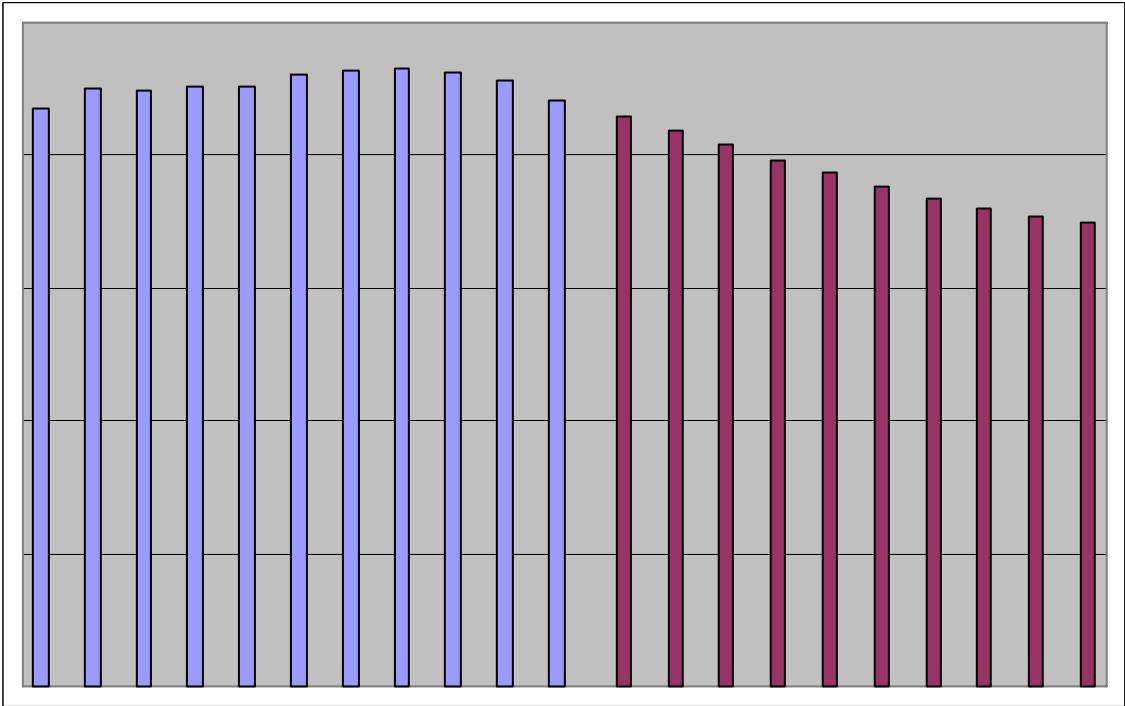


# REGION 14 PUBLIC SCHOOL ENROLLMENT PROJECTED TO 2017



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November 12, 2007

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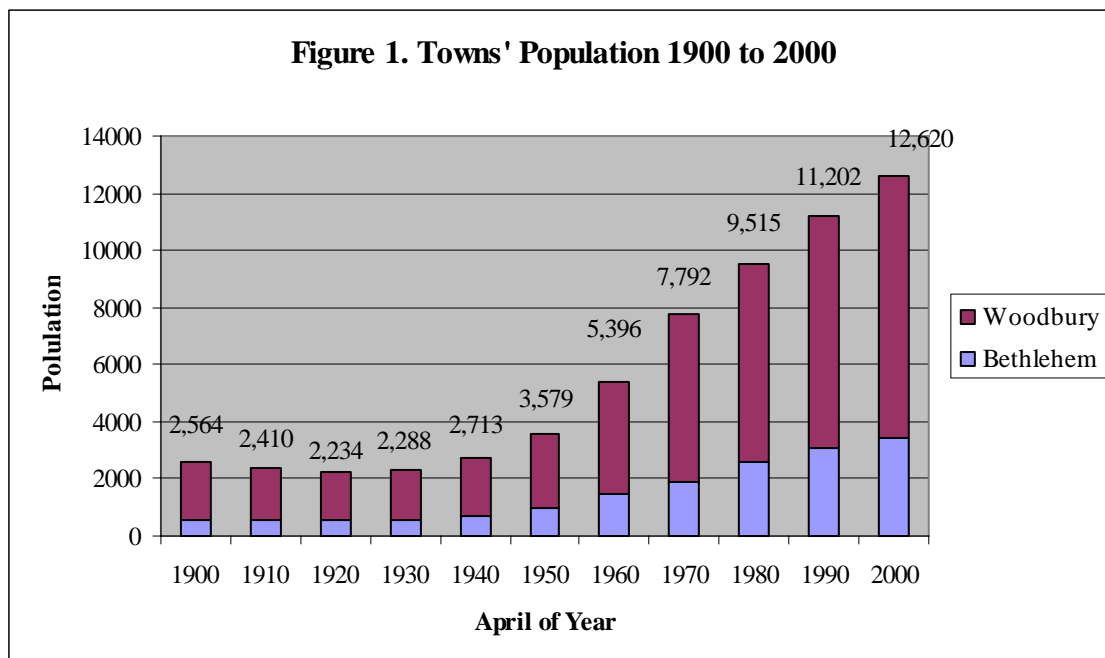
## Introduction

This report presents a ten-year projection of enrollment for the Region 14 Public Schools. It is based on residents and non-residents attending the Region 14 public schools in October of the school year. The projection is divided into the four grade levels that represent how the Region 14 schools are organized: K-2, 3-5, 6-8 and 9-12. It includes the population of the towns of Region 14 since 1900 and 37 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. Data on delayed entry into kindergarten (parent hold-outs and retentions) are provided. Several factors that influence school enrollment - housing, migration, employment, non-public enrollment, regional magnet schools and non-resident enrollment - are presented. Finally, the accuracy of earlier projections is examined.

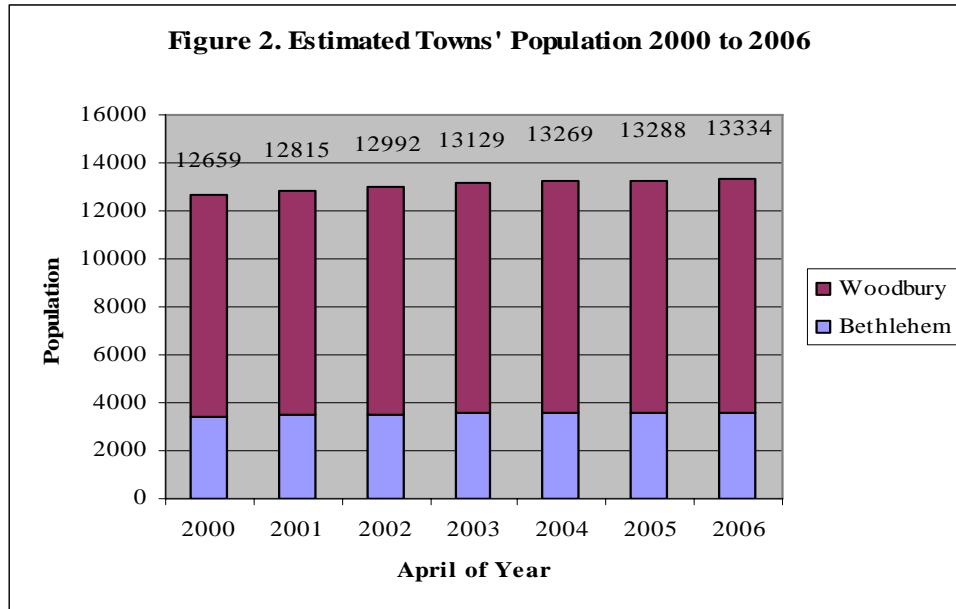
Enrollment projections are a valuable planning tool. For budgeting, the numbers can place requested expenditures into a per pupil context. This can inform the public about which expenditures represent continuing expenditures to support on-going programs and expenditures for school improvement and program 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 as a critical component of determining the size of the project for which reimbursement is eligible. In some communities the projection can determine the number of places they can make available to urban students as part of a regional desegregation effort.

## 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 population in Bethlehem and Woodbury for the censuses conducted since 1900.



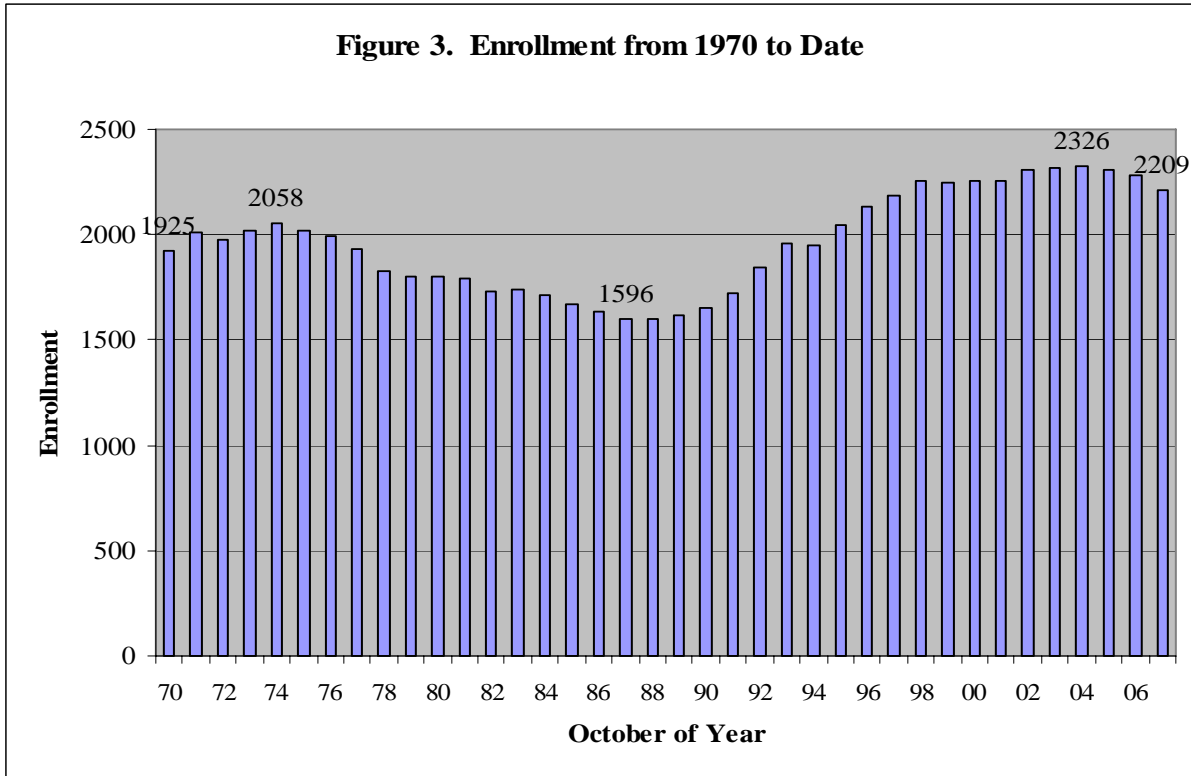
Over the past century the population of the towns of Region 14 grew from 2,564 to 12,620 residents. The 1960's were the period of greatest growth. Population increased by almost 2,400 people in that decade. In each decade since then the population growth slowed. Between 1990 and 2000, growth was 1,418 people. The Census Bureau estimates that growth is continuing. Figure 2 presents Census estimates of Region 14 population from 2000 to 2006. (The 2000 data in the two figures differ because the Census population data are as of April 1 and Census estimates are as of July 1.)



The Census Bureau estimates that the population in the towns of Region 14 grew 5.3 percent between 2000 and 2006. This contrasts to an estimated growth of 2.7 percent for the state and 4.1 percent for Litchfield County.

In recent decades, enrollment has moved in a different pattern than the towns' population. Figure 3 presents the enrollment in the Region 14 Public Schools from 1970 to date. Region 14 enrollment grew through 1974 when it reached a then peak of 2,058 students. Enrollment then went through a decline that bottomed out in 1987 at 1,596 students. Between 1974 and 1987, enrollment fell by 22.4 percent. Enrollment then went through a period of growth that took it to a peak of 2,326 students in 2004. Between 1987 and 2004, enrollment rose 45.7 percent. The 2007 enrollment of 2,209 students represents a decline of 5.0 percent from the peak. This contrasts to the statewide enrollment pattern. State enrollment peaked in 1971. Between then and 1988, enrollment declined by 31.5 percent. State enrollment hit a secondary peak in 2004. It grew 24.5 percent between the 1988 low and 2004. State enrollment declined by 1.2 percent between 2004 and 2007. While both the state and Region 14 went through periods of decline and growth, Region 14's period of decline was shallower than the state's and was of shorter duration. Its period of growth was steeper than the state's and was about the same duration. During its period of decline the steepest one-year drop in Region 14 was 5.1 percent between 1977 and 1978. During the recent period of growth, the greatest increase was 7.1 percent between 1991 and 1992. Enrollment has declined in each of the past three years. The decline was 3.2 percent between 2006 and 2007.

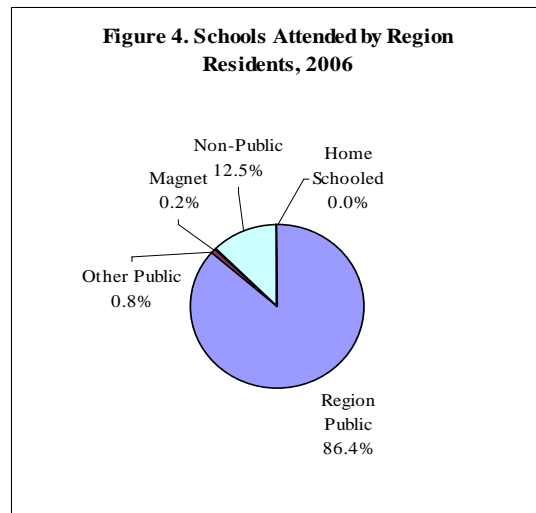
In recent years, the school population has grown at about the same rate as the town population. In 2000, the school population was 17.9 percent of the towns' population. By 2006 it declined slightly to 17.1 percent. In comparison, it was 14.7 percent in 1990 and 19.0 percent in 1980. It still is short of the 24.7 percent observed in 1970.



**Current Enrollment**

Current data on the number attending non-public schools and home-schooled are not yet available. Last year's data, however, should provide an adequate picture of where Region 14 residents attend school. Over 85 percent (86.4%) of Region 14's school-age residents attended the Region 14 public schools in 2006 (see Table 1 and Figure 4). One in eight (12.5 percent) attended non-public schools in state. The number attending prep schools out-of-state is not known. The balance of the school-age residents attended public schools in other districts (0.8%) or magnet schools (0.2%). No students were reported as being home schooled. There were 207 non-residents who attended the Region 14 Public Schools vocational agriculture program. The projections in this report are about the Region 14 residents and non-residents who attend the Region 14 Public schools. In 2007, there were 1,196 residents and 213 non-residents enrolled.

	Number	Percent
<b>Residents</b>		
A. Region 14 Public	2076	86.4%
B. Other Public	20	0.8%
C. Magnets	5	0.2%
D. Non-Public	301	12.5%
E. Home Schooled	0	0.0%
<b>Total (A+B+C+D+E)</b>	2402	
F. Non-Residents	207	
<b>Total Enrollment (A+F)</b>	2283	



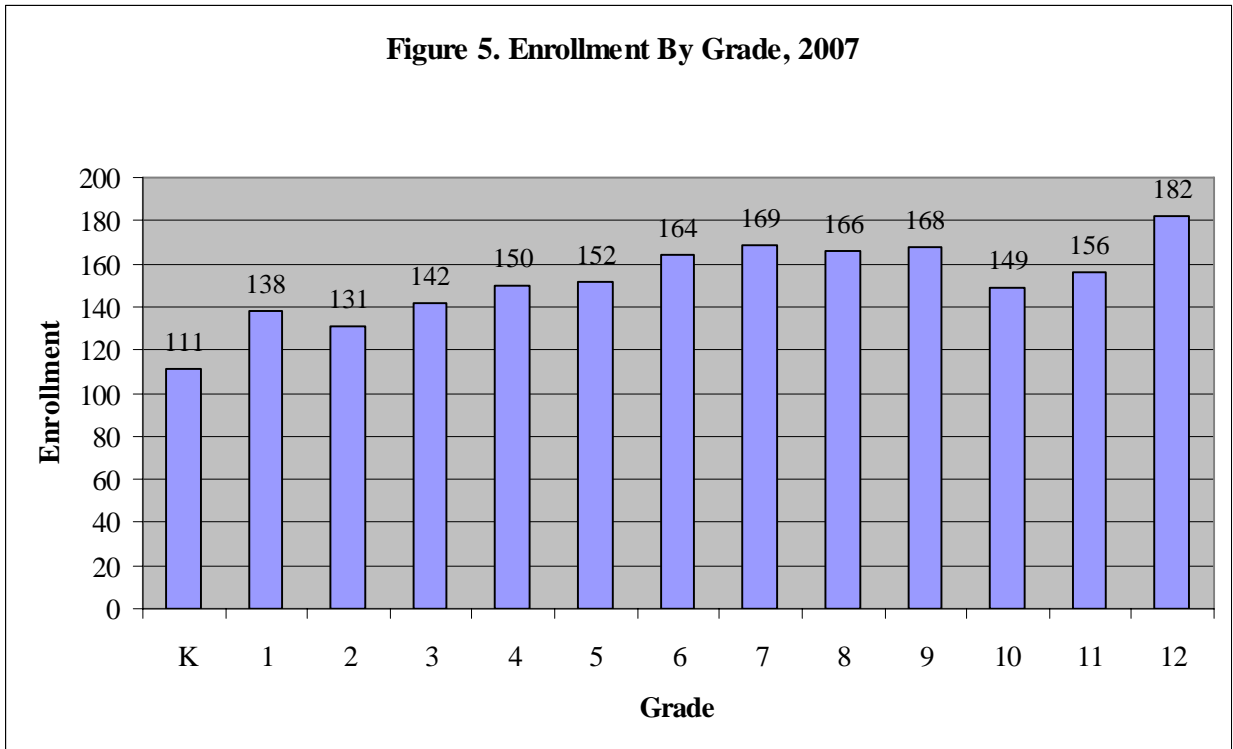


Figure 5 shows how the total enrollment of 2,209 students was disbursed through the grades in 2007. Grade 12 had the largest enrollment with 182 students followed by the 169 students in Grade 7. The smallest class was kindergarten with 111 students. This graph is a reflection of the births and migration over the years. This distribution is the starting point for the projection of enrollment. How enrollment evolves from this point onward is discussed below.

### Projection Method

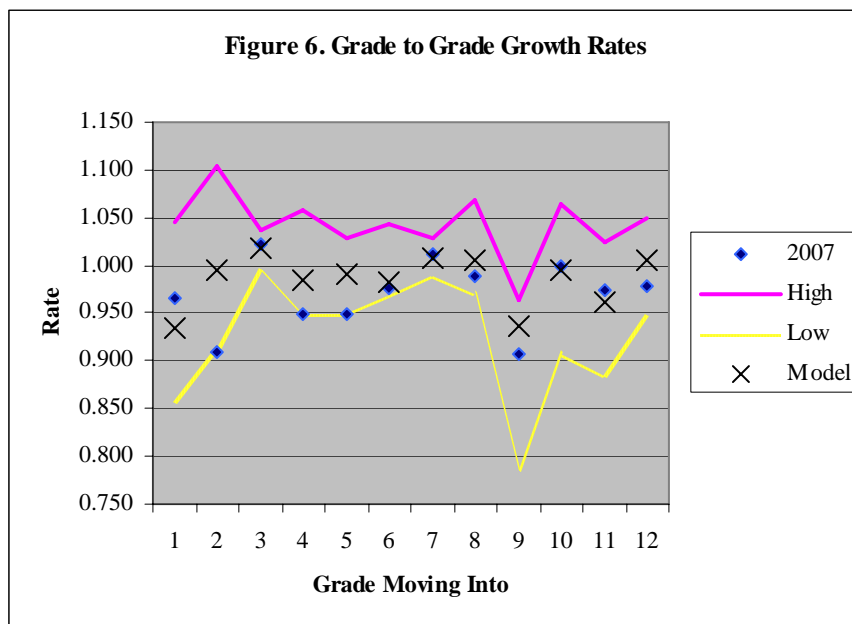
The projections in this report were generated using cohort survival methodology. This is the standard method used by people running enrollment projections. I have made some enhancements to the standard methodology. For the grades above kindergarten, I compute grade-to-grade growth factors for ten years (see Appendix 2). For example, if the number of fifth graders this year is 204 and the number of fourth graders last year was 200, then the growth factor is 1.02. Growth factors above one indicate that students moved in or that they were retained. Growth factors below one means that students moved out, dropped out, or were not promoted from the prior grade. For each grade I calculate four different averages: a ten-year median, a 3-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 factor 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, 6-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 notoriously difficult to predict. I feel that this component model can improve the predictability slightly.

To extend a projection beyond four years, one needs to project births. To do so, I aggregated the number of births by five-year cohorts of the age of mother for each of nine District Reference Groups (DRGs).

This is a categorization of the state's 166 school districts into nine groups labeled A to I, running from the most affluent, least needy suburbs of Fairfield County to the seven impoverished and needy urban areas. Region 14 is a member of DRG C. I then took the Connecticut State Data Center's (CtSDC) projections of women of child bearing age and aggregated the numbers by DRG and mother's age cohort. Juxtaposed, these figures were used to calculate fertility rates for each age cohort and DRG. I used fertility rates by DRG instead of town because I believe they are more stable and that similar towns will have similar fertility rates. I then applied the fertility rates to the CtSDC projections of women of child-bearing age in 2010 and 2015. I annualized the growth rates from 2005 to 2010 and 2010 to 2015 and applied them to the latest year of observed births.

Figure 6 gives a perspective of the Region 14's grade-to-grade growth factors. An "x" indicates the growth factor used in this projection. The diamond is the growth observed between last year and this year. The upper line indicates the largest growth factor 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. Many of Region 14's growth factors are below 1.000. This indicates out-migration. The low growth between kindergarten and Grade 1 is unusual. I typically find residents moving their children into public schools in Grade 1 after attending (all-day) kindergarten elsewhere. The relatively low growth rate between Grade 8 and Grade 9 indicates parents choosing a non-public high school and a low retention rate in Grade 9. Rates below 1.0 in high school are generally indicative of drop-outs. Note that three of the 2007 growth rates were at ten-year lows.

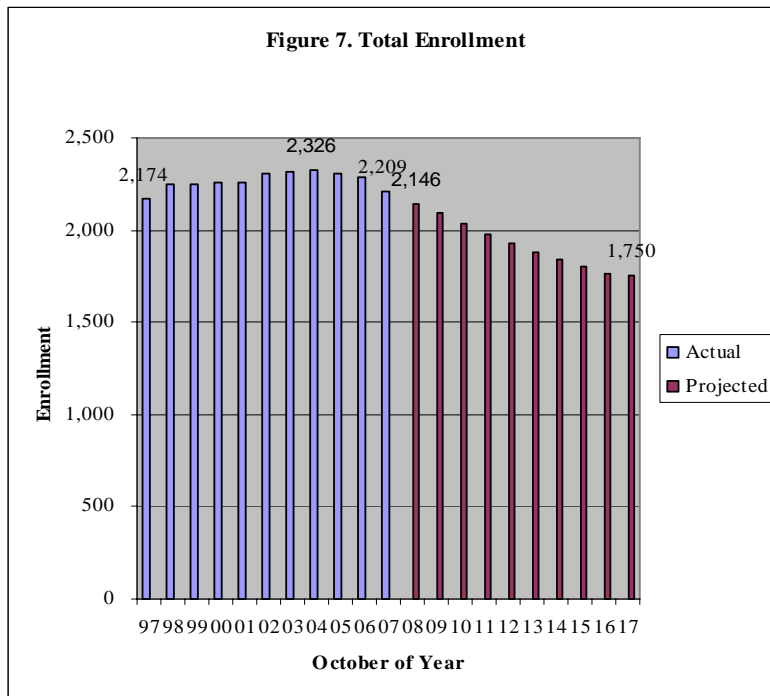


In this projection I used, in most cases, a weighted five-year average of the observed grade-to-grade growth. I give the recent years a higher weight so that the projection responds more quickly to a possible shift in pattern. I also adjusted the K-8 growth factors to account for limited non-resident enrollment and for residents attending regional magnet schools. To estimate kindergarten enrollment, I used the weighted three-year averages of retentions, and yields from births five and six years ago for the years 2008 through 2010 and weighted five-year averages afterward. I did this because the drop in growth between birth and kindergarten observed in the last two kindergarten classes was not well reflected in the five-year averages.

## Total Enrollment

Figure 7 and Table 2 present the observed total enrollment in Region 14 from 1997 to 2007 and projected enrollment through 2017. Detailed grade-by-grade data may be found in Appendix A. Total enrollment in Region 14 increased from 2,174 to 2,209 between 1997 and 2007. Peak enrollment of 2,326 occurred in 2004. In the past ten years enrollment increased by 35 students or 1.6 percent. Statewide in that period, enrollment increased by 11.4%. Enrollment growth in similar towns in the region was mixed. Enrollment increased 22.7 percent in Oxford (PK-8 only), 17.0 percent in Region 10 and -5.0 percent in Region 12.

I expect that the decline that began in 2005 will continue. Next year, I anticipate that total enrollment will decline by about 50 students or 2.9 percent. I project that total enrollment fall to 1,750 students by 2017. That is almost 460 students or 20.8 percent below the current enrollment. The total 10-year decline averages 46 students per year. Total enrollment should average about 1,920 students over the ten-year projection period. This compares to an average total enrollment of 2,277 students over the past ten years.

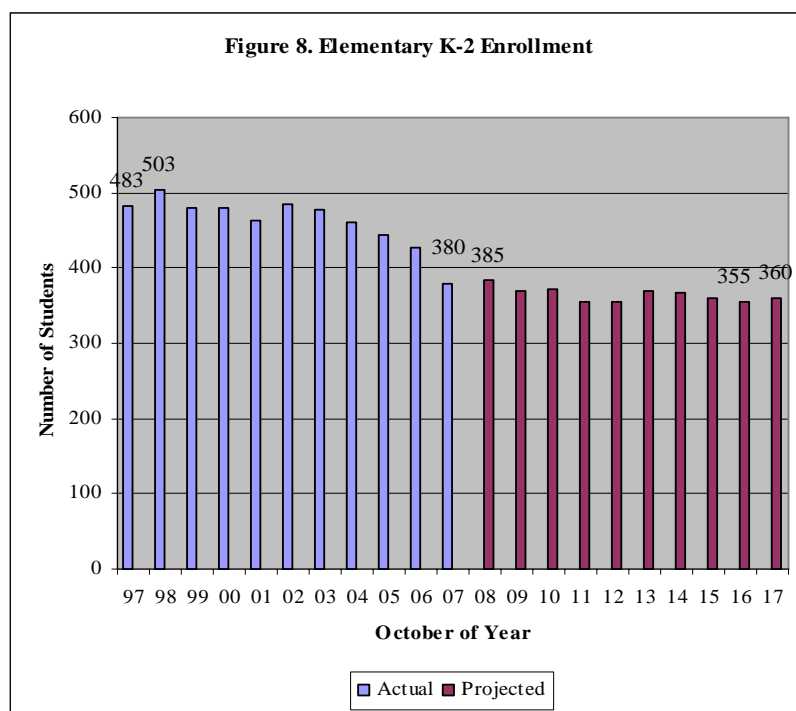


Year	Students	Percent Change
1997	2,174	
1998	2,252	3.6%
1999	2,246	-0.3%
2000	2,259	0.6%
2001	2,258	0.0%
2002	2,305	2.1%
2003	2,318	0.6%
2004	2,326	0.3%
2005	2,310	-0.7%
2006	2,283	-1.2%
2007	2,209	-3.2%
2008	2,146	-2.9%
2009	2,093	-2.5%
2010	2,037	-2.7%
2011	1,976	-3.0%
2012	1,932	-2.2%
2013	1,884	-2.5%
2014	1,837	-2.5%
2015	1,798	-2.1%
2016	1,768	-1.7%
2017	1,750	-1.0%

## Elementary K-2 Enrollment

Figure 8 and Table 3 present enrollment in Grades K-2. Between 1997 and 2007, enrollment in Grades K-2 declined from 483 to 380 students, a 21.3 percent decrease. Enrollment in these grades declined 11 percent in the past year as a Grade 2 class of 140 students moved on to Grade 3 and was replaced by a kindergarten class of 111 students. This year's kindergarten class is the smallest since 1987. I expect that early elementary enrollment will drift downward with no precipitous declines on the horizon. I anticipate that elementary enrollment will reach a bottom of about 355 students in 2011, 2012 or 2016. In 2017, I expect elementary enrollment will be 360 students, 5.3 percent below the current level. Over the ten-year projection period, I believe Grade K-2 enrollment will average 365 students. This is well below the average of 460 students observed over the past ten years.

These figures exclude pre-kindergarten children. In the past ten years, pre-kindergarten enrollment grew from 12 to 23 children and currently is 18. My projection model holds pre-kindergarten enrollment at 18 children throughout the projection.



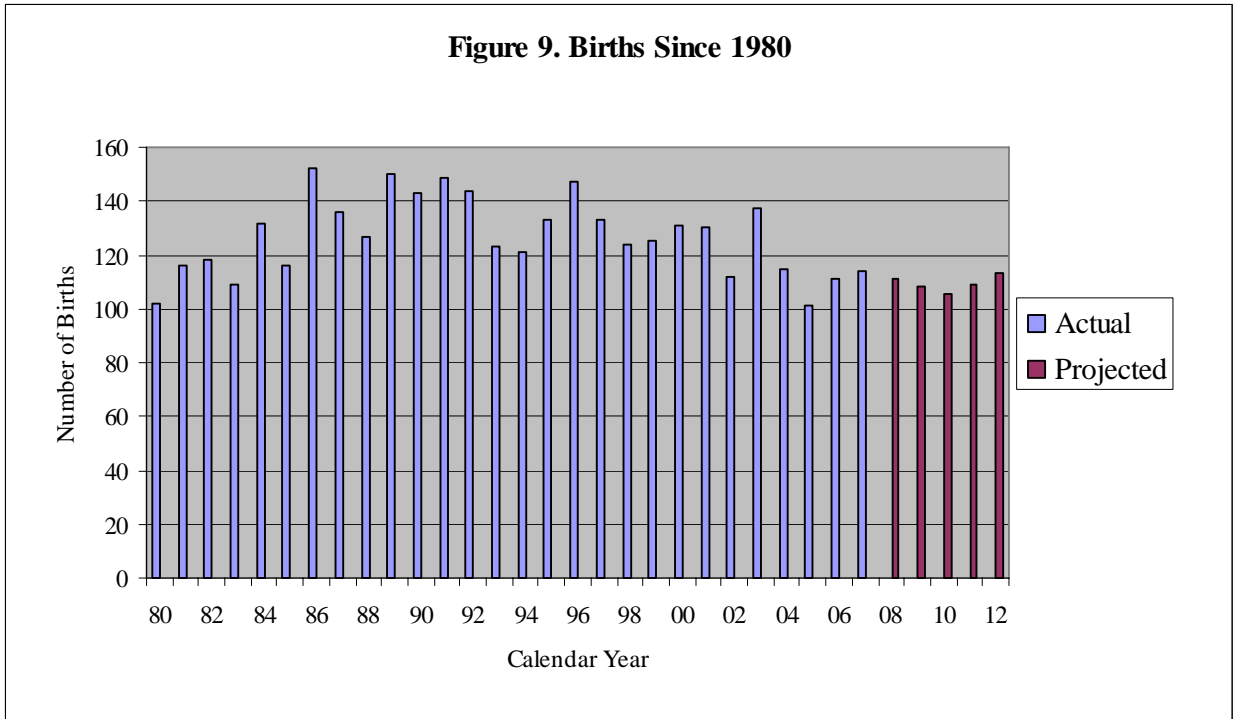
**Table 3. Elementary K-2 Enrollment**

Year	Students	Percent Change
1997	483	
1998	503	4.1%
1999	479	-4.8%
2000	481	0.4%
2001	464	-3.5%
2002	485	4.5%
2003	478	-1.4%
2004	460	-3.8%
2005	443	-3.7%
2006	427	-3.6%
2007	380	-11.0%
2008	385	1.3%
2009	369	-4.2%
2010	372	0.8%
2011	356	-4.3%
2012	356	0.0%
2013	369	3.7%
2014	368	-0.3%
2015	359	-2.4%
2016	355	-1.1%
2017	360	1.4%

## Factors Affecting the Elementary Projection

The primary reasons for elementary enrollment change lie in the births and total yield from the birth cohort. Figure 9 presents the actual births from 1980 to 2007 and projected births through 2012. Births in the first half of the 1980s (1981 to 1985) averaged 118. By the first half of the 1990s the average number of births reached 142. The number has declined since then. In the five years from 1998 to 2002 (this fall's kindergarten through 4<sup>th</sup> graders) births averaged 124. My data indicate that births in the 2003 through 2007 period will average 116. The projection in years 2013 to 2017 assumes an average of 109 births annually between 2008 and 2012. This is based upon the projected future distribution of women of child-bearing age in Region 14 and the estimated 2005 age-based fertility rates of women in DRG C. The State Department of Public Health recorded only 111 births to Region 14 residents in 2006. To get a fix on 2007 births, I analyzed births through June 30. In Region 14 there is a correlation of 0.66 between mid-year and end-of-year births. The 47 births reported through June 30, 2007 project through regression to 114 full-year births in 2007.

**Figure 9. Births Since 1980**

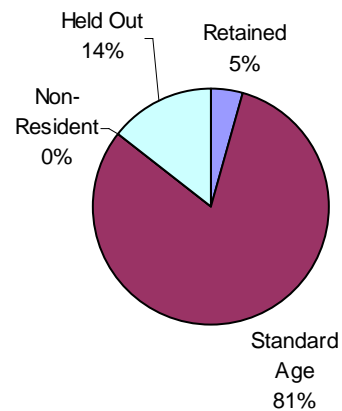


Most models project kindergarten directly from births five-years prior. My model breaks kindergarten enrollment into its component parts and bases the projection on an analysis of each part. Figure 10 gives the breakdown of the 2007 kindergarten enrollment. The class of 111 children had 90 resident five-year olds, 16 resident six-year olds who had entered kindergarten for the first time (parent hold-outs), five six-year old repeaters and no non-residents. In DRG C towns in 2006 (the latest information available) 85.3 percent of kindergartners were the standard age, 12.8 percent were parental holdouts and 1.9 percent were retained.

Table 4 gives a history of enrollment in kindergarten since 1997 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 weighted three-year average of retentions, and yields from births five and six years ago for the years 2008 to 2010 and five-year weighted averages subsequently. Thus in 2008-2010, I estimated kindergarten from 84.6 percent of births five years ago, 14.5 percent of births six years ago, and 5.2 percent of current kindergarten students retained. For the 2011-2017 period, I estimated kindergarten from 88.7 percent of births five years ago, 15.2 percent of births six years ago, and 5.1 percent retention.

Region 14 kindergarten is presently half-day. The projection assumes this will not change. Many districts with half-day kindergarten see an influx of students in Grade 1. I did not find this pattern in Region 14, where Grade 1 enrollment has been 6.5 percent less than the prior year's kindergarten enrollment.

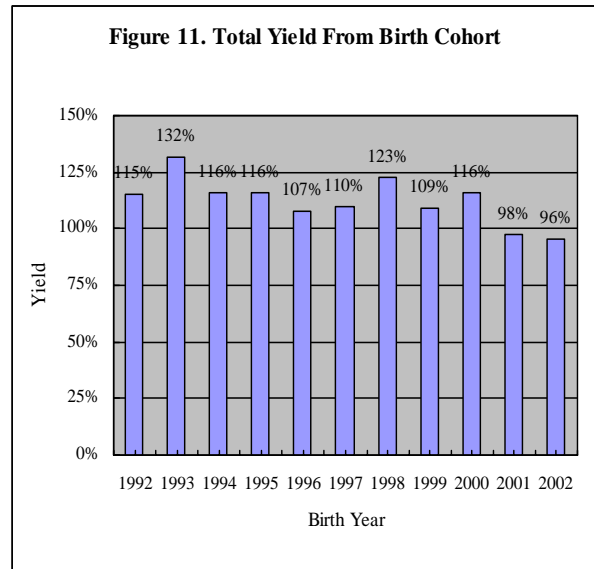
**Figure 10. Kindergarten, 2007**



**Table 4. Analysis of Kindergarten Enrollment**

Year	Birth Year	Births	K	Retained From Prior Year			Non-Retained Born 5-Years Prior Non-Resident			Born 6 Years Prior	Percent Retained	Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
				From Prior Year	Born 5-Years Prior Resident	Non-Resident	Born 5-Years Prior Resident	Non-Resident						
1996	1991	149	152											
1997	1992	144	162		137	0	25	0.0%	95.0%	16.9%	115.5%			
1998	1993	123	169	2	136	0	30	1.2%	110.2%	20.5%	131.5%			
1999	1994	121	150	2	120	0	26	1.2%	99.3%	21.3%	115.8%			
2000	1995	133	153	1	132	0	20	0.7%	99.2%	16.5%	115.8%			
2001	1996	147	158	2	134	0	22	1.3%	91.2%	16.5%	107.5%			
2002	1997	133	154	5	125	0	24	3.2%	94.0%	16.3%	109.8%			
2003	1998	124	154	4	128	1	21	2.6%	103.2%	15.8%	122.6%			
2004	1999	125	147	2	121	0	24	1.3%	96.8%	19.4%	108.8%			
2005	2000	131	161	18	127	1	15	12.2%	96.9%	12.0%	116.0%			
2006	2001	130	143	7	111	0	25	4.3%	85.4%	19.1%	97.7%			
2007	2002	112	111	5	90	0	16	3.5%	80.4%	12.3%	95.6%			
<b>3-Year Average</b>											6.7%	87.9%	14.5%	103.1%
<b>Weighted 3-Year Average</b>											<b>5.2%</b>	<b>84.8%</b>	<b>14.5%</b>	<b>99.7%</b>
<b>5-Year Average</b>											4.7%	92.8%	15.7%	108.1%
<b>Weighted 5-Year Average</b>											<b>5.1%</b>	<b>88.7%</b>	<b>15.2%</b>	<b>103.8%</b>

To give a simple picture of the growth between birth and kindergarten, I calculate the total yield from the birth cohort. This is the percentage of a given birth year who enter your school as five- or six-year olds. The 2001 birth cohort of 130 children had 111 enter kindergarten in 2006 as five-year olds and 16 enter kindergarten in 2007 as six-year olds. This computes to a 97.7 percent yield. Figure 11 shows how the total yield from the birth cohort has changed in recent years. I believe that the decrease in total yield from the birth cohort, which moved from 124 percent to an estimated 96 percent in the last two years, will contribute to the change in elementary enrollment. The projection is based upon 99.7 and 103.8 percent yields from the birth cohort and 5.1-5.2 percent retention of the prior year's kindergarten students. Yields above 100 percent are an indication that families with young children are moving to Region 14.

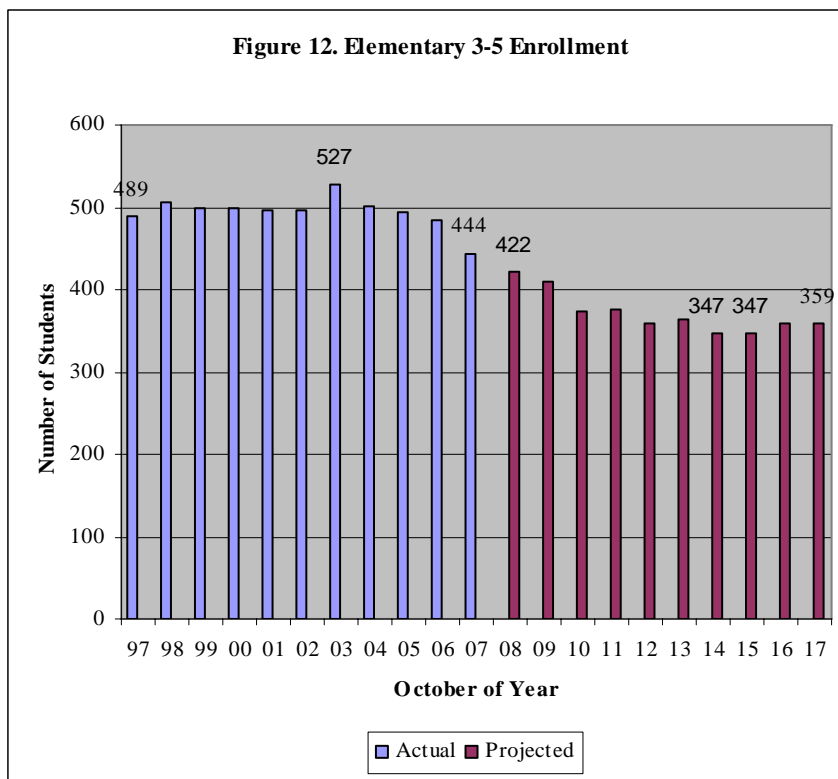


Births five-years prior is the key component of the three I use to project kindergarten enrollment. How accurately kindergarten enrollment can be projected is illustrated by the relationship between births and kindergarten enrollment. For the period 1990 to 2007, the correlation between births and kindergarten enrollment five years later was a low to moderate 0.47. This means that births five years prior to kindergarten explained 22 percent of the movement of kindergarten enrollment. Other factors such as migration, retention and parent hold-outs contributed to the balance. On average over the 1990 to 2007 period, kindergarten enrollment differed by 11 children from the level predicted by births five years prior.

## Elementary 3-5 Enrollment

Figure 12 and Table 5 present enrollment in Grades 3-5. In the past ten years, enrollment in these grades declined 9.2 percent from 489 to 444. Peak enrollment in the period was 527 students in 2003. I believe that the decline will continue. I expect that next year's enrollment will be about 20 students less than this year's. I expect enrollment to bottom at about 350 students in either 2014 or 2015. By the year 2017, enrollment at the Mitchell Elementary School is projected to be around 360 students. Over the ten-year projection period, enrollment in these late elementary grades is expected to average 370 students. This is well below the average of 495 students observed over the past ten years.

The year-to-year change in enrollment ranged from a low of -8.5 percent between 2006 and 2007 to a high of +6.3 percent between 2002 and 2003. Over the projection period, I forecast a range of annual growth from -9.0 percent between 2009 and 2010 and +3.7 percent between 2015 and 2016.

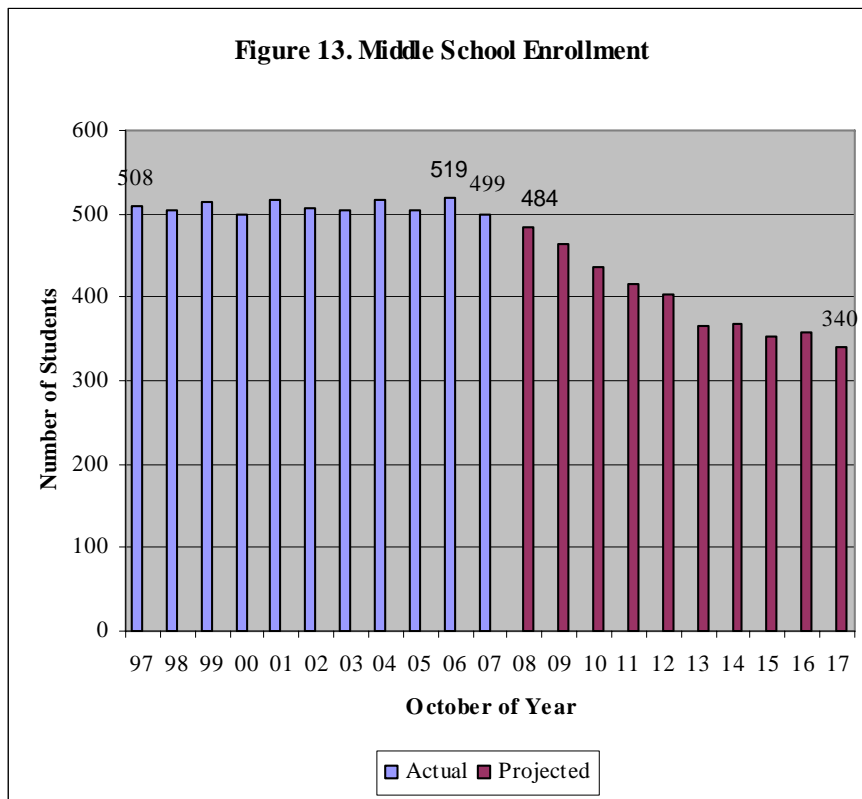


Year	Students	Percent Change
1997	489	
1998	507	3.7%
1999	498	-1.8%
2000	498	0.0%
2001	497	-0.2%
2002	496	-0.2%
2003	527	6.3%
2004	502	-4.7%
2005	493	-1.8%
2006	485	-1.6%
2007	444	-8.5%
2008	422	-5.0%
2009	410	-2.8%
2010	373	-9.0%
2011	376	0.8%
2012	360	-4.3%
2013	364	1.1%
2014	347	-4.7%
2015	347	0.0%
2016	360	3.7%
2017	359	-0.3%

## Middle School Enrollment

Figure 13 and Table 6 present enrollment in Grades 6-8. Between 1997 and 2007, enrollment at Woodbury Middle School was fairly steady, ranging from a low of 499 in 2007 to a high of 519 in 2006. Ten years ago, enrollment was 508 students. I believe that the decline observed this past year is just the beginning. I expect that next year's enrollment will be about 15 students less than this year's. By 2017, I anticipate that middle school enrollment will be 340 students. This represents a decline of almost 160 students or 31.9 percent. Over the ten-year projection period, enrollment in these middle school grades is expected to average about 399 students. This is well below the average of 509 students observed over the past ten years.

Between 1997 and 2007, annual growth ranged from a low of -3.9 percent between 2006 and 2007 to a high of +3.6 percent between 2000 and 2001. Between 2008 and 2017, I anticipate that the year-to-year change in enrollment will range from -5.8 percent between 2009 and 2010 and +1.4 percent between 2015 and 2016.



Year	Students	Percent Change
1997	508	
1998	503	-1.0%
1999	515	2.4%
2000	500	-2.9%
2001	518	3.6%
2002	506	-2.3%
2003	504	-0.4%
2004	516	2.4%
2005	505	-2.1%
2006	519	2.8%
2007	499	-3.9%
2008	484	-3.0%
2009	463	-4.3%
2010	436	-5.8%
2011	415	-4.8%
2012	403	-2.9%
2013	366	-9.2%
2014	369	0.8%
2015	352	-4.6%
2016	357	1.4%
2017	340	-4.8%

## High School Enrollment

Grade 9 is a time when students exercise a wide range of options about where to attend high school. The State Technical High Schools and vocational-agriculture centers are two options that are not available before Grade 9. Figure 14 presents what schools Region 14 residents enrolled in Grade 9 chose to attend in 2006 (the latest data available). Fully 65.8 percent attended the regular education program at Nonnewaug High School. An additional 13.2 percent attended the school's vocational agriculture program. A majority of the rest (18.4 percent) attended non-public schools in Connecticut. The number attending non-public schools out-of-state is not known. The balance attended the State Technical High Schools (1.6 percent) or another public high school (1.1 percent).

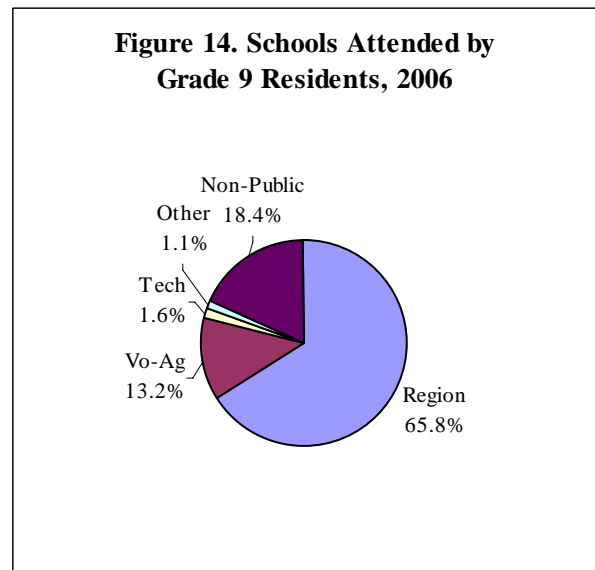
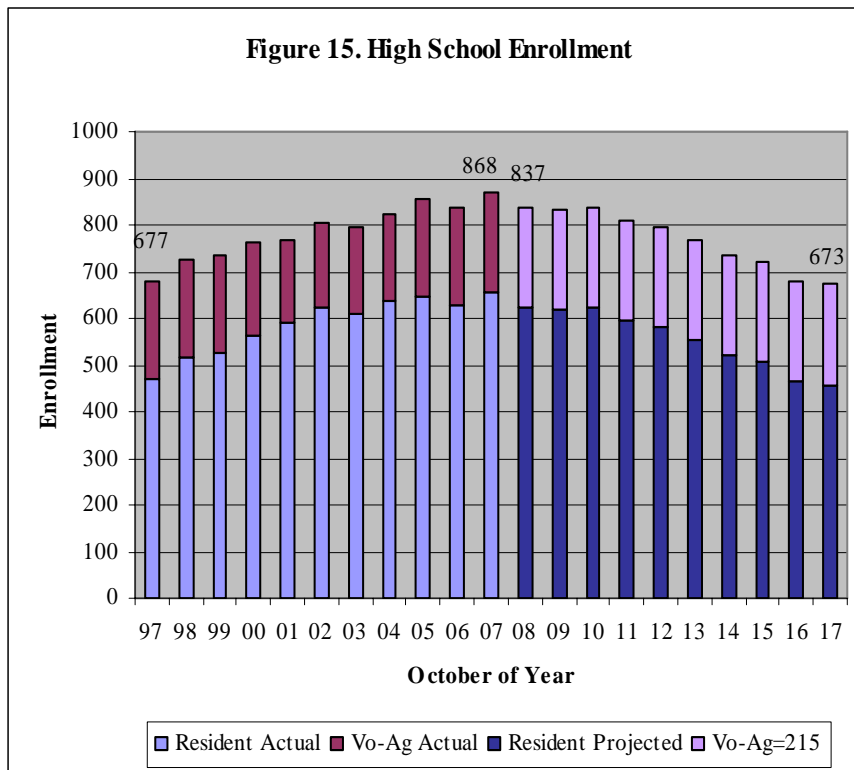


Figure 15 and Table 7 present enrollment in Grades 9-12. Between 1997 and 2007, enrollment in Nonnewaug High School increased 28.2 percent from 677 to 869 students. I believe that the current enrollment is the peak. Next year I anticipate a decline of about 30 students. By 2017, I anticipate high school enrollment including the vocational agriculture program will be about 675 students or 22.4 percent below the current level. The projection assumes that the yield of Bethlehem and Woodbury students in Grade 9 from the prior year's Grade 8 will be 93.6 percent. The projection holds non-resident enrollment at a constant 215 students.



**Table 7. High School Enrollment**

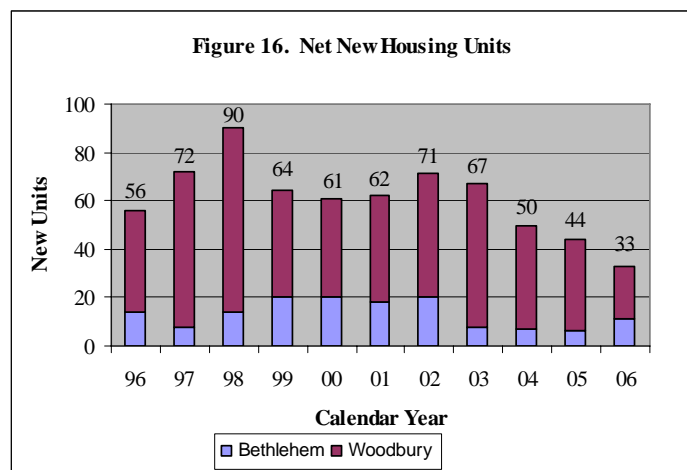
Year	Students	Percent Change
1997	677	
1998	726	7.2%
1999	737	1.5%
2000	761	3.3%
2001	767	0.8%
2002	803	4.7%
2003	794	-1.1%
2004	825	3.9%
2005	855	3.6%
2006	836	-2.2%
2007	868	3.8%
2008	837	-3.6%
2009	833	-0.5%
2010	838	0.6%
2011	811	-3.2%
2012	795	-2.0%
2013	767	-3.5%
2014	735	-4.2%
2015	722	-1.8%
2016	678	-6.1%
2017	673	-0.7%

## 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.

To assist in this endeavor, this report examines seven factors that could affect enrollment: new home construction, sales of existing homes, people in the labor market, non-public enrollment, student migration, resident enrollment in regional magnets and non-resident enrollment in the Region 14 schools.

Figure 16 presents the net new housing units constructed from 1996 to 2006 from the State Department of Economic and Community Development. In the past ten years the number of new housing units constructed in Bethlehem and Woodbury ranged from 90 in 1998 to 33 in 2006. In the five-year look-back period for this projection, there was an average of 46 net new housing units constructed. Housing activity appears to have slowed down. You should check the towns' plans of development to see if a net increase of 460 housing units over the next ten years is reasonable.



It appears that the increase in foreclosures on sub-prime mortgages has caused a housing slowdown. Eligibility requirements for new mortgages have tightened. More foreclosures are expected as teaser adjustable rate mortgages reset. The purchase of a house often requires a chain of sales. With the recent changes in the market, there are fewer people at the start of the chain. There is evidence that the slowdown is upon us. Figure 17 shows the housing permits issued through August 2007. The data are the most currently available from the State Department of Economic and Community Development. Through August of 2007, there were 29 housing permits issued, compared to 47 through August of 2006. This means that the next few years are likely to be different than the look-back period for the projection. The use of a three-year average in kindergarten for the short term should address this to some degree.

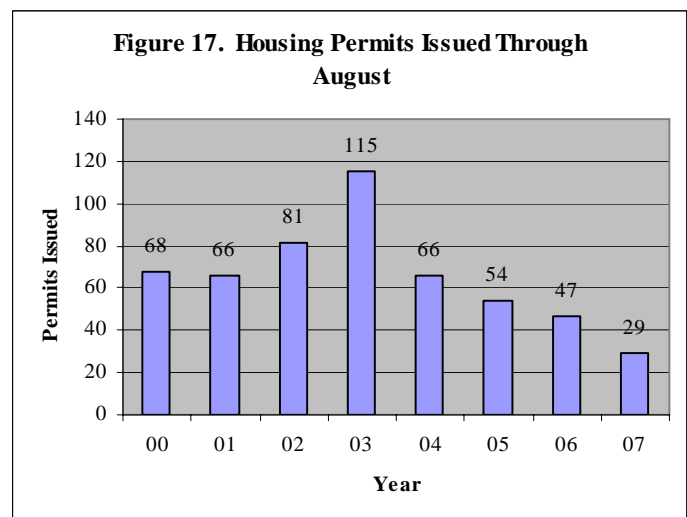
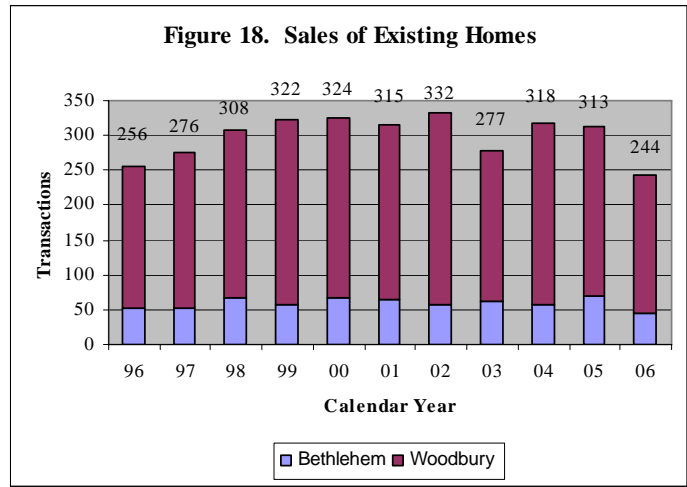


Figure 18 presents my estimate of the number of sales of existing homes. I derived it by taking the number of real estate transactions from The Warren Group/Commercial Record and subtracting the number of new homes constructed. This is an estimate because of the lag between the time a new house is constructed and it is sold. Between 1996 and 2002 the estimated number of sales of existing homes increased from 256 to 332. Sales eased to 313 homes in 2005 and 244 in 2006. The projection assumes 288 sales annually. Preliminary data indicate there will be no recovery in 2007.



Seniors downsizing their houses can open up opportunities for families with children. According to the 2000 Census there were 760 owner-occupied dwellings with owners 65 years or older. This represented 19.7 percent of the owner-occupied housing. In fully 630 of those homes, the owners moved in more than 20 years ago. Those who have remained in town are now at least 72 years old. The fact that 360 houses in 2000 were still occupied by long-term residents 75 years and older, means only a portion of those houses will be coming on the market.

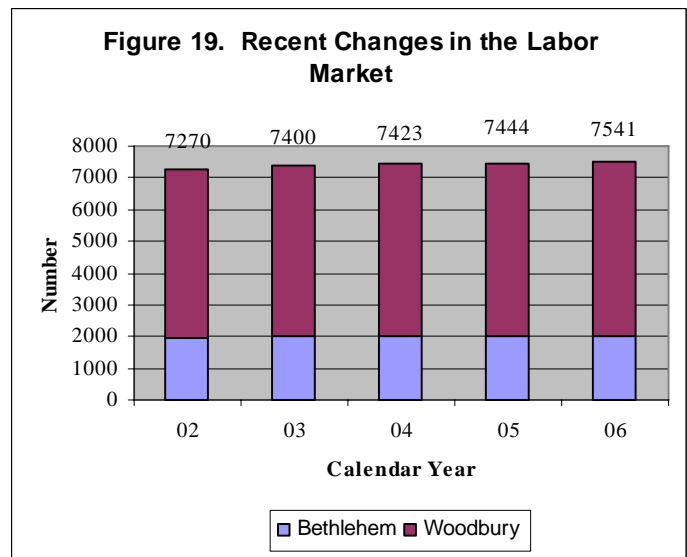


Figure 19 examines the number of people in the labor market from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older who were working or actively seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Region 14 labor force increased 3.7 percent between 2002 and 2006 compared to 3.7 percent in the state and 3.6 percent in Litchfield County.

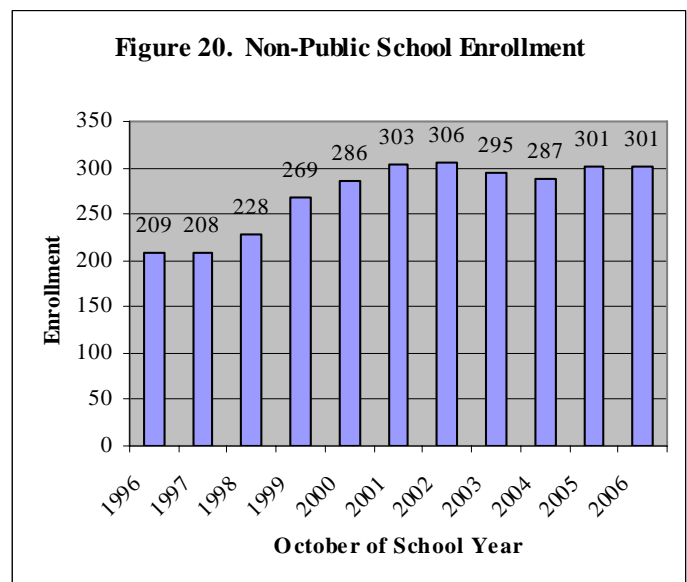


Figure 20 presents the non-public enrollment over the past ten years for students from the town of Region 14. Non-public enrollment grew from 1996 to 2001 and has been steady since. Over the past ten years non-public enrollment has averaged 272 students. High school students made up 42.0 percent of the non-public enrollment over the past ten years. Middle school children were 19.8 percent of the enrollment, followed by K-2, 16.1 percent; Grades 3-5, 15.7 percent and pre-kindergarten, 4.9 percent.

Figure 21 presents the estimated student migration for the 1996 to 2007 period. It is based on observed enrollment in the Region 14 public schools adjusted for non-residents attending Region 14 schools and Region 14 residents attending magnet schools. The migration rate ranged from a low of -1.8 percent between 2006 and 2007 to a high of 3.0 percent between 1997 and 1998. The projection assumes an average out-migration of -0.22 percent.

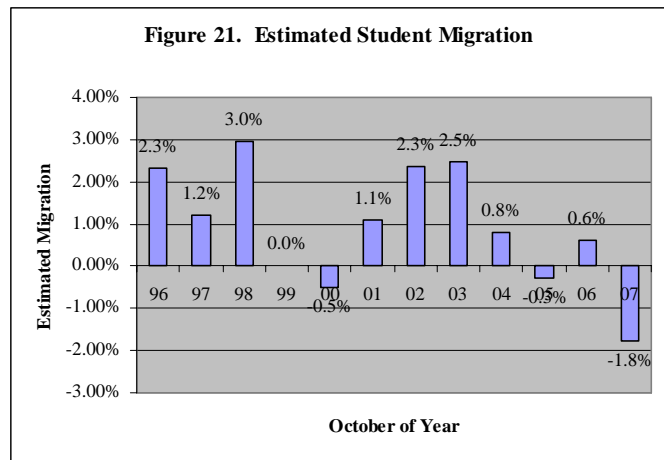


Figure 22 presents Region 14 enrollment in full-time magnet schools run by Waterbury. Attendance in magnet schools is essentially not a factor in enrollment. At one time, five students attended a Waterbury magnet. This year only one did so.

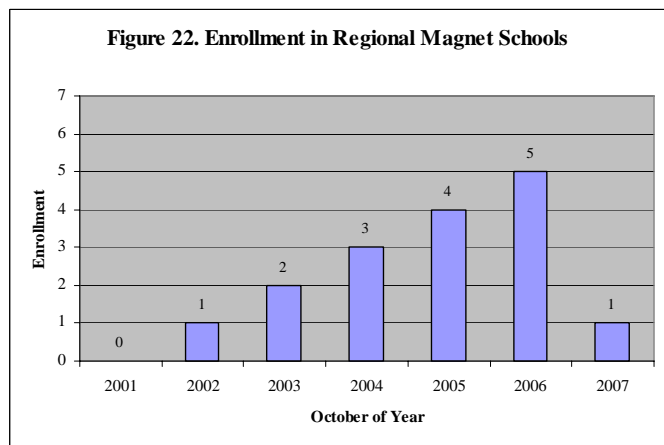
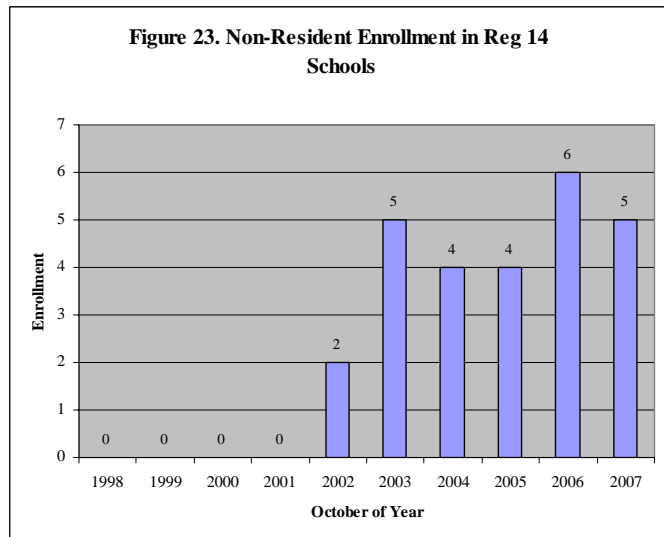
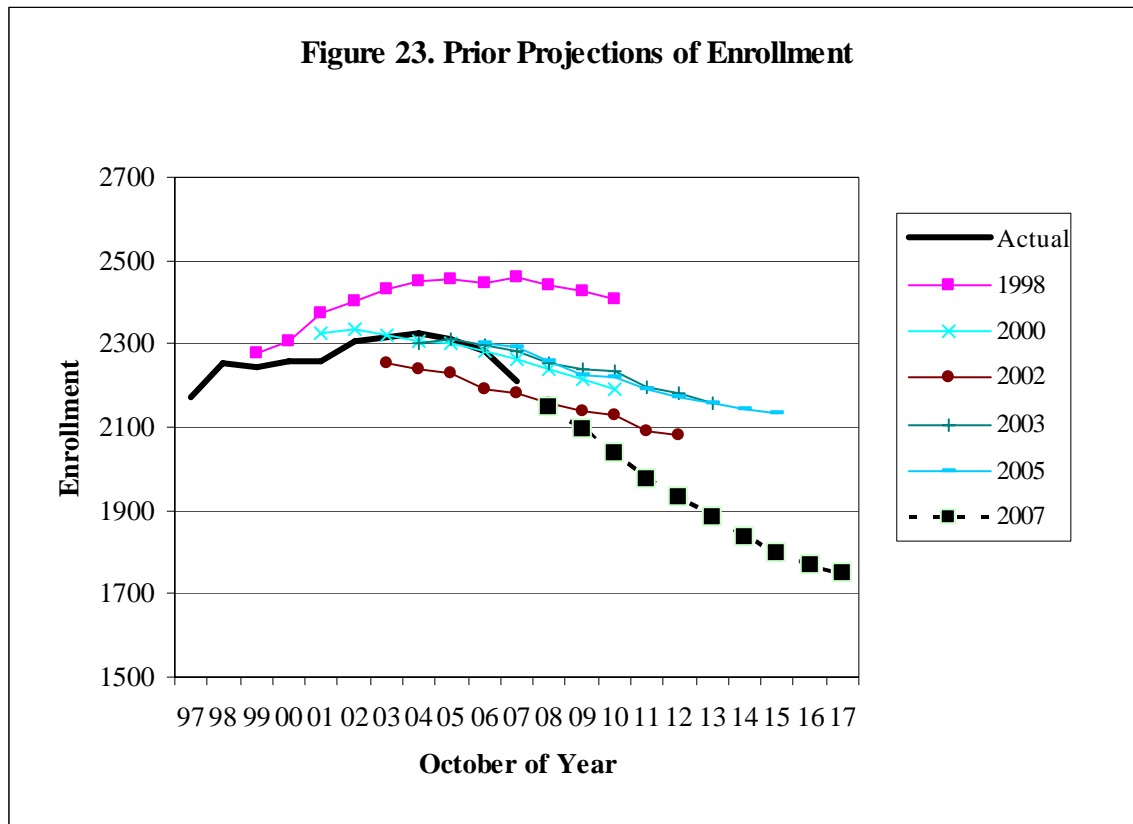


Figure 23 shows the enrollment of non-resident students in the Region 14 public schools outside of the vocational-agriculture program. This too has very little bearing on the projection. This year a total of five non-residents enrolled in Region 14 schools outside of the vocational-agriculture program.



## 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 at a steady rate. One way to know if that assumption is valid is to examine how past projections have fared. Figure 24 presents the enrollment projections that I have run for Region 14 since 1998. The five enrollment projections that I did between 1998 and 2005 had one-year error rates that averaged 1.8 percent. The three projections done between 1998 and 2002 had an average five-year error rate of a low 2.2 percent, which is 0.4 percent annualized. The projection run in 1998 overestimated current enrollment by over 10 percent. The four projections run since then have been close to the mark. The 2000 projection is high by only 2.5 percent after seven years. Error rates may be considered when supplying enrollment estimates for a school construction project. In my work I have found the cohort-survival method provides estimates that are sufficiently accurate for intermediate-range policy planning and for applying for a school construction grant.



## Summary

Total enrollment is projected to decline by 20.8 percent to 1,750 students in 2017. Grade K-2 enrollment is projected to decline by 5.3 percent from today's level to 360 students in 2017. Enrollment in Grades 3-5 is projected to decline by about 85 students (19.4 percent) to about 360 students in ten years. Enrollment in middle school is projected to decline by about 130 students (31.9 percent) to 370 students in 2017. High school enrollment is projected to decline by about 195 students (22.4 percent) to 674 students over the next decade.

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 half-day; retention policies will not change; no change in the drop-out rate and continued enrollment of 215 non-residents in the vocational-agriculture program. The projection assumes the following population growth factors will not change appreciably: births will average 146 over the 2008 to 2012 period, a zero to four percent growth between the number of births and kindergarten enrollment and a student migration of -0.22 percent. Additionally, there will be little change in non-public school enrollment, 14 percent of parents will start their children in kindergarten at age six, there will be 46 new housing units constructed annually, 288 sales of existing homes and an increasing labor force.

There are some other factors beyond the scope of this report that can influence enrollment. Has the perceived quality of the school district changed absolutely or relative to neighboring communities? Are the schools well maintained? Is there on-going school construction? What is the regional job outlook? What are your taxes relative to neighboring towns? Is there land available for residential development?

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 Region 14 and then make adjustments as necessary.

## Appendix A. Enrollment Projected By Grade To 2017

School	Birth	Grade																			
Year	Year <sup>1</sup>	Births	K <sup>2</sup>	1	2	3	4	5	6	7	8	9	10	11	12	PreK	K-2	3-5	6-8	9-12	Total
1997-98	1992	144	162	155	166	153	171	165	167	159	182	110	125	131	103	17	483	489	508	677	2174
1998-99	1993	123	169	167	167	172	158	177	172	167	164	143	113	129	131	13	503	507	503	726	2252
1999-00	1994	121	150	171	158	169	176	153	175	172	168	142	149	113	122	17	479	498	515	737	2246
2000-01	1995	133	153	155	173	157	165	176	157	176	167	151	151	144	117	19	481	498	500	761	2259
2001-02	1996	147	158	154	152	178	154	165	174	156	188	154	145	148	142	12	464	497	518	767	2258
2002-03	1997	133	154	164	167	154	186	156	164	179	163	182	148	147	147	15	485	496	506	803	2305
2003-04	1998	124	154	161	163	173	163	191	153	167	184	150	165	143	152	15	478	527	504	794	2318
2004-05	1999	125	147	155	158	166	169	167	185	156	175	175	155	158	150	23	460	502	516	825	2326
2005-06	2000	131	161	127	155	159	165	169	167	183	155	167	184	134	162	14	443	493	505	855	2310
2006-07	2001	130	143	144	140	158	160	167	167	168	184	150	159	186	134	16	427	485	519	836	2283
2007-08	2002	112	111	138	131	142	150	152	164	169	166	168	149	156	182	18	380	444	499	868	2209
Projected																					
2008-09	2003	137	144	104	137	133	140	149	149	165	170	155	167	143	157	18	385	422	484	837	2146
2009-10	2004	115	131	135	103	140	131	139	147	150	166	159	154	161	144	18	369	410	463	833	2093
2010-11	2005	101	115	123	134	105	138	130	137	148	151	155	158	148	162	18	372	373	436	838	2037
2011-12	2006	111	126	108	122	136	103	137	128	138	149	141	154	152	149	18	356	376	415	811	1976
2012-13	2007	114	131	118	107	124	134	102	135	129	139	139	140	148	153	18	356	360	403	795	1932
2013-14	2008	111	129	123	117	109	122	133	100	136	130	130	138	135	149	18	369	364	366	767	1884
2014-15	2009	108	125	121	122	119	107	121	131	101	137	122	129	133	136	18	368	347	369	735	1837
2015-16	2010	105	122	117	120	124	117	106	119	132	101	128	121	124	134	18	359	347	352	722	1798
2016-17	2011	109	125	114	116	122	122	116	104	120	133	95	127	116	125	18	355	360	357	678	1768
2017-18	2012	113	130	117	113	118	120	121	114	105	121	124	95	122	117	18	360	359	340	673	1750

<sup>1</sup> 2006 data are preliminary. 2007 to 2012 data are estimated from estimated fertility rates of women in 2006 DRG C and projections of women of child-bearing age in Region 14.

<sup>2</sup> Based on three-year weighted averages of retention, yield from births 5 and 6 years ago through 2010 and five-year weighted averages subsequently.

## Appendix B. Growth from Grade-to-Grade Across Years<sup>1</sup>

October of Year	Grade Moved Into from Prior Year													PreK	Average	Estimated Migration
	K	1	2	3	4	5	6	7	8	9	10	11	12			
1998	1.374	1.031	1.077	1.030	1.033	1.029	1.042	1.000	1.031	0.786	1.018	1.024	0.992	1.036	3.0%	
1999	1.240	1.012	0.946	1.012	1.023	0.968	0.989	1.000	1.006	0.866	1.042	1.000	0.946	1.004	0.0%	
2000	1.150	1.033	1.012	0.994	0.976	1.000	1.026	1.006	0.971	0.899	1.063	0.966	1.035	1.010	-0.5%	
2001	1.075	1.007	0.981	1.029	0.981	1.000	0.989	0.994	1.068	0.922	0.960	0.980	0.986	0.998	1.1%	
2002	1.158	1.044	1.084	1.013	1.045	1.013	0.994	1.029	1.045	0.963	0.961	1.007	0.993	1.027	2.3%	
2003	1.242	1.045	0.994	1.036	1.058	1.027	0.981	1.018	1.028	0.914	0.906	0.966	1.027	1.019	2.5%	
2004	1.176	1.006	0.981	1.018	0.977	1.025	0.969	1.020	1.048	0.951	1.034	0.951	1.049	1.016	0.8%	
2005	1.221	0.857	1.000	1.006	0.994	1.000	1.000	0.989	0.994	0.954	1.051	0.883	1.032	0.999	-0.3%	
2006	1.100	0.894	1.103	1.019	1.006	1.012	0.988	1.006	1.005	0.955	0.952	1.011	0.993	1.003	0.6%	
2007	0.991	0.965	0.909	1.022	0.949	0.950	0.976	1.012	0.988	0.908	1.000	0.975	0.978	0.971	-1.8%	
5 Year Ave.	1.146	0.954	0.998	1.020	0.997	1.003	0.983	1.009	1.013	0.936	0.989	0.957	1.016	1.002		
3 Year Ave.	1.104	0.905	1.004	1.016	0.983	0.987	0.988	1.002	0.996	0.939	1.001	0.956	1.001	0.991		
Weighted 5 year Median, past 10 years	1.108	0.935	0.994	1.018	0.984	0.992	0.983	1.007	1.004	0.936	0.996	0.962	1.006	0.994		
Enrollment Multiplier		0.935	0.994	1.018	0.984	0.992	0.983	1.007	1.004	0.936	0.996	0.962	1.006	1.000	0.985	

<sup>1</sup> Adjusted for non-residents enrolled in Region 14 and Region 14 residents enrolled in magnet schools.