### Performance Measure Summary - Indianapolis IN

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2020. 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 2020 (estimated at \$20.17 per hour of person travel and \$55.24 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.

Annual Greenhouse Gases (CO2) Produced -Tons of CO2 produced from all vehicle travel.

Excess Greenhouse Gases (CO2) Produced due to Congestion-Tons of CO2 produced due to congested portion of travel. The excess CO2 is a subset of the total CO2 produced.

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	1,625	1,625	1,615	1,605	1,590	1,575
Rank	33	33	33	33	33	33
Commuters (1000s)	812	812	807	802	798	790
Daily Vehicle-Miles of Travel (1000s)						
Freeway	13,131	15,595	15,098	15,336	15,234	14,859
Arterial Streets	15,038	17,860	17,115	16,898	16,420	16,427
Cost Components	10,000	17,000	17,110	10,070	10,.20	10,127
Value of Time (\$/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost (\$/hour)	55.24	49.49	54.71	52.14	50.20	46.87
Gasoline (\$/gallon)	2.14	2.66	2.83	2.34	2.17	2.18
Diesel (\$/gallon)	2.80	2.95	3.29	2.60	2.25	2.46
System Performance	2020	2019	2018	2017	2016	2015
Congested Travel (% of peak VMT)				12.8		
Congested System (% of lane-miles)				8.2		
Congested Time (number of "Rush Hours")				1.3		
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	10,625	21,655	20,783	19,705	19,511	19,270
Rank	39	34	34	34	34	34
Fuel per Peak Auto Commuter (gallons)	12	24	23	22	22	22
Rank	39	27	31	32	33	29
Annual Delay						
Total Delay (1000s of person-hours)	23,362	47,617	45,924	43,003	42,653	41,413
Rank	40	36	37	39	38	38
Delay per Auto Commuter (pers-hrs)	26	52	51	48	47	46
Rank	47	36	34	42	43	43
Travel Time Index	1.06	1.18	1.18	1.18	1.18	1.18
Rank	75	41	41	43	43	41
Commuter Stress Index	1.07	1.20	1.19	1.19		
Rank	75	49	51	50		
Freeway Planning Time Index (95th Pctile)		1.35	1.34	1.30		
Rank		64	60	70		
Congestion Cost						
Total Cost (\$ millions)	540	1,043	1,020	939	914	873
Rank	40	36	37	38	38	38
Cost per Auto Commuter (\$)	487	941	926	858	857	828
Rank	66	49	50	56	53	52
Truck Congestion						
Annual Person-Hours of Delay (000)	1,548	2,488	2,398	2,306	2,287	2,220
Rank	33	31	31	31	31	31
Annual Gallons of Wasted Fuel (000)	2,965	4,765	4,366	4,178	4,136	4,085
Rank	29	31	31	32	31	31
Annual Congestion Cost (\$ million)	83	124	133	123	116	107
Rank	33	36	31	31	31	31
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	107,027	218,144				
Rank	38	34				
Due to All Travel (tons)	3,492,223	7,117,868				
Rank	27	27				
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	32,772	52,669				
Rank	29	31				
Due to Truck Travel (tons)	1,340,749	2,154,766				
Rank	15	19				
	1.5	17		-	-	_

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	1,555	1,520	1,485	1,450	1,425	1,380
Rank	33	33	33	33	34	35
Commuters (1000s)	782	766	748	742	740	722
Daily Vehicle-Miles of Travel (1000s)						
Freeway	13,968	12,684	13,640	14,205	13,800	13,500
Arterial Streets	15,946	15,782	16,295	14,283	13,900	13,398
Cost Components		,	,	· ·	,	
Value of Time (\$/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost (\$/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline (\$/gallon)	3.26	3.55	3.60	3.34	2.66	2.17
Diesel (\$/gallon)	3.68	3.91	3.89	3.70	2.94	2.54
System Performance	2014	2013	2012	2011	2010	2009
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	19,039	18,827	18,354	18,095	17,901	17,202
Rank	34	34	35	34	34	35
Fuel per Peak Auto Commuter (gallons)	22	23	22	22	23	20
Rank	24	17	21	18	14	18
Annual Delay						
Total Delay (1000s of person-hours)	40,210	39,065	37,744	36,541	35,485	33,463
Rank	38	38	38	38	38	38
Delay per Auto Commuter (pers-hrs)	45	44	43	43	42	41
Rank	43	43	43	38	38	38
Travel Time Index	1.18	1.18	1.18	1.18	1.17	1.17
Rank	39	39	38	39	41	43
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	866	830	791	759	703	645
Rank	38	38	38	36	36	37
Cost per Auto Commuter (\$)	799	784	767	766	768	737
Rank	52	54	53	52	53	56
Truck Congestion						
Annual Person-Hours of Delay (000)	2,157	2,095	2,024	1,960	1,903	1,794
Rank	31	31	30	30	30	31
Annual Gallons of Wasted Fuel (000)	4,036	3,991	3,891	3,836	3,795	3,647
Rank	31	31	31	31	31	31
Annual Congestion Cost (\$ million)	105	96	90	96	87	79
Rank	31	31	31	30	30	31
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)						
	·					
Rank						
Rank Due to Truck Travel (tons) Rank	 		 		 	

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	1,335	1,290	1,230	1,170	1,115	1,090
Rank	35	35	36	37	37	38
Commuters (1000s)	701	673	637	601	570	554
Daily Vehicle-Miles of Travel (1000s)						
Freeway	13,340	13,000	12,400	11,900	11,500	11,390
Arterial Streets	13,685	13,600	13,520	13,470	13,400	13,300
Cost Components						
Value of Time (\$/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost (\$/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline (\$/gallon)	3.47	2.98	2.60	2.26	1.84	1.50
Diesel (\$/gallon)	4.17	3.34	2.81	2.47	1.90	1.44
System Performance	2008	2007	2006	2005	2004	2003
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	17,665	16,641	15,716	14,360	13,678	13,260
Rank	36	37	37	38	39	39
Fuel per Peak Auto Commuter (gallons)	23	21	21	19	18	17
Rank	13	23	24	34	38	45
Annual Delay						
Total Delay (1000s of person-hours)	32,726	30,829	29,116	26,605	25,340	24,565
Rank	38	40	41	44	44	44
Delay per Auto Commuter (pers-hrs)	41	41	40	40	40	40
Rank	35	36	40	38	37	32
Travel Time Index	1.18	1.18	1.18	1.17	1.17	1.17
Rank	43	43	42	49	46	44
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	659	590	536	470	428	399
Rank	37	39	41	44	44	44
Cost per Auto Commuter (\$)	713	698	676	640	630	629
Rank	57	64	67	75	76	74
Truck Congestion						
Annual Person-Hours of Delay (000)	1,756	1,654	1,562	1,426	1,359	1,318
Rank	31	33	34	37	37	37
Annual Gallons of Wasted Fuel (000)	3,745	3,528	3,332	3,044	2,900	2,811
Rank	31	32	33	35	35	34
Annual Congestion Cost (\$ million)	83	73	65	56	50	46
Rank	32	34	34	37	37	37
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)						
Rank	 					

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	1,075	1,050	1,030	1,020	1,015	1,015
Rank	39	39	39	39	39	39
Commuters (1000s)	538	517	500	486	476	469
Daily Vehicle-Miles of Travel (1000s)						
Freeway	11,400	11,500	11,500	11,315	11,320	11,540
Arterial Streets	13,290	12,700	12,325	12,400	12,400	12,400
Cost Components	,	,	,	,	,	
Value of Time (\$/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost (\$/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline (\$/gallon)	1.29	1.33	1.52	1.05	1.06	1.07
Diesel (\$/gallon)	1.30	1.46	1.47	1.05	1.07	1.18
System Performance	2002	2001	2000	1999	1998	1997
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	12,692	12,116	11,738	10,952	10,675	10,290
Rank	39	40	39	39	37	37
Fuel per Peak Auto Commuter (gallons)	17	15	15	13	13	14
Rank	34	47	40	51	42	26
Annual Delay						
Total Delay (1000s of person-hours)	23,514	22,446	21,747	20,290	19,777	19,063
Rank	44	43	43	42	40	39
Delay per Auto Commuter (pers-hrs)	40	39	39	39	39	38
Rank	30	32	30	27	22	19
Travel Time Index	1.17	1.17	1.17	1.16	1.16	1.15
Rank	40	38	36	39	36	41
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	371	349	330	293	281	267
Rank	43	43	42	41	40	37
Cost per Auto Commuter (\$)	614	594	593	571	570	557
Rank	74	74	71	73	68	66
Truck Congestion						
Annual Person-Hours of Delay (000)	1,262	1,204	1,166	1,088	1,061	1,023
Rank	38	37	35	35	34	33
Annual Gallons of Wasted Fuel (000)	2,691	2,569	2,488	2,322	2,263	2,181
Rank	34	34	33	33	32	32
Annual Congestion Cost (\$ million)	42	39	37	32	31	30
Rank	37	38	35	35	33	33
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
· ·	l					
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Truck Annual Greenhouse Gases (CO2) Produced  Excess Due to Truck Congestion (tons)  Rank		  		   	 	 
Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)		  		   		  

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	1,010	985	970	960	955	950
Rank	39	39	39	38	36	36
Commuters (1000s)	459	440	427	416	407	398
Daily Vehicle-Miles of Travel (1000s)						
Freeway	10,895	11,000	10,145	9,290	8,900	8,100
Arterial Streets	11,465	10,935	10,585	9,920	9,730	9,525
Cost Components						
Value of Time (\$/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost (\$/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline (\$/gallon)	1.25	1.09	0.99	1.06	1.07	1.09
Diesel (\$/gallon)	1.37	1.20	1.09	1.16	1.17	1.21
System Performance	1996	1995	1994	1993	1992	1991
Congested Travel (% of peak VMT)						
Congested System (% of lane-miles)						
Congested Time (number of "Rush Hours")						
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	9,766	9,036	8,384	7,877	7,123	6,778
Rank	37	37	36	35	35	35
Fuel per Peak Auto Commuter (gallons)	13	12	11	11	9	8
Rank	29	35	37	22	45	45
Annual Delay						
Total Delay (1000s of person-hours)	18,093	16,740	15,532	14,593	13,196	12,557
Rank	37	37	37	37	38	36
Delay per Auto Commuter (pers-hrs)	36	35	33	32	29	28
Rank	20	20	22	22	28	26
Travel Time Index	1.15	1.14	1.14	1.13	1.12	1.12
Rank	40	41	39	40	41	39
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	250	224	202	186	164	152
Rank	37	37	37	37	38	36
Cost per Auto Commuter (\$)	542	517	494	476	444	435
Rank	63	62	61	62	62	60
Truck Congestion						
Annual Person-Hours of Delay (000)	970	898	833	783	707	673
Rank	33	33	33	32	33	32
Annual Gallons of Wasted Fuel (000)	2,070	1,916	1,777	1,670	1,510	1,437
Rank	34	34	34	33	33	33
Annual Congestion Cost (\$ million)	28	25	23	22	19	18
Rank	33	33	33	32	33	32
Annual Greenhouse Gases (CO2) Produced					1	
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)						
Truck Annual Greenhouse Gases (CO2) Produced  Excess Due to Truck Congestion (tons)  Rank	 	 	 	 		
Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)		  		  	  	  

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	945	935	930	925	895	865
Rank	36	36	36	36	36	36
Commuters (1000s)	390	383	378	373	357	343
Daily Vehicle-Miles of Travel (1000s)					İ	
Freeway	7,795	7,065	6,920	6,810	6,695	6,060
Arterial Streets	9,315	9,095	9,020	8,915	8,710	8,600
Cost Components						
Value of Time (\$/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost (\$/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline (\$/gallon)	1.07	1.10	1.02	1.02	0.99	1.30
Diesel (\$/gallon)	1.11	1.07	0.99	0.99	0.97	1.26
System Performance	1990	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)	6,569	6,416	5,965	5,520	5,247	4,567
Rank	34	33	32	31	29	30
Fuel per Peak Auto Commuter (gallons)	8	9	8	7	7	6
Rank	35	19	20	22	21	22
Annual Delay					İ	
Total Delay (1000s of person-hours)	12,169	11,887	11,051	10,226	9,721	8,460
Rank	36	35	35	35	32	33
Delay per Auto Commuter (pers-hrs)	28	28	26	24	24	22
Rank	21	19	20	20	18	20
Travel Time Index	1.11	1.11	1.11	1.10	1.10	1.09
Rank	42	37	33	37	33	36
Commuter Stress Index						
Rank						
Freeway Planning Time Index (95th Pctile)						
Rank						
Congestion Cost						
Total Cost (\$ millions)	142	132	118	105	97	84
Rank	35	35	35	34	30	31
Cost per Auto Commuter (\$)	440	456	444	427	426	376
Rank	53	46	47	41	38	42
Truck Congestion						
Annual Person-Hours of Delay (000)	652	637	592	548	521	453
Rank	31	28	27	27	28	29
Annual Gallons of Wasted Fuel (000)	1,393	1,360	1,265	1,170	1,112	968
Rank	33	31	31	30	29	29
Annual Congestion Cost (\$ million)	17	17	15	14	13	11
Rank	30	28	27	27	27	29
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)						
Rank						
Due to All Travel (tons)						
Rank						
Truck Annual Greenhouse Gases (CO2) Produced						
Truck Annual Greenhouse Gases (CO2) Produced  Excess Due to Truck Congestion (tons)  Rank		  		 		 
Truck Annual Greenhouse Gases (CO2) Produced Excess Due to Truck Congestion (tons)		  		  		  

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	860	860	860
Rank	36	35	35
Commuters (1000s)	339	336	332
Daily Vehicle-Miles of Travel (1000s)			
Freeway	5,790	5,400	5,530
Arterial Streets	8,490	8,420	8,310
Cost Components			
Value of Time (\$/hour)	7.75	7.43	7.20
Commercial Cost (\$/hour)	23.94	23.63	23.31
Gasoline (\$/gallon)	1.31	1.34	1.41
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)	4,275	3,980	3,760
Rank	29	29	28
Fuel per Peak Auto Commuter (gallons)	5	5	4
Rank	27	22	19
Annual Delay			
Total Delay (1000s of person-hours)	7,919	7,373	6,965
Rank	32	32	31
Delay per Auto Commuter (pers-hrs)	21	19	18
Rank	19	21	21
Travel Time Index	1.08	1.08	1.08
Rank	39	34	29
Commuter Stress Index			
Rank			
Freeway Planning Time Index (95th Pctile)			
Rank			
Congestion Cost			
Total Cost (\$ millions)	77	69	64
Rank	32	32	29
Cost per Auto Commuter (\$)	367	353	348
Rank	39	40	38
Truck Congestion			
Annual Person-Hours of Delay (000)	425	396	374
Rank	27	27	26
Annual Gallons of Wasted Fuel (000)	906	844	797
Rank	28	28	27
Annual Congestion Cost (\$ million)	11	10	9
Rank	25	26	26
Annual Greenhouse Gases (CO2) Produced			
Excess Due to Congestion (tons)			
Rank			
Due to All Travel (tons)			
Rank			
Truck Annual Greenhouse Gases (CO2) Produced			
Excess Due to Truck Congestion (tons)			
Rank			
Due to Truck Travel (tons)			
Rank	ı	i	

<sup>\*</sup> Note: Zeroes in the table reflect values less than 0.5.