	2015	2014	2013	2012
<b>Urban Area Information</b>						
Population (1000s)	515	520	520	525	525	520
Rank	78	78	78	77	77	75
Commuters (1000s)	263	265	265	270	275	273
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	4,362	4,230	4,124	4,206	4,165	3,770
Arterial Streets	4,748	4,801	4,623	4,488	4,547	4,055
<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)	2.29	2.17	2.18	3.16	3.48	3.58
Diesel (\$/gallon)	2.53	2.29	2.49	3.67	3.91	3.87
System Performance	2017	2016	2015	2014	2013	2012
<b>Congested Travel (% of peak VMT)</b>	9.7	--	--	--	--	--
<b>Congested System (% of lane-miles)</b>	6.4	--	--	--	--	--
<b>Congested Time (number of "Rush Hours")</b>	0.7	--	--	--	--	--
<b>Annual Excess Fuel Consumed</b>						
Total Fuel (1000 gallons)	6,978	6,899	6,790	6,642	6,516	6,357
Rank	71	72	71	72	73	73
Fuel per Peak Auto Commuter (gallons)	21	20	20	19	19	19
Rank	41	47	42	47	45	42
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	15,407	15,063	14,698	14,252	13,736	13,281
Rank	75	76	75	76	76	76
Delay per Auto Commuter (pers-hrs)	40	38	37	36	36	36
Rank	75	79	79	78	78	72
<b>Travel Time Index</b>						
Rank	1.14	1.14	1.14	1.14	1.14	1.15
Rank	80	80	80	80	78	71
<b>Commuter Stress Index</b>						
Rank	1.15	--	--	--	--	--
Rank	78	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	1.21	--	--	--	--	--
Rank	90	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	313	301	290	287	273	261
Rank	75	76	75	75	75	74
Cost per Auto Commuter (\$)	757	744	724	697	678	665
Rank	67	66	65	66	67	65
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	647	633	617	599	577	558
Rank	75	76	75	76	76	76
Annual Gallons of Wasted Fuel (000)	1,479	1,463	1,440	1,408	1,381	1,348
Rank	71	72	71	72	73	73
Annual Congestion Cost (\$ million)	33	31	29	29	26	25
Rank	74	73	73	72	73	72

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

# Mobility Data for Toledo OH-MI

Inventory Measures	2011	2010	2009	2008	2007	2006
<b>Urban Area Information</b>						
Population (1000s)	520	520	520	520	520	520
Rank	75	75	74	73	72	72
Commuters (1000s)	272	271	270	269	268	266
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	4,013	4,021	3,900	3,805	4,025	4,125
Arterial Streets	4,344	4,352	4,336	4,465	4,855	5,040
<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)	3.25	2.64	2.19	3.40	2.88	2.58
Diesel (\$/gallon)	3.69	2.96	2.58	4.17	3.35	2.83
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)	6,236	6,003	5,815	6,101	5,970	5,780
Rank	73	74	74	74	74	73
Fuel per Peak Auto Commuter (gallons)	20	20	17	19	19	19
Rank	32	29	43	37	40	36
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	12,676	12,090	11,492	11,483	11,237	10,879
Rank	77	77	77	77	76	75
Delay per Auto Commuter (pers-hrs)	33	33	33	31	32	33
Rank	81	77	77	78	77	73
<b>Travel Time Index</b>						
Rank	1.15	1.14	1.14	1.14	1.15	1.15
Rank	70	73	74	79	72	72
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	246	224	207	216	201	187
Rank	76	77	77	76	76	73
Cost per Auto Commuter (\$)	654	643	624	614	627	623
Rank	67	72	72	74	73	73
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	532	508	483	482	472	457
Rank	77	77	77	77	76	75
Annual Gallons of Wasted Fuel (000)	1,322	1,273	1,233	1,293	1,266	1,225
Rank	73	74	74	74	74	73
Annual Congestion Cost (\$ million)	26	23	21	23	21	19
Rank	73	73	75	75	75	73

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

## Mobility Data for Toledo OH-MI

Inventory Measures	2005	2004	2003	2002	2001	2000
<b>Urban Area Information</b>						
Population (1000s)	520	520	520	510	505	500
Rank	69	69	69	69	69	69
Commuters (1000s)	264	263	261	253	248	242
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	4,090	4,155	4,115	4,090	4,095	4,025
Arterial Streets	4,920	4,930	4,785	4,725	4,665	4,610
<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)	2.24	1.81	1.52	1.38	1.30	1.55
Diesel (\$/gallon)	2.48	1.94	1.49	1.36	1.49	1.53
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)	5,551	5,437	5,298	5,124	4,989	4,812
Rank	73	73	72	71	70	71
Fuel per Peak Auto Commuter (gallons)	17	17	17	16	16	15
Rank	48	46	45	42	36	40
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	10,449	10,234	9,972	9,645	9,390	9,058
Rank	73	73	73	72	72	72
Delay per Auto Commuter (pers-hrs)	33	32	32	31	31	31
Rank	71	73	69	72	68	65
<b>Travel Time Index</b>						
Rank	71	66	64	61	58	65
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	173	162	152	143	137	129
Rank	73	73	73	72	72	72
Cost per Auto Commuter (\$)	617	627	627	620	610	606
Rank	72	69	69	68	65	60
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	439	430	419	405	394	380
Rank	73	73	73	72	72	72
Annual Gallons of Wasted Fuel (000)	1,177	1,153	1,123	1,086	1,058	1,020
Rank	73	73	72	71	70	71
Annual Congestion Cost (\$ million)	17	16	14	13	12	12
Rank	73	73	73	72	72	70

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

# Mobility Data for Toledo OH-MI

Inventory Measures	1999	1998	1997	1996	1995	1994
<b>Urban Area Information</b>						
Population (1000s)	495	495	495	495	495	490
Rank	69	69	69	66	66	66
Commuters (1000s)	237	234	231	228	225	220
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	3,805	3,745	3,590	3,380	3,305	3,295
Arterial Streets	4,550	4,480	4,430	4,425	4,000	3,560
<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)	1.14	1.11	1.13	1.28	1.12	1.08
Diesel (\$/gallon)	1.15	1.17	1.25	1.39	1.22	1.17
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)	4,702	4,642	4,515	4,358	4,068	3,840
Rank	68	66	63	62	62	62
Fuel per Peak Auto Commuter (gallons)	15	14	15	14	14	13
Rank	32	31	17	18	15	15
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	8,850	8,738	8,498	8,203	7,656	7,227
Rank	72	69	69	66	67	66
Delay per Auto Commuter (pers-hrs)	30	30	30	29	27	26
Rank	65	61	56	54	57	55
<b>Travel Time Index</b>						
Rank	1.14	1.14	1.14	1.13	1.13	1.12
Rank	61	55	47	50	47	51
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	120	116	112	106	96	88
Rank	72	69	69	66	67	66
Cost per Auto Commuter (\$)	611	619	609	603	582	563
Rank	60	55	48	47	44	43
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	372	367	357	345	322	304
Rank	72	69	69	66	67	66
Annual Gallons of Wasted Fuel (000)	997	984	957	924	862	814
Rank	68	66	63	62	62	62
Annual Congestion Cost (\$ million)	11	10	10	10	9	8
Rank	68	69	66	63	64	64

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

# Mobility Data for Toledo OH-MI

Inventory Measures	1993	1992	1991	1990	1989	1988
<b>Urban Area Information</b>						
Population (1000s)	490	490	490	490	490	490
Rank	65	64	64	64	63	62
Commuters (1000s)	217	215	212	209	207	206
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	3,095	2,950	2,770	2,810	2,725	2,615
Arterial Streets	3,120	2,800	2,650	2,550	2,505	2,435
<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)	1.09	1.11	1.13	1.06	1.08	1.00
Diesel (\$/gallon)	1.19	1.19	1.25	1.10	1.05	0.97
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)	3,551	3,304	3,117	2,934	2,744	2,590
Rank	61	61	60	60	58	58
Fuel per Peak Auto Commuter (gallons)	12	11	11	10	8	9
Rank	16	16	13	14	26	13
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	6,685	6,219	5,867	5,522	5,165	4,875
Rank	66	64	64	64	60	59
Delay per Auto Commuter (pers-hrs)	24	23	22	21	19	18
Rank	58	58	53	52	55	52
<b>Travel Time Index</b>						
Rank	54	49	51	46	48	43
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	80	72	66	60	54	48
Rank	66	64	64	63	60	59
Cost per Auto Commuter (\$)	536	515	498	490	483	481
Rank	44	44	44	41	36	34
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	281	261	246	232	217	205
Rank	66	64	64	64	60	59
Annual Gallons of Wasted Fuel (000)	753	700	661	622	582	549
Rank	61	61	60	60	58	58
Annual Congestion Cost (\$ million)	8	7	7	6	5	5
Rank	61	63	58	59	60	58

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

# Mobility Data for Toledo OH-MI

Inventory Measures	1987	1986	1985	1984	1983	1982
<b>Urban Area Information</b>						
Population (1000s)	490	490	490	485	485	485
Rank	61	59	57	57	58	58
Commuters (1000s)	204	203	201	197	196	194
<b>Daily Vehicle-Miles of Travel (1000s)</b>						
Freeway	2,805	2,535	2,785	2,660	2,675	2,330
Arterial Streets	2,395	2,110	2,015	1,905	1,810	1,770
<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)	1.00	0.98	1.28	1.29	1.32	1.38
Diesel (\$/gallon)	0.97	0.95	1.24	1.26	1.29	1.34
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)	2,389	2,206	2,040	1,986	1,765	1,610
Rank	58	59	55	53	53	53
Fuel per Peak Auto Commuter (gallons)	8	8	6	7	5	4
Rank	18	14	22	12	22	19
<b>Annual Delay</b>						
Total Delay (1000s of person-hours)	4,497	4,152	3,840	3,738	3,323	3,030
Rank	62	61	60	56	58	57
Delay per Auto Commuter (pers-hrs)	17	16	15	14	13	12
Rank	51	52	50	48	49	47
<b>Travel Time Index</b>						
Rank	44	49	48	42	46	43
<b>Commuter Stress Index</b>						
Rank	--	--	--	--	--	--
<b>Freeway Planning Time Index (95th Pctile)</b>						
Rank	--	--	--	--	--	--
<b>Congestion Cost</b>						
Total Cost (\$ millions)	43	38	36	34	29	26
Rank	60	61	59	55	56	57
Cost per Auto Commuter (\$)	465	442	421	428	394	372
Rank	30	32	31	29	29	30
<b>Truck Congestion</b>						
Annual Person-Hours of Delay (000)	189	174	161	157	140	127
Rank	60	61	60	56	57	57
Annual Gallons of Wasted Fuel (000)	506	468	432	421	374	341
Rank	58	59	55	53	53	53
Annual Congestion Cost (\$ million)	5	4	4	4	3	3
Rank	56	58	55	49	55	52

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