

**State College Area School District      III**  
**Office of Physical Plant**  
**Ed Poprik, Director**

To:            Board of School Directors

From:        Ed Poprik

RE:           **Demographic Update**

Date:        June 17, 2013

Attached are 10 preliminary tables from our forthcoming Demographic update. In summary, they predict flat enrollment for the next 10 years. Dr. Stewman will be present to discuss this at the meeting,

Table 1

Annual Number of Births to State College Area School District  
Residents by Municipality and Year: 1990-2011<sup>1</sup>

	College Township	Ferguson Township	Half Moon Township	Harris Township	Patton Township	State College Boro	Total
1990	128	135	31	65	159	209	727
1991	154	117	40	71	139	170	691
1992	123	138	38	66	148	174	687
1993	105	133	53	65	122	218	696
1994	100	114	34	52	123	205	628
1995	126	120	35	57	105	188	631
1996	96	139	30	47	118	211	641
1997	79	117	37	43	102	181	559
1998	87	145	30	44	110	164	580
1999	71	163	43	46	108	142	572
2000	60	158	25	46	149	186	624
2001	88	146	38	51	118	151	592
2002	69	174	40	58	125	174	640
2003	82	176	30	44	132	157	621
2004	75	178	43	42	118	180	636
2005	84	176	16	58	112	175	621
2006	89	187	27	51	123	171	648
2007	72	188	28	43	155	138	624
2008	92	178	18	43	113	140	584
2009	95	160	21	42	151	145	614
2010	107	169	22	52	151	171	672
2011 <sup>2</sup>	75	153	26	39	137	147	577
∑ 1990-1994	610	637	196	319	691	976	3429
∑ 1995-1999	459	684	174	237	543	886	2983
∑ 2000-2004	374	832	176	241	642	848	3113
∑ 2005-2009	432	899	110	237	654	769	3091
∑ 2010-2011	182	322	48	91	288	318	1249
Average/Year							
1990-1994	122.0	127.4	39.2	63.8	138.2	195.2	685.8
1995-1999	91.8	136.8	34.8	47.4	108.6	177.2	596.6
2000-2004	74.8	166.4	35.2	48.2	128.4	169.6	622.6
2005-2009	86.4	177.8	22.0	47.4	130.8	153.8	618.2
2010-2011	91.0	161.0	24.0	45.5	144.0	159.0	624.5

<sup>1</sup> Source: Department of Health, Commonwealth of Pennsylvania

<sup>2</sup> Preliminary estimates from Department of Health, Commonwealth of Pennsylvania

$\Delta_1^a$	-30.2	+9.4	-4.4	-16.4	-29.6	-18.0	-89.2 (-13.0%)
$\Delta_2^b$	-17.0	+29.6	+0.4	+0.8	+19.8	-7.6	+26.0 (+4.4%)
$\Delta_3^c$	+11.6	+11.4	-13.2	-0.8	+2.4	-15.8	-4.4 (-0.7%)
$\Delta_4^d$	+4.6	-16.8	+2.0	-1.9	+13.2	+5.2	+6.3 (+1.0%)

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<sup>a</sup>  $\Delta_1$  (1990-1994 average) → (1995-1999 average)

<sup>b</sup>  $\Delta_2$  (1995-1999 average) → (2000-2004 average)

<sup>c</sup>  $\Delta_3$  (2000-2004 average) → (2005-2009 average)

<sup>d</sup>  $\Delta_4$  (2005-2009 average) → (2010-2011 average)

Table 3

Distribution of Births by Age of Mother and Year  
in the State College Area School District\*

<b>AGE</b>								
Year	15-19	20-24	25-29	30-34	35-39	40-44	45	Total Births
1990	.037	.151	.382	.303	.109	.017	.001	727
1991	.033	.129	.378	.305	.137	.017	.000	691
1992	.026	.148	.335	.333	.137	.020	.000	687
1993	.040	.131	.316	.365	.126	.022	.000	696
1994	.045	.142	.325	.336	.127	.025	.000	628
1995	.040	.130	.331	.339	.135	.024	.002	631
1996	.036	.133	.304	.359	.154	.014	.000	641
1997	.025	.140	.299	.315	.179	.043	.000	559
1998	.034	.122	.291	.367	.164	.021	.000	580
1999	.037	.140	.292	.343	.164	.024	.000	572
2000	.029	.114	.252	.378	.184	.042	.002	624
2001	.037	.137	.255	.334	.189	.041	.007	592
2002	.034	.134	.264	.353	.188	.025	.002	640
2003	.016	.140	.277	.346	.176	.042	.003	621
2004	.024	.099	.303	.368	.165	.041	.000	636
2005	.032	.100	.293	.367	.171	.032	.005	621
2006	.032	.116	.310	.310	.188	.039	.003	648
2007	.030	.119	.277	.373	.171	.024	.002	624
2008	.019	.091	.298	.402	.151	.038	.002	584
2009	.021	.112	.267	.386	.174	.037	.002	614
2010	.018	.086	.290	.394	.174	.030	.007	672
<b>Average</b>								
1990-94	.036	.140	.348	.328	.127	.020	.0003	3,429
1995-99	.035	.133	.304	.345	.159	.025	.0003	2,983
2000-04	.028	.125	.270	.356	.180	.038	.0026	3,113
2005-09	.027	.108	.290	.367	.172	.034	.0026	3,091
$\Delta_3\%$	-.009	-.032	-.058	+.039	+.045	+.014	+.0023	
	↓	↓	↓	↑	↑	↑	↑	

\* Source: Department of Health, Commonwealth of Pennsylvania  
 $\Delta_3\%$ : [2005-2009 average] - [1990-1994 average]

Table 5

Changes in Population Age Distribution for State College Area School District  
Over the Past Decade Due to Migration vs Cohort Replacement<sup>1</sup>:  
2000 and 2010

	2000	Birth Years		2010	Birth Years		Δ Net Migration & Aging	Δ Cohort Replacement
<5	2969	1996-2000		3233	2006-2010			+264 (+9%)
5-9	3192	1991-95	EB <sup>2</sup>	3069	2001-2005			-123 (-4%)
10-14	3350	1986-90	EB	3151	1996-2000		+182 (+6%)	-199 (-6%)
15-19	10175	1981-85	EB	12471	1991-95	EB	+9279 (+291%)	+2296 (+23%) EB
20-24	23884	1976-80	bb	29166	1986-90	EB	+25816 (+771%)	+5282 (+22%) EB
25-29	5688	1971-75	bb	6676	1981-85	EB	-3499 (-34%)	+988 (+17%) EB
30-34	4287	1966-70		4353	1976-80	bb	-19531 (-82%)	+66 (+2%) bb
35-39	4337	1961-65	BB	3581	1971-75	bb	-2107 (-37%)	-756 (-17%) bb
40-44	3998	1956-60	BB	3585	1966-70		-702 (-16%)	-413 (-10%)
45-49	3768	1951-55	BB	4101	1961-65	BB	-236 (-5%)	+333 (+9%) BB
50-54	3268	1946-50	BB	3989	1956-60	BB	-9 (-0.2%)	+721 (+22%) BB
55-59	2303	1941-45		3763	1951-55	BB	-5 (-1%)	+460 (+20%) BB
60-64	1901	1936-40	De	3042	1946-50	BB	-226 (-7%)	+1141 (+60%) BB
65-69	1748	1931-35	De	2155	1941-45		-148 (-6%)	+407 (+23%)
70-74	1575	1926-30		1797	1936-40	De	-104 (-5%)	+222 (+14%)
75-79	1323	1921-25		1518	1931-35	De	-230 (-13%)	+195 (+15%)
80-84	885	1916-20		1207	1926-30		-368 (-23%)	+322 (+36%)
85+	755	Pre-1916		1239	Pre-1926		-84 (-6%)	+484 (+64%)
Total	79406			92096				+12690 (+16%)

<sup>1</sup> Data Sources:

(1) 2000 and 2010: US Decennial Census

<sup>2</sup> EB: Echo Boom Cohort; BB: Baby Boom Cohort; bb: Baby Bust Cohort; De: Great Depression Cohort

Table 9A

**Overall Net Migration for the State College Area School District  
Using Baseline “Replacement” of Grade 12 Students in Year t-1 by  
Kindergarten/Additional Grade 1 Students in Year t: 1997-2011**

	A			B			C = A3+B3	D Total Student Population <sub>t</sub>	E $\Delta_2^s$	F Net Migration <sup>a</sup> ( $\Delta_2 - \Delta_1$ )
	A1	A2	A3	B1	B2	B3				
	$K_t$	$G_{12,t-1}$	$K_t - G_{12,t-1}$	$G_{1t}$	$K_{t-1}$	( $G_{1t} - K_{t-1}$ )	$\Delta_1$ without migration <sup>b</sup>			
t= 1997-98	497	471	+26	539	460	+79	+26 + 79 = +105	7366	+120	+15
1998-99	464	532	-68	556	497	+59	-68 + 59 = -9	7402	+36	+45
1999-00	401	504	-103	546	464	+82	-103 + 82 = -21	7364	-38	-17
2000-01	387	564	-177	492	401	+91	-177 + 91 = -86	7402	+38	+124
2001-02	412	615	-203	497	387	+110	-201 + 110 = -93	7429	+27	+120
2002-03	378	626	-248	500	412	+88	-248 + 88 = -160	7452	+23	+183
2003-04	402	645	-243	477	378	+99	-243 + 99 = -144	7316	-136	+8
2004-05	399	623	-224	473	402	+71	-224 + 71 = -153	7274	-42	+111
2005-06	476	630	-154	453	399	+54	-154 + 54 = -100	7323	+49	+149
2006-07	471	667	-196	509	476	+33	-196 + 33 = -163	7237	-86	+77
2007-08	431	659	-228	496	471	+25	-228 + 25 = -203	7121	-116	+87
2008-09	450	679	-229	501	431	+70	-229 + 70 = -159	7003	-118	+41
2009-10	469	611	-142	493	450	+43	-142 + 43 = -99	7063	+60	+159
2010-11	480	667	-187	500	469	+31	-187 + 31 = -156	6924	-139	+17
2011-12	443	604	-161	510	480	+30	-161 + 30 = -131	6918	-6	+125
Last 15 years: $\sum$ (1997-2011)			-2537 (-525)			+965 (+421)	-1572 (-104)		-328 (+183)	+1244 (+287)
Last 10 years: $\sum$ (2002-2011)			-2012(-1065)			+544 (+345)	-1468 (-720)		-511 (-192)	+957 (+528)
Last 5 years: $\sum$ 2007-2011			-947			+199	-748		-319	+429

<sup>c</sup>  $\Delta_1 = K_t - G_{12,t-1} + (G_{1t} + K_{t-1})$ , i.e., assuming the counterfactual case of “what if” no one migrated; rather there was only G12 students exiting via graduation and K students entering as well as any additional G1 students entering beyond the prior year’s K enrollment. Thus the “net migration” pertains to year t-1.

<sup>b</sup>  $\Delta_2 =$  Student Population<sub>t</sub> – Student Population<sub>t-1</sub>; in 1997 the total student population was 7,246.

<sup>a</sup> Net migration is ( $\Delta_2 - \Delta_1$ ) where  $\Delta_2$  is the change in actual or observed total students and  $\Delta_1$  is the counterfactual “what if” case depicting what would happen to the total student population with no migration—in or out. Thus, the difference ( $\Delta_2 - \Delta_1$ ) is net migration.

Table 9D  
**“Net Migration” at the High School Level: 1997-2011**

	G8 <sub>t-1</sub>	G12 <sub>t-1</sub>	$\Delta_1$ without migration <sup>5</sup>	High School Student Population <sub>t</sub>	$\Delta_2^i$	Net Migration <sup>6</sup>
t= 1997-98	630	471	+159	2271	+148	-11
1998-99	598	532	+66	2335	+64	-2
1999-00	606	504	+102	2406	+71	-31
2000-01	607	564	+43	2473	+67	+24
2001-02	606	615	-9	2522	+49	+58
2002-03	633	626	+7	2601	+79	+72
2003-04	663	645	+18	2625	+24	+6
2004-05	634	623	+11	2679	+54	+43
2005-06	601	630	-29	2703	+24	+53
2006-07	626	667	-41	2671	-32	+9
2007-08	569	659	-90	2645	-26	+64
2008-09	552	679	-127	2505	-140	-13
2009-10	556	611	x-55	2537	+32	+87
2010-11	554	667	-113	2429	-108	+5
2011-12	529	604	-75	2393	-36	+39
Last 15 years: $\sum$ 1998-2012			-133 (+361)		+270 (+399)	+403 (+38)
Last 10 years: $\sum$ 2003-2012			-494 (-34)		-129 (+149)	+365 (+183)
Last 5 years: $\sum$ 2008-2012			-460		-278	+182

<sup>5</sup>  $\Delta_1 = G8_t - G12_{t-1}$

<sup>6</sup>  $\Delta_2 =$  High School Student Population<sub>t</sub> - High School Student Population<sub>t-1</sub>. in 1997 the high school student population was 2,123.

<sup>7</sup> The basic equation for net migration is ( $\Delta_2 - \Delta_1$ ), that is, the actual change in the G8-G12 student population minus what it would have been without migration, i.e., replacing the G12 population at t-1 who graduate from High School by t with the new entrants at G9 in t and with all other grades having all students staying and moving up one grade. The difference ( $\Delta_2 - \Delta_1$ ) is the net migration that occurred.

Table 10A

**Evidence of Net Migration of Families with Preschool Children by Municipality and Overall School District: 1995-2000 and 2005-2010<sup>1</sup>**

<i>2005-09</i>			
<b>Census Tract</b>	<b>Column A 2010 Census Children &lt; 5 Yrs. Of Age</b>	<b>Column B Births 2005-09</b>	<b>Column C Net Migration (Preschoolers) <math>\Delta</math> (A-B)</b>
College Twp	453	432	+21 (+5%)
Ferguson Twp	948	889	+59 (+7%)
Half Moon Twp	119	110	+9 (+8%)
Harris Twp	254	237	+17 (+7%)
Patton Twp	682	654	+28 (+4%)
State College Boro	777	769	+8 (+1%)
<b>TOTAL</b>	<b>3233</b>	<b>3091</b>	<b>+142 (+5%) +28 .4 ave/yr</b>

<i>1995-09</i>			
<b>Census Tract</b>	<b>Column A 2000 Census Children &lt; 5 Yrs. Of Age</b>	<b>Column B Births 1995-99</b>	<b>Column C Net Migration (Preschoolers) <math>\Delta</math> (A-B)</b>
College Twp	404	459	-55 (-12%)
Ferguson Twp	860	684	+176 (+26%)
Half Moon Twp	191	174	+17 (+10%)
Harris Twp	257	237	+20 (+8%)
Patton Twp	560	543	+17 (+3%)
State College Boro	697	886	-189 (-21%)
<b>TOTAL</b>	<b>2969</b>	<b>2983</b>	<b>-14 (-0.5%) -2.8 ave/yr</b>

<sup>1</sup> Data Sources: (1) Column A: 2000 and 2010 US Census, (2) Column B: Pennsylvania Department of Health



Table 12

**State College Area School District  
Retention Ratios 1999-2011<sup>1</sup>  
Four-Year Averages**

	1999-2002	2003-2006	2007-2011
K→G1	1.247	1.104	1.095
G1→G2	1.001	1.005	1.001
G2→G3	0.991	1.016	1.008
G3→G4	1.012	1.014	1.015
G4→G5	1.000	0.997	0.997
G5→G6	1.029	1.043	1.036
G6→G7	1.061	1.026	1.016
G7→G8	1.028	1.019	1.038
G8→G9	1.050	1.089	1.089
G9→G10	1.009	1.001	1.004
G10→G11	1.001	0.994	0.991
G11→G12	1.012	0.986	0.980
B <sub>t-5</sub> →K <sub>t</sub>	0.652	0.732	0.730

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<sup>1</sup> Data for the retention ratios for 2007-2012 included the student populations for 2007-2011; data for the retention ratios for 2003-2006 included student populations for 2003-2007—the end of school year enrollment; data for the retention ratios for 1999-2002 included student populations for 1999-2003—the end of school year enrollment.

Four year averages for Birth at t-5 and Kindergarten enrollment at t, .e.g., the 2003-2006 header for B→K here refers to K in 2004-2007 and births from 1999-2002 while that for the 2007-2011 header refers to K in 2008-2011 and births from 2002-2006. We use a .75 x births in year t-5 plus a .25 x births in year t-6 to calculate the relevant births for the expected entry K cohort.

Table 13A

Overall Alternative Schooling by Type of Alternative and  
Educational Level: 2002-2011

School Year	Home Schooled			Parochial/Private School			Charter School			Overall		
	Elem	Sec	Total	Elem	Sec	Total	Elem	Sec	Total	Elem	Sec	Total
2002-03	87	92	179	553	58	611	98	37	135	738	187	925
2003-04	87	88	175	517	74	591	100	42	142	704	204	908
2004-05	92	96	188	519	77	596	96	26	122	707	295	1002
2005-06	80	100	180	427	98	525	206	40	246	713	238	951
2006-07	86	92	178	407	135	542	218	41	259	711	268	979
2007-08	86	102	188	406	146	552	210	42	252	653	252	905
2008-09	71	109	180	352	90	442	226	63	289	649	262	911
2009-10	77	103	180	374	86	460	211	67	278	662	256	918
2010-11	69	111	180	336	99	435	NA	NA	279			894
2011-12	67	108	175	408	123	531	NA	NA	305			1011
A1 (2009-10)-(2002-03)	-10	+11	+1	-179	+28	-151	+113	+30	+143	-76	+69	-7
A2 (2011-12)-(2002-03)	-20	+16	-4	-145	+65	-80			+170	-85	+65	-20

Table 17A

**State College Area School District Forecasts per Grade:  
2013-2022 Fertility/Aging/Embedded Growth Scenario  
[Scenario I].**

	K	G1	G2	G3	G4	G5	G6	Total K→G6	G7	G8	Total G7→G8	G9	G10	G11	G12	Ungraded	Total G9→G12	Total K→G12
2012	443	510	502	502	524	496	521	3498	517	510	1027	577	612	602	578	24	2393	6918
2013	434	485	510	506	510	518	514	3477	529	537	1066	555	579	606	590	24	2354	6897
2014	443	475	485	514	514	508	537	3476	522	549	1071	585	557	574	594	24	2334	6881
2015	480	485	475	489	522	512	526	3489	546	542	1088	598	587	552	563	24	2324	6901
2016	439	526	485	479	496	520	530	3475	534	567	1101	590	600	582	541	24	2337	6913
2017	447	481	526	489	486	495	539	3463	538	554	1092	617	592	595	570	24	2398	6953
2018	456	489	481	530	496	485	513	3450	548	558	1106	603	619	587	583	24	2416	6972
2019	456	499	489	485	538	495	502	3464	521	569	1090	608	605	613	575	24	2425	6979
2020	456	499	499	493	492	536	513	3488	510	541	1051	620	610	600	601	24	2455	6994
2021	456	499	499	503	500	491	555	3503	521	529	1050	589	622	605	588	24	2428	6981
2022	456	499	499	503	511	499	509	3476	564	541	1105	576	591	616	593	24	2400	6981

	2012	2017	2022	Δ2017-2012	Δ2022-2017	Δ2022-2012
K→G6	3498	3463	3476	-35	+13	-22 (-1%)
G7→G8	1027	1092	1105	+65	+13	+78 (+8%)
G9→G12	2393	2398	2400	+5	+2	+7 (0%)
Total	6918	6953	6981	+35	+28	+63 (+1%)

This scenario uses the following parameters: (1) Baseline four-year retention ratios (2007-2011), as shown in Table 12; (2) Birth at weighted t-5, t-6 to K enrollment ratio of .730; this is derived as follows: (a) a baseline weighted [(t-5 births x .75) + (t-6 x .25 births)] to K enrollment ratio was estimated using 2002-2006 births and 2009-2012 K enrollments. For years 2013-2016, observed births in the State College Area School District from 2007-2011 were used. For years 2083-2022, the average number of births from 2010-2011 was used (625); see Table 1. For 2017, the observed births in 2011 (x .25) and the 625 average births in 2010-2011 (x .75) were used. The total high school enrollment includes 24 ungraded students for all years—the same as in 2012.

Table 22A

Comparison of Projected and Actual Student Populations in 2011-12 and Predictive Accuracy Overall and By Level<sup>1</sup>

Scenario IV	Initial 2007 School Population	P 2011 Projected Population	O 2012 Actual (Observed) Population	ΔP Projected Change	ΔO Actual (Observed) Change	(P-O)	Percentage of Accuracy <sup>†</sup>
Elementary	3389	3578	3498	+189	+109	+80	97.7
Middle	1087	1047	1027	-40	-60	+20	98.0
Sr. High	2626	2382	2369	-244	-257	+13	99.4
Total	7121	7026	6918	-95	-203	+108	98.4

Scenario III	Initial 2007 School Population	P 2011 Projected Population	O 2012 Actual (Observed) Population	ΔP Projected Change	ΔO Actual (Observed) Change	(P-O)	Percentage of Accuracy <sup>†</sup>
Elementary	3389	3542	3498	+153	+109	+44	98.7
Middle	1087	1033	1027	-54	-60	+6	99.4
Sr. High	2626	2353	2369	-273	-257	-16	99.3
Total	7121	6947	6918	-174	-203	+29	99.6

<sup>1</sup> Scenario IV has an additional direct housing impact; Scenario III has embedded housing effect with no additional housing impact from growth in housing  
<sup>†</sup> 1 - |(P-O/O)|