

This document was prepared by NJDHSS for discussion with the Pompton Lakes Health Community Advisory Group. The analyses are preliminary and will be incorporated into a forthcoming Community Health Profile report.

Preliminary Analyses of Childhood Lead Exposure Community Health Profile Pompton Lakes, New Jersey

Presented to Pompton Lakes Health CAG
July 12, 2011

The New Jersey Department of Health and Senior Services (DHSS) requires every physician, professional registered nurse, and health care facility to screen for lead exposure all children under six years of age who come to them for care (Public Law 1995, chapter 328). Lead is a toxic metal that has been used in paints, gasoline, ceramics, solder, batteries and many other consumer products; the main source of childhood lead exposure is lead-based paint in older homes.

All children in New Jersey are considered at risk for lead exposure and poisoning. Therefore, DHSS recommends that all children should be screened for lead poisoning at 12 and 24 months of age, and any child between three and six years of age who has never previously been screened. In addition, DHSS recommends that any child who is six months of age or older, and who may be exposed to a known or suspected lead hazard, should be screened.

Since July 1999, DHSS has required clinical laboratories to report all blood lead test results to the State. The Childhood Lead Poisoning Prevention (CLPP) program in DHSS maintains a central surveillance database and patient tracking system called LeadTrax. Using LeadTrax, CLPP coordinates with local health departments to document, share and track case management data and environmental intervention activities. The LeadTrax database includes the following information on each laboratory report: patient's identifying information, patient's address, patient's age at time of blood specimen collection, type of screening specimen (venous or capillary), and blood lead result in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$).

Multiple lead test reports may be received on the same patient. For the purpose of this analysis, each child was counted only once per calendar year. For each child, the highest result among all venous specimens during a calendar year was selected. If no venous sample is available for a child in a calendar year, the lowest result among capillary specimens (finger sticks) was selected, since a blood lead test done on a capillary specimen is susceptible to falsely high results.

The U.S. Center for Disease Control and Prevention (CDC) sets 10 $\mu\text{g}/\text{dL}$ as its "level of concern" for children's lead exposure. Levels at or above this level trigger case management, a home visit, education and counseling about lead hazards, and re-testing by local health departments. Higher levels trigger may more aggressive interventions including full environmental inspection and medical evaluation and treatment.

A. Lead Exposure, Children 6 to 29 Months of Age, 2000-2010

Methods

While the ideal is for all children to be tested at both one and two years of age, at a minimum all children should have at least one blood lead test done before their third birthday. CLPP in DHSS uses the age span of 6 to 29 months to capture data on tests that are performed either earlier than the age of 12 months or later than the age of 24 months, as not all children are tested exactly at the age of one and two years.

Blood lead test results in the period January 1, 2000 through December 31, 2010 were extracted from LeadTrax for children between the ages of 6 and 29 months at the time that blood was collected for lead analysis. Results were summarized for Pompton Lakes, the six surrounding municipalities (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey. In each of these areas, the percent of children tested whose blood lead test reached or exceeded 5, 10 and 20 µg/dL was computed, for the entire 11 year period and for each year.

Results, Children 6 to 29 Months of Age

Table 1 presents the percent of children age 6 to 29 months with blood lead levels equal to or exceeding 5, 10 or 20 µg/dL, in Pompton Lakes, the six surrounding towns, and the State of New Jersey, during the 11-year period 2000-2010. Figure 1 shows the percent of children with blood lead levels equal to or exceeding 10 µg/dL.

Statewide, 1.45% of children in this age range had blood lead levels at or above 10 µg/dL, with much lower percentages in Pompton Lakes (0.2%) and the six surrounding municipalities (also 0.2% combined, ranging from 0.1% to 0.4%).

No children aged 6 to 29 months in Pompton Lakes had blood lead levels at 20 µg/dL or above. About 0.25% of children in this age group statewide had a blood lead level of 20 µg/dL or above

About 8.9% of children aged 6 to 29 months in Pompton Lakes had a blood lead level of 5 µg/dL or higher. The percent was smaller in the six surrounding towns (6.4% combined, ranging from 4.0% to 8.3%), and was larger statewide (12.9%).

Table 1. Percent of blood lead concentrations greater than or equal to 5, 10 or 20 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$), among children aged 6 to 29 months, 2000 through 2010.

Population	% ≥ 5 $\mu\text{g}/\text{dL}$	% ≥ 10 $\mu\text{g}/\text{dL}$	% ≥ 20 $\mu\text{g}/\text{dL}$
Pompton Lakes	8.9%	0.2%	0%
Six Surrounding Towns	6.4%	0.2%	0.03%
Bloomingtondale	8.3%	0.1%	0%
Oakland	4.0%	0.3%	0.1%
Pequannock	7.8%	0.2%	0%
Riverdale	5.0%	0.2%	0%
Wanaque	7.4%	0.4%	0%
Wayne	6.0%	0.2%	0.04%
State of New Jersey	12.9%	1.45%	0.25%

Figure 1. Percent of blood lead concentrations greater than or equal to 10 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$), among children aged 6 to 29 months, 2000 through 2010.

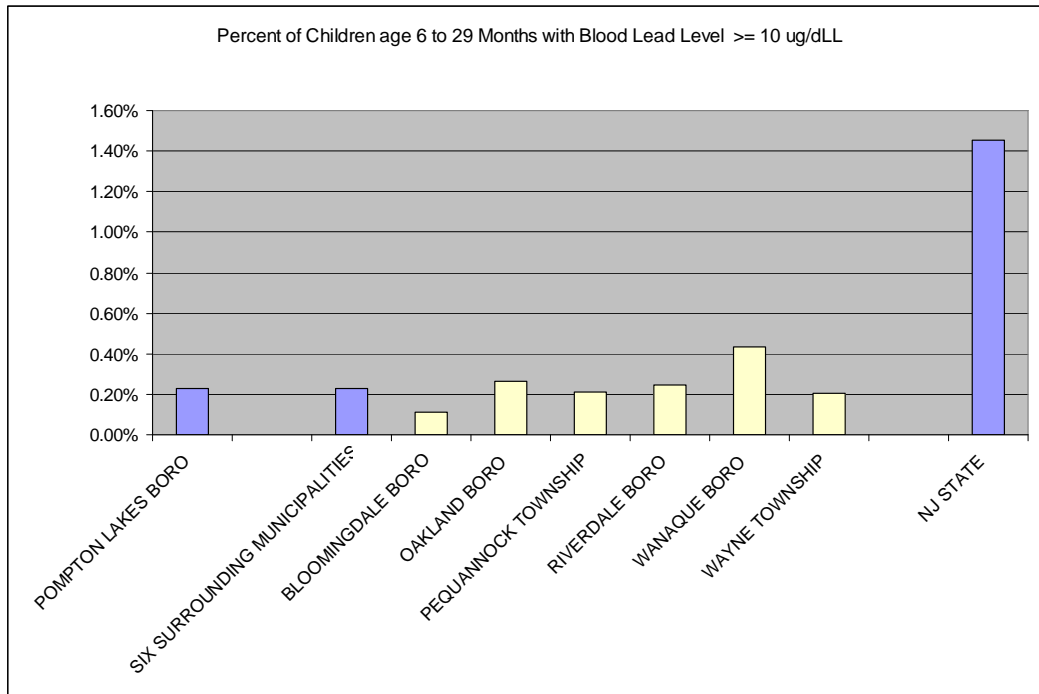


Table 2 shows the number of children age 6 to 29 months whose blood lead test fell within certain concentration ranges, for Pompton Lakes, the six surrounding municipalities combined and separately, and the state of New Jersey. This Table shows the data for the entire 11-year period combined, 2000 through 2010.

Table 2. Distribution of blood lead concentrations among children aged 6 to 29 months, 2000 through 2010, in micrograms of lead per deciliter of blood (µg/dL).

Population	<2.5 µg/dL	2.5-4.4 µg/dL	4.5-9.4 µg/dL	10-14 µg/dL	15-19 µg/dL	20-44 µg/dL	45-69 µg/dL	>=70 µg/dL	Total Screened
Pompton Lakes	577	629	115	3	0	0	0	0	1,324
Six Surrounding Towns	4,239	5,058	617	15	5	3	0	0	9,937
Bloomingtondale	363	452	73	0	1	0	0	0	889
Oakland	380	349	28	1	0	1	0	0	759
Pequannock	565	756	108	2	1	0	0	0	1,432
Riverdale	175	208	19	1	0	0	0	0	403
Wanaque	466	606	81	3	2	0	0	0	1,158
Wayne	2,290	2,687	308	8	1	2	0	0	5,296
State of New Jersey	431,271	490,796	120,749	9,691	3,038	2,503	133	28	1,058,209

Tables 3 and 4 show a breakdown by year of blood lead values among children 6 to 29 months of age, for Pompton Lakes, the six surrounding municipalities combined, and the State of New Jersey. Table 3 presents these annual data expressed as the percent of children tested whose blood lead value reached or exceeded 5, 10 or 20 µg/dL, while Table 4 shows the distributions by ranges of blood lead concentration.

In general for the State of New Jersey, there has been a steadily improving trend in the percent of children whose blood lead result was at or above 5, 10 or 20 µg/dL (Table 3). These trends are also apparent in the six surrounding towns combined. Trends are not as clear for Pompton Lakes, primarily because of the relatively small number of children whose test results were 10 µg/dL or higher.

Table 3. Percent of blood lead concentrations greater than or equal to 5, 10 or 20 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$), by year, among children aged 6 to 29 months, 2000 through 2010.

Population and Year of Test	% \geq 5 $\mu\text{g}/\text{dL}$	% \geq 10 $\mu\text{g}/\text{dL}$	% \geq 20 $\mu\text{g}/\text{dL}$
Pompton Lakes			
2000-2010	8.9%	0.2%	0%
2000	18%	0%	0%
2001	11%	0.8%	0%
2002	7%	0%	0%
2003	14%	0%	0%
2004	10%	0%	0%
2005	7%	0.7%	0%
2006	9%	0%	0%
2007	12%	0%	0%
2008	7%	0%	0%
2009	0.8%	0%	0%
2010	3%	0.8%	0%
Six Surrounding Towns			
2000-2010	6.4%	0.2%	0.03%
2000	8.1%	0.5%	0.2%
2001	9.4%	0.4%	0%
2002	8.3%	0.2%	0.09%
2003	6.8%	0.3%	0%
2004	6.9%	0.2%	0%
2005	6.1%	0.1%	0%
2006	6.5%	0.1%	0%
2007	8.1%	0.1%	0%
2008	4.2%	0.1%	0%
2009	2.2%	0.1%	0%
2010	1.6%	0.1%	0%
State of New Jersey			
2000-2010	12.9%	1.4%	0.25%
2000	18.3%	2.6%	0.50%
2001	16.6%	2.0%	0.34%
2002	16.9%	2.0%	0.29%
2003	17.0%	2.1%	0.37%
2004	16.2%	1.9%	0.32%
2005	15.3%	1.6%	0.26%
2006	14.5%	1.3%	0.21%
2007	12.9%	1.1%	0.20%
2008	7.8%	0.78%	0.14%
2009	5.5%	0.61%	0.13%
2010	4.7%	0.65%	0.13%

Table 4. Distribution of blood lead concentrations among children aged 6 to 29 months, by year, 2000 through 2010, in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$).

Population and Year of Test	<2.5 $\mu\text{g}/\text{dL}$	2.5-4.4 $\mu\text{g}/\text{dL}$	4.5-9.4 $\mu\text{g}/\text{dL}$	10-14 $\mu\text{g}/\text{dL}$	15-19 $\mu\text{g}/\text{dL}$	20-44 $\mu\text{g}/\text{dL}$	45-69 $\mu\text{g}/\text{dL}$	≥ 70 $\mu\text{g}/\text{dL}$	Total Screened
Pompton Lakes									
2000-2010	577	629	115	3	0	0	0	0	1,324
2000	52	40	20	0	0	0	0	0	112
2001	82	29	13	1	0	0	0	0	125
2002	35	59	7	0	0	0	0	0	101
2003	17	88	17	0	0	0	0	0	122
2004	32	71	11	0	0	0	0	0	114
2005	45	86	9	1	0	0	0	0	141
2006	39	90	13	0	0	0	0	0	142
2007	47	58	14	0	0	0	0	0	119
2008	55	38	7	0	0	0	0	0	100
2009	81	35	1	0	0	0	0	0	117
2010	92	35	3	1	0	0	0	0	131
Six Surrounding Towns									
2000-2010	4,239	5,058	617	15	5	3	0	0	9,937
2000	548	326	72	1	2	2	0	0	951
2001	719	279	98	4	1	0	0	0	1,101
2002	362	610	86	1	0	1	0	0	1,060
2003	173	674	59	3	0	0	0	0	909
2004	195	593	56	1	1	0	0	0	846
2005	272	686	61	1	0	0	0	0	1,020
2006	261	598	59	1	0	0	0	0	919
2007	337	449	68	1	0	0	0	0	855
2008	396	328	31	1	0	0	0	0	756
2009	450	301	16	1	0	0	0	0	768
2010	526	214	11	0	1	0	0	0	752
State of New Jersey									
2000-2010	431,271	490,796	120,749	9,691	3,038	2,503	133	28	1,058,209
2000	30,898	31,770	12,070	1,254	335	359	17	7	76,710
2001	41,176	28,584	12,123	1,108	324	267	12	4	83,598
2002	25,060	49,366	13,332	1,152	369	238	17	2	89,536
2003	19,596	54,229	13,204	1,199	367	309	14	3	88,921
2004	24,120	55,793	13,596	1,135	378	292	11	4	95,329
2005	26,349	58,333	13,675	1,027	311	242	12	2	99,951
2006	30,138	58,858	13,717	847	274	205	7	3	104,049
2007	40,319	49,085	12,160	685	230	195	11	0	102,685
2008	57,917	40,168	7,439	506	176	138	11	1	106,356
2009	64,052	36,047	5,210	387	119	125	14	1	105,955
2010	71,646	28,563	4,223	391	155	133	7	1	105,119

B. Lead Exposure, Children up to 6 Years of Age, 2000-2010

Methods

CLPP also examines childhood lead screening data for all children 6 years of age and under. Blood lead test results in the period January 1, 2000 through December 31, 2010 were extracted from LeadTrax for children under 72 months of age at the time that blood was collected for lead analysis. Results were summarized for Pompton Lakes, the six surrounding municipalities (Oakland Borough, Pequannock Township, Riverdale Borough, Bloomingdale Borough, Wanaque Borough, and Wayne Township), and the State of New Jersey.

Results, Children up to 6 Years of Age

Table 5 presents the percent of children age up to 6 years with blood lead levels equal to or exceeding 5, 10 or 20 µg/dL, in Pompton Lakes, the six surrounding towns, and the State of New Jersey, during the 11-year period 2000-2010. Figure 2 shows the percent of these children with blood lead levels equal to or exceeding 10 µg/dL.

Statewide, 1.83% of children in this age range had blood lead levels at or above 10 µg/dL, with much lower percentages in Pompton Lakes (0.4%) and the six surrounding municipalities (also 0.2% combined, ranging from 0.2% to 0.4%).

About 0.1% of children aged up to 6 years in Pompton Lakes had blood lead levels at 20 µg/dL or above in the 11-year period. About 0.3% of children in this age group statewide had a blood lead level of 20 µg/dL or above.

About 8.5% of children aged up to 6 years in Pompton Lakes had a blood lead level of 5 µg/dL or higher. The percent was smaller in the six surrounding towns (6.2% combined, ranging from 3.9% to 7.8%), and was larger statewide (14.9%).

Table 5. Percent of blood lead concentrations greater than or equal to 5, 10 or 20 micrograms of lead per deciliter of blood (µg/dL), among children aged up to 6 years, 2000 through 2010.

Population	% ≥ 5 µg/dL	% ≥ 10 µg/dL	% ≥ 20 µg/dL
Pompton Lakes	8.5%	0.4%	0.1%
Six Surrounding Towns	6.2%	0.2%	0.03%
Bloomingdale	7.8%	0.2%	0.09%
Oakland	3.9%	0.2%	0.1%
Pequannock	7.5%	0.2%	0%
Riverdale	4.7%	0.2%	0%
Wanaque	7.3%	0.4%	0%
Wayne	5.8%	0.2%	0.03%
State of New Jersey	14.9%	1.83%	0.3%

Figure 2. Percent of blood lead concentrations greater than or equal to 10 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$), among children aged up to 6 years, 2000 through 2010.

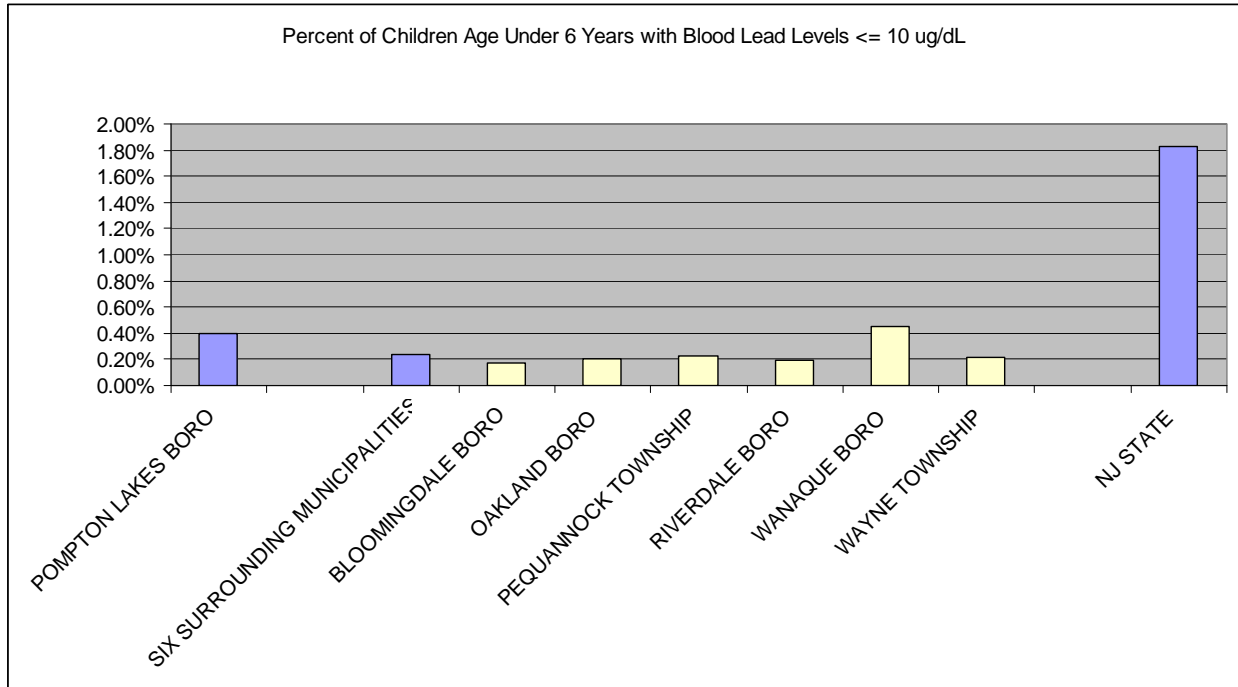


Table 6 shows the number of children age up to 6 years whose blood lead test fell within certain concentration ranges, for Pompton Lakes, the six surrounding municipalities combined and separately, and the state of New Jersey. This Table shows the data for the entire 11-year period combined, 2000 through 2010.

Table 6. Distribution of blood lead concentrations among children aged up to 6 years, 2000 through 2010, in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$).

Population	<2.5 $\mu\text{g}/\text{dL}$	2.5-4.4 $\mu\text{g}/\text{dL}$	4.5-9.4 $\mu\text{g}/\text{dL}$	10-14 $\mu\text{g}/\text{dL}$	15-19 $\mu\text{g}/\text{dL}$	20-44 $\mu\text{g}/\text{dL}$	45-69 $\mu\text{g}/\text{dL}$	$\geq 70 \mu\text{g}/\text{dL}$	Total Screened
Pompton Lakes	778	841	143	5	0	2	0	0	1,769
Six Surrounding Towns	5,579	6,568	775	22	5	4	0	0	12,953
Bloomingdale	472	597	89	0	1	1	0	0	1,160
Oakland	476	456	36	1	0	1	0	0	970
Pequannock	701	928	128	3	1	0	0	0	1,761
Riverdale	229	253	23	1	0	0	0	0	506
Wanaque	668	780	107	5	2	0	0	0	1,562
Wayne	3,033	3,554	392	12	1	2	0	0	6,994
State of New Jersey	714,929	821,313	235,766	21,043	6,524	5,117	262	49	1,805,003

Tables 7 and 8 show a breakdown by year of blood lead values among children age up to 6 years, for Pompton Lakes, the six surrounding municipalities combined, and the State of New Jersey. Table 7 presents these annual data expressed as the percent of children tested whose blood lead value reached or exceeded 5, 10 or 20 $\mu\text{g}/\text{dL}$, while Table 8 shows the distributions by ranges of blood lead concentration.

In general for the State of New Jersey, there has been a steadily improving trend in the percent of children whose blood lead result was at or above 5, 10 or 20 $\mu\text{g}/\text{dL}$ (Table 8). These trends are also apparent in the six surrounding towns combined, but trends are not as clear for Pompton Lakes because of the relatively small number of children whose test results were 10 $\mu\text{g}/\text{dL}$ or higher.

Table 7. Percent of blood lead concentrations greater than or equal to 5, 10 or 20 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$), by year, among children aged up to 6 years, 2000 through 2010.

Population and Year of Test	% \geq 5 $\mu\text{g}/\text{dL}$	% \geq 10 $\mu\text{g}/\text{dL}$	% \geq 20 $\mu\text{g}/\text{dL}$
Pompton Lakes			
2000-2010	8.5%	0.4%	0.1%
2000	16%	0%	0%
2001	11%	0.7%	0%
2002	8%	0%	0%
2003	12%	0%	0%
2004	8%	0%	0%
2005	8%	1%	0.5%
2006	10%	1%	0.5%
2007	10%	0.6%	0%
2008	6%	0%	0%
2009	2%	0%	0%
2010	3%	0.6%	0%
Six Surrounding Towns			
2000-2010	6.2%	0.2%	0.03%
2000	8.5%	0.7%	0.2%
2001	9.1%	0.4%	0%
2002	8.0%	0.2%	0.08%
2003	6.4%	0.3%	0%
2004	6.7%	0.2%	0%
2005	6.1%	0.2%	0%
2006	6.7%	0.2%	0%
2007	8.4%	0.09%	0%
2008	3.5%	0.1%	0%
2009	2.0%	0.2%	0%
2010	1.3%	0.09%	0%
State of New Jersey			
2000-2010	14.9%	1.8%	0.30%
2000	22.8%	3.8%	0.72%
2001	20.4%	3.0%	0.47%
2002	20.7%	2.8%	0.41%
2003	20.4%	2.7%	0.43%
2004	18.9%	2.3%	0.36%
2005	17.8%	2.0%	0.30%
2006	16.2%	1.5%	0.23%
2007	14.1%	1.2%	0.19%
2008	8.4%	0.86%	0.15%
2009	6.0%	0.67%	0.13%
2010	4.9%	0.67%	0.14%

Table 8. Distribution of blood lead concentrations among children aged up to 6 years, by year, 2000 through 2010, in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$).

Population and Year of Test	<2.5 $\mu\text{g}/\text{dL}$	2.5-4.4 $\mu\text{g}/\text{dL}$	4.5-9.4 $\mu\text{g}/\text{dL}$	10-14 $\mu\text{g}/\text{dL}$	15-19 $\mu\text{g}/\text{dL}$	20-44 $\mu\text{g}/\text{dL}$	45-69 $\mu\text{g}/\text{dL}$	≥ 70 $\mu\text{g}/\text{dL}$	Total Screened
Pompton Lakes									
2000-2010	778	841	143	5	0	2	0	0	1,769
2000	65	54	22	0	0	0	0	0	141
2001	98	37	16	1	0	0	0	0	152
2002	48	77	11	0	0	0	0	0	136
2003	25	106	18	0	0	0	0	0	149
2004	41	104	12	0	0	0	0	0	157
2005	58	112	13	1	0	1	0	0	185
2006	53	120	18	1	0	1	0	0	193
2007	70	84	17	1	0	0	0	0	172
2008	74	53	8	0	0	0	0	0	135
2009	115	51	3	0	0	0	0	0	169
2010	131	43	5	1	0	0	0	0	180
Six Surrounding Towns									
2000-2010	5,579	6,568	775	22	5	4	0	0	12,953
2000	670	429	94	3	2	3	0	0	1,201
2001	892	322	115	5	1	0	0	0	1,335
2002	437	784	104	1	0	1	0	0	1,327
2003	235	853	70	4	0	0	0	0	1,162
2004	260	797	74	1	1	0	0	0	1,133
2005	373	839	77	2	0	0	0	0	1,291
2006	345	776	78	2	0	0	0	0	1,201
2007	453	595	95	1	0	0	0	0	1,144
2008	535	460	35	1	0	0	0	0	1,031
2009	637	412	20	2	0	0	0	0	1,071
2010	742	301	13	0	1	0	0	0	1,057
State of New Jersey									
2000-2010	714,929	821,313	235,766	21,043	6,524	5,117	262	49	1,805,003
2000	44,460	51,789	23,712	2,985	837	850	35	14	124,682
2001	60,777	47,621	23,700	2,630	802	606	32	5	136,173
2002	38,921	79,698	26,831	2,678	818	581	31	7	149,565
2003	31,176	87,008	26,197	2,567	825	610	29	5	148,417
2004	40,306	93,025	27,397	2,373	788	564	23	5	164,481
2005	44,206	96,792	27,136	2,179	675	493	22	4	171,507
2006	52,336	97,663	26,182	1,759	564	379	21	3	178,907
2007	68,582	84,277	23,018	1,380	406	328	17	1	178,009
2008	98,841	70,461	13,956	1,009	310	259	16	1	184,853
2009	109,706	62,857	9,795	745	241	216	19	1	183,580
2010	125,618	50,122	7,842	738	258	231	17	3	184,829