

Performance Measure Summary - Orlando FL

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2011. 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 Report 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 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 trip to be late for only 1 day a month. 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 3.00 means that for a 20-minute trip in light traffic, 60 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 the per-mile congestion 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).

CO₂ per Commuter - represents the pounds of additional CO₂ emissions generated by a commuter during a year due to traffic congestion.

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 values may be appropriate for urban project evaluations or sub-regions studies.

Excess Fuel Consumed – Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

Public Transportation – Regular route service from all public transportation providers in an urban area.

Operations Treatments – Freeway incident management, freeway ramp metering, arterial street signal coordination and arterial street access management.

Congestion Cost – Value of travel delay for 2011 (estimated at \$16.79 per hour of person travel and \$86.81 per hour of truck time) and excess gasoline consumption (passenger vehicles) and diesel (trucks) 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). The annual change in miles traveled and lane-miles, therefore, includes both new travel and roads due to growth and travel and roads that were previously in areas designated as rural.

Number of Rush Hours – Time when the road system might have congestion.

The Mobility Data for Orlando FL

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	1,475	1,453	1,429	1,415	1,405	1,375
Rank	33	33	33	33	33	33
Peak Travelers (1000s)	841	825	809	798	787	765
Commuters (1000s)	781	767	751	741	731	710
Freeway						
Daily Vehicle-Miles of Travel (1000s)	13,353	13,154	13,199	13,265	13,540	12,980
Lane-Miles	1,036	1,005	960	925	870	860
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	16,909	16,657	16,472	16,555	17,000	16,595
Lane-Miles	2,408	2,370	2,260	2,260	2,240	2,140
Public Transportation						
Annual Psgr-Miles of Travel (millions)	160.8	159.3	160.4	166.8	159.3	162.9
Annual Unlinked Psgr Trips (millions)	28.5	26.0	26.2	27.2	26.1	25.3
Cost Components						
Value of Time (\$/hour)	16.79	16.30	16.01	16.10	15.47	15.06
Commercial Cost (\$/hour)	86.81	88.12	89.75	81.52	82.56	80.43
Gasoline (\$/gallon)	3.24	2.74	2.33	3.47	2.98	2.66
Diesel (\$/gallon)	3.65	2.96	2.59	4.15	3.36	2.85
System Performance	2011	2010	2009	2008	2007	2006
Congested Travel (% of peak VMT)	80	79	81	72	74	72
Congested System (% of lane-miles)	75	74	76	68	69	68
Congested Time (number of "Rush Hours")	4.00	4.00	4.00	4.00	5.25	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	23,336	22,988	24,530	23,439	28,240	27,847
Rank	21	21	21	23	20	20
Fuel per Peak Auto Commuter (gallons)	22	22	23	23	29	29
Rank	15	15	12	13	9	9
Annual Delay						
Total Delay (1000s of person-hours)	46,607	45,912	47,022	42,030	48,011	47,886
Rank	25	26	24	26	28	27
Delay per Peak Auto Commuter (pers-hrs)	45	44	48	43	50	51
Rank	13	14	11	17	16	16
Travel Time Index						
Rank	1.20	1.20	1.22	1.21	1.24	1.24
Rank	27	27	19	26	27	28
Commuter Stress Index						
Rank	1.27	1.24	1.27	1.25	1.29	--
Rank	24	29	18	26	27	--
Freeway Planning Time Index (95th Pctile)						
Rank	2.58	--	--	--	--	--
Rank	59	--	--	--	--	--
Freeway Planning Time Index (80th Pctile)						
Rank	1.42	--	--	--	--	--
Rank	60	--	--	--	--	--
Excess CO2 Due to Congestion						
Congested CO2 (million pounds)	471	464	495	473	570	562
Rank	20	20	20	21	18	18
CO2 Per Peak Auto Commuter (pounds)	450	443	480	480	591	591
Rank	13	13	11	11	9	8
Truck Congestion Cost (\$ millions)						
Truck Congestion Cost (\$ millions)	248	244	251	207	234	--
Truck Commodity Value (\$ millions)						
Truck Commodity Value (\$ millions)	63,858	63,106	62,252	61,409	60,578	--
Congestion Cost						
Total Cost (\$ millions)	1,031	1,016	1,029	918	1,013	974
Rank	23	23	23	26	25	27
Cost per Peak Auto Commuter (\$)	984	969	1,016	931	1,037	1,355
Rank	14	14	13	18	15	19

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

The Mobility Data for Orlando FL

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	1,360	1,320	1,290	1,260	1,230	1,185
Rank	33	34	34	34	34	35
Peak Travelers (1000s)	751	725	704	678	651	617
Commuters (1000s)	697	673	654	630	604	574
Freeway						
Daily Vehicle-Miles of Travel (1000s)	12,470	11,765	10,570	10,000	9,950	9,400
Lane-Miles	850	840	805	775	745	730
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	16,770	16,530	17,000	17,000	16,970	15,855
Lane-Miles	2,100	2,075	2,060	2,060	2,050	2,050
Public Transportation						
Annual Psgr-Miles of Travel (millions)	160.2	144.2	147.1	144.3	131.1	139.7
Annual Unlinked Psgr Trips (millions)	24.8	23.4	22.7	21.5	22.3	21.8
Cost Components						
Value of Time (\$/hour)	14.58	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	78.05	74.17	72.23	70.86	71.38	70.47
Gasoline (\$/gallon)	2.34	1.99	1.53	1.41	1.51	1.54
Diesel (\$/gallon)	2.53	2.01	1.61	1.41	1.58	1.55
System Performance	2005	2004	2003	2002	2001	2000
Congested Travel (% of peak VMT)	70	68	69	71	71	70
Congested System (% of lane-miles)	66	65	65	67	67	63
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	26,718	26,122	26,023	26,466	27,004	24,601
Rank	21	21	21	20	18	19
Fuel per Peak Auto Commuter (gallons)	27	27	29	31	31	29
Rank	15	12	8	5	4	5
Annual Delay						
Total Delay (1000s of person-hours)	47,090	46,485	46,911	47,145	48,301	44,451
Rank	28	28	26	25	24	25
Delay per Peak Auto Commuter (pers-hrs)	51	51	54	55	57	55
Rank	15	15	8	6	5	5
Travel Time Index						
Rank	28	30	23	24	18	20
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (80th Pctile)						
Rank	--	--	--	--	--	--
Excess CO2 Due to Congestion						
Congested CO2 (million pounds)	539	527	525	534	545	497
Rank	18	20	19	18	17	18
CO2 Per Peak Auto Commuter (pounds)	554	554	591	627	627	591
Rank	13	11	7	5	3	4
Truck Congestion Cost (\$ millions)						
Truck Commodity Value (\$ millions)						
Congestion Cost						
Total Cost (\$ millions)	913	853	819	804	819	736
Rank	28	27	26	25	23	23
Cost per Peak Auto Commuter (\$)	1,283	1,235	1,213	1,220	1,273	1,188
Rank	19	15	13	10	5	7

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

The Mobility Data for Orlando FL

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	1,140	1,120	1,105	1,065	1,035	995
Rank	35	35	34	36	36	36
Peak Travelers (1000s)	584	564	548	520	497	471
Commuters (1000s)	542	524	509	483	462	437
Freeway						
Daily Vehicle-Miles of Travel (1000s)	8,725	8,565	8,205	7,695	7,280	7,360
Lane-Miles	705	685	680	680	670	670
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	15,290	14,440	14,040	13,215	12,625	11,760
Lane-Miles	2,040	2,010	1,980	1,900	1,850	1,775
Public Transportation						
Annual Psgr-Miles of Travel (millions)	127.6	118.2	112.9	103.2	102.1	74.7
Annual Unlinked Psgr Trips (millions)	20.7	19.3	17.8	15.7	14.1	12.5
Cost Components						
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37	11.06
Commercial Cost (\$/hour)	66.76	65.76	66.83	66.20	64.27	62.23
Gasoline (\$/gallon)	1.14	1.07	1.17	1.30	1.20	1.08
Diesel (\$/gallon)	1.19	1.20	1.27	1.40	1.30	1.17
System Performance	1999	1998	1997	1996	1995	1994
Congested Travel (% of peak VMT)	69	68	66	63	61	59
Congested System (% of lane-miles)	64	60	60	60	60	60
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	23,098	22,125	20,550	18,119	16,463	15,105
Rank	18	18	19	22	23	21
Fuel per Peak Auto Commuter (gallons)	29	27	25	23	23	22
Rank	5	5	10	12	12	9
Annual Delay						
Total Delay (1000s of person-hours)	41,417	39,833	37,217	33,275	30,185	28,002
Rank	25	24	26	28	27	26
Delay per Peak Auto Commuter (pers-hrs)	54	52	49	45	43	41
Rank	6	6	8	8	10	8
Travel Time Index						
Rank	18	13	15	17	18	15
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (80th Pctile)						
Rank	--	--	--	--	--	--
Excess CO2 Due to Congestion						
Congested CO2 (million pounds)	466	447	415	366	332	305
Rank	17	18	19	20	22	20
CO2 Per Peak Auto Commuter (pounds)	591	554	517	480	480	443
Rank	4	5	10	11	11	10
Truck Congestion Cost (\$ millions)						
Truck Commodity Value (\$ millions)	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	646	611	569	503	441	398
Rank	25	24	26	27	27	26
Cost per Peak Auto Commuter (\$)	1,084	1,044	984	903	815	764
Rank	7	7	9	8	11	9

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The Mobility Data for Orlando FL

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	965	935	910	860	805	785
Rank	37	38	38	38	40	41
Peak Travelers (1000s)	449	428	410	381	354	342
Commuters (1000s)	417	398	380	354	329	318
Freeway						
Daily Vehicle-Miles of Travel (1000s)	6,700	6,250	5,800	5,350	5,000	4,500
Lane-Miles	620	575	520	480	435	395
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	10,860	10,790	10,280	9,500	8,745	8,050
Lane-Miles	1,700	1,650	1,600	1,550	1,510	1,480
Public Transportation						
Annual Psgr-Miles of Travel (millions)	59.0	52.6	60.0	90.8	83.9	72.2
Annual Unlinked Psgr Trips (millions)	11.1	10.0	12.0	18.7	18.3	15.2
Cost Components						
Value of Time (\$/hour)	10.78	10.47	10.17	9.75	9.25	8.83
Commercial Cost (\$/hour)	60.84	59.01	57.31	55.03	52.81	50.04
Gasoline (\$/gallon)	1.13	1.12	1.10	1.05	1.08	1.00
Diesel (\$/gallon)	1.22	1.20	1.24	1.11	1.07	0.99
System Performance	1993	1992	1991	1990	1989	1988
Congested Travel (% of peak VMT)	59	61	61	59	58	51
Congested System (% of lane-miles)	61	61	61	61	62	56
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	13,880	13,820	13,300	11,286	10,046	8,270
Rank	22	20	20	20	20	24
Fuel per Peak Auto Commuter (gallons)	20	22	20	18	18	14
Rank	8	6	6	9	8	11
Annual Delay						
Total Delay (1000s of person-hours)	25,816	25,886	24,954	20,986	18,570	15,601
Rank	28	21	22	23	23	24
Delay per Peak Auto Commuter (pers-hrs)	40	41	41	36	34	29
Rank	7	5	6	7	9	12
Travel Time Index						
Rank	13	9	12	13	12	17
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (80th Pctile)						
Rank	--	--	--	--	--	--
Excess CO2 Due to Congestion						
Congested CO2 (million pounds)	280	279	268	228	203	167
Rank	20	18	19	19	19	22
CO2 Per Peak Auto Commuter (pounds)	406	443	406	369	369	295
Rank	9	6	5	7	7	9
Truck Congestion Cost (\$ millions)						
Rank	--	--	--	--	--	--
Truck Commodity Value (\$ millions)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	357	348	326	264	222	178
Rank	25	21	20	23	23	24
Cost per Peak Auto Commuter (\$)	707	711	685	587	528	433
Rank	9	5	6	7	9	11

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

The Mobility Data for Orlando FL

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	760	690	675	650	630	610
Rank	42	43	43	43	44	46
Peak Travelers (1000s)	329	296	288	275	265	253
Commuters (1000s)	306	275	267	255	246	235
Freeway						
Daily Vehicle-Miles of Travel (1000s)	4,100	3,815	3,435	3,150	3,010	2,750
Lane-Miles	360	330	315	315	305	300
Arterial Streets						
Daily Vehicle-Miles of Travel (1000s)	6,955	6,270	6,275	6,130	5,635	5,250
Lane-Miles	1,430	1,400	1,380	1,350	1,320	1,300
Public Transportation						
Annual Psgr-Miles of Travel (millions)	74.0	85.4	73.0	60.8	60.8	60.8
Annual Unlinked Psgr Trips (millions)	18.4	19.8	17.3	14.8	14.8	14.8
Cost Components						
Value of Time (\$/hour)	8.48	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	48.53	46.57	47.83	46.47	44.23	43.08
Gasoline (\$/gallon)	1.00	0.98	1.28	1.29	1.32	1.38
Diesel (\$/gallon)	0.99	0.97	1.27	1.28	1.31	1.37
System Performance	1987	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	45	40	39	36	34	29
Congested System (% of lane-miles)	55	51	51	51	50	49
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,419	5,086	4,832	4,074	3,341	2,646
Rank	25	26	25	26	29	33
Fuel per Peak Auto Commuter (gallons)	13	11	9	9	7	7
Rank	9	10	17	14	18	17
Annual Delay						
Total Delay (1000s of person-hours)	12,229	9,504	9,295	7,822	6,449	5,171
Rank	27	31	27	31	33	37
Delay per Peak Auto Commuter (pers-hrs)	23	20	20	17	15	13
Rank	16	21	13	19	19	23
Travel Time Index						
Rank	17	23	17	18	27	29
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (80th Pctile)						
Rank	--	--	--	--	--	--
Excess CO2 Due to Congestion						
Congested CO2 (million pounds)	130	103	98	82	67	53
Rank	24	25	24	26	29	31
CO2 Per Peak Auto Commuter (pounds)	258	221	185	185	148	148
Rank	9	10	19	13	20	16
Truck Congestion Cost (\$ millions)						
Rank	--	--	--	--	--	--
Truck Commodity Value (\$ millions)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	134	101	100	81	65	51
Rank	28	31	27	29	31	34
Cost per Peak Auto Commuter (\$)	338	280	284	241	198	160
Rank	18	20	20	19	22	27

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

**Benefits from Public Transportation Service and Operations Strategies in
Orlando FL**

Operations Strategies	2011	2010	2009	2008	2007
Freeway Ramp Metering					
Percent of Roadway Miles	-	-	-	-	-
Annual Delay Reduction (1000 hours)	-	-	-	-	-
Freeway Incident Management					
Cameras					
Percent of Roadway Miles	68	67	67	67	65
Service Patrols					
Percent of Roadway Miles	95	94	94	94	88
Annual Delay Reduction (1000 hours)	1,185	1,167	1,195	1,189	1,592
Arterial Signal Coordination					
Percent of Roadway Miles	81	80	80	80	82
Annual Delay Reduction (1000 hours)	218	215	220	190	200
Arterial Access Management					
Percent of Roadway Miles	53	52	52	52	51
Annual Delay Reduction (1000 hours)	1,343	1,323	1,355	1,173	1,397
HOV Lanes					
Daily Passenger-miles of travel (1000s)	-	-	-	-	-
HOV User Delay Savings	-	-	-	-	-
Added Congestion if Operations Treatments were Discontinued					
Annual Delay Reduction (1000 hours)	2,746	2,705	2,770	2,552	3,189
Annual Delay Saved per Peak Auto Commuter (hrs)	4	4	4	3	4
Annual Congestion Cost Savings (\$million)	61	60	71	67	80
Public Transportation Service	2011	2010	2009	2008	2007
Existing Service					
Annual Passenger-miles of travel (million)	161	159	160	167	159
Unlinked Passenger Trips (million)	29	26	26	27	26
Added Congestion if Public Transportation Service were Discontinued					
Annual Increase					
Delay (1000 hours)	1,704	1,678	1,719	1,637	1,824
Delay per Peak Auto Commuter (hours)	2	2	2	2	2
Congestion Cost (\$million)	38	37	44	43	46

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