



Hatboro-Horsham School District Enrollment Projections



Hatboro-Horsham School District Enrollment Projections



Prepared By
The Montgomery County Planning Commission



September 2014

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Introduction

School districts can only plan for their future if they have some idea of what that future will entail. The number of students that will need to be served by district facilities is the key variable that must be understood in order to make prudent decisions.

Montgomery County and much of the region is in a cautious period following a historic housing price bubble and the subsequent bursting of that bubble followed by the Great Recession. An extended recovery period is still going and shows signs of improvement, but some of the population is still hampered by long-term unemployment and slow job creation.

Overall, the housing market has improved over the last two years, and development proposals are on the rise again. Mature suburbs and boroughs, such as Horsham Township and Hatboro, may start to see renewed interest in residential development, but it

may be less focused on traditional single family detached housing and more concentrated on denser infill-oriented housing types, including townhomes and multifamily apartment style living. Additionally, one of the largest redevelopment projects in the county, the former Willow Grove Naval Air Station, may bring over 1,000 new residential units in the coming decade.

This report gives an overview of the population and housing characteristics within the Hatboro-Horsham School District (HHSD) in order to establish the conditions that have formed the most recent enrollment trends. Future enrollments will depend largely upon the following factors:

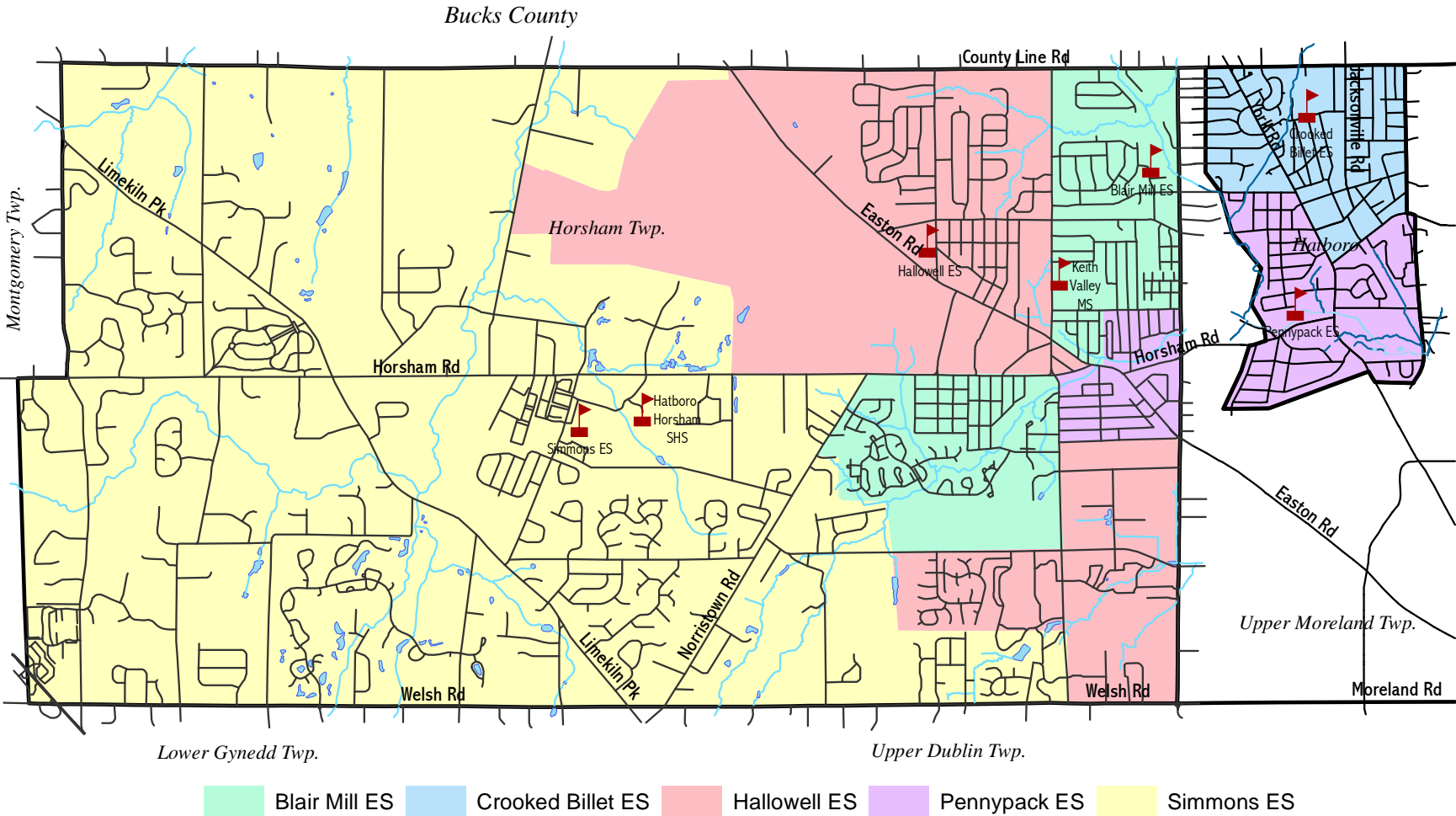
- Recent and future births
- Housing construction
- Moves in and out of the school district
- Private, charter, home, and cyber school growth

The following study employs the use of a Cohort Progression Model to account for the above factors and form projections for each grade level over the next ten years. No model is perfect when it comes to predicting the future, but given the right data, an accurate projection for the next five years is expected.

Projections should not be considered a final product with the completion of the model. Additional data and analysis, including housing and population forecasts, characteristics of households by housing types, geographic mobility by age cohorts, and housing sales activity, are also presented in this study to provide a useful context with the projections. This context also provides the basis for using the projections beyond just the next school year. The study provides the important data points that should be reviewed every year to determine if unanticipated activity is occurring and how that might influence the projections and actual enrollments down the line.



FIGURE 1: District School Locations and Boundary Areas



Summary of Key Findings

The general trend in future enrollments for the Hatboro-Horsham School District calls for a gradual decline over the next ten years, unless the redevelopment of the NAS comes in on schedule and counteracts other negative factors. Birth activity and other new construction will most prominently influence the rate of decline. Under any scenario, the amount of decline will be greatest over the next five years with a drop between 3% and 7% in overall enrollment. Declines will continue at a slower rate during the second five years, unless the NAS project begins within the next five years, which will prompt a turnaround in enrollment and result in no net gain or loss over the ten year study period. The following factors are determining this forecast:

- Births in the HHSD have declined over the last three years. This is a pretty common trend in the region, and it will cause kindergarten classes to shrink from recent sizes beginning in another year or two.
- Births will gradually recover, but the extent is uncertain. The age cohort of 25-34 year old females is expected to rise through the current decade. A younger bubble of the population will move into this range and begin having children. If the economy improves, there could also be an increase in the rate of births.
- The HHSD often sees its class sizes increase as they age through the system, indicating a higher rate of transfers into the district.
- Private school enrollment from students living in the district have increased over the decade, but have decreased the last four years. There is not a significant enough change in private school attendance to warrant an adjustment to the models.
- There should be some additional growth stemming from new housing construction in the HHSD over the next three to four years. While

residential construction has been active over the last ten years, much of the recent development has been age restricted or of a character that provides few school age children. Current proposals that are likely to be built could provide 18-19 additional students per year beyond the continued trend development.

- Residential sales activity has gone up the last two years in the district but still pales to levels seen before the Recession. A greater churning of households is likely to bring younger households into the area, although they may not make an immediate impact on enrollment.

Projections

Two scenarios of future enrollments are based on the level of birth increases in the township. A third scenario makes adjustments to the most likely of the birth scenarios in order to account for an increase in housing construction over the near term. The fourth scenario builds on the third by accounting for the NAS redevelopment beginning in 2017. The third scenario is recommended as the most realistic projection, but the fourth should also be used to gauge the impact of the NAS as it progresses.

*School District
Characteristics*

Part

1

School District Characteristics

Population

Birth Patterns

School District Enrollment

Alternative School Enrollment

Population

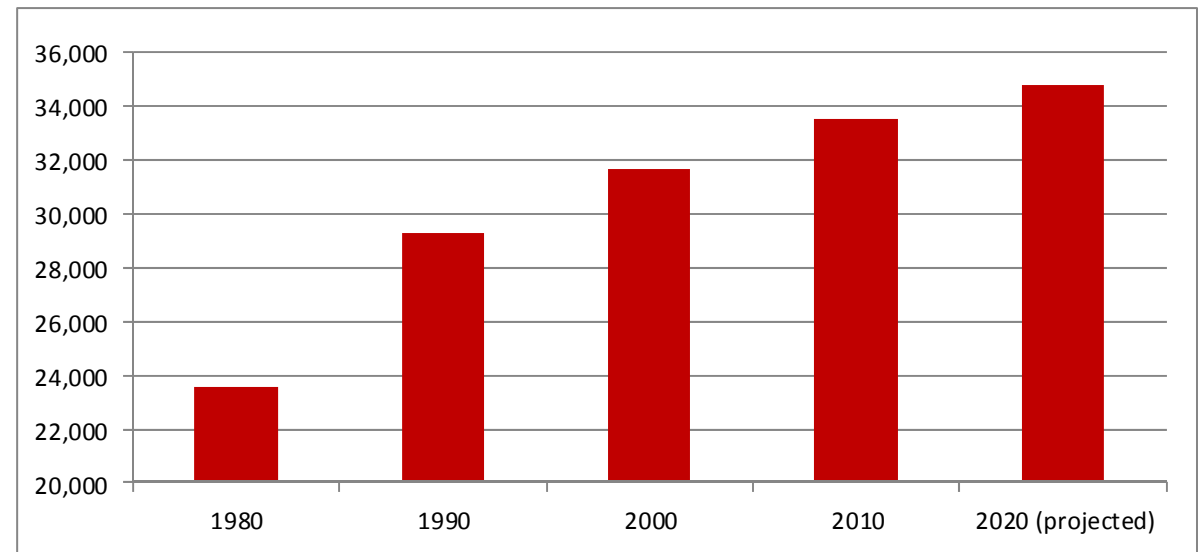
The general population within the Hatboro-Horsham School District grew by 6 percent from 2000 to 2010. This was the slowest rate of growth by the district in the last three decades and it fell behind the countywide growth rate of 6.8 percent. The housing crash and recession during the second half of the decade restricted the potential for more growth, but there are also fewer opportunities for development in Horsham and Hatboro as more potential residential land has been developed or otherwise preserved.

Regional projections are calling for the population to continue a slowing growth pattern over the current decade through 2020. Population estimates from the U.S. Census Bureau confirm that growth through 2013 has occurred close to the forecasted rate. However, the big impact on population will come with the redevelopment of the former Naval Air

Station (NAS) in Horsham, which could bring over 1,000 residential units and close to 2,500 additional residents. This development will not be built all at once, and some of this impact will likely not occur until after 2020.

The general trend for the immediate future is for continued modest growth until development in the NAS comes to fruition. It is important to recognize that population totals do not necessarily reflect changes in the numbers of school-age children or public school enrollment figures. While the population will grow within the district, shifts in the age cohorts within that population will have distinct effects on the numbers of school age children in the future.

FIGURE 2: Population of Hatboro-Horsham School District, 1980-2020



Source: U.S. Census Bureau, except 2020 Projections (DVRPC and MCPC)

FIGURE 3: Population Totals, 1990-2020

	1990			2000			2010			2020 (Forecasted)		
	Total	1980-1990 Change	1980-1990 Percent	Total	1990-2000 Change	1990-2000 Percent	Total	2000-2010 Change	2000-2010 Percent	Total	2010-2020 Change	2010-2020 Percent
Hatboro-Horsham SD	29,278	5,740	24.4%	31,625	2,347	8.0%	33,507	1,882	6.0%	34,753	1,246	3.7%
Montgomery County	678,111	34,740	5.4%	748,987	70,876	10.5%	799,874	50,887	6.8%	823,564	23,690	3.0%

Source: U.S. Census Bureau, except 2020 Forecasts (DVRPC and MCPC)

Age Cohorts and School Age Children

Age data from the last three decennial censuses reveal patterns in how the demographics of the Hatboro-Horsham School District have changed. The cohort that best represents school age children is the 5-17 year old group. This cohort increased dramatically during the 1990s but then remained fairly steady from 2000 to 2010 with only a slight decrease. These figures include all children, not just public school students. The younger cohort, 0-4 year olds (pre-school age), dropped more significantly in 2010 compared to 2000. This snapshot reveals an

indication that recent and current entrants into the school system may not be as strong in numbers as they were a decade ago.

The remaining cohorts show that the population aged 45-54 years old has become a bubble where there are disproportionately more people in this age range. This age group along with the 55-64 year old group roughly account for the baby boomers and the cause for why places like the Hatboro-Horsham District and Montgomery County are said to be home to an aging population. These people may still have children in their households or have seen them move

out in recent years. The effect is that there may be fewer children per household as these people age, but that effect will also be countered by seniors moving to other types of housing or downsizing, providing opportunities for younger families to move in.

The remaining ages in between the previously mentioned cohorts, the 25-44 year old population, declined in 2010. These people are the most likely to have babies and their decline heralds a period of lower birth activity, which can ultimately result in fewer students enrolling for school six years later. However, the cohorts coming up behind the 25-44 year olds could create a recovery from the lower birth activity as they settle into homes and have children of their own.

This shifting of age cohorts over time is only one part of the picture when it comes to explaining and predicting what will happen with school enrollment, but it is a good place to start when considering why enrollments cycle up and down over time.

FIGURE 4: Age Cohorts, Hatboro-Horsham School District, 1990-2010

Age Cohort	1990		2000		2010	
	Total	1980-1990 Change	Total	1990-2000 Change	Total	2000-2010 Change
0-4	2,387	1,025	2,159	-228	1,768	-391
5-17	4,410	-316	6,159	1,749	6,135	-24
18-24	2,708	-466	2,130	-578	2,696	566
25-34	6,824	3,024	4,692	-2,132	4,037	-655
35-44	4,403	1,569	6,353	1,950	4,633	-1,720
45-54	2,801	63	4,121	1,320	6,224	2,103
55-64	2,539	78	2,517	-22	3,775	1,258
65-74	1,933	423	2,028	95	2,099	71
75 and over	1,273	340	1,466	193	2,140	674

Source: U.S. Census Bureau

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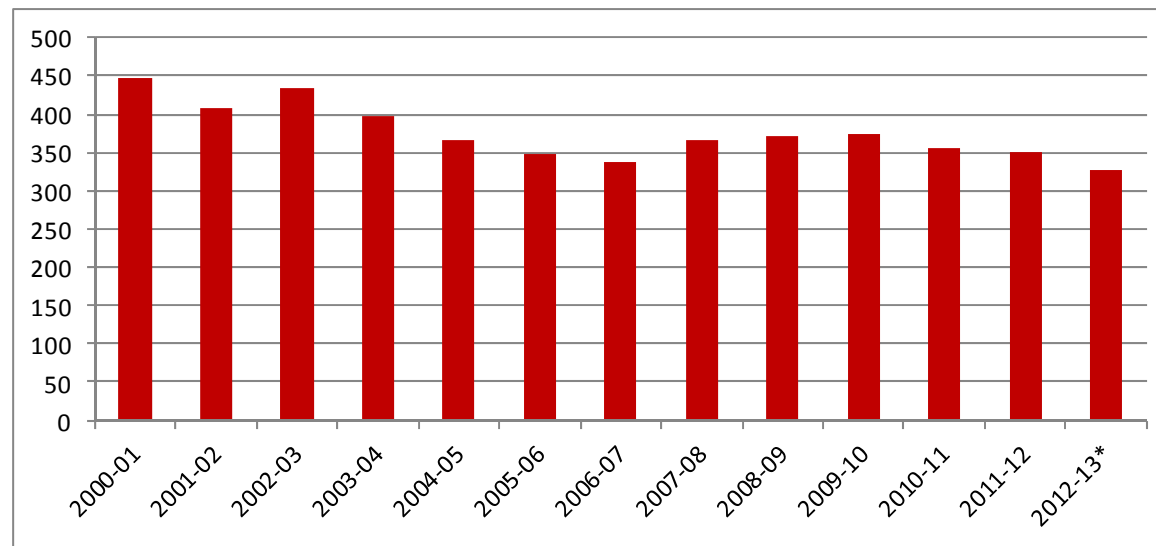
The number of births in an area is a critical component to projecting future enrollment in a school district. While some families will migrate over time, births provide a beginning indicator of the potential size of future kindergarten classes. This relationship will be detailed in the cohort progression model (p. 25), but it is important to note that birth data can give a preview of what will happen with entering students over the first five years of the projection period. Also note that annual birth totals are aligned to match the school calendar year (September—August) in order to make the most accurate correlations to future kindergarten classes.

The trend for live births since 2000 in the Hatboro-Horsham School District shows that the average number of births from the 2000 to 2009 school years was 385 births. The number of births started high

during that period with over 400 births annually in the beginning, but it came down to below 350 in 2006, before rising back to 375 in 2009. During the 2010 through 2012 school years, births have declined again to the overall low point in the most recent year, only 326 births in 2012-13. This recent decline is not just relative to the HHSD. Countywide, birth totals began falling around 2009.

Has the downturn in the economy starting with the Great Recession in 2008 driven this decline in births? Logically, it would make sense for some to defer or delay decisions to have children based on economic uncertainty in one's life. Some studies have looked at national population bases, both the United States and globally, and determined that overall fertility rates do decline with downturns in the economy. The HHSD encompasses a relatively small geography and exists within the context of larger economies, but the

FIGURE 5: Number of Live Births in Hatboro-Horsham SD by School Calendar Year (Sept.-Aug.)



* Births during the 2013 months in the 2012-2013 school year were estimated due to state data being unreleased at the time of this report.
Source: Pennsylvania Department of Health

timing of the decline is not too far behind the economic downturn. Most of the other districts in the county have also experienced a decline in births around the same time, but some have been more severe than what has registered in the HHSD. Some of these other drops occurred several years before the Recession and some occurred a few years later as with the HHSD. The economy can have an impact as it influences factors such as housing construction and sales activity, but it alone should not be considered the cause for the recent decline in births at the local level.

Attempting to pinpoint the causes of change in birth totals over time is difficult, but another clue comes

FIGURE 6: Number of Live Births in HHSD by School Calendar Year (Sept.-Aug.)

School Year	HHSD
2000-01	446
2001-02	407
2002-03	435
2003-04	397
2004-05	366
2005-06	347
2006-07	337
2007-08	367
2008-09	371
2009-10	375
2010-11	355
2011-12	350
2012-13	326

Births during the 2013 months in the 2012-2013 school year were estimated due to state data being unreleased at the time of this report.

Source: Pennsylvania Department of Health

from looking at the population of women of child-bearing age women. According to the Pennsylvania Department of Health, birth activity in Montgomery County is at its highest when potential mothers are between the ages of 25-34. The population of women in that age group from the HHSD dropped from 2,340 in 2000 to 1,995 in 2010, a loss of 15 percent. Figure 7 identifies age cohorts for females of child-bearing age.

This data also suggests that on a purely demographic basis, births may not remain at the current low levels for long. Females within the age 15-24 groups increased by 25 percent in 2010. Looking out to 2020, the bubble in the younger cohorts, sometimes known as “echo boomers,” will be aging into higher fertility rates, potentially raising birth figures closer to the averages in the earlier parts of the last decade.

Of course, the actual 15-24 year olds living in the HHSD at the time of the data collection are going through an extreme period of flux as many of them graduate high school and go to college, or otherwise move out of their parents’ homes. Many things may happen to prevent them from becoming a 25-34 year old resident of Hatboro or Horsham. However, the bubbles in the so-called baby boomers and echo boomers also exist at the county and regional levels.

FIGURE 7: Females of Child-Bearing Age in HHSD, 2000 and 2010

Age Cohort	2000 Females	2010 Females
Age 15 - 19	929	1,144
Age 20 - 24	726	932
Age 25 - 29	1,037	1,102
Age 30 - 34	1,303	893
Age 35 - 39	1,610	1,045
Age 40 -44	1,590	1,356

Source: U.S. Census Bureau

The general increase in people of that age will still likely impact the number of 25-34 year olds in the HHSD even if they are not the same residents that lived here as 15-24 year olds.

Birth Rates

Birth rates are a different statistic than live births. An increase or decrease in actual births could be explained by concurrent growth or decline in the population base, but birth rates average out the number of live births per 1,000 persons in an area. The statistics in Figure 8 confirm that the trend of lower birth activity is a recent occurrence beginning closer to 2010 and not caused by an overall reduction in population.

FIGURE 8: Birth Rates (Births Per 1,000 Population) in HHSD by Calendar Year (Jan.-Dec.)

Calendar Year	HHSD	Montgomery County
2002	12.9	12.2
2003	13.5	12.7
2004	11.9	12.3
2005	10.9	12.1
2006	10.5	12.3
2007	10.7	11.9
2008	10.9	12.1
2009	11.3	11.7
2010	10.9	11.4
2011	10.7	11.2
2012	10.0	11.0

Sources: Pennsylvania Department of Health, U.S. Census Bureau

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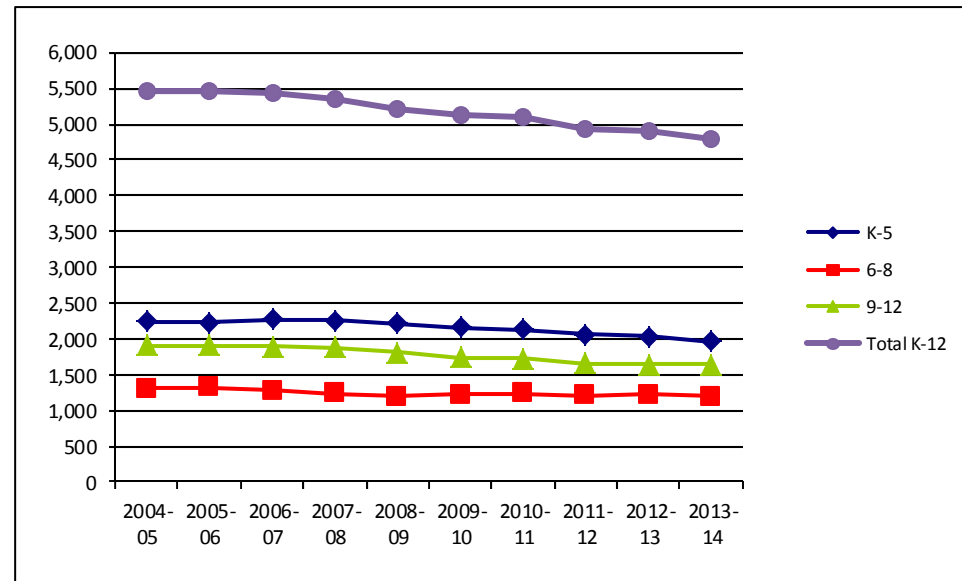
Over the last ten years, district enrollment has declined by 11.9 percent, dropping every year since 2005-06. The prior decade saw the exact opposite trend and the district has seen a net gain in students over the last twenty years. This decade's downward trend is evident in the annual percent changes in Figure 10, although the decreases were not consistent every year. They ranged between negative 0.3 and 3.1 percent. Most recently, enrollment had its biggest drop in 2011-12 and its third biggest drop in 2013-14. The big question to be answered by this study is whether the declining trend in the decade will continue, or are enrollments preparing to cycle back upwards over the next few years?

The first place to look for that answer comes from breaking down the figures by general school levels as indicated in Figure 9. Elementary school enrollment, grades K-5, resembles the overall enrollment trend

and has dropped by 12.2 percent. It has been declining every year since the 2006-07 school year. Middle school enrollment, grades 6-8, has declined at a slightly slower rate, 8.6 percent over the decade, but much of that decline took place earlier in the decade. Over the last seven school years, middle school enrollment has been fairly stable between 1,198 and 1,236 students, although that lowest figure occurred during the most recent year. The high school enrollment, grades 9-12, fell the fastest over the decade at a rate of 13.7 percent, also resembling the elementary and overall enrollment pattern.

With all groupings declining over the decade the general trend is quite clear. However, the smaller high school levels are important to note. These smaller classes will be leaving the system over the next few years. The size of incoming elementary classes will determine if the district may naturally increase again.

FIGURE 9: School District Enrollment by Grade Divisions, 2004-2013



Source: Hatboro-Horsham School District (enrollment as of October 1 each year)

FIGURE 10: District Enrollment by Division, 2004-2013

Year	Total K-12	Number Change from Previous Year	Percent Change from Previous Year	Grade K-5	Grade 6-8	Grade 9-12
2004-05	5,448			2,237	1,311	1,900
2005-06	5,456	8	0.1%	2,234	1,317	1,905
2006-07	5,439	-17	-0.3%	2,270	1,281	1,888
2007-08	5,362	-77	-1.4%	2,249	1,236	1,877
2008-09	5,210	-152	-2.8%	2,207	1,199	1,804
2009-10	5,122	-88	-1.7%	2,159	1,220	1,743
2010-11	5,088	-34	-0.7%	2,128	1,233	1,727
2011-12	4,930	-158	-3.1%	2,064	1,213	1,653
2012-13	4,901	-29	-0.6%	2,037	1,221	1,643
2013-14	4,801	-100	-2.0%	1,963	1,198	1,640

Source: Hatboro-Horsham School District (enrollment as of October 1 each year)

FIGURE 11: District Enrollment by Grade, 2004-2013

Year	K	1	2	3	4	5	6	7	8	9	10	11	12
2004-05	309	379	360	395	374	420	434	445	432	522	472	473	433
2005-06	327	373	381	367	403	383	429	444	444	470	508	467	460
2006-07	341	370	381	389	384	405	386	438	457	462	469	497	460
2007-08	322	381	376	382	398	390	409	386	441	463	459	452	503
2008-09	295	359	389	380	388	396	397	414	388	457	462	443	442
2009-10	299	320	362	396	384	398	411	404	405	405	451	447	440
2010-11	296	348	335	373	399	377	410	418	405	424	421	436	446
2011-12	259	351	344	340	376	394	385	417	411	404	417	402	430
2012-13	288	306	359	359	342	383	402	400	419	408	410	420	405
2013-14	295	301	312	357	357	341	389	414	395	414	401	401	424

Source: Hatboro-Horsham School District (enrollment as of October 1 each year)

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Alternative School Enrollment

Potential alternative schooling choices include private schools, charter/cyber schools, and homeschooling. Enrollment in these schools are enumerated from several data sources and do not always have a consistent historical record. Further confusing matters is that charter and most cyber schools are also considered public schools.

Private Schools

The U.S. Census Bureau and its American Community Survey (ACS) provides some comprehensive data on public versus private school enrollment, which is probably the most straightforward assessment of trends. However, these figures are still estimates with a margin of error and they rely upon the accuracy of individuals filling out questionnaires. Figure 12 shows the available data that can be compared from the Census and ACS. The data indicates that private school enrollment has increased within the district since 2000 by 16.7 percent. This is a surprising result given the overall drop in public students, and the trend in other districts for fewer private school students over the decade, but especially since 2008.

The Hatboro-Horsham School District also keeps data on residents that attend private school through

FIGURE 12: Private School Enrollment According to U.S. Census Bureau

Year	Private School Students	Dataset
2012*	1,020	ACS, 5 Year Estimates, 2008-2012
2000	874	Census 2000, Summary File 3

* 5 Year Estimates from the ACS are an average of 5 years worth of sampling data

its monitoring of district bus records which includes public and private school students. However, the data is incomplete as it only recognizes students who are using the district’s public busses. The bus data in Figure 13 goes back to the 2002-03 school year and supports a general increase in private school students since the early part of last decade. However, the increase is less substantial than the ACS indicates. The bus records also show a more precise pattern year by year that reveals private school enrollment has been declining since the 2009-10 school year.

FIGURE 13: Private School Enrollment According to HHSD Bus Records

School Year	Private School Students
2012-13	801
2011-12	827
2010-11	885
2009-10	904
2008-09	875
2007-08	889
2006-07	786
2005-06	826
2004-05	718
2003-04	774
2002-03	783

Source: Hatboro-Horsham School District Bus Records
 * Only recognizes private school students that opt for HHSD bus transportation.

Charter / Cyber Schools

Charter schools are still considered public in that they usually have free tuition and are funded with public dollars. However, they are independently operated and students are not considered in the district enrollment figure. According to the Hatboro-Horsham School District, there were 31 students living in the district in 2013-14 that enrolled in cyber charter schools, which are a form of home-based virtual charter schools. These types of schools are relatively new options in the area, first appearing less than ten years ago. The district's records show that there were as many as 53 charter students in 2010-11 and 2011-12 school years, but those numbers had gone up from only 19 students in 2004-05.

Homeschooling

The last alternative, which is not considered public schooling, is homeschooling where the parent is responsible for educating the child. District records show that there were 16 students being homeschooled within the HHSD during the 2013-2014 school year. This number has been relatively stable over the last five years, but was in the 30s during the middle of the 2000-2010 decade. This decrease in the number of homeschooled students has not been typical in Montgomery County, which has been relatively stable over this time period. While these levels should be monitored, the relatively low numbers still have a minimal impact on the overall enrollment in the district.

Housing Activity

Part 2

Housing Activity

Impacts of Housing on Enrollment

Housing Units Built

Housing Units Proposed

Housing Sales

Impacts of Housing on Enrollment

School Age Children by Housing Type

The average number of school age children in a residential unit depends on the type of residential unit. MCPC reviews the latest census data and compares it to county property records as part of its report titled, “Characteristics of the Population in New and Existing Housing Units.” The latest report, based on the 2010 Census, contains the average number of school age children in single family detached, attached (townhomes and twins), and multifamily (apartments or multiple units in a structure) housing types. The data is also analyzed in terms of new and existing units. The results of the study (Figure 14) show that a newly constructed single family detached home is over 15 times more likely to contain a school age child than multifamily units. The difference is less stark when considering all existing units, but there are clearly more children found in detached units than in multifamily units, with single family attached units falling in between the other two.

The methodology for the report was replicated to just focus on data within the Hatboro-Horsham School District. While there were not enough new attached and multifamily units to develop representative figures, it was still revealed that the disparity between school age children between detached units and other housing types is similar to countywide levels for existing units. Attached homes in the district may be slightly more likely to have children than the county while multifamily homes are less likely to have children, even though most multifamily developments do not attract high numbers of children. These factors can be used to make estimates on the impact of different housing types in terms of school age children.

Migration of Households

The connection between new housing units and new population is fairly clear, although it also depends on the type of units. The impact of household movement in and out of existing housing units is a less certain connection, but it is still incorporated into the cohort progression model. It would be useful to look at sales data of homes and come to an

FIGURE 14: Average Number of School Aged Children by Housing Unit Type

Montgomery County			
	Single Family Detached	Single Family Attached	Multifamily
School Age Children per Household in Existing Units	0.55	0.41	0.18
School Age Children per Household in New Units	0.93	0.21	0.06
Hatboro-Horsham School District			
	Single Family Detached	Single Family Attached	Multifamily
School Age Children per Household in Existing Units	0.54	0.44	0.11
School Age Children per Household in New Units	1.21	NA	NA

Source: Montgomery County Planning Commission

understanding of what might happen with school age children where sales activity increases for one reason or another.

The American Community Survey offers data on geographic mobility of households and the age composition of those households. Figure 15 shows a breakdown of households that have remained within the same house as the year prior and households that have moved within the last year. This latter group would constitute the characteristics of people who are purchasing homes or moving into rental units.

The results show that the percentage of school age children is higher in homes that are occupied by the same household as the year before. Therefore, recently sold homes will contain fewer school age children than homes that have not been sold. A sudden increase in home sales should not be construed as having an immediate positive impact on school enrollment.

Eventually, a boost in housing sales may still provide a positive impact on enrollments. Pre-school age children (1-4 years old) are found at a higher percentage in recently sold homes than in homes that have not been sold. Many of these children will enter the public school system over the next five years. Also, persons age 25-34 are the most likely to conceive children. A household that has just moved into a home in the district is more likely to contain members of this age group, therefore increasing the likelihood that new children will be born into the district.

Owner / Renter Occupied

Housing in the HHSD is predominately owner occupied—73 percent of all occupied units. This equals the rate of home ownership in the county as a whole. However, rental housing as a percentage in the district has decreased since 2000 when the district was 71 percent owner occupied. This runs contrary to the countywide trend where rentals have increased since 2000. Overall, the rental market has been stronger in recent years after the recession and

FIGURE 15: *Percentage of Children in HHSD Area Households Related to Geographic Mobility*

	Total Persons	Persons Age 1-4		Persons Age 5-17		Persons Age 25-34	
		Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Persons in households that have moved within the last year	3,908	476	12.2%	382	9.8%	1,074	27.5%
Persons in households that have remained in the same house	29,114	1,173	4.0%	5,242	18.0%	3,419	11.7%

Source: American Community Survey, 2008-2012 Estimates

decline of the housing market since 2008. The decrease in the HHSD may be due more to the type of housing constructed in the 2000s as opposed to conversions. Other districts are seeing some formerly owner occupied units change to renter occupied due to the market.

An upswing in rental housing can have varying socioeconomic effects in a population, but it is not expected to result in more school age children. Data from the 2010 Census (Figure 16) suggests that children under the age of 18 are more likely to be found in owner occupied housing than they are in renter occupied housing.

FIGURE 16: *Presence of Children in Owner Occupied and Renter Occupied Housing Within HHSD*

	Percent of Housing with Children Under 18
Owner Occupied Housing	38%
Renter Occupied Housing	27%

Source: U.S. Census Bureau, 2010 Census

Age-Restricted Housing

Age-restricted housing refers to housing developments that place minimum limits on the age of residents but still offer independent living. The age limit is usually set at 55 years old and above.

This housing does not include assisted living units or nursing care beds although some age-restricted developments are actually continuing care environments where all three types of living are present—independent, assisted, and nursing—allowing residents to transfer into more dependent care as needed. Age-restricted developments can feature any type of housing, single family or multifamily, but the housing is designed to facilitate an older population and meet their needs.

Age-restricted housing became popular in Montgomery County beginning in the mid to late 1990s and continues to be a prominent type of residential development today. Since 1996, about 22 percent of all units proposed in the county have been age-restricted.

In the HHSD, there are 348 age-restricted units (306 are multifamily) spread across three developments—Victorian Village, Moreland Towers (income restricted) and Carriage House Manor (townhomes).

These types of housing are important to recognize as they can account for residential and population growth. While some school children can still be found in these developments, there are fewer of them than in units that are not age-restricted. Therefore, residential proposals that are built as age-restricted units will have a minimal effect on school enrollments.

Housing Activity

Impacts of Housing on Enrollment

Housing Units Built

Housing Units Proposed

Housing Sales

Housing Units Built

Residential construction activity in Montgomery County has hit historic lows since around 2008 after the housing market bubble burst and the Great Recession followed. Development in the HHSD also hit its lowest point in 2008 and 2009, but development since then has actually been stronger than earlier in the decade. This increase was due to two larger projects, both in Hatboro.

The Hatboro Loft Apartments is a former industrial site redeveloped in 2010 as 159 multifamily rental units. The Victorian Village is a 168 unit age-restricted development featuring condos and apartment rentals, but all multifamily units. This project was actually constructed in 2008, but the county records have recorded the units across multiple years based upon when they actually sold or rented on the market.

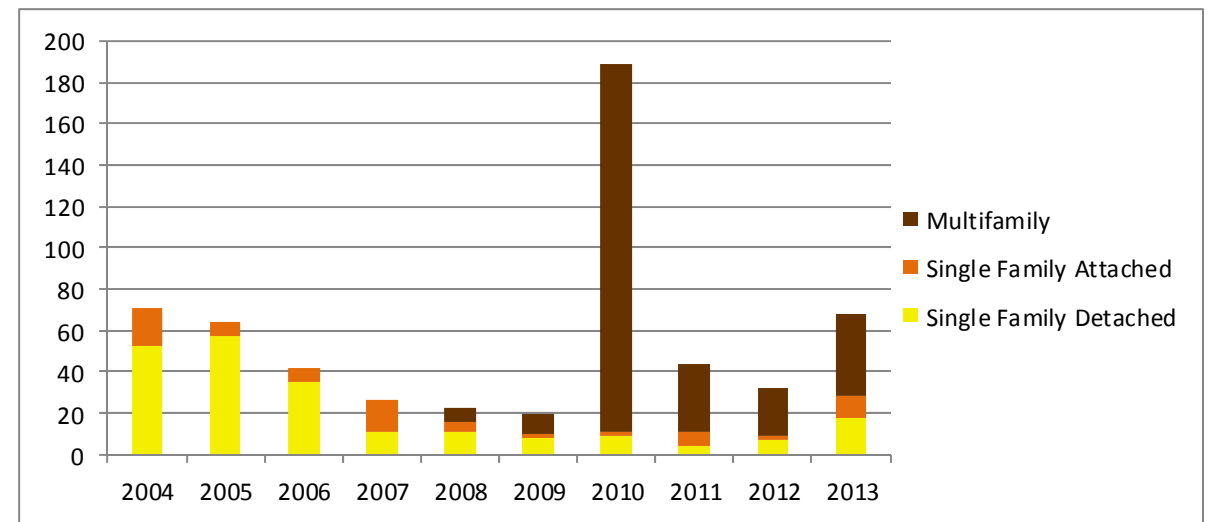
Figure 17 shows how residential development has taken on a very different character in the second half of the decade (mostly multifamily) as opposed to the

first half, which featured more single family detached development mainly located in Horsham Township. Future building activity is going to continue to be split between remaining detached home opportunities in Horsham along with denser housing types in Hatboro and some parts of Horsham, including the former Naval Air Station discussed in the next section.

Since 2004, an average of 58 units per year have been built in the district, but these units have come in at different times and had varying effects on school age children based on their type and whether they were age-restricted. Based on the factors from Figure 14, this development has translated into approximately 31 additional school age children per year over the ten year period, but only 13 children per year over the last six years.

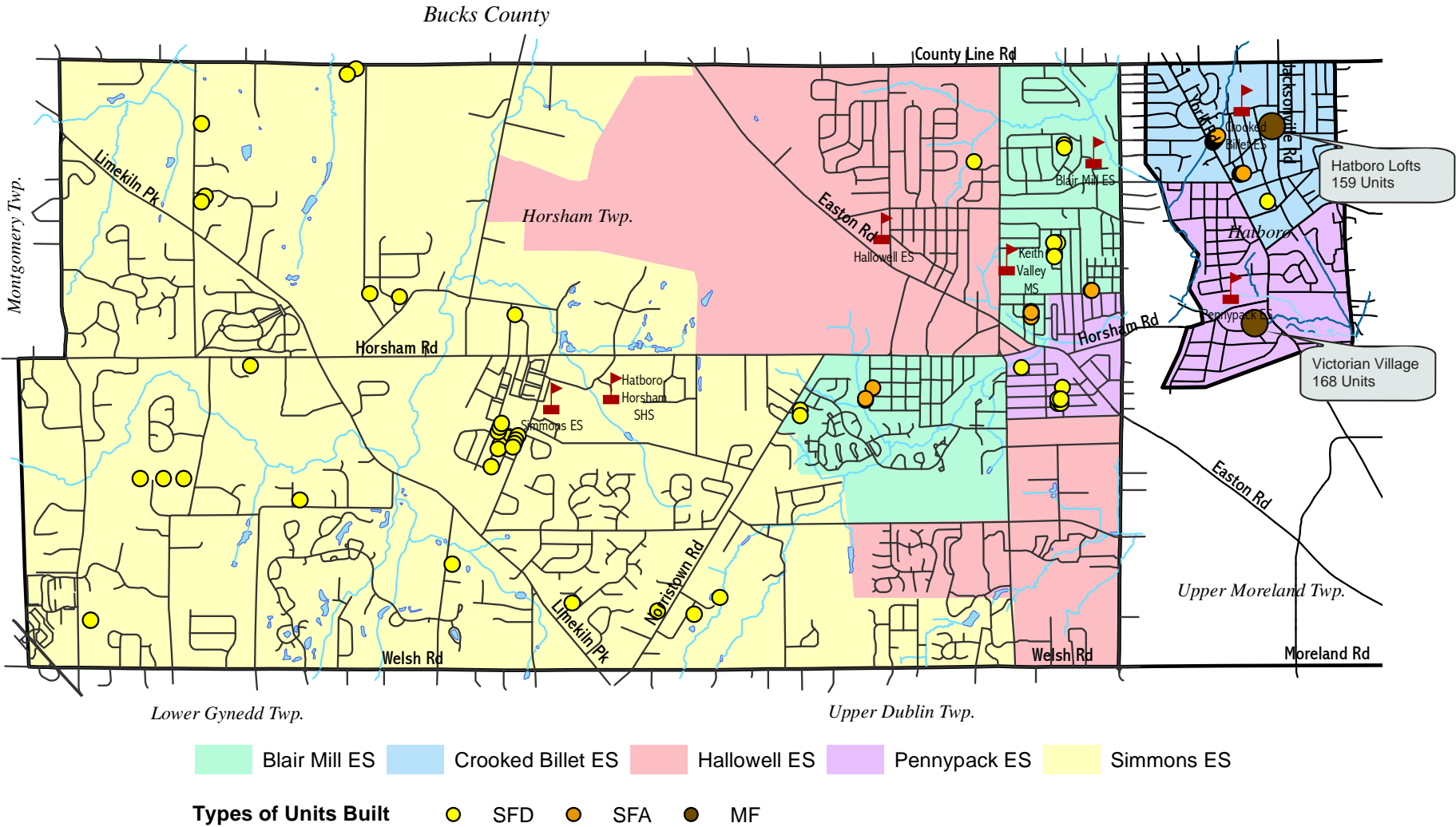
The map in Figure 18 on the following page shows the most recent developments in the HHSD, recognizing all units built from 2009 through 2013.

FIGURE 17: Housing Units Built in the HHSD by Housing Type, 2004-2013



Source: Montgomery County Planning Commission

FIGURE 18: Housing Units Built in the HHSD, 2009-2013



Housing Activity

Impacts of Housing on Enrollment

Housing Units Built

Housing Units Proposed

Housing Sales

Housing Units Proposed

Despite the downturn in the overall housing market, there have been a number of properties in the district receiving developer interest over the last ten years, and some of them look like they will be realized over the next four years. If these units get built, they could bring approximately 29 school age children into the district during this time. Given the average of only 13 children from new housing over the last six years, a housing adjustment to the projections in Part Three is recommended.

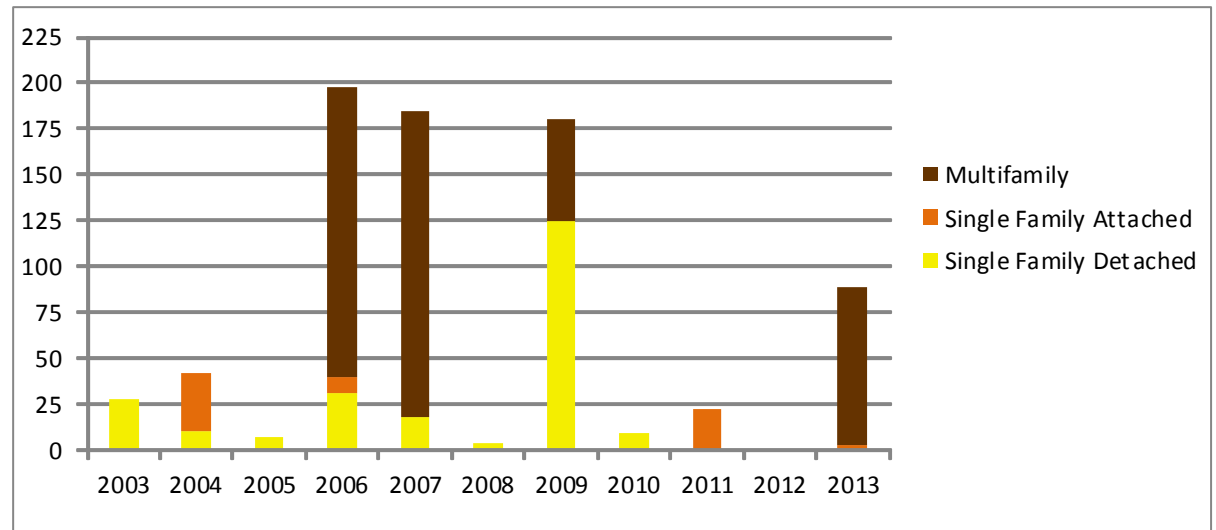
The chart in Figure 19 reflects the submission of land development proposals in Hatboro and Horsham as well as the Montgomery County Planning Commission. Proposals are only counted once, so the lack of submissions in specific years does not necessarily mean that there has been no developer activity during that time. Plans will often go through multiple submissions and variations as the process takes place.

Figure 20 on the following page shows the locations of each development proposal that has a good chance of being constructed over the next four years.

The largest impact from residential development over the long term will come from the redevelopment of the former Willow Grove Naval Air Station (NAS). The base was closed in 2011, but the process to redevelop the site is an extensive process that is still a number of years away. The official redevelopment plan for the site calls for a total of 1,416 new residential units. However, these include assisted living, nursing, and age restricted units along with a high percentage of denser housing types (multifamily and townhomes). Only 340 units are expected to be single family detached.

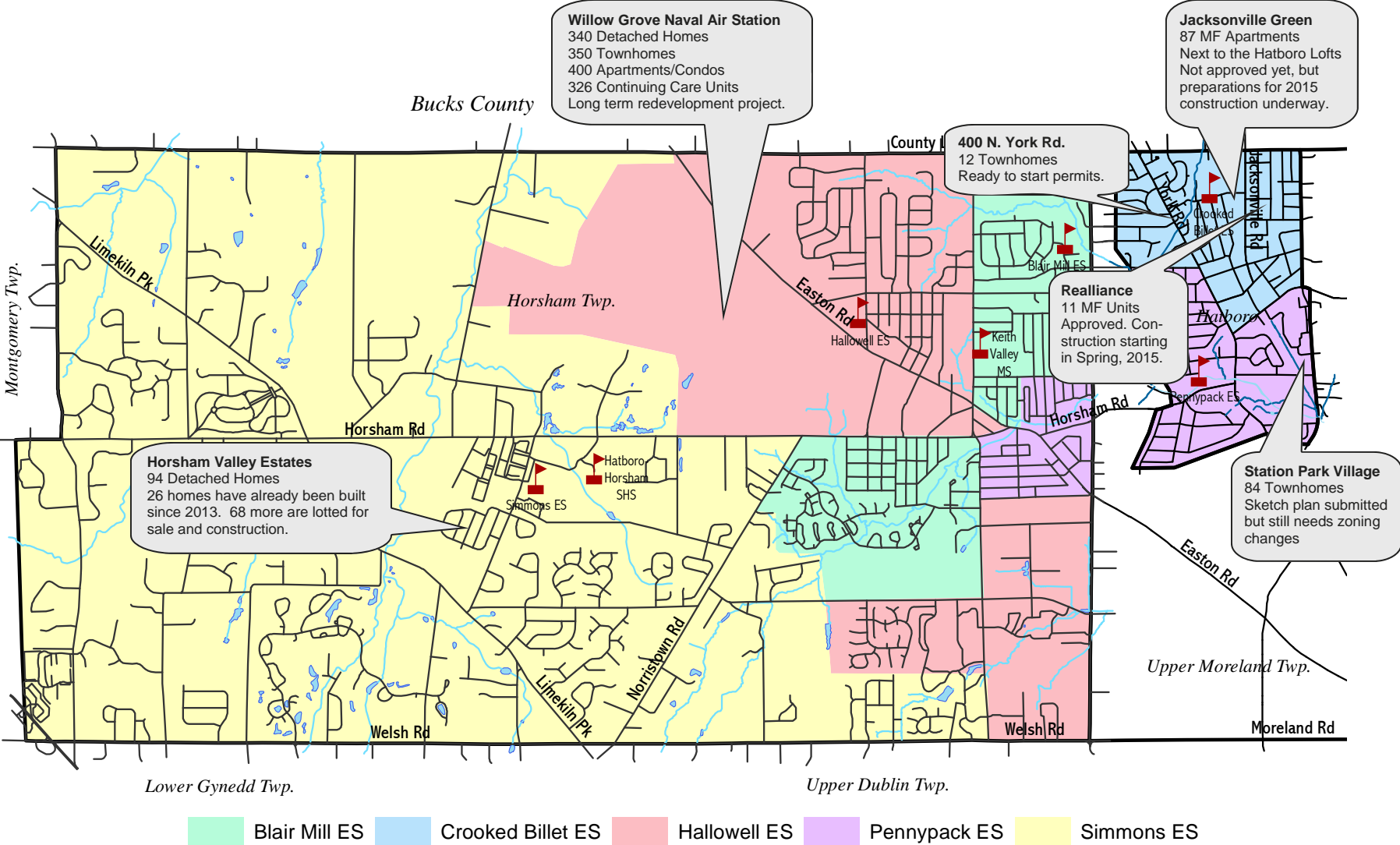
The first units in the ground may still be five years away. The entire development will be built in phases and extend even further out over time, although the detached homes have been suggested as one of the earliest phases. Overall, the redevelopment may bring over 400 additional school age children into the district area between 2017 and 2022.

FIGURE 19: *Housing Units Proposed in the HHSB, 2004-2013*



Source: Montgomery County Planning Commission

FIGURE 20: Currently Proposed Housing Developments



Housing Activity

Impacts of Housing on Enrollment

Housing Units Built

Housing Units Proposed

Housing Sales

Housing Sales

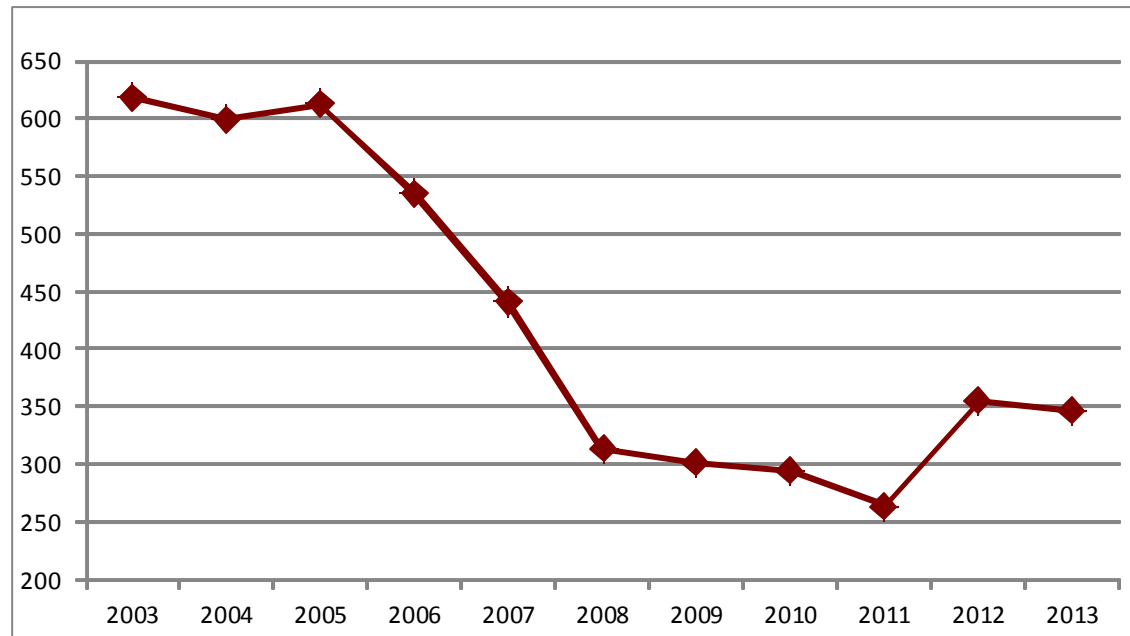
Market-rate housing sales activity in the HHSD has followed a pattern similar to countywide sales activity. The number of units sold peaked at very high levels in the early to mid 2000s before the housing boom crashed and the economy entered a recession. Sales levels continually declined to historically low levels through 2011. During this collapse, home values flattened out and often depreciated as financial markets tightened up for potential buyers.

The last two years have shown the beginnings of a recovery in the HHSD with the number of sales growing by 31 percent from 2011 to 2013. The county also began to recover in this time period, and it also increased by 31 percent. At both levels, these

figures still pale in comparison to earlier in the decade, but it is unlikely that the market returns to that level in the foreseeable future.

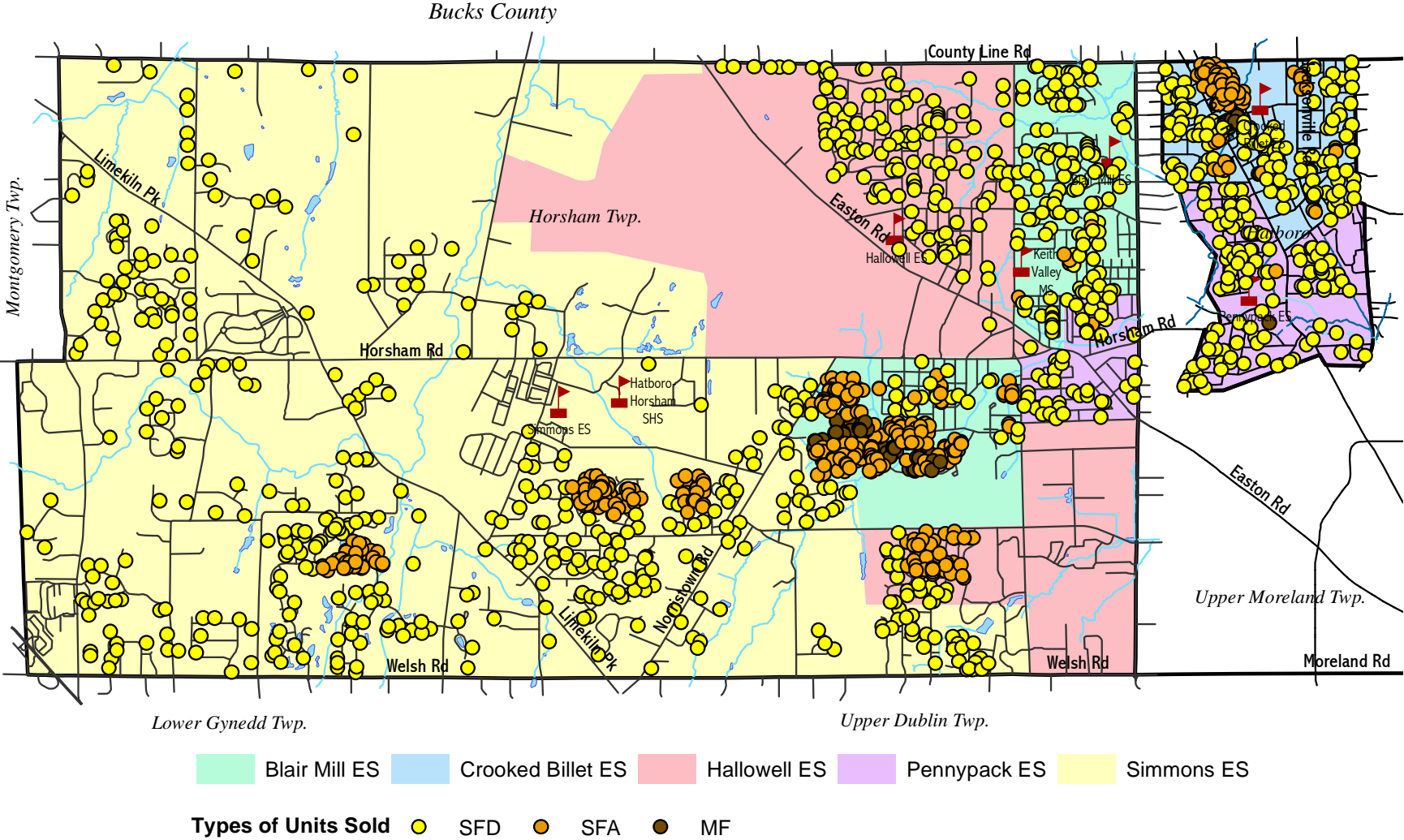
The impact of the decline in sales is that it can slow down migration activity in an area that features a majority of its housing stock as owner-occupied housing. While it was demonstrated on pages 15-16 that housing transfers do not necessarily bring more school age children with them, they do provide for a churning of households that should result in a greater number of child-bearing age women. The data is not strong enough to link housing sales directly with birth totals, but the district has seen births drop in the last three years after this sustained period of housing sales decline. The recent recovery, should it continue, may also be one factor that could help birth levels start to go up as well.

FIGURE 21: Total Housing Units Sold in the HHSD, 2004-2013



Source: Montgomery County Planning Commission

FIGURE 22: Existing Housing Units Sold in the HHSD, 2009-2013



*District Enrollment
Projections*

Part

3

District Enrollment Projections

Cohort Progression Model

Projected Enrollment Summaries

Indicators of Projection Change

Cohort Progression Model

The method used in this study to calculate projections for each grade level is known as the Cohort Progression Model, which is also referred to as Cohort Survival in some applications. This is a fairly common approach and one used by the state and other districts in formulating projections. However, it should always be used with caution and presented in context with the other variables offered in this report. In some districts there will be cause for adjustments to the model based on changing factors in population growth or migration.

The nature of the model allows it to integrate trend activity across a number of variables. Birth rates have the most obvious impacts in the model, but the changes that take place account for trends in population migration, housing construction, sales, and alternative schooling choices, such as private, charter, or homeschooling opportunities.

The model is fairly straightforward in its method. It tracks each class in a given year and measures the change in that class from one year to the next. Then it applies an average of changes over a specified time period to determine the percentage of a given grade likely to “progress” to the next grade in future years. A six year average was used for the Hatboro-Horsham School District, since it would account for enrollment patterns from the 2007 through 2013 school years. The lowest and highest progression rates over the six years were withheld from the calculated averages to eliminate unexplained extremes within the period.

Figure 23 displays all of the progression rates for each grade transition from the last six school years. The average is calculated to arrive at a basic trend that will be applied for each projected year. Any progression rate that is greater than 1.0 indicates that a class *increased* in size from one year to the next as it also moved up a grade level. Progression rates that are lower than 1.0 indicate that a class *decreased* in size. For example, the third grade class of the 2008

school year increased in size when it entered the fourth grade in 2009 at a rate of 1.011. Using actual enrollment figures, the class went from 380 to 384 students during that period. The following year in 2010, it entered the fifth grade and this time it decreased at a rate of 0.982. In 2011, it entered the sixth grade and increased at a rate of 1.021, gaining 8 students by the enrollment figures.

Looking at the whole range of progression rates (Figure 23), most grade levels are more likely to grow at the elementary and middle school levels, but classes may decline during the high school years. It is possible that some students will drop out of school and others will leave the public system to enroll in a private preparatory high school. The high school grade progression rates in the HHSD do not drop by very much, indicating that there may be a low dropout rate or departures are counterbalanced by incoming students moving into the district.

Birth-to-Kindergarten Ratio

The projection of future enrollments in the model requires that we apply the trends in progression rates to future classes as they go from one grade to the next. However, the kindergarten class for each year does not have an enrollment figure for its prior year since those children would be in preschool or home care outside of the district system. Therefore, we must use live birth data to identify ratios of births to kindergarten. The birth data comes from a given past year and is then applied to the kindergarten class that would follow six years later in order to capture the same children at each end of the ratio. For instance, a birth-to-kindergarten ratio for the 2013-14 school year uses birth data from 2007-08 as the numerator and divides it by the kindergarten enrollment in 2013 to form the rate (0.804) shown in Figure 23.

The ratios of births to kindergarten are much lower than the yearly grade progression rates. Some will go straight into a private school, and others may move away before entry into kindergarten. The averaging out of the ratios gives us the best

FIGURE 23: Grade Progression Rates Over the Last Six Years

School Year	Birth-K*	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
2008-09	0.678	1.115	1.021	1.011	1.016	0.995	1.018	1.012	1.005	1.036	0.998	0.965	0.978
2009-10	0.753	1.085	1.008	1.018	1.011	1.026	1.038	1.018	0.978	1.044	0.987	0.968	0.993
2010-11	0.809	1.164	1.047	1.030	1.008	0.982	1.030	1.017	1.002	1.047	1.040	0.967	0.998
2011-12	0.746	1.186	0.989	1.015	1.008	0.987	1.021	1.017	0.983	0.998	0.983	0.955	0.986
2012-13	0.855	1.181	1.023	1.044	1.006	1.019	1.020	1.039	1.005	0.993	1.015	1.007	1.007
2013-14	0.804	1.045	1.020	0.994	0.994	0.997	1.016	1.030	0.988	0.988	0.983	0.978	1.010
Average**	0.778	1.136	1.018	1.018	1.008	1.000	1.022	1.020	0.995	1.018	0.996	0.969	0.996

* The birth-to-kindergarten ratio uses birth data six years prior to the indicated school year, thus drawing the relationship between children born and the year they would actually enter kindergarten.

** The average is calculated with minimum and maximum value (shaded in red) removed from each set of progression.

approximation of the net result of all birth and migration activity in the district, but clearly there is room for error.

One beneficial aspect of a birth-to-kindergarten ratio is that it allows the model to integrate real data into the first five years of the projection period. In other words, projections of kindergarten classes for the first five years, through the 2018 school year, can account for real changes in birth patterns that have occurred from 2008 to 2013. The downside is that an estimated birth figure must be used for any projection beyond the 2018 school year.

Projection Periods

Due to the distinction between using real birth data and the need to estimate beyond five years, enrollment projections are divided into two periods. The primary period covers the first five school years from 2014 to 2018, and the secondary period covers the next five school years from 2019 to 2023. There is a higher degree of accuracy expected during the primary period than in the secondary period. Recent trends are more likely to continue in the short term before outside factors can influence a change in patterns, but the use of the birth data gives a more dependable start to projecting the size of kindergarten classes in the future.

Estimated Births

The projection of kindergarten classes after 2018 requires the use of estimated birth figures for the next five years. A simple approach to estimate these births is to use an average of the most recent birth figures and extend it through the end of the projection period. In the Hatboro-Horsham School District, the average number of births over the last five years was 357. This is the figure used to formulate the ten year district projection in Option 1 in Figure 24 on the following page.

The increasing numbers of child-bearing age females along with greater home sales activity supports the idea that births will be cycling back up from their recent historically low level. A second birth estimate targets a higher birth figure through the 2017-18 school year, which would be the last year of births that would affect the ten year study period. That target was set up as 400 births for Option 2 in Figure 25. This option starts with a lower increment and progressively gets larger until reaching the target birth estimate of 400. The average for the five future years is 373 births. This incremental strategy also reflects anticipated changes in age demographics that are expected to result in greater numbers of females of child-bearing age through 2020.

Housing Adjustment

The models for Options 1 and 2 are based on recent activity including housing construction. As discussed on pp. 17-18, construction affecting school age enrollment in the HHSD has been rather limited over the last six years, resulting in an average of 13 additional school age children per year. A review of proposed development on pp. 19-20 indicates that development over the next 3-4 years is expected to exceed this pace, and it could bring an average of 29 school age children per year. Option 3 in Figure 26 makes adjustments to the preferred birth model (Option 2) to account for the additional construction that will bring more public school children into the system. See page 33 for details on the adjustments made.

A fourth option was developed to address the potential impacts from the NAS redevelopment project. Option 4 in Figure 27 uses the same adjustments made for Option 3, but then accounts for a potential NAS redevelopment timeline that would begin construction in the 2017-18 school year. The NAS scenario is a very fluid one and our best current assumptions have been made. However, this scenario should only be used as a guide at this time, and revisited as that project moves forward.

HATBORO-HORSHAM SCHOOL DISTRICT

Projected Enrollments

Figures 24, 25, 26, and 27 offer four variations of grade by grade projections over the next ten years. The first two scenarios are differentiated by the estimates of future births as explained on the preceding page. Since these future birth estimates

only begin to impact kindergarten enrollment beginning with the 2019 school year, the first five years, or primary period are identical for each of the first two scenarios. Option One is based on birth activity remaining consistent with the lower numbers of the last five years. Option Two uses a higher birth estimate based on anticipated changes in age cohort demographics and makes the increases incremental. Option

FIGURE 24: Projected Enrollments, OPTION 1—Base Future Birth Estimate

School Year	Births 6 Years Ago*	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
2014-15	371	289	335	306	318	360	357	349	397	412	402	412	389	399	4,724
2015-16	375	292	328	341	312	320	360	365	356	395	419	400	400	387	4,674
2016-17	355	276	332	334	348	315	320	368	372	354	402	417	388	398	4,623
2017-18	351	273	314	337	340	350	314	327	375	370	360	400	404	386	4,553
2018-19	331	258	310	319	344	343	350	321	334	373	377	358	388	403	4,478
2019-20	357	278	293	316	325	346	343	358	328	332	380	375	348	386	4,407
2020-21	357	278	316	298	322	328	346	350	365	326	338	378	364	346	4,355
2021-22	357	278	316	321	303	324	328	354	357	363	332	337	367	362	4,342
2022-23	357	278	316	321	327	306	324	335	361	355	370	331	326	365	4,315
2023-24	357	278	316	321	327	330	306	331	342	359	362	368	320	325	4,285

FIGURE 25: Projected Enrollments, OPTION 2—Higher Future Birth Scenario

School Year	Births 6 Years Ago*	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
2014-15	371	289	335	306	318	360	357	349	397	412	402	412	389	399	4,724
2015-16	375	292	328	341	312	320	360	365	356	395	419	400	400	387	4,674
2016-17	355	276	332	334	348	315	320	368	372	354	402	417	388	398	4,623
2017-18	351	273	314	337	340	350	314	327	375	370	360	400	404	386	4,553
2018-19	331	258	310	319	344	343	350	321	334	373	377	358	388	403	4,478
2019-20	345	268	293	316	325	346	343	358	328	332	380	375	348	386	4,398
2020-21	359	279	305	298	322	328	346	350	365	326	338	378	364	346	4,346
2021-22	373	290	317	310	303	324	328	354	357	363	332	337	367	362	4,346
2022-23	387	301	330	323	316	306	324	335	361	355	370	331	326	365	4,344
2023-24	400	311	342	336	329	319	306	331	342	359	362	368	320	325	4,350

* The birth figure for each row does not pertain to births during that year, but rather the births that occurred six years prior to the projected year. The average birth-to-kindergarten ratio is then applied to get the projected kindergarten class.

Three includes the higher birth estimates from Option Two and makes adjustments to account for an expected increase in housing construction compared to the last six years. These adjustments account for public and private school choice along with the type of housing and its impact in terms of school age children. Option Four adds the potential impacts from the NAS redevelopment beginning in 2017-18. See page 33 for further details on the adjustments made. Option Three is recommended as the most realistic scenario, but it is also suggested that Option Four be used to anticipate what could happen with the NAS redevelopment as it moves forward.

FIGURE 26: Projected Enrollments, OPTION 3—Housing Adjustment to Higher Birth Estimate

School Year	Births 6 Years Ago*	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
2014-15	371	291	337	307	319	361	358	350	398	413	403	413	390	400	4,739
2015-16	375	295	332	345	315	323	363	368	359	398	422	403	403	390	4,716
2016-17	355	282	338	341	354	320	325	373	377	359	407	422	393	403	4,694
2017-18	351	279	322	345	349	357	320	332	380	375	365	405	409	391	4,631
2018-19	331	263	317	327	351	351	357	328	339	378	382	364	393	408	4,558
2019-20	345	273	298	323	333	354	351	365	334	337	385	380	352	391	4,479
2020-21	359	284	311	304	329	336	354	359	373	332	343	383	369	351	4,428
2021-22	373	295	323	316	309	331	336	362	366	371	338	342	372	367	4,429
2022-23	387	306	335	329	322	312	331	344	369	364	377	337	331	370	4,428
2023-24	400	316	348	341	335	325	312	339	351	367	371	376	327	330	4,436

FIGURE 27: Projected Enrollments, OPTION 4—NAS Redevelopment Added to Housing Adjustment and Higher Birth Estimate

School Year	Births 6 Years Ago*	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
2014-15	371	291	337	307	319	361	358	350	398	413	403	413	390	400	4,739
2015-16	375	295	332	345	315	323	363	368	359	398	422	403	403	390	4,716
2016-17	355	282	338	341	354	320	325	373	377	359	407	422	393	403	4,694
2017-18	351	281	324	347	351	359	322	334	382	377	367	406	410	392	4,654
2018-19	331	269	324	334	358	358	364	334	345	384	388	370	398	413	4,639
2019-20	345	286	313	338	349	369	365	379	347	350	398	393	365	403	4,658
2020-21	359	303	332	326	351	358	376	380	394	353	364	403	387	370	4,699
2021-22	373	319	350	343	337	359	363	389	392	396	363	366	395	390	4,762
2022-23	387	330	364	357	351	340	360	372	397	391	404	362	356	394	4,778
2023-24	400	340	375	370	364	354	340	368	380	395	398	402	351	354	4,792

* The birth figure for each row does not pertain to births during that year, but rather the births that occurred six years prior to the projected year. The average birth-to-kindergarten ratio is then applied to get the projected kindergarten class.

District Enrollment Projections

Cohort Progression Model

Projected Enrollment Summaries

Indicators of Projection Change

Projected Enrollment Summaries

The summarized enrollment projections for the district and at each school level are presented on the following pages. The four options based on future birth estimates, housing adjustments, and the redevelopment of the NAS are also differentiated. However, the variation in birth estimates make no difference at the middle school and high school levels since children born over the next five years will not be old enough to influence those projections within the ten year timeframe.

Option Three is recommended as the most realistic or likely result at this time, although Option Four is really an expansion of Option Three that add the impact from the NAS. Option One can be considered the default or baseline standard for enrollment projections. If an assumption regarding housing development needs to be altered or actual birth data

veers from the projected patterns, the district may adjust to a different option number. The presentation and explanation of each option is intended to allow the district to better plan for multiple scenarios.

The general trend for the district under all scenarios is that enrollment will continue to decline over the next five years. If there is little change in recent birth totals and residential construction, enrollment will decline over the entire ten years. However, a rebound in birth rates and an improving housing market that prompts new construction and more sales transactions will begin to counteract the baseline declines during the secondary period.

Figures 28, 29, 30, and 31 isolate the projections according to the grade levels of buildings in the district. Changes have also been evaluated over the five-year intervals of the primary and secondary periods. Some of the levels will experience very different trends from one five-year period to the next.

FIGURE 28: Total District Enrollment Projections

Year	Option 1—Base Future Births		Option 2—Higher Future Births		Option 3—Housing Adjustment		Option 4—NAS Redevelopment with Housing Adjustment	
	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change
2013-14 (Current)	4,801		4,801		4,801		4,801	
2014-15	4,724	-77	4,724	-77	4,739	-62	4,739	-62
2015-16	4,674	-50	4,674	-50	4,716	-23	4,716	-23
2016-17	4,623	-51	4,623	-51	4,694	-22	4,694	-22
2017-18	4,553	-70	4,553	-70	4,631	-63	4,654	-40
2018-19	4,478	-75	4,478	-75	4,558	-73	4,639	-15
2019-20	4,407	-71	4,398	-80	4,479	-79	4,658	19
2020-21	4,355	-52	4,346	-52	4,428	-51	4,699	41
2021-22	4,342	-13	4,346	0	4,429	1	4,762	63
2022-23	4,315	-27	4,344	-2	4,428	-1	4,778	16
2023-24	4,285	-30	4,350	6	4,436	8	4,792	14
Total Change 2013-2023	-516		-451		-365		-9	

FIGURE 29: Grades K-5 Enrollment Projections

Year	Option 1—Base Future Births		Option 2—Higher Future Births		Option 3—Housing Adjustment with Higher Future Births		Option 4—NAS Redevelopment with Housing Adjustment	
	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change
2013-14 (Current)	1,963		1,963		1,963		1,963	
2014-15	1,965	2	1,965	2	1,973	10	1,973	10
2015-16	1,953	-12	1,953	-12	1,973	0	1,973	0
2016-17	1,924	-29	1,924	-29	1,960	-13	1,960	-13
2017-18	1,929	5	1,929	5	1,972	12	1,984	24
2018-19	1,924	-5	1,924	-5	1,967	-5	2,008	24
5 Yr. Change from 2013-14 to 2018-19	-39		-39		4		45	
2019-20	1,901	-23	1,891	-33	1,933	-34	2,021	13
2020-21	1,887	-14	1,878	-13	1,918	-15	2,047	26
2021-22	1,870	-17	1,873	-5	1,911	-7	2,072	25
2022-23	1,872	2	1,900	27	1,935	24	2,102	30
2023-24	1,877	5	1,942	42	1,977	42	2,143	41
5 Yr. Change from 2018-19 to 2023-24	-47		18		10		135	
10 Yr. Change Since 2013-14	-86		-21		14		180	

Elementary Schools

Much of the district’s overall potential decrease in enrollment over the next five years will not be seen at the elementary school level. Birth activity has been lower in the district the last three years and that will result in smaller kindergarten classes starting in 2016-17. However, the proposed residential construction in the near term could counteract that activity and bring very little overall change in enrollment as depicted under Option Three.

Enrollment during the secondary period will be tied to what happens with birth activity over the next few years. It is expected to gradually rise at a moderate level which could result in larger kindergarten classes towards the end of the ten year study period.

If the NAS redevelopment proceeds as expected within the next five years and the detached housing is built first, this will begin to impact the elementary school level with gains in enrollment over the secondary period.

HATBORO-HORSHAM SCHOOL DISTRICT

FIGURE 30: Grades 6-8 Enrollment Projections (Keith Valley MS)

Year	Options 1 and 2		Option 3—Housing Adjustment		Option 4—NAS Redevelopment with Housing Adjustment	
	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change
2013-14 (Current)	1,198		1,198		1,198	
2014-15	1,157	-41	1,160	-38	1,160	-38
2015-16	1,115	-42	1,124	-36	1,124	-36
2016-17	1,094	-21	1,109	-15	1,109	-15
2017-18	1,073	-21	1,088	-21	1,094	-15
2018-19	1,029	-44	1,045	-43	1,063	-31
5 Yr. Change from 2013-14 to 2018-19	-169		-153		-135	
2019-20	1,018	-11	1,037	-8	1,077	14
2020-21	1,042	24	1,064	27	1,127	50
2021-22	1,075	33	1,099	35	1,177	50
2022-23	1,052	-23	1,077	-22	1,161	-16
2023-24	1,033	-19	1,056	-21	1,143	-18
5 Yr. Change from 2018-19 to 2023-24	4		11		80	
10 Yr. Change Since 2013-14	-165		-142		-55	

Middle School (Keith Valley MS)

Adjustments to the estimates of future births will not affect enrollment at the Middle School since those children will not have reached the sixth grade prior to 2024. Housing construction could bring a few more students than would otherwise be expected, as shown in Option Three. With or without the housing adjustment, enrollment is expected to decline over the primary period. Smaller classes now in the elementary schools will result in smaller middle school grades as they go through the system. While more stable enrollments in the secondary period are expected, even the dramatic development from the NAS project will not be enough to change an overall decline over the ten year period.

FIGURE 31: Grades 9-12 Enrollment Projections (Hatboro-Horsham SHS)

Year	Options 1 and 2		Option 3—Housing Adjustment		Option 4—NAS Redevelopment with Housing Adjustment	
	Total Students	Annual Change	Total Students	Annual Change	Total Students	Annual Change
2013-14 (Current)	1,640		1,640		1,640	
2014-15	1,602	-38	1,606	-34	1,606	-34
2015-16	1,606	4	1,618	12	1,618	12
2016-17	1,605	-1	1,625	7	1,625	7
2017-18	1,551	-54	1,571	-54	1,576	-49
2018-19	1,526	-25	1,546	-25	1,568	-8
5 Yr. Change from 2013-14 to 2018-19	-114		-94		-72	
2019-20	1,489	-37	1,509	-37	1,560	-8
2020-21	1,426	-63	1,446	-63	1,524	-36
2021-22	1,397	-29	1,419	-27	1,514	-10
2022-23	1,392	-5	1,416	-3	1,516	2
2023-24	1,375	-17	1,403	-13	1,506	-10
5 Yr. Change from 2018-19 to 2023-24	-151		-143		-62	
10 Yr. Change Since 2013-14	-265		-237		-134	

High School (Hatboro-Horsham SHS)

Adjustments to the estimates of future births will also not affect enrollment at the High School over the next ten years. Housing construction and redevelopment of the NAS will bring additional students, but the net result is still an expected decline in enrollment over both the primary and secondary periods.

District Enrollment Projections

Cohort Progression Model

Projected Enrollment Summaries

Indicators of Projection Change

Indicators of Projection Change

No further adjustments to the projections on the preceding pages are necessary at this time. The background data and analysis throughout this report forms a basis and understanding of how the numbers should be interpreted. However, markets and trends can always change in unexpected manners. This section provides a further understanding of the assumptions inherent with the progression model and potential warning signs that would prompt a future reconsideration of the projected enrollment figures. These indicators are not likely to prompt an immediate change in future enrollments, but over time they could still influence the outlook.

Housing Construction

New housing and births are the two most significant factors that could suggest a revision in the expected enrollments, but housing will have the more immediate effect. Housing construction that impacts school enrollments has been relatively low over the last six years, so additional declines in enrollment

due to further reductions in housing activity would be unlikely. A housing adjustment for additional students, as incorporated into Option Three of the projection scenarios, would be necessary if current proposed projects do get built as expected. Should any of these alter or be unexpectedly discontinued, the effects can be roughly gauged through the scenarios. If more development is brought forward, a further adjustment might be warranted.

Figure 32 provides the data that was used to make the housing adjustment in Option Three of the cohort progression model. Countywide factors for the number of children based on unit type (p. 15) were calculated and then modified to reflect a proportion that would attend public over private school (82 percent). These expected students were added to the model in the years indicated, but they were distributed across all grade levels. Finally, as these additional students go through the system and graduate, the model gets repopulated each year to balance out the departures. This keeps the average factor of school age children per unit intact through the life of the model.

FIGURE 32: Factors Used for Option Three—Housing Adjustment Model Calculations

	Units	Housing Type	School Age Children in Public School*	Years Added to Public School across Grades
Horsham Valley Estates	94	Detached Singles	20	2014-15
			26	2015-16
			26	2016-17
Realliance	11	Multifamily	1	2015-16
400 N. York Rd.	12	Townhomes	2	2015-16
Jacksonville Green	87	Multifamily	4	2016-17
Station Park Village	84	Townhomes	7	2016-17
			7	2017-18

* The historical trend allows us to expect 13 school age children from new construction as a default for each year. 50% of these children were subtracted each year from the total proposed new construction impact since a portion of the proposed housing would be fulfilling the historical trend and the base models already account for some construction.

FIGURE 33: *Factors Used for Option Four—NAS Redevelopment Plan Impact*

School Year	Units	Housing Type	School Age Children in Public School
2017-18	30	Large Lot SFD	23
2018-19	60	Large Lot SFD	46
	70	Townhomes	12
2019-20	100	Small Lot SFD	76
	70	Townhomes	12
	150	Apts/Condos MF	8
2020-21	100	Small Lot SFD	76
	70	Townhomes	12
2021-22	50	Small Lot SFD	38
	70	Townhomes	12
	150	Apts/Condos MF	8
2022-23	70	Townhomes	12

Figure 33 shows the adjustments made in Option Four to reflect an assumed timeline for the NAS redevelopment. There is no official timeline, so this is only an estimate based on recent interviews with stakeholders. As the U.S. Navy provides more information and environmental issues get addressed, a clearer timeline may be determined. The order of development pertaining to the different housing types is also based on current understandings, but that too could change once a final developer is chosen and plans are brought forward.

Birth Patterns

Birth numbers are directly integrated into the cohort progression model and form the basis for the difference between Options One and Two on the preceding pages. The number of births can significantly affect future projections, but any changes today will not be felt for at least six years in terms of the projections.

Annual birth data should be tracked to anticipate if one option may become more likely during the secondary period. Live birth data is available from the Pennsylvania Department of Health, but the numbers should be correlated to the school year rather than the calendar year.

Alternative School Enrollment

Private schools, charter schools, cyber schools, and homeschooling could also impact the district’s public school enrollment if students opt for these alternatives at a greater or lesser rate than in the past. The American Community Survey provides delayed data on private schools averaged out over multiple years, so the district’s record of private school students using district buses is going to provide more immediate information on any change in enrollment trends.

Hatboro-Horsham’s bus records show a fairly stable level of private school students living in the district, although it has declined in the last four years.

Nationally, private school enrollment has also declined in recent years. The economy could be having an effect, but at least one study from the Census Bureau claims that mainstream public schools are not the primary competition to private schools, but rather new charter schools and homeschooling formats are causing lower enrollments. Still, if the economy improves and private school residents increase, there could be an additional decline on public school attendees.

Charter schools, cyber schools, and homeschooling make up a relatively small portion of students within the HHSD, but many of these opportunities were not around ten to fifteen years ago. Approximately 47 students were using these combined alternatives during the 2013-14 school year. HHSD tracks homeschooled students along with annual enrollment in charter and cyber schools since they are still considered public schooling.

Housing Sales Activity

The amount of housing sales transactions in the HHSD has started to increase in the last two years, but still lags well behind activity earlier in the decade. The housing market overall is improving, but still going through fits and starts. Thus far, countywide sales levels in 2014 are actually lower than they were in 2013. When sales do increase further in the district, the effect on school age children in the district is expected to be a delayed reaction. New households moving into an area are less likely to have school age children, but they are more likely to have members of child-bearing age. Therefore, an increase in school age children probably will not be felt in the near term but might in the longer term if housing sales continue to increase.

School Profiles

Part

4

School Profiles

Introduction

Blair Mill Elementary

Crooked Billet Elementary

Hallowell Elementary

Pennypack Elementary

Simmons Elementary

Introduction

Application of the Cohort Progression Model to individual school buildings can be done, but it loses some accuracy when enrollments are at a smaller scale, especially when under one thousand. It becomes even more difficult when school boundary areas do not correspond with municipal boundaries, making it impossible to use actual birth data related to the precise area. Both situations are existing conditions in the HHSD, so the following school profiles do not present detailed projection numbers for the future.

The district also has a cap system that can result in some students attending a school building outside of the designated area which they reside. This can

distort past figures or cause adjustments to projected figures whenever it is implemented.

However, there is still useful data that can inform more general forecasts for the future. The county's geographic data on housing construction and sales have been customized to recognize each school boundary. Plus, the overall projections for each school level provide the context for how much growth or decline might occur in each school.

The following profiles offer an assessment of what is happening in each area and how it might affect future enrollments. Of course, the middle school and high school profiles have been left out since those projections were presented in Part Three.



Blair Mill Elementary School



Hallowell Elementary School



Pennypack Elementary School



Simmons Elementary School

Blair Mill Elementary School

Grade level sizes were close to being evenly split in 2013-14, which means that short-term changes in the future will mostly stem from the sizes of incoming kindergarten and first grade classes. The Blair Mill area is completely within Horsham Township which has declined in births over the last four years compared to the district as a whole.

Housing construction has been limited over the last five years and a low rate of new housing is expected to continue since there are no major proposals outstanding in the Blair Mill area. Housing sales have picked up in the last couple of years, and a stronger churning of households in detached housing could prompt more students in the long term.

Forecast

Enrollment at Blair Mill is expected to remain fairly stable for the next three years, but it may start declining by approximately 20 students in the 2017-18 and 2018-19 school years as the lower number of births in Horsham make an impact.

FIGURE 34: Blair Mill Elementary School Enrollment by Grade, 2007-2013

Year	K	1	2	3	4	5	Total	Annual Change
2007-08	59	65	70	69	64	69	396	
2008-09	49	68	65	72	72	65	391	-5
2009-10	53	60	74	63	73	73	396	5
2010-11	46	71	65	75	66	71	394	-2
2011-12	48	72	69	71	74	67	401	7
2012-13	71	66	75	74	70	81	437	36
2013-14	72	67	72	69	71	70	421	-16

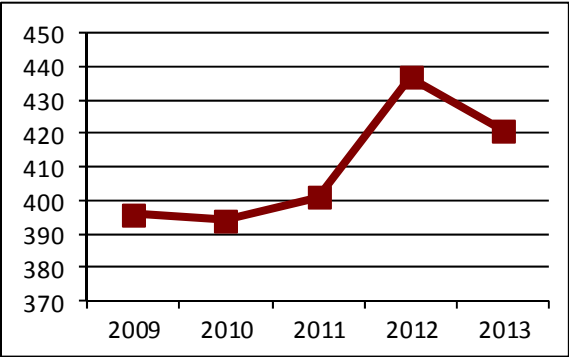
Source: Hatboro-Horsham School District

FIGURE 35: Housing Activity Within Blair Mill ES Boundary Area

Year	New Units Built	Existing Units Sold			
	Total	SFD	SFA	MF	Total
2009	5	27	54	19	100
2010	3	30	26	12	68
2011	4	16	31	11	58
2012	4	32	32	12	76
2013	0	38	49	16	103
Total	16	143	192	70	405

Source: Montgomery County Planning Commission

FIGURE 36: Blair Mill ES Enrollment



HATBORO-HORSHAM SCHOOL DISTRICT

Crooked Billet Elementary School

Enrollment at Crooked Billet ES had not varied by a great amount until the 2013-14 school year when it dropped by 20 students. Enrollment had dropped for three years prior, but only by a few students each year. The larger drop was due to the exit of a large fifth grade class after 2012-13 and small decreases in each class as they moved up a grade in 2013-14.

The Crooked Billet boundary covers the northern half of Hatboro. Births in Hatboro have actually increased over the last four years, which is the opposite of what has happened in Horsham and most

of the region. While it cannot be determined where in Hatboro the birth activity is occurring, this could affect future enrollment for Crooked Billet.

Housing sales in the area have been fairly consistent over the last five years, but construction of new units is higher in this area due to the Hatboro Lofts development in 2010. However, the Lofts are multifamily apartments and not expected to bring a high ratio of school age children. More multifamily units are proposed for the area, including 87 units in Jacksonville Green, which is adjacent to the Lofts.

Another 11 multifamily units and 12 townhomes are also expected to start construction in the next year.

Forecast

Despite the recent drop in enrollment for Crooked Billet, the school should start seeing increases in another year or two. The increase in births and continued housing construction, even though they are lower impact housing types, could push enrollment up closer to 300 students by the 2019-20 school year.

FIGURE 37: Crooked Billet Elementary School Enrollment by Grade, 2007-2013

Year	K	1	2	3	4	5	Total	Annual Change
2007-08	40	48	43	47	39	49	266	
2008-09	38	47	50	47	52	44	278	12
2009-10	45	38	48	49	45	54	279	1
2010-11	47	46	39	50	51	43	276	-3
2011-12	36	50	44	39	53	50	272	-4
2012-13	47	42	50	36	39	52	266	-6
2013-14	45	41	40	47	34	39	246	-20

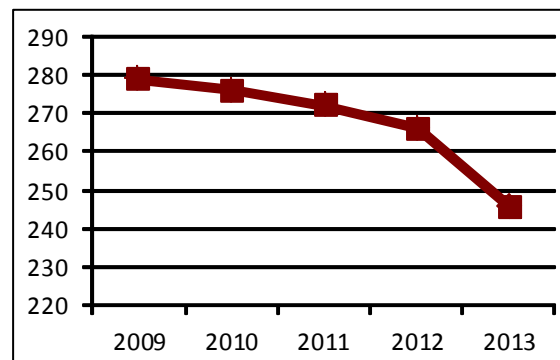
Source: Hatboro-Horsham School District

FIGURE 38: Housing Activity Within Crooked Billet ES Boundary Area

Year	New Units Built	Existing Units Sold			
	Total	SFD	SFA	MF	Total
2009	1	18	20	4	42
2010	159	31	20	2	53
2011	3	28	10	2	40
2012	0	26	18	7	51
2013	10	26	17	4	47
Total	173	129	85	19	233

Source: Montgomery County Planning Commission

FIGURE 39: Crooked Billet ES Enrollment



Hallowell Elementary School

Enrollment for Hallowell ES has declined each year since 2007-08. Over the last four years, the enrollment has gone down despite little change in the size of incoming kindergarten and first grade classes. The declines were due to much larger classes having been in the school in 2007 and 2008. Those classes graduated from the elementary level while being replaced by smaller kindergarten classes.

The Hallowell boundary is within the eastern half of Horsham Township. Birth activity in Horsham has

declined over the last four years compared to the district as a whole.

Housing sales have bumped up in the last two years, especially for single family detached housing, but only one new unit has been constructed in the last five years. No proposals for new construction are active right now. However, the NAS site is adjacent to the school. When redevelopment occurs, it will have a major effect, but the impact on individual schools is not determined for this report.

Forecast

Further declines in enrollment for Hallowell are not forecasted in the near future. The larger class sizes are now out of the elementary level, and there are no immediate shifts based on housing activity. Ultimately, the lower births in Horsham could start to affect enrollment for Hallowell in 2017-18 and 2018-19. Enrollment at that time may dip down to between 250 and 260 students if no other factors, such as the NAS site, are introduced.

FIGURE 40: Hallowell Elementary School Enrollment by Grade, 2007-2013

Year	K	1	2	3	4	5	Total	Annual Change
2007-08	48	69	61	70	64	63	375	
2008-09	43	56	69	58	66	65	357	-18
2009-10	37	40	53	68	58	68	324	-33
2010-11	47	44	43	51	68	57	310	-14
2011-12	46	48	45	38	48	66	291	-19
2012-13	44	48	50	49	38	50	279	-11
2013-14	49	46	45	49	46	39	274	-5

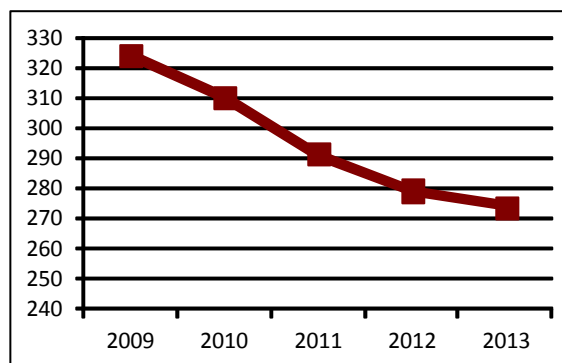
Source: Hatboro-Horsham School District

FIGURE 41: Housing Activity Within Hallowell ES Boundary Area

Year	New Units Built	Existing Units Sold			
	Total	SFD	SFA	MF	Total
2009	0	32	7	0	39
2010	0	23	8	0	31
2011	1	27	7	0	34
2012	0	35	11	0	46
2013	0	37	6	0	43
Total	1	154	39	0	193

Source: Montgomery County Planning Commission

FIGURE 42: Hallowell ES Enrollment



HATBORO-HORSHAM SCHOOL DISTRICT

Pennypack Elementary School

Overall enrollment for Pennypack ES since 2007 has changed by only seven students. However, the first half of that period reflected slight gains, while the last three years have been slight declines.

The Pennypack boundary covers the southern half of Hatboro and a small portion of Horsham Township around Horsham Road and Route 611. Births in Hatboro have actually increased over the last four years, which is the opposite of what has happened in Horsham and most of the region. While it cannot be

determined where in Hatboro the birth activity is occurring, this could affect future enrollment for Pennypack.

Housing sales in the area have been fairly consistent over the last five years, although a spike in detached housing sales occurred in 2012. The construction of new units shows an active market, but this is not affecting the school enrollment. All but six of the new units built since 2009 have been part of the age-restricted Victorian Village condos and apartments. Very few, if any, children are expected to come from these units. There is one major development proposal active in the Pennypack area—the Station

Park Village. This proposal is for 84 townhomes built in a neotraditional style that may appeal to some small families. The proposal still needs zoning changes before being approved, and it is still probably two to three years away if approved.

Forecast

The next two or three years are unlikely to include major shifts in enrollment for Pennypack. The rise in Hatboro births could start to push enrollment up after that time and boost enrollment back to the 270 to 280 level by the 2018-19 school year. If the Station Park Village development is built, then enrollment could be closer to 290 or 300 at that time.

FIGURE 43: Pennypack Elementary School Enrollment by Grade, 2007-2013

Year	K	1	2	3	4	5	Total	Annual Change
2007-08	48	39	44	45	40	41	257	
2008-09	41	48	45	47	47	35	263	6
2009-10	36	39	47	48	53	49	272	9
2010-11	43	39	42	48	47	54	273	1
2011-12	33	48	37	47	49	46	260	-13
2012-13	36	34	49	41	49	45	254	-6
2013-14	41	40	36	48	38	47	250	-4

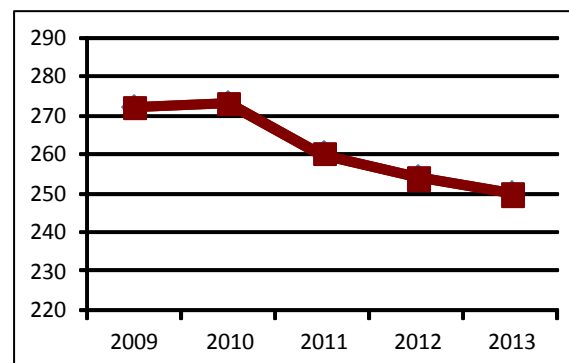
Source: Hatboro-Horsham School District

FIGURE 44: Housing Activity Within Pennypack ES Boundary Area

Year	New Units Built	Existing Units Sold			
	Total	SFD	SFA	MF	Total
2009	12	32	0	0	32
2010	22	26	1	0	27
2011	34	31	0	0	31
2012	23	45	1	0	46
2013	40	33	0	1	34
Total	131	167	2	1	170

Source: Montgomery County Planning Commission

FIGURE 45: Pennypack ES Enrollment



Simmons Elementary School

Until 2011, some kindergarten classes in the Simmons ES area attended the former Limekiln-Simmons Elementary School, which has since been closed. The numbers in the charts below reflect all grade level students in the Simmons area regardless of which school was attended within the area.

It is difficult to assess the recent enrollment trends for this area due to the change in facilities. The numbers show strong overall declines, especially in the kindergarten and first grade classes of the last

three years. In addition, the area is within Horsham Township, which has declined in birth activity over the last four years compared to the district as a whole.

Housing sales in the area have been fairly consistent over the last five years, although a spike in detached housing sales occurred in 2012. There have been a handful of new detached units constructed each year, but an important new development of large detached singles began in 2013—the Horsham Valley Estates. This development already has 26 homes built, which began in 2013, and a total of 94 units are expected when the development is finished in the next two

years. At least 72 additional public school students are expected from the development.

Forecast

The smaller early grade classes at Simmons indicate that enrollment will continue to decline without any other factors. Slower birth activity will also further limit kindergarten classes in the near future.

However, the Horsham Valley Estates could counter some of these declines. Overall, enrollment is still expected to decline, but much less than it would without new development. The school is expected to have between 725 and 750 students by the 2018-19 school year.

FIGURE 46: Simmons Elementary School Enrollment by Grade, 2007-2013

Year	K	1	2	3	4	5	Total	Annual Change
2007-08	127	160	158	151	191	168	955	
2008-09	147	140	160	156	151	187	941	-14
2009-10	128	143	140	168	155	154	888	-53
2010-11	113	148	146	149	167	152	875	-13
2011-12	96	133	149	145	152	165	840	-35
2012-13	90	116	133	157	146	154	796	-44
2013-14	98	107	117	139	159	145	765	-31

Source: Hatboro-Horsham School District

FIGURE 47: Housing Activity Within Simmons ES Boundary Area

Year	New Units Built	Existing Units Sold			
	Total	SFD	SFA	MF	Total
2009	2	63	19	0	82
2010	5	88	20	0	108
2011	2	72	25	0	97
2012	5	104	24	0	128
2013	18	80	21	0	101
Total	32	407	109	0	516

Source: Montgomery County Planning Commission

FIGURE 48: Simmons ES Enrollment

