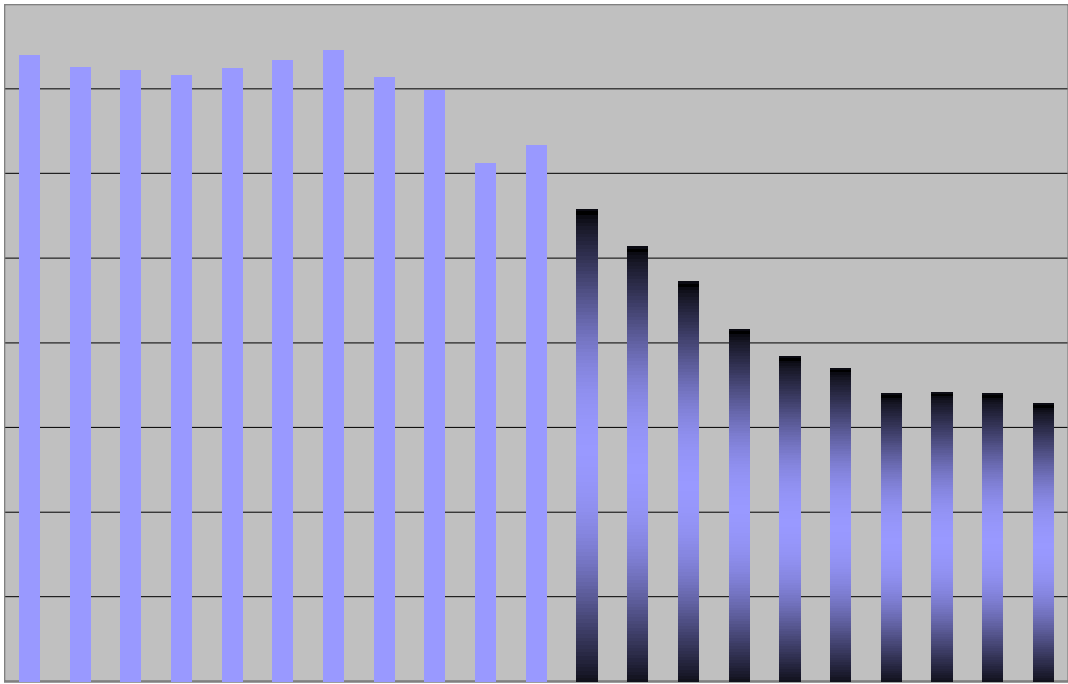


# BARKHAMSTED ELEMENTARY SCHOOL ENROLLMENT PROJECTED TO 2024



Peter M. Prowda, PhD  
28 Old Mill Court  
Simsbury, CT 06070  
(860) 658-9919  
[peteprowda@yahoo.com](mailto:peteprowda@yahoo.com)

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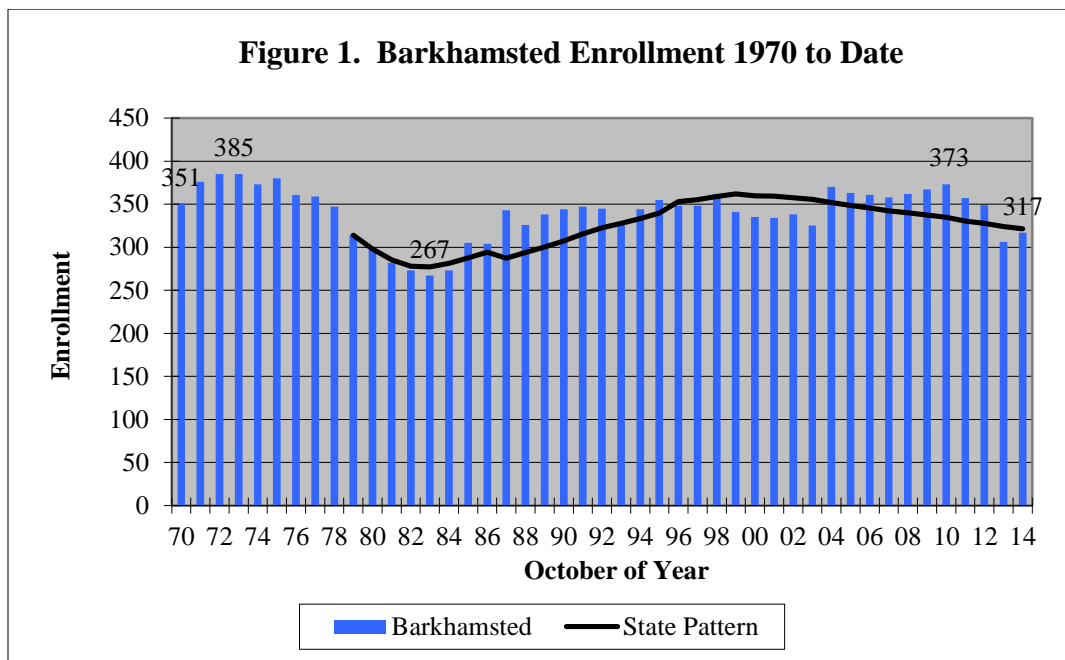
## Introduction

This report is a ten-year projection of enrollment for the Barkhamsted Elementary School. It is based on students attending the school in October of the school year. The report includes 45 years of enrollment to place the projection into a wider historical perspective. One of the primary drivers of future enrollment is births to residents. The report examines births and their relationship to kindergarten enrollment. Several factors that influence school enrollment - town population, women of child-bearing age, housing, migration, non-public enrollment and resident enrollment in other public schools - are presented. Finally, the accuracy of earlier projections is examined.

Enrollment projections are a valuable planning tool. For budgeting the numbers can place requested expenditures into a per pupil context. This can inform the public about which expenditures represent continuing expenditures to support on-going programs and expenditures for school improvement and program expansion. They are an essential step in determining the staffing that will be needed in the future. This may facilitate the transfer of teachers from one grade to another or allow the hiring process to start earlier, which can increase the likelihood of attracting the best teachers in the marketplace. Projections are a critical and required step in planning for school facilities. The State of Connecticut requires eight-year projections by school as a critical component of determining the size of the project for which reimbursement is eligible. This projection is appropriate for that purpose.

## Perspective

Enrollment projections typically use the most recent five years of data. While the most recent past is viewed as the best predictor of the near future, it is informative to look at a broader perspective. Figure 1 shows the enrollment in the Barkhamsted Elementary School from 1970 to date.



Enrollment at the Barkhamsted Elementary School peaked at 385 students in 1972 and 1973. Between 1973 and 1983, enrollment fell to 267 students. In those 10 years, enrollment declined by 118 students or 30.6 percent. Between 1983 and 2010 enrollment grew by 106 students, or 39.7 percent, and reached a secondary peak of 373 students. The 2014 enrollment was 317 students, 56 students (15.0 percent) below the 2010 level.

Barkhamsted's enrollment pattern is somewhat similar to that of the state's public schools in grades K-6. I have tracked public school K-6 enrollment since 1979. Public school K-6 enrollment bottomed in 1983, the same year as Barkhamsted. It reached a secondary peak in 1999. In those 16 years, state K-6 enrollment grew by 30.6 percent. Barkhamsted's period of growth was much longer than the state's, and somewhat greater magnitude. The state's public school K-6 enrollment has been declining for 14 years and it is expected to decline in 2014. Between 1999 and 2014, I project that it fell by 11.2 percent. Although Barkhamsted started the second downturn later than the state, the magnitude of the district's decline has been greater than the state's. Had Barkhamsted followed the state pattern of enrollment since 1979, it would have had 321 students in October of 2014 instead of the 317 that were enrolled on that date.

### Current Enrollment

Table 1 and Figure 2 provide a picture of where Barkhamsted residents in grades PK-6 attended school in October of 2013, the latest data available. They show that 92.3 percent of Barkhamsted's elementary school-age residents attended Barkhamsted Elementary School in 2013. A little over five percent of the school-age residents attended non-public schools in state. Other school-age residents attended magnet schools (1.5 percent) or public schools in other districts (0.9 percent). The state discontinued the collection of the number home schooled in 2013. In 2012, the last year the data were collected, you reported four students were home-schooled. There were five non-residents enrolled in the Barkhamsted Elementary School in 2013. The projections in this report are based off the 317 students who attended the Barkhamsted Elementary School in October, 2014. This is equivalent to the "Total Enrollment" count of 306 in 2013.

<b>Table 1. 2013 Enrollment</b>		
	Number	Percent
<b>Residents</b>		
A. Barkhamsted Public	301	92.3%
B. Other Public	3	0.9%
C. Magnets	5	1.5%
D. Non-Public	17	5.2%
<b>Total (A+B+C+D)</b>	326	
E. Non-Residents	5	
<b>Total Enrollment (A+E)</b>	306	

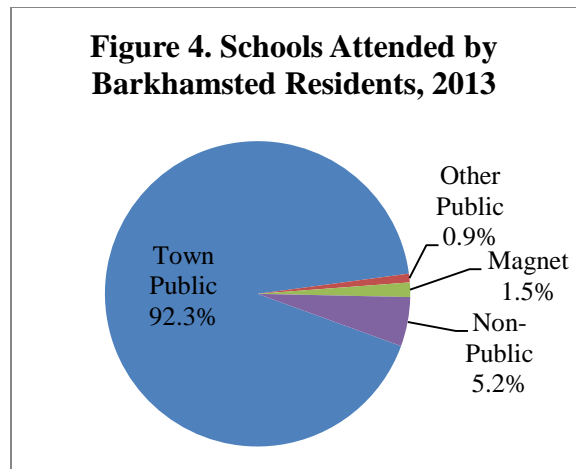
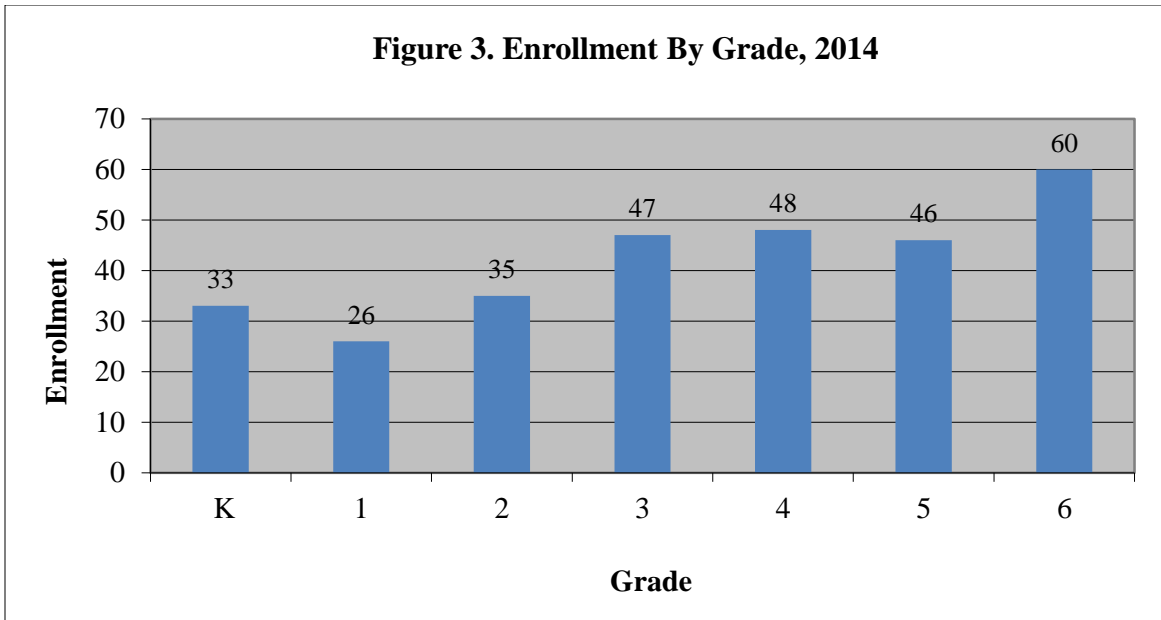


Figure 3 shows the October 2014 grade-by-grade enrollment of students in the Barkhamsted Elementary School. The children in pre-kindergarten programs are not shown. Grade 6 had the largest enrollment with 60 students. Grades 3 through 5 averaged 47 students. Grade 1 was the smallest class with only 26



students. Kindergarten had 33 students and Grade 2 had 35. If current conditions continue, this year's Kindergarten class will have 36 students when it enters Grade 6 in 2020. That is well below the current enrollment for that grade. The current year enrollment by grade is the starting point for this projection. How it moves forward is discussed below.

### Projection Method

The projections in this report were generated using the cohort survival method. This is the standard method used by people running enrollment projections. For the grades above kindergarten, I compute grade-to-grade growth rates for ten years (see Appendix B). For example, if the number of fifth graders this year is 41 and the number of fourth graders last year was 40, then the growth rate is 1.025. A growth rate above 1.000 indicates that students moved in, transferred from a non-public school or they were retained. A growth rate below 1.000 means that students moved out, transferred or were not promoted from the prior grade. For each grade I calculate four different averages of the annual growth rates: a three-year average, a weighted three-year average, a five-year average and a weighted five-year average. I choose the average that seems to best fit the data. The average growth rate for a grade is applied to the current enrollment from the prior grade. The projection builds grade by grade and year by year.

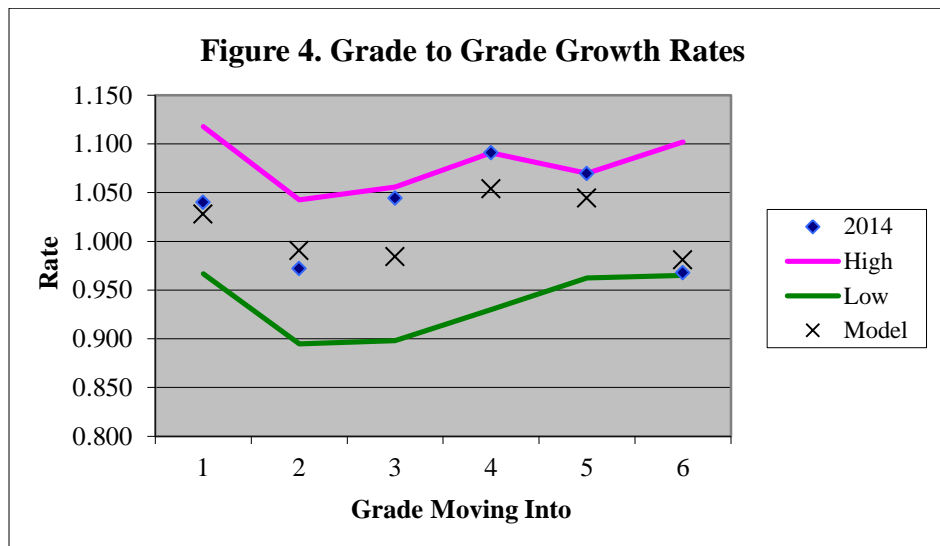
In the standard model, kindergarten enrollment is compared to births five years prior and some average of the observed growth or decline is used to project future kindergarten enrollment. My method breaks kindergarten enrollment into three parts: five-year olds, six-year olds entering kindergarten for the first time, and six-year old repeaters. Each component is analyzed separately and then combined to get total projected kindergarten. Kindergarten enrollment is very difficult to predict. I feel that this component model can improve the predictability slightly.

To extend the projection beyond four years, I need to estimate births. The State Department of Public Health recorded 18 births in 2011. That is the latest official count. The preliminary counts for 2012 and 2013 are 25 and 19 births, respectively. In 2014, there were only 13 in-state births recorded through August compared to 16 for the same period in 2013. From this I estimated there would be 18 births in 2014 by adding the average of births in September to December in 2012 and 2013 and the average out-of-

state births in those years. I estimated the 2012 fertility rates from similar districts (DRG C) by taking the 2010 rates and multiplying them by the percentage change in the Center for Disease Control's (CDC) estimate of fertility rates in Connecticut in 2012 and 2010. They have reported a decline in rates. I applied the estimated 2012 DRG C rates to the Connecticut State Data Center's projection of women of child-bearing age in 2015 to project 17 births in 2015. I projected births in 2015 and 2020, calculated the projected growth in the interval, annualized it and applied it to the prior year's births in Barkhamsted starting with 2015.

Figure 4 gives a perspective of the grade-to-grade growth rates for students attending the Barkhamsted schools. An "x" indicates the average growth rate used in this projection. The diamond is the growth observed between last year and this year. The upper line indicates the largest growth rate observed over the past ten years and the lower line, the lowest. In general, the narrower the gap between the two lines is, the greater the accuracy of the projection. The growth rates used in the projection were based on a weighted three-year average of the observed grade-to-grade growth. This was the highest of the four averages I calculated.

Most model growth rates are toward the middle or upper end of the ten-year range. Grade 6 is the exception. Three of the elementary growth rates are above 1.00 indicating a balance between families moving into and out of Barkhamsted. Three of the 2014 grade-to-grade growth rates - grades 3, 4 and 5 - were at or close to ten-year highs. These pulled the model growth rates upward. Most of the model growth rates were very close to the annual rates in 2014. Grade 3 was the exception. The average growth rate across grades 1-6 used for the projection was 1.014. The rate in 2014 was a relatively high 1.031; the median rate over the past 20 years was 1.020.



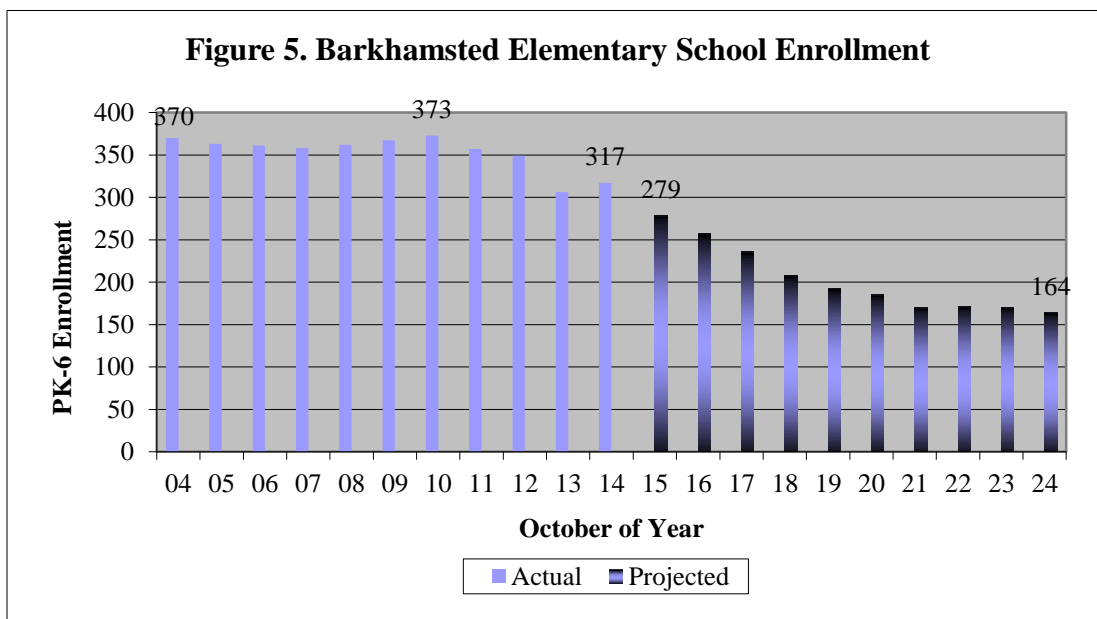
Enrollment data from 2003 to 2013 were taken from the files of the Connecticut State Department of Education. The public school data are available on the Department's website at [www.sde.ct.gov](http://www.sde.ct.gov). Data for 2014 were provided by the Barkhamsted central office. All enrollment data after 2011 are subject to minor changes as they are reviewed and audited. Births from 1980 to 2014 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.

## Barkhamsted Elementary School Enrollment

Table 2 and Figure 5 present the observed total enrollment in Barkhamsted from 2004 to 2014 and projected enrollment through 2024. Detailed grade-by-grade data may be found in Appendix A. Enrollment inched upward from 370 students in 2004 to 373 students in 2010. That was the highest level since 1975. Enrollment then went through three years of decline that took it down to 306 students in 2013. In 2014, enrollment rebounded to 317 students. Between 2004 and 2014 there was a loss of 53 students or 14.3 percent. Statewide in that period, grade K-6 enrollment is projected to have decreased by 8.7 percent. Barkhamsted's decline of 5.8 percent between 2003 and 2013 (the latest comparable data available) was among the smallest of similar districts in the region. Only Canton (+1.9 percent) gained enrollment in that period. Steeper declines were recorded in grades PK-6 in Region 14 (-7.6 percent), Suffield (-10.8 percent), Region 12 (-13.0 percent), New Hartford (-14.6 percent), Region 10 (-14.6 percent), Oxford (-21.7 percent), Sherman (-28.5 percent) and Cornwall (-33.6 percent).

I anticipate that enrollment will decline for the next several years. Next year, I anticipate that total enrollment will fall to 279 students as this year's large 6<sup>th</sup> grade class of 60 students exits and a kindergarten class expected to be fewer than 20 students enters. That will be the peak eight-year enrollment for school construction purposes. In 2024, I expect the enrollment will be about 165 students. The total ten-year projected decline of about 150 students is about 48 percent below the current enrollment. I have projected that K-6 enrollment statewide will be down almost 12.3 percent in that period. Your total enrollment should average 203 students over the ten-year projection period. This compares to an average total enrollment of 351 students over the past ten years.

Year	Students	Percent Change
2004	370	
2005	363	-1.9%
2006	361	-0.6%
2007	358	-0.8%
2008	362	1.1%
2009	367	1.4%
2010	373	1.6%
2011	357	-4.3%
2012	349	-2.2%
2013	306	-12.3%
2014	317	3.6%
2015	279	-12.0%
2016	257	-7.9%
2017	236	-8.2%
2018	208	-11.9%
2019	192	-7.7%
2020	185	-3.6%
2021	170	-8.1%
2022	171	0.6%
2023	170	-0.6%
2024	164	-3.5%



## Factors Affecting the Projection

The primary reasons for elementary enrollment change lie in the births and yield from the birth cohort. Figure 6 presents the official birth counts from 1980 to 2011 and preliminary, estimated and projected births through 2019. Births ranged from a low of 16 in 2010 to a high of 51 in 1986. There were 18 births in 2011, the last official count. The preliminary counts of births are 25 in 2012 and 19 in 2013. Based on births through August of 2014, I estimate there will be only 18 births in 2014. In the 1990s there was an average of 43 births annually. In the five years from 2005 to 2009 (this fall's kindergarten through 4<sup>th</sup> graders) births averaged 32. Births in the 2010 through 2014 period will likely average 19. The projection in years 2020 to 2024 assumes an average of 18 births annually between 2015 and 2019. This is based in part upon the Connecticut State Data Center projection of Barkhamsted women of child-bearing ages.

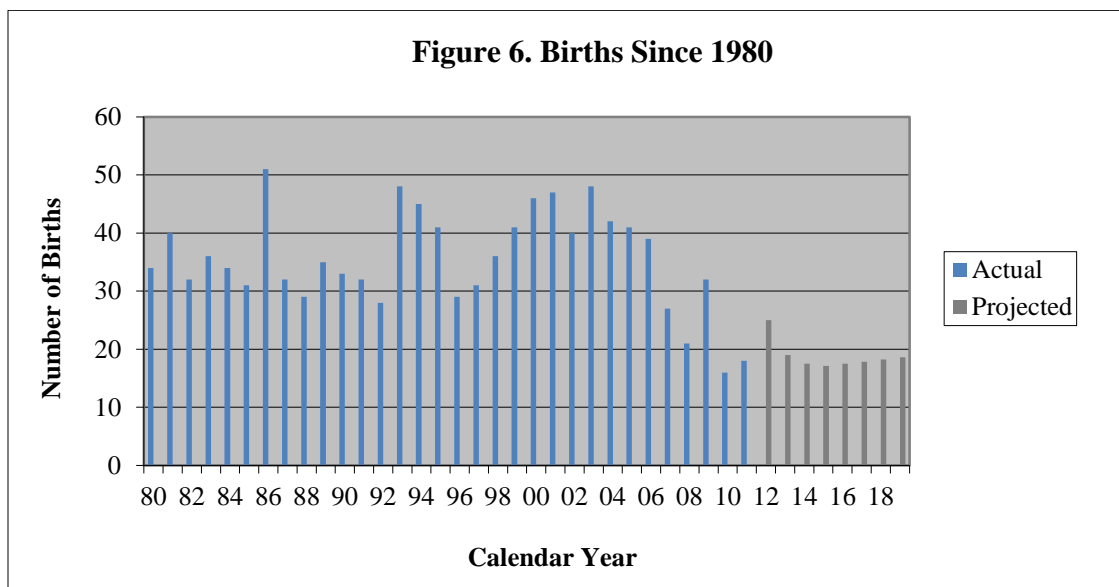
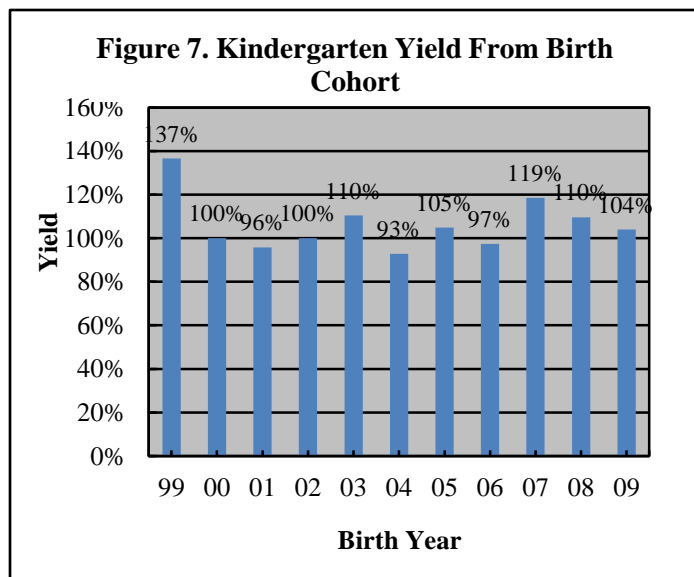


Figure 7 depicts the kindergarten yield five and six years later from the birth cohorts of 1999 to 2009 for Barkhamsted residents attending kindergarten in Barkhamsted. For example, there were 21 births in 2008 and 22 children enrolled in Barkhamsted kindergarten at age five in 2013 and 2 who first enrolled in kindergarten at age six in 2014. That is a yield of 110 percent. The yield from the birth cohort ranged from a low 93 percent in 2004 to a high of 137 percent in 1999. The estimated yield for births in 2009 is 104 percent. Note that 2009 yield is an estimate because we will not know the actual number of children who will enter kindergarten for the first time as six-year





olds until October 2015. Yields above 100 percent generally mean that parents move into town after giving birth elsewhere. Yields below 100 percent mean that families who gave birth as town residents left town or chose another school system for kindergarten. The average yield over the past two years, when full-day kindergarten was in effect, was 106.7 percent along with a 0.0 percent retention rate.

Table 5 gives a history of enrollment in kindergarten since 2004 and relates the components of kindergarten enrollment back to the appropriate birth cohort. Retention is tied to the prior year's kindergarten enrollment. To estimate kindergarten enrollment, I used the two-year average of retentions, and yields from births five and six years ago. Full-day kindergarten was adopted in 2013. I estimated kindergarten from 98.1 percent of births five years ago, 6.3 percent of births six years ago, and 0.0 percent of current Kindergarten students retained. The two-year average is very close to the estimated level of 2014.

<b>Table 3. Analysis of Kindergarten Enrollment</b>												
Year	Birth Year	Births	K	Retained From Prior Year				Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort		
				Retained From Prior Year	Non-Resident Born 5-Years Prior	Non-Resident	Non-Resident Born 6 Years Prior					
2004	1999	41	60	1	49	0	10	2.5%	119.5%	27.8%	136.6%	
2005	2000	46	51	4	40	0	7	6.7%	87.0%	17.1%	100.0%	
2006	2001	47	52	2	44	0	6	3.9%	93.6%	13.0%	95.7%	
2007	2002	40	42	3	30	0	1	5.8%	75.0%	2.1%	100.0%	
2008	2003	48	36	2	45	0	10	4.8%	93.8%	25.0%	110.4%	
2009	2004	42	22	1	33	0	8	2.8%	78.6%	16.7%	92.9%	
2010	2005	41	33	2	41	0	6	9.1%	100.0%	14.3%	104.9%	
2011	2006	39	42	3	37	0	2	9.1%	94.9%	4.9%	97.4%	
2012	2007	27	36	4	31	0	1	9.5%	114.8%	2.6%	118.5%	
2013	2008	21	22	0	21	0	1	0.0%	100.0%	3.7%	109.5%	
2014	2009	32	33	0	31	0	2	0.0%	96.9%	9.5%	103.9%	
<b>3-Year Average</b>								4.0%	103.8%	4.6%	110.7%	
<b>Weighted 3-Year Average</b>								1.6%	100.9%	6.4%	108.2%	
<b>5-Year Average</b>								5.8%	100.6%	7.1%	106.9%	
<b>Weighted 5-Year Average</b>								3.7%	101.2%	6.3%	107.5%	
<b>2-Year Average</b>								<b>0.0%</b>	<b>98.1%</b>	<b>6.3%</b>	<b>106.7%</b>	

The correlation between births and kindergarten enrollment five-year later was a low 0.60 over the 1980 to 2014 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of five children annually over the past ten years. The cohort survival method, even with my breakout into five-year olds, six-year old delayed entrants and children retained, cannot overcome the underlying unpredictability of kindergarten enrollment from earlier births.

Public Act 14-39 requires that the Office of Early Childhood develop a plan by June 30, 2015 to change the age eligible to start kindergarten from January of the school year to October and to create spaces in public and private child readiness programs for the students affected by the change. The earliest this plan could be implemented would seem to be the 2016-17 school year. Whatever form the plan takes, it would reduce the size of your kindergarten class in October, 2016 and possibly increase your pre-kindergarten enrollment in that year. This change is not built into this projection, but will be built into future projections once the plan is formalized.

## Context of the Projection

The cohort-survival method needs only births and a few years of recent enrollment data to generate a projection. Mathematically, nothing else matters. But enrollment changes do not occur in a vacuum. Events and policies in the district, community and region all have some bearing on enrollment. Remember that a basic assumption of the cohort-survival method is that the recent past can be a good predictor of the near future. It is incumbent for every receiver of a projection to determine what events happened in the past five years and whether they are likely to change. Analyzing how the factors underlying the projection changed in the prior year can be an important step in this process.

To assist in this endeavor, this report examines eight factors that could affect enrollment: town population, women of child-bearing age; people in the labor market; new home construction; sales of existing homes; non-public enrollment; resident enrollment in other public schools and student migration.

Figure 8 presents the US Census Bureau estimate of Barkhamsted population growth between July, 2010 and 2013. In those three years, they estimated the town population decreased by 51 people. The population loss of 1.34 percent was the 152nd ranked in the state. In contrast, Litchfield County declined by 1.49 percent, the state grew by 0.58 percent and communities with similar economic and need characteristics declined by 0.43 percent. The 2010 census population data show that from April 2000 to April 2010 Barkhamsted's population grew from 3,494 people to 3,799. The 305-person growth was the second smallest in the past six decades. The 8.7 percent increase between 2000 and 2010 was the 143rd largest in the state.

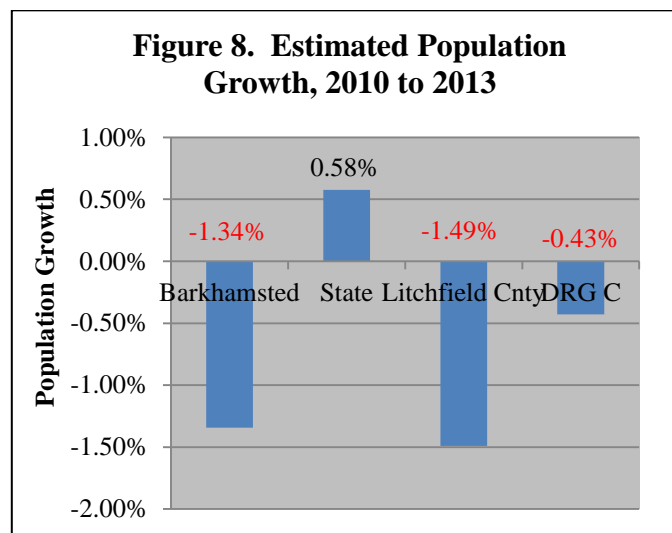


Figure 9 presents the number of women of child-bearing age from the 2000 and 2010 censuses and projected in 2015. There were 46 births to Barkhamsted residents in 2000 and 16 in 2010. In communities such as yours, women in the 30-34 age group have the highest rate of births. The number of women in this group fell from 134 in 2000 to 78 in 2010 and is projected to decline further in 2015. The second highest birth rate in communities like yours is women ages 25-29. The number in that age range fell from 75 in 2000 to 42 in 2010 and is projected to decline significantly. The only age ranges that increased were 15-19 and 20 to 24. These age ranges typically have low birth rates in communities like yours.

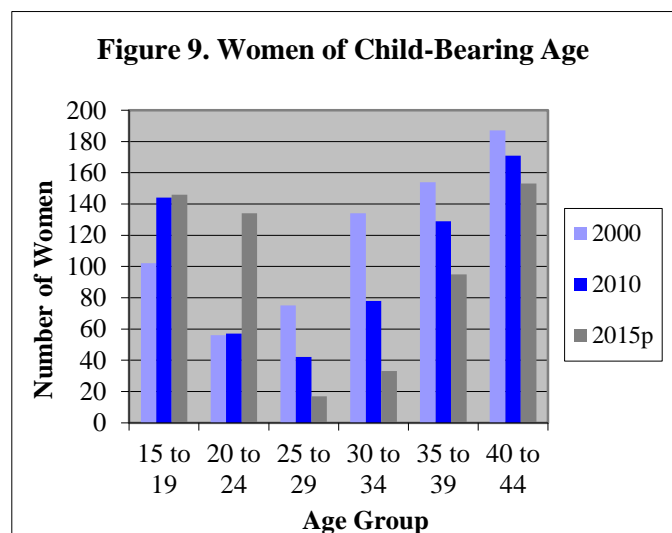


Figure 10 examines the number of people in the labor market from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older working or actively seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Barkhamsted labor force decreased 3.2 percent between 2009 and 2013. This was worse than the state (-1.9 percent) but similar to Litchfield County (-3.1 percent). The 2013 unemployment level of 6.5 percent was down from the 9.3 percent recent high set in 2010. It is below the state rate of 7.8 percent and the Litchfield County rate of 7.2 percent.

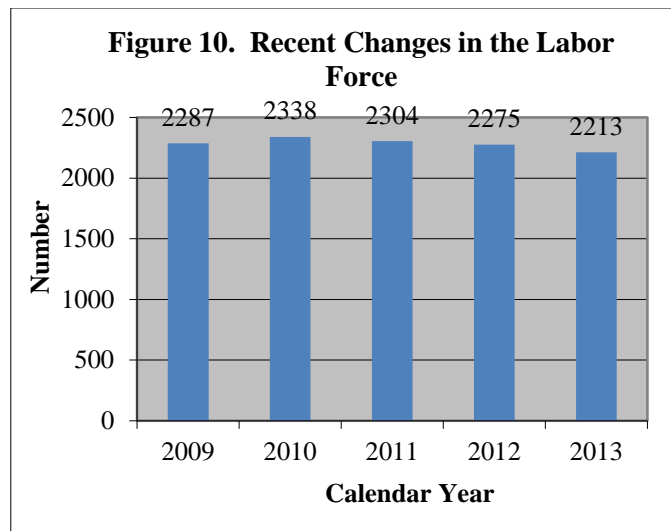


Figure 11 presents the net new housing units constructed from 2003 to 2013 from the State Department of Economic and Community Development. In the past ten years the number of net (of demolitions) new housing units constructed in Barkhamsted ranged from a high 17 in 2004 down to a low of zero in 2012. There were permits for one new housing unit issued in 2013. In the three-year look-back period for this projection, there was an average of one net new housing unit constructed. The 2010 census indicated that Barkhamsted had 1,589 housing units of which 91.4 percent were occupied in April 2010. There was an average of 2.62 people per household and 33.5 percent of household had a child under 18.

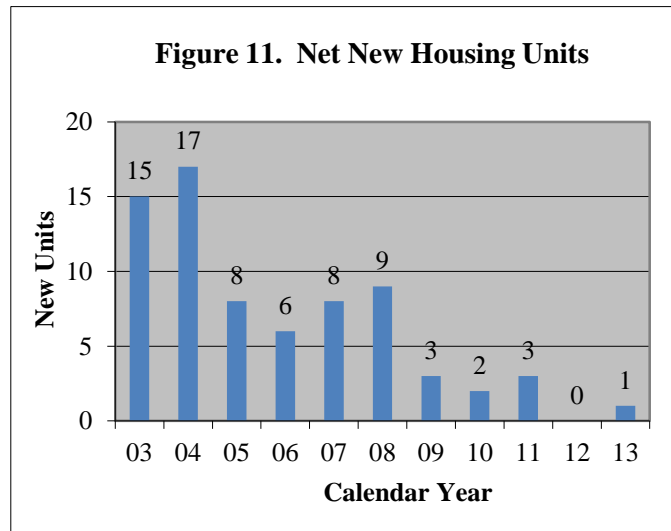


Figure 12 presents my estimate of the number of sales of existing homes. I derived it by taking the number of real estate transactions from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized. This is an estimate because of the lag between the time a new house is authorized and it is sold. The estimated number of sales of existing homes ranged from a low of 26 in 2011 to a high of 68 in 2003. There were 36 existing houses sold in 2013. In the three-year look back period for the projection, there were 33 sales annually. Based on sales through August, I anticipate there will be about 50 sales of existing houses in 2014.

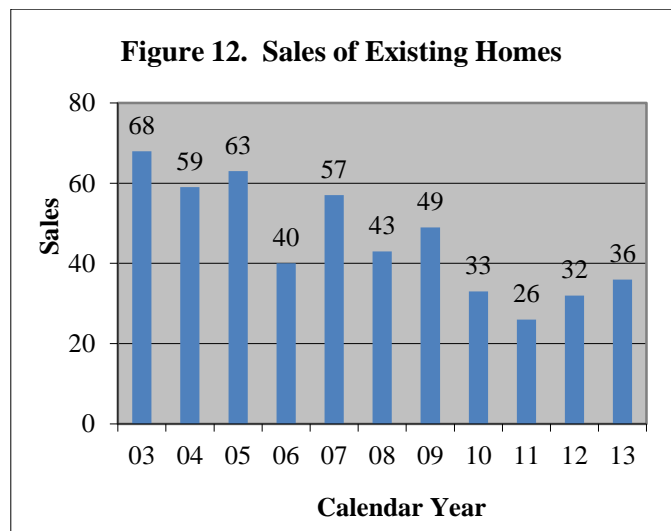


Figure 13 presents the non-public enrollment in grades PK-6 over the past ten years for students from the town of Barkhamsted. The data are from the records of the Connecticut State Department of Education. Non-public enrollment ranged from a high of 28 students in 2003 to a low of 15 students in 2012. There were 17 students enrolled in 2013. In the past ten years, enrollment in the non-public schools decreased by 11 students or 39.3 percent. The 2013 enrollment represented 4.8 percent of all PK-6 students from Barkhamsted. That is down from the 7.9 percent recent high recorded in 2003. I expect the non-public enrollment from Barkhamsted will be down slightly in 2014.

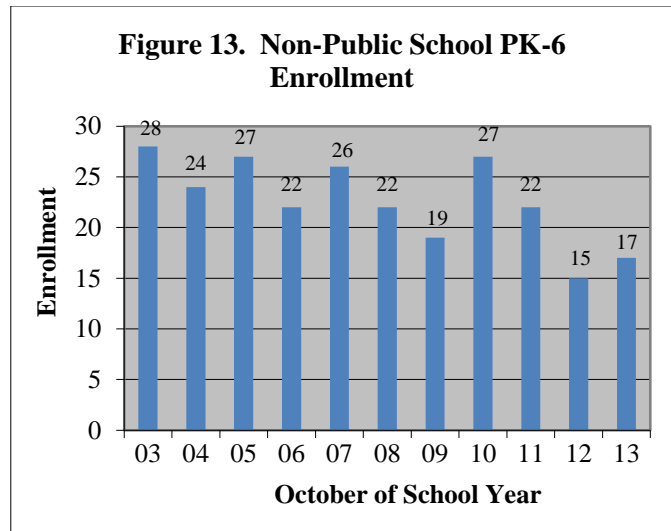


Figure 14 presents the enrollment of Barkhamsted residents in other public schools in Connecticut in grades PK-6 from 2004 to 2014. The number educated out-of-district ranged from one in 2004 to eight in 2013. In 2014, the district reported a total of five. This included two students at the Reggio magnet in Avon, one at a Hartford magnet, one at the University of Hartford magnet and one at the Bridges II program in New Hartford.

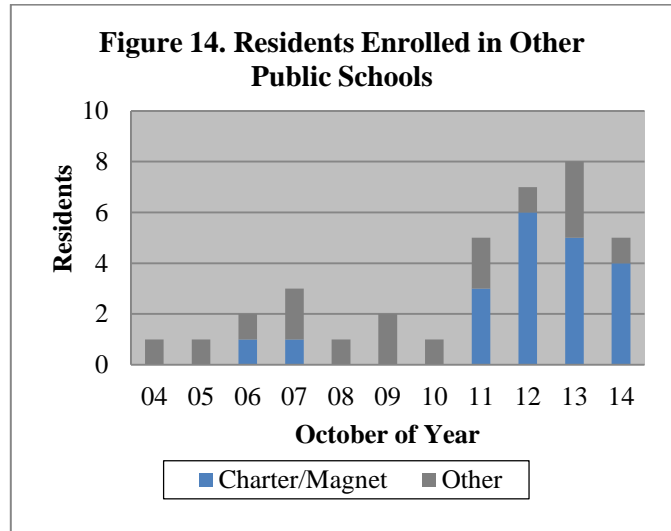
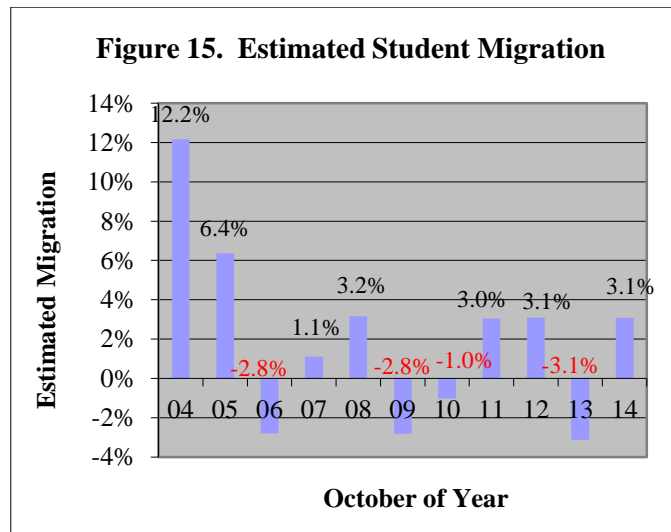


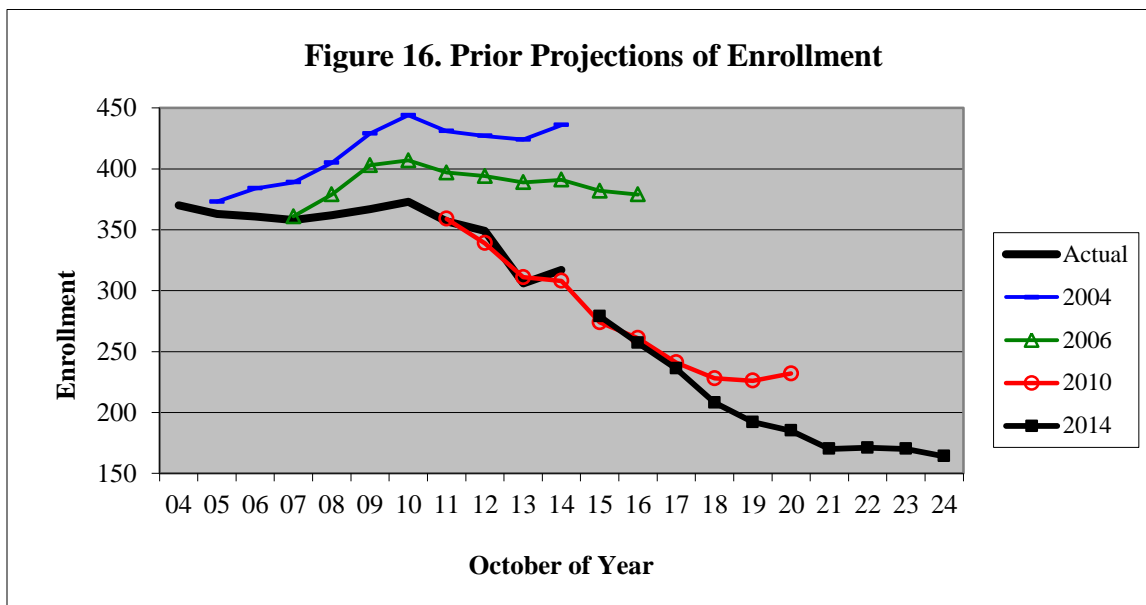
Figure 15 presents the estimated migration of students from Barkhamsted. Estimated migration ranged from a low of -3.1 percent in 2013 to a high of +12.2 percent in 2004. The rate in 2014 was 3.1 percent. The data behind these figures may be found in Appendix B. The projection assumes an average migration of + 1.01 percent. In the past 25 years, 14 of the three-year averages of migration surpassed this figure. The median three-year migration rate is 1.45 percent over the past 25 years. If migration returns to previous levels, then this projection will be a little low.



## Prior Projections of Enrollment

The cohort-survival projection method works by moving forward the pattern of recent events that are subsumed within the grade-by-grade enrollment. This works very well when communities are stable. That includes places that are growing or declining at a steady rate. One way to know if that assumption is valid is to examine how past projections have fared. Figure 16 presents the enrollment projections that I have run for Barkhamsted since 2004. The three enrollment projections that I did between 2004 and 2012 had one-year error rates that averaged 1.4 percent. The two projections done between 2004 and 2009 had an average five-year error rate of 14.0 percent, which is 2.7 percent annualized.

My 2010 projection for Barkhamsted is running 2.8 percent low after four years. In that analysis, I projected that K-6 enrollment would be 278 students in 2014. The actual enrollment of 295 was 17 students more than projected. The projection was low by 5.8 percent over four years, which is an annual rate of 1.5 percent. The 2010 projection kept pre-kindergarten enrollment at the 2010 level of 30 children. There were 22 children enrolled in the program in 2014.



In my work I have found the cohort-survival method provides estimates that are sufficiently accurate for intermediate-range policy planning. The eight-year planning horizon for school construction grants is at the limit of the useful accuracy of the method. I analyzed the eight-year accuracy of the district projections from across the state that I ran in 2004. I found for the 67 district-level projections that I ran in 2004 the median projection was 5.5 high in predicting 2012 enrollment. That is an annual error rate of 0.7 percent. The absolute error rate (regardless of whether it was high or low) averaged 8.6 percent. That error was less than five percent in 46 percent of the projections and more than 15 percent in 15 percent of the projections. Among the 87 elementary projections run, the median projection was 9.5 percent high (1.1 percent annually). This illustrates what an economic downturn can do to projections run with the cohort-survival method.

## Summary

There were 317 students enrolled at Barkhamsted Elementary School in October 2014. Next year, I anticipate that total enrollment will fall to 279 students as this year's large 6<sup>th</sup> grade class exits and a small kindergarten class enters. That will be the peak eight-year enrollment for school construction purposes. In 2024, I expect the enrollment will be about 165 students. The total ten-year projected decline of about 150 students is about 48 percent below the current enrollment. Your total enrollment should average 203 students over the ten-year projection period.

This report is projecting a large decline in enrollment. It is critical to remember that a projection is just a moving forward of recent trends. Is the forecast realistic? In the five years from 2005 to 2009 (this fall's kindergarten through 4<sup>th</sup> graders) births averaged 32. Births in the 2010 through 2014 period will average 19. This 41 percent decline in births, which except for the last half of 2014 has already happened, supports the decline. My calculation of 17 births in 2015 was based in part on the Connecticut State Data Center projection of Barkhamsted women of child-bearing age in 2015. Their model projects only 50 women in the 25-34 age range. Although that number seems small to me, their model did project that age range fairly well in the past. My kindergarten model expects a small 6.7 percent growth between births and eventual kindergarten enrollment. You did not get an expected bump from the introduction of full-day kindergarten in 2013. The median growth over the past 17 years was only 4.9 percent. The average of the grade-to-grade growth rates across grades 1-6 that I used to grow future enrollment was 1.014. The annual growth rate averaged a high 1.031 in 2014 and the median over the last 20 years was 1.020. Taking these three key factors into consideration, I consider the projection neither overly optimistic nor pessimistic in the short term. When we get five-years out, I believe the factors favor enrollment coming in slightly higher than projected.

These projections are based upon several key assumptions revolving around the notion that the recent past is a good predictor of the near future. The projection assumes that the following school policies will continue: kindergarten will remain full-day, retention policies will not change, continued small enrollment of Barkhamsted residents in regional magnet schools and continued enrollment in other regional towns in your pre-kindergarten program. The projection assumes the following population growth factors will not change appreciably: births will average 18 over the 2015 to 2019 period, a 6.7 percent growth between the number of births and kindergarten enrollment and a student migration of +1.01 percent. Additionally, 5.3 percent of parents will start their children in kindergarten at age six (or have had a special education child held in pre-school for an extra year); there will be one new housing unit constructed annually and 33 sales of existing homes.

It is important to remember that the cohort survival method relies on observed data from the recent past. Its key assumption is that those conditions will persist. It does not try to predict when the economic conditions might change. We cannot know today how long these conditions will continue. This projection should be used as a starting point for local planning. Examine the factors and assumptions underlying the method. You know your community best. Apply your knowledge of the specific conditions in Barkhamsted and then make adjustments as necessary.

**Appendix A. Barkhamsted Enrollment Projected By Grade to 2024**

School Year	Birth Year	Births <sup>1</sup>	K <sup>2</sup>	1	2	3	4	5	6	PreK	K-6	PK-6
<b>2004-05</b>	1999	41	60	47	32	43	48	49	62	29	341	370
<b>2005-06</b>	2000	46	51	58	49	32	46	51	54	22	341	363
<b>2006-07</b>	2001	47	52	53	58	44	34	45	50	25	336	361
<b>2007-08</b>	2002	40	34	57	54	57	46	33	47	30	328	358
<b>2008-09</b>	2003	48	57	38	51	57	58	46	34	21	341	362
<b>2009-10</b>	2004	42	42	61	36	49	53	57	47	22	345	367
<b>2010-11</b>	2005	41	49	43	58	35	52	51	55	30	343	373
<b>2011-12</b>	2006	39	42	50	44	59	35	55	53	19	338	357
<b>2012-13</b>	2007	27	36	44	49	43	62	37	57	21	328	349
<b>2013-14</b>	2008	21	22	36	45	44	43	62	36	18	288	306
<b>2014-15</b>	2009	32	33	26	35	47	48	46	60	22	295	317
<b>Projected</b>												
<b>2015-16</b>	2010	16	18	34	26	34	50	50	45	22	257	279
<b>2016-17</b>	2011	18	19	19	34	26	36	52	49	22	235	257
<b>2017-18</b>	2012	25	26	20	19	33	27	38	51	22	214	236
<b>2018-19</b>	2013	19	20	27	20	19	35	28	37	22	186	208
<b>2019-20</b>	2014	18	18	21	27	20	20	37	27	22	170	192
<b>2020-21</b>	2015	17	18	19	21	27	21	21	36	22	163	185
<b>2021-22</b>	2016	17	18	19	19	21	28	22	21	22	148	170
<b>2022-23</b>	2017	18	19	19	19	19	22	29	22	22	149	171
<b>2023-24</b>	2018	18	19	20	19	19	20	23	28	22	148	170
<b>2024-25</b>	2019	19	19	20	20	19	20	21	23	22	142	164

<sup>1</sup> 1999 to 2013 births from the State Department of Public Health. Births in 2012 and 2013 are preliminary. Births in 2014 were estimated from the 2014 count of in-state births through August. Births in 2015 were based on estimated 2012 town fertility rates and the Connecticut State Data Center projections of Barkhamsted women of child-bearing ages.  
<sup>2</sup> Based on two-year averages of births 5- and 6- years ago and retention.

## Appendix B. Growth from Grade-to-Grade across Years

October of Year	Grade Moved Into from Prior Year								Estimated Migration <sup>1</sup>
	K	1	2	3	4	5	6	PreK	
2005	1.109	0.967	1.043	1.000	1.070	1.063	1.102		6.36%
2006	1.106	1.039	1.000	0.898	1.063	0.978	0.980		-2.81%
2007	0.850	1.096	1.019	0.983	1.045	0.971	1.044		1.10%
2008	1.188	1.118	0.895	1.056	1.018	1.000	1.030		3.16%
2009	1.000	1.070	0.947	0.961	0.930	0.983	1.022		-2.82%
2010	1.195	1.024	0.951	0.972	1.061	0.962	0.965		-1.03%
2011	1.077	1.020	1.023	1.017	1.000	1.058	1.039		3.05%
2012	1.333	1.048	0.980	0.977	1.051	1.057	1.036		3.09%
2013	1.048	1.000	1.023	0.898	1.000	1.000	0.973		-3.13%
2014	1.031	1.040	0.972	1.044	1.091	1.070	0.968		3.08%
<b>3-Year Ave.</b>	1.137	1.029	0.992	0.973	1.047	1.042	0.992		
<b>Weighted 3-Year</b>	1.087	<b>1.028</b>	<b>0.990</b>	<b>0.984</b>	<b>1.054</b>	<b>1.044</b>	<b>0.981</b>		
<b>5-Year Ave.</b>	1.137	1.026	0.990	0.982	1.041	1.029	0.996		
<b>Weighted 5-year</b>	1.113	1.027	0.993	0.984	1.045	1.040	0.992		
<b>Enrollment Multiplier</b>		1.028	0.990	0.984	1.054	1.044	0.981		

<sup>1</sup> Adjusted for Barkhamsted residents enrolled in magnet schools.