

The Mobility Data for Philadelphia, PA-NJ

Inventory Measures	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Urban Area Information										
Population (000)	4,090	4,100	4,120	4,140	4,175	4,200	4,250	4,330	4,370	4,430
Rank	4	4	4	4	4	4	4	4	4	4
Urban Area (Sq. Miles)	970	970	1,100	1,100	1,100	1,115	1,120	1,150	1,200	1,240
Population Density (persons/sq. mile)	4,215	4,225	3,745	3,765	3,795	3,765	3,795	3,765	3,640	3,575
Freeway										
Daily Vehicle-Miles of Travel (000)	11,625	12,005	12,600	12,750	12,900	14,325	15,730	17,025	17,140	19,085
Lane Miles	1,230	1,280	1,270	1,275	1,285	1,290	1,340	1,420	1,460	1,540
Principal Arterial Streets										
Daily Vehicle-Miles of Travel (000)	18,080	18,180	18,745	20,000	21,625	22,475	22,160	21,115	19,800	20,280
Lane Miles	3,110	3,070	3,120	3,220	3,400	3,660	3,555	3,395	3,110	2,970
Roadway System										
Daily Vehicle-Miles of Travel (000)	51,480	53,115	54,025	54,705	59,150	62,780	64,245	65,625	65,760	66,775
Total Centerline Miles	10,535	10,550	10,570	10,765	10,765	10,805	10,870	11,195	11,815	12,240
Public Transportation										
Annual Psgr-Miles of Travel (mil)	1,036	1,178	1,294	1,423	1,309	1,314	1,384	1,411	1,397	1,377
Annual Unlinked Psgr Trips (mil)	323	350	356	389	377	342	345	370	368	356
Cost Components										
Value of Time (\$/hr)	7.20	7.45	7.75	8.00	8.20	8.50	8.80	9.25	10.00	10.25
Commercial Cost (\$/mile)	1.50	1.55	1.55	1.60	1.65	1.65	1.75	1.85	1.95	2.05
Fuel Cost (\$/gallon)	1.29	1.24	1.25	1.24	0.89	0.97	0.90	1.07	1.18	1.16
System Performance										
Travel Time Index										
Rank	13	13	16	14	12	12	17	19	20	18
Annual Delay (Person-Hours)										
Total (000)	19,727	19,378	22,014	25,177	31,560	36,794	37,715	38,722	38,836	47,689
Rank	9	9	10	11	10	11	11	13	13	12
Recurring Delay (%)	46	46	45	46	45	44	44	43	43	42
Incident Delay (%)	54	54	55	54	55	56	56	57	57	58
Delay per Person (person-hours)	5	5	5	6	8	9	9	9	9	11
Rank	18	21	25	26	16	19	23	24	26	24
Delay Saved by Public Transportation (person-hours)										
Total (000)	8,670	9,740	11,130	10,970	13,815	12,790	15,295	14,965	17,300	19,550
Delay per Person	2.1	2.4	2.7	2.6	3.3	3.0	3.6	3.5	4.0	4.4
Congested Travel (% of Peak VMT)										
Rank	14	16	16	15	15	14	17	20	23	21
Congested System (% of Freeway & Street Lane-miles)										
Rank	9	11	12	9	10	11	13	14	15	14
Number of "Rush Hours" (Time When System Might Have Congestion)										
To Maintain Constant Congestion Level:	4.0	4.0	4.4	4.6	5.0	5.2	5.4	5.6	5.4	6.0
Annual Lane-miles Needed (Freeway & Street)	--	--	--	--	--	216	227	193	112	120
Daily Transit or Carpool Riders Needed (000)	--	--	--	--	--	224	245	212	125	145
Annual Excess Fuel Consumed (gallons)										
Total (million)	31	30	35	40	48	57	60	62	61	76
Rank	9	9	10	11	10	11	11	13	14	12
Fuel per Person (gallons)	8	7	8	10	11	14	14	14	14	17
Rank	20	25	28	29	29	21	26	25	33	26
Congestion Cost										
Total (\$ million)	213	214	251	294	358	436	460	509	549	690
Rank	9	9	10	11	10	11	11	13	13	12
Cost per Person (\$)	52	52	61	71	86	104	108	118	126	156
Rank	22	27	27	30	27	22	25	25	31	26

The Mobility Data for Philadelphia, PA-NJ Continued

Inventory Measures	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Urban Area Information										
Population (000)	4,500	4,520	4,525	4,525	4,525	4,530	4,535	4,570	4,590	4,600
Rank	4	4	4	4	4	4	4	4	4	4
Urban Area (Sq. Miles)	1,250	1,260	1,280	1,300	1,320	1,330	1,350	1,375	1,385	1,390
Population Density (persons/sq. mile)	3,600	3,585	3,535	3,480	3,430	3,405	3,360	3,325	3,315	3,310
Freeway										
Daily Vehicle-Miles of Travel (000)	19,485	21,210	21,880	22,280	22,380	23,600	24,555	25,155	25,445	25,605
Lane Miles	1,590	1,700	1,730	1,740	1,730	1,730	1,730	1,725	1,740	1,750
Principal Arterial Streets										
Daily Vehicle-Miles of Travel (000)	20,160	20,705	21,105	20,405	21,300	21,750	21,855	21,565	21,325	21,600
Lane Miles	2,965	3,000	3,020	2,980	3,105	3,105	3,160	3,125	3,035	3,045
Roadway System										
Daily Vehicle-Miles of Travel (000)	70,655	73,425	73,595	74,120	74,690	74,900	76,465	76,465	77,500	78,935
Total Centerline Miles	12,495	13,040	13,125	13,385	13,525	13,550	13,390	13,365	13,415	13,460
Public Transportation										
Annual Psgr-Miles of Travel (mil)	1,339	1,268	1,333	1,280	1,314	1,321	1,233	1,333	1,389	1,331
Annual Unlinked Psgr Trips (mil)	344	330	329	322	318	305	273	300	307	319
Cost Components										
Value of Time (\$/hr)	10.50	10.75	11.05	11.40	11.70	12.00	12.15	12.40	12.85	13.25
Commercial Cost (\$/mile)	2.15	2.25	2.35	2.45	2.55	2.65	2.75	2.85	2.95	3.05
Fuel Cost (\$/gallon)	1.14	1.11	1.01	1.15	1.26	1.19	1.06	1.11	1.41	1.54
System Performance										
Travel Time Index										
Rank	19	21	23	21	19	23	19	23	26	27
Annual Delay (Person-Hours)										
Total (000)	49,307	45,356	50,532	56,292	57,777	60,382	68,609	71,858	70,631	77,463
Rank	12	12	13	12	12	13	12	12	13	12
Recurring Delay (%)	41	42	42	41	41	41	40	39	40	39
Incident Delay (%)	59	58	58	59	59	59	60	61	60	61
Delay per Person (person-hours)	11	10	11	12	13	13	15	16	15	17
Rank	25	35	38	36	38	37	35	37	39	36
Delay Saved by Public Transportation (person-hours)										
Total (000)	19,355	19,485	22,630	20,785	27,890	24,860	25,575	28,380	29,615	31,375
Delay per Person	4.3	4.3	5.0	4.6	6.2	5.5	5.6	6.2	6.5	6.8
Congested Travel (% of Peak VMT)										
Rank	24	25	22	27	23	24	25	26	28	28
Congested System (% of Freeway & Street Lane-miles)										
Rank	50	51	54	54	56	56	56	56	56	58
Rank	17	19	14	19	18	21	24	24	27	26
Number of "Rush Hours" (Time When System Might Have Congestion)										
To Maintain Constant Congestion Level:	5.8	6.0	6.0	6.0	6.2	6.6	6.8	7.0	7.0	7.2
Annual Lane-miles Needed (Freeway & Street)	68	96	115	138	101	132	101	82	88	75
Daily Transit or Carpool Riders Needed (000)	83	119	145	174	128	172	133	109	120	103
Annual Excess Fuel Consumed (gallons)										
Total (million)	78	75	82	91	94	98	112	116	115	126
Rank	12	12	13	12	12	12	12	12	12	12
Fuel per Person (gallons)	17	17	18	20	21	22	25	25	25	27
Rank	30	34	40	38	39	37	36	39	40	38
Congestion Cost										
Total (\$ million)	730	697	787	914	973	1,041	1,184	1,276	1,331	1,518
Rank	12	12	13	12	12	12	12	12	13	12
Cost per Person (\$)	162	154	174	202	215	230	261	279	290	330
Rank	28	37	40	37	39	37	37	39	40	38

Mobility Strategy for Philadelphia, PA-NJ

Key Inventory Variables (Amount of Strategy That Has Been Applied)	Strategy Implemented					
	Ramp Metering	Incident Management			Signal Coordination	
		Cameras	Service Patrol	Uncoordinated	Actuated	Progressive
Percent of Daily Miles Traveled	5.3	35.3	73.4	65.6	34.4	
Percent of Miles of Roadway	3.8	28.3	75.6	71.7	28.3	
Percent of Daily Miles of Travel						
Uncongested	--	23.3	79.7	52	38	9
Moderate	8.3	49.9	73.8	82	18	--
Heavy	6.5	54.8	73.7	90	3	7
Severe	19.9	49.1	61.6	57	43	--
Extreme	--	23.3	50.5	53	33	14
Annual Delay Reduction from Strategy (000)	245	3,730		250		
Percent of Annual Delay	0.6	9.6		0.6		
Travel Time Index with Strategy	1.263	1.248		1.337		
Travel Time Index (Base)	1.264	1.264		1.341		

Strategy	HOV Information		Travel Time Index		Annual Delay Increase if HOV Users were in Freeway Mainlanes (000)
	Daily Psgr- Miles of Travel (000)	Miles of Roadway	Base	HOV	
			Freeway		
HOV Lanes	--	--	1.264	--	--

Strategy	Annual Statistics		Travel Time Index		Annual Delay Increase if Public Transportation Did Not Operate (000)
	Psgr-Miles of Travel (millions)	Unlinked Passenger Trips (mil)	Base	with Public Transportation	
Public Transportation	1,331	319	1.299	1.267	31,375

Mobility Benefit Estimates for All Strategies	Annual Hours of Delay (000)			Travel Time Index	
	Base	Savings due to Operations Treatments	Annual Delay Increase if Public Transp. Service Did Not Operate	Base	with Strategies
	77,463	4,225	31,375	1.299	1.266

Note: "--" indicates strategy is not applied.