PRESTON PUBLIC SCHOOLS
ENROLLMENT PROJECTED TO 2025

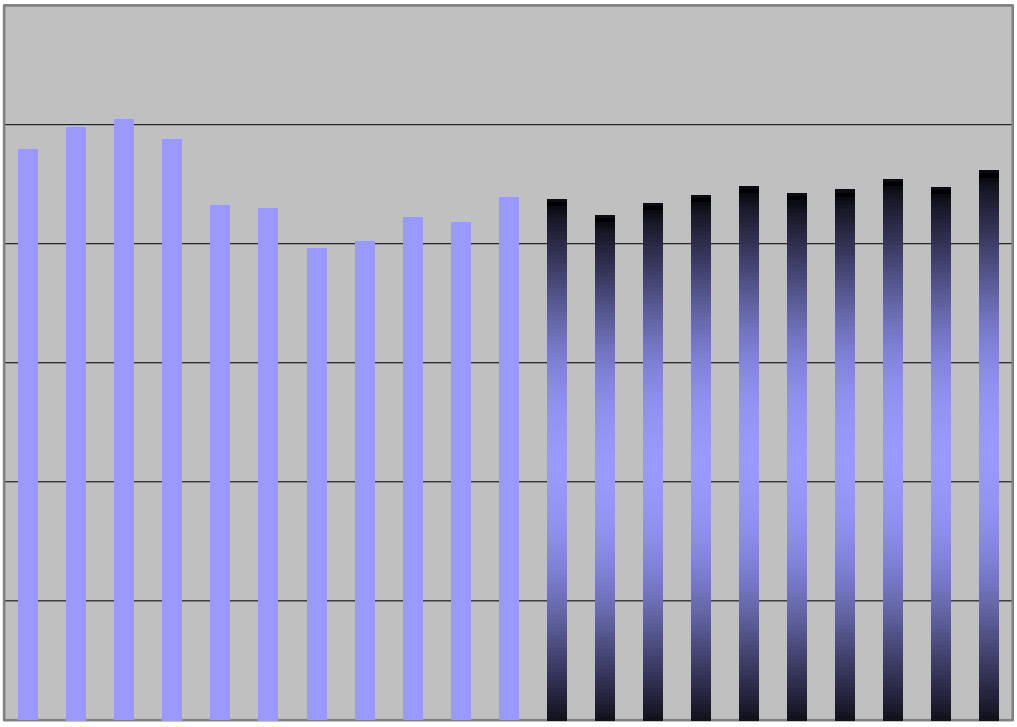

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Table of Contents

List of Tables

List of Figures

List of Figures (Cont'd)

Introduction

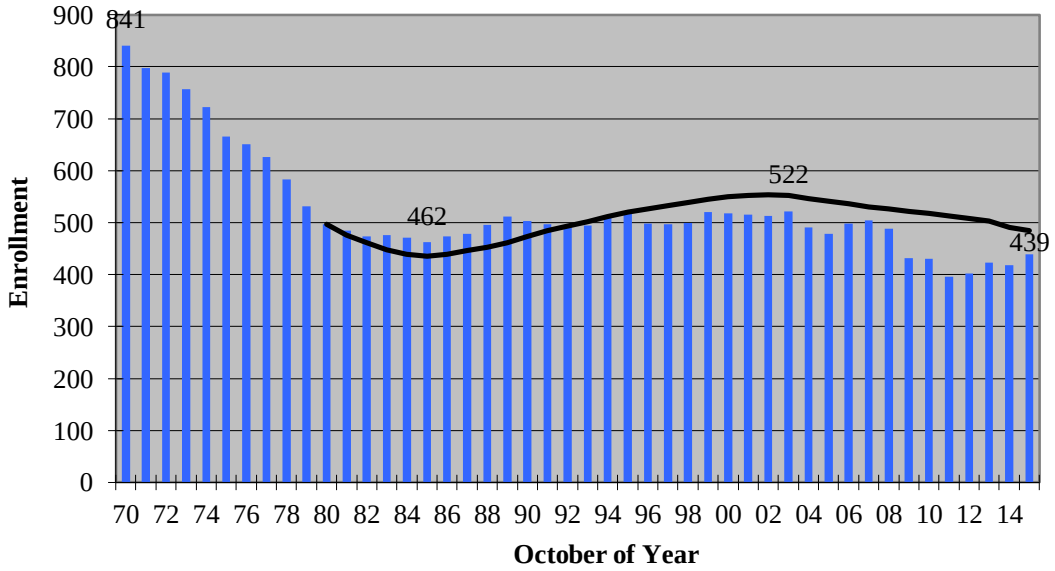
This report is a ten-year projection of enrollment for the Preston Public Schools. It is based on students attending the Preston Public Schools in October of the school year. The projection is divided into the two grade levels that represent how the Preston schools are organized: PK-5 and 6-8. The report includes 46 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 Preston from 1970 to date.

Figure 1. Enrollment from 1970 to Date



Enrollment in the Preston Public Schools peaked at 841 students in 1970. Between 1970 and 1985, enrollment fell to 462 students. In those 15 years, enrollment declined by 379 students or 45.1 percent. Between 1985 and 2003 enrollment grew by 60 students, or 13.0 percent, and reached a secondary peak of 522 students. The 2015 enrollment was 439 students, 83 students (15.9 percent) below the 2003 level.

Preston's enrollment pattern is somewhat similar to that of the state's public schools in grades K-8. I have tracked public school K-8 enrollment since 1980. Public school K-8 enrollment bottomed in 1985, the same year as Preston. It reached a secondary peak in 2002. In those 17 years, state K-8 enrollment grew by 27.2 percent. Preston's period of growth was slightly shorter than the state's, but much less intense. The state's public school K-8 enrollment has been declining for eleven years and it is expected to decline in 2015. Between 2002 and 2015, I project that it fell by 12.5 percent. Both Preston and the state started the second downturn at about the same time. The second decline in Preston has been steeper than the state's. Had Preston followed the state pattern of enrollment since 1980, it would have had 484 students in October of 2015 instead of the 447 that were enrolled on that date.

Current Enrollment

Table 1 and Figure 2 provide a picture of where Preston residents in grades PK-8 attended school in October of 2014, the latest data available. They show that 89.5 percent of Preston's elementary school-age residents attended the Preston Public Schools in 2014, a slightly higher percentage than in 2013. Six percent of the school-age residents attended non-public schools in state. Other school-age residents attended magnet schools (3.6 percent) or public schools in other districts (0.9 percent). The state discontinued the collection of the number home schooled in 2013. There were no non-residents enrolled in the Preston Public Schools in 2014. The projections in this report are based on the 439 students who attended the Preston Public Schools in October, 2015. This is equivalent to the "Total Enrollment" count of 418 in 2014.

Table 1. 2014 Enrollment

	Number	Percent
Residents		
A. Preston Public	418	89.5%
B. Other Public	4	0.9%
C. Magnets	17	3.6%
D. Non-Public	28	6.0%
Total (A+B+C+D)	467	
E. Non-Residents	0	
Total Enrollment (A+E)	418	

Figure 2. Schools Attended by Town Residents, 2014

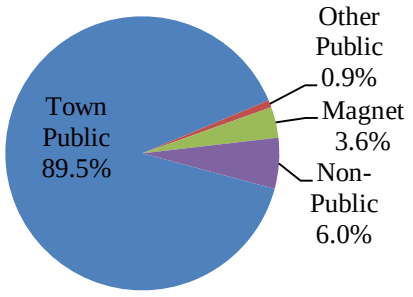
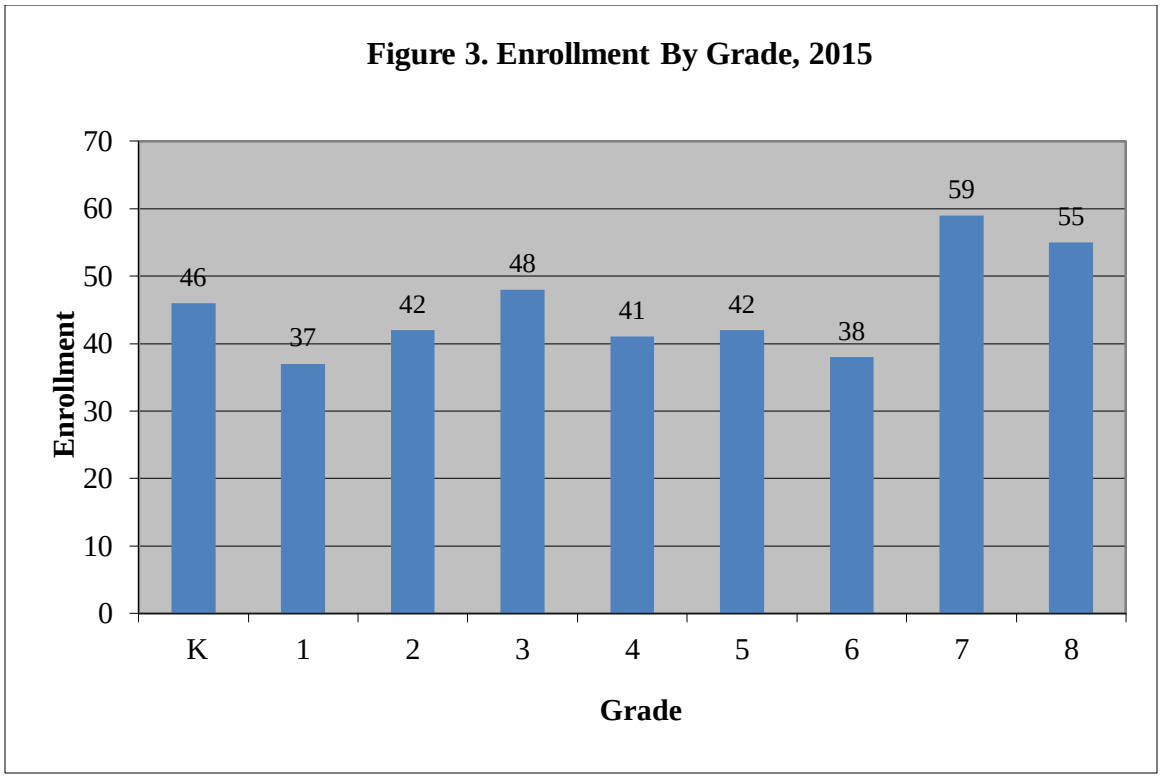


Figure 3 shows the October 2015 grade-by-grade enrollment of students in the Preston Public Schools. The children in pre-kindergarten programs are not shown. Grade 7 had the largest enrollment with 59 students. That was followed by Grade 8 with 55 students and Grade 3 with 48 students. Grade 1 was the smallest class with only 37 students. Grades 2, 4, 5 and 6 all had close to 40 students. If current conditions continue, this year's Kindergarten class of 46 students will have 56 students when it enters Grade 6 at Preston Plains in 2021. That is well above 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 51 and the number of fourth graders last year was 50, then the growth rate is 1.02. 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.

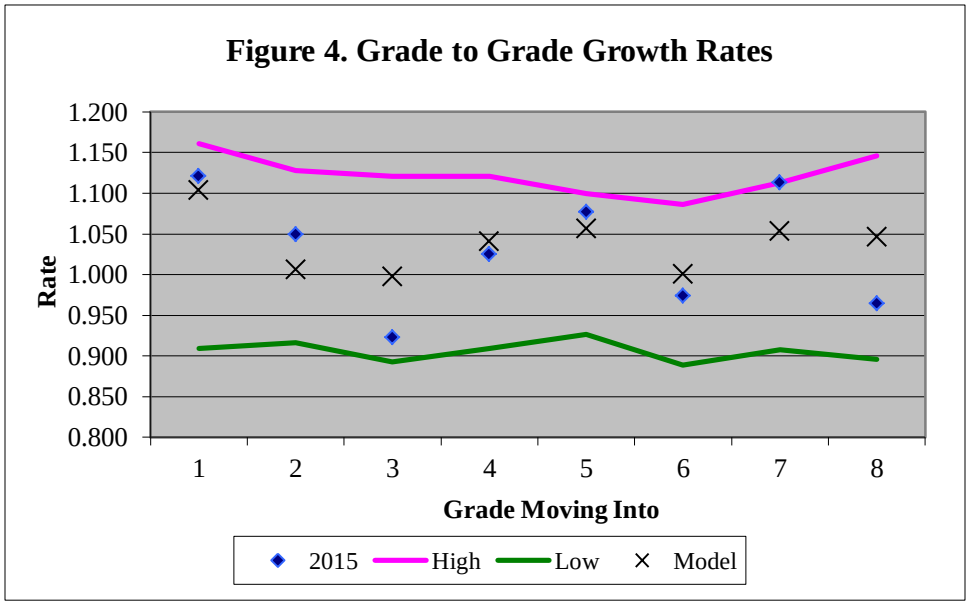
In the standard model, kindergarten enrollment is compared to births five years prior and some average of the observed growth or decline is used to project future kindergarten enrollment. My method breaks kindergarten enrollment into three parts: five-year olds, six-year olds entering kindergarten for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

Preston now offers universal pre-kindergarten for four-year olds. In my standard model, I hold pre-kindergarten enrollment constant. In this model, I set pre-kindergarten enrollment to births four-years earlier. The median growth between births and five-year olds enrolled in kindergarten was 96.1 percent over the past 15 years. Thus, I felt relating pre-kindergarten enrollment directly to births four-years prior was appropriate.

To extend the projection beyond four years, I need to estimate births. The State Department of Public Health recorded 39 births in 2012. That is the latest official count. The preliminary counts for 2013 and 2014 are 33 and 36 births, respectively. From the 15 births recorded through July 2015, I estimated there would be 36 births in 2015 by adding the average of births in August to December in 2013 and 2014 and the average out-of-state births in 2012 and 2013 (the latest data available). To project births in 2016 to 2020, I started by estimating the 2013 fertility rates from Preston 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 2013 and 2010. They have reported a decline in rates. I applied the estimated 2013 Preston rates to the Connecticut State Data Center's projection of women of child-bearing age in 2015 and 2020. I projected births in 2015 and 2020, calculated the projected growth in the interval, annualized it and applied it to the two year running average of births in Preston starting with 2014 and 2015.

Figure 4 gives a perspective of the grade-to-grade growth rates for students attending the Preston 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 five-year average of the observed grade-to-grade growth.

All model growth rates are toward the middle or upper end of the ten-year range. All eight of the elementary growth rates are above 1.00 indicating that families are moving into the Preston schools. The Grade 7 grade-to-grade growth rate in 2015 was a ten-year high. Most of the model growth rates are very close to the annual rates in 2015. In grades 3 and 8, the model rates were well above the 2015 rates. The average growth rate across grades 1-8 used for the projection was a high 1.038. The rate in 2015 was 1.031; the median rate over the past 20 years was 1.027.



Enrollment data from 2005 to 2014 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. Data for 2015 were provided by the Preston central office. All enrollment data after 2012 are subject to minor changes as they are reviewed and audited. Births from 1980 to 2015 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.

Total Enrollment

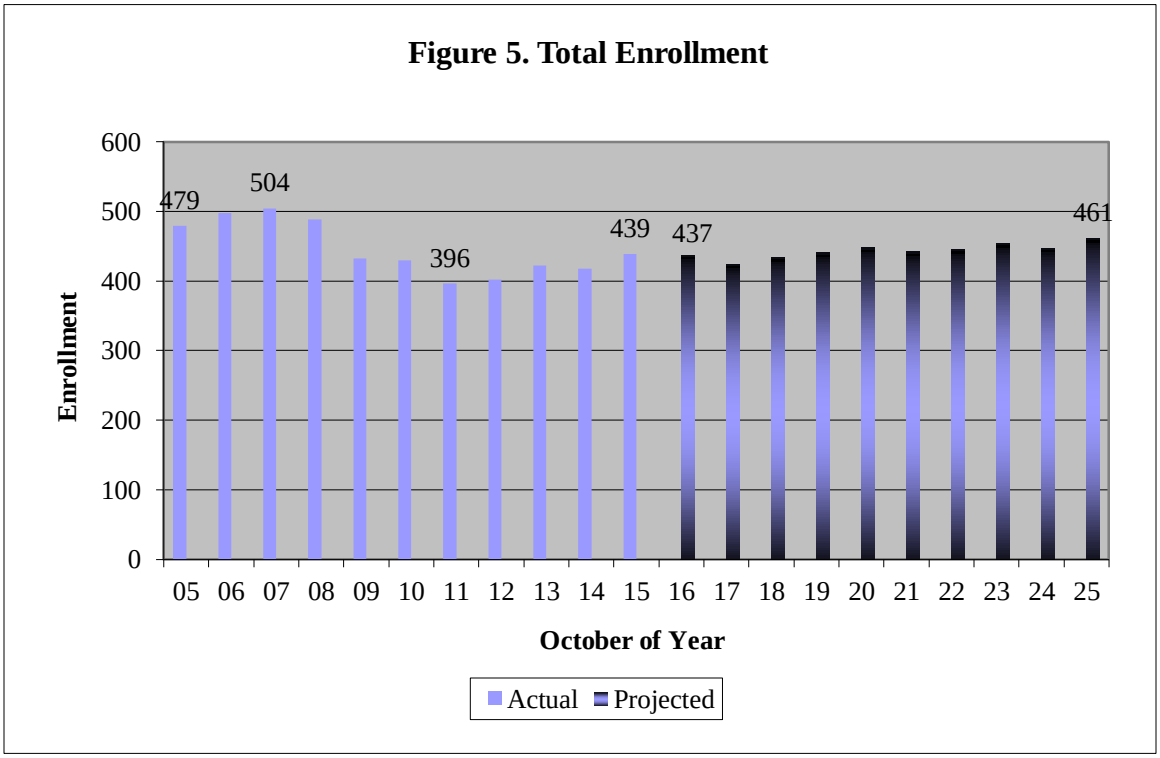
Table 2 and Figure 5 present the observed total enrollment in Preston from 2005 to 2015 and projected enrollment through 2025. Detailed grade-by-grade data may be found in Appendix A. Enrollment grew from 479 students in 2005 to 504 students in 2007. That was below the recent high of 522 students in 2003. Enrollment then went through four years of decline that took it below 400 students in 2011. Enrollment is now rebounding. In 2015, it was 439 students. Between 2005 and 2015 there was a loss of 40 students or 8.4 percent. Statewide in that period, I project that grade K-8 enrollment will have decreased by 9.4 percent. Preston's decline of 14.9 percent between 2004 and 2014 (the latest comparable data available) was smaller than most similar districts in the region. Steeper declines were recorded in grades PK-8 in Lebanon (-23.1 percent), Bozrah (-26.1 percent), Franklin (-30.1 percent), Scotland (-30.6 percent), and Lisbon (-36.6 percent). Smaller declines were recorded in North Stonington (-4.4 percent) and Brooklyn (-9.0 percent).

I anticipate that, if grade-to-grade growth continues, enrollment will grow slowly. Next year, I anticipate that total enrollment will be similar to this year. By 2025, I expect the enrollment will be about 460 students. The total ten-year projected growth of 20-25 students is about five percent above the current enrollment. I have projected that K-8 enrollment statewide will be down 13.0 percent in that period. Your total enrollment should average 443 students over the ten-year projection period. This is the same as the average total enrollment over the past ten years.

Table 2. Total Enrollment

Year	Students	Percent Change
2005	479	
2006	498	4.0%
2007	504	1.2%
2008	488	-3.2%
2009	432	-11.5%
2010	430	-0.5%
2011	396	-7.9%
2012	402	1.5%
2013	422	5.0%
2014	418	-0.9%
2015	439	5.0%
2016	437	-0.5%
2017	424	-3.0%
2018	434	2.4%
2019	441	1.5%
2020	448	1.7%
2021	442	-1.3%
2022	445	0.7%
2023	454	2.0%
2024	447	-1.5%
2025	461	3.1%

Figure 5. Total Enrollment



Preston Veterans' Memorial School Enrollment

Table 3 and Figure 6 present actual enrollment from 2005 to 2015 and projected enrollment through 2025 at the Preston Veterans' Memorial School. Enrollment at the school remained between 310 and 320 students from 2005 to 2008. It then began to decline. The declines in 2009 and 2011 were rather large, perhaps tied to employment levels at the local casinos. Enrollment fell to 261 students in 2014 and then rebounded to 287 in 2015. Between 2005 and 2015 the school's enrollment declined by 28 students or 8.9 percent. I project that state public school enrollment in grades K-5 will have fallen 9.5 percent in that interval.

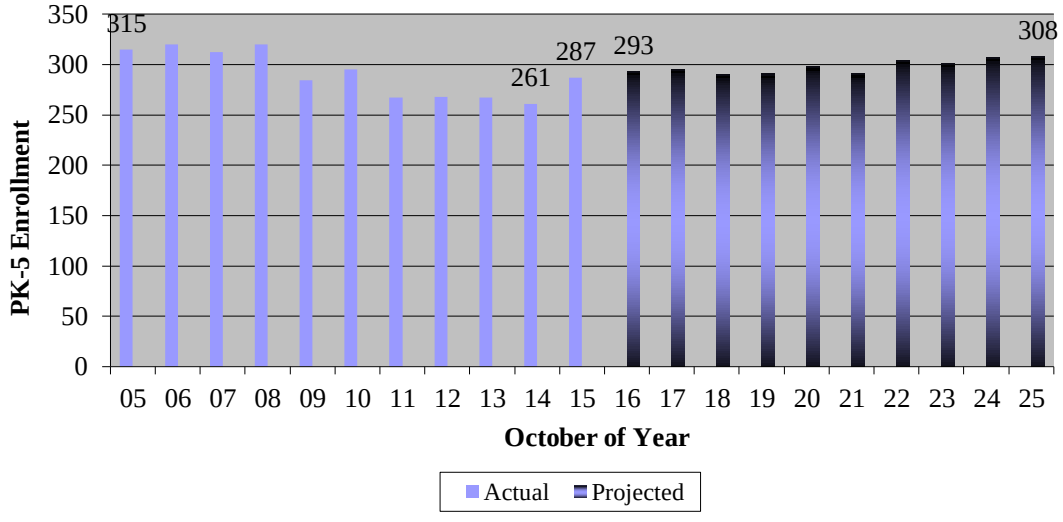
Partially aided by the implementation of universal pre-kindergarten for four-year olds, enrollment at Preston Veterans School should grow slightly. I project that next year's enrollment at the school will be about five students more than this year's. By 2025, I expect the school's enrollment be close to 310 students. This will be about the same as the October 2007 count. Statewide, I have projected a 10.3 percent decrease in grade K-5 enrollment in that period. Over the ten-year projection period, I believe enrollment at the Preston Veterans' Memorial School will average almost 300 students. This is above the average of 288 students observed over the past ten years.

Table 3. Preston Veterans' Memorial School Enrollment

Year	PK	K-5 Students	K-5 Percent Change
2005	22	293	
2006	29	291	-0.7%
2007	29	283	-2.7%
2008	26	294	3.9%
2009	15	269	-8.5%
2010	22	273	1.5%
2011	17	250	-8.4%
2012	15	253	1.2%
2013	14	253	0.0%
2014	18	243	-4.0%
2015	31	256	5.3%
2016	39	254	-0.8%
2017	33	262	3.1%
2018	36	254	-3.1%
2019	36	255	0.4%
2020	36	262	2.7%
2021	36	255	-2.7%
2022	36	268	5.1%
2023	36	265	-1.1%
2024	36	271	2.3%
2025	36	272	0.4%

These figures include pre-kindergarten children. In the past ten years, pre-kindergarten enrollment ranged from 14 to 31 children. There were 31 children enrolled in these programs in 2015. My projection model sets pre-kindergarten enrollment at the number of births four-years prior. That peaks at 39 students in 2016.

Figure 6. Preston Veterans' Memorial School Enrollment



Preston Plains School Enrollment

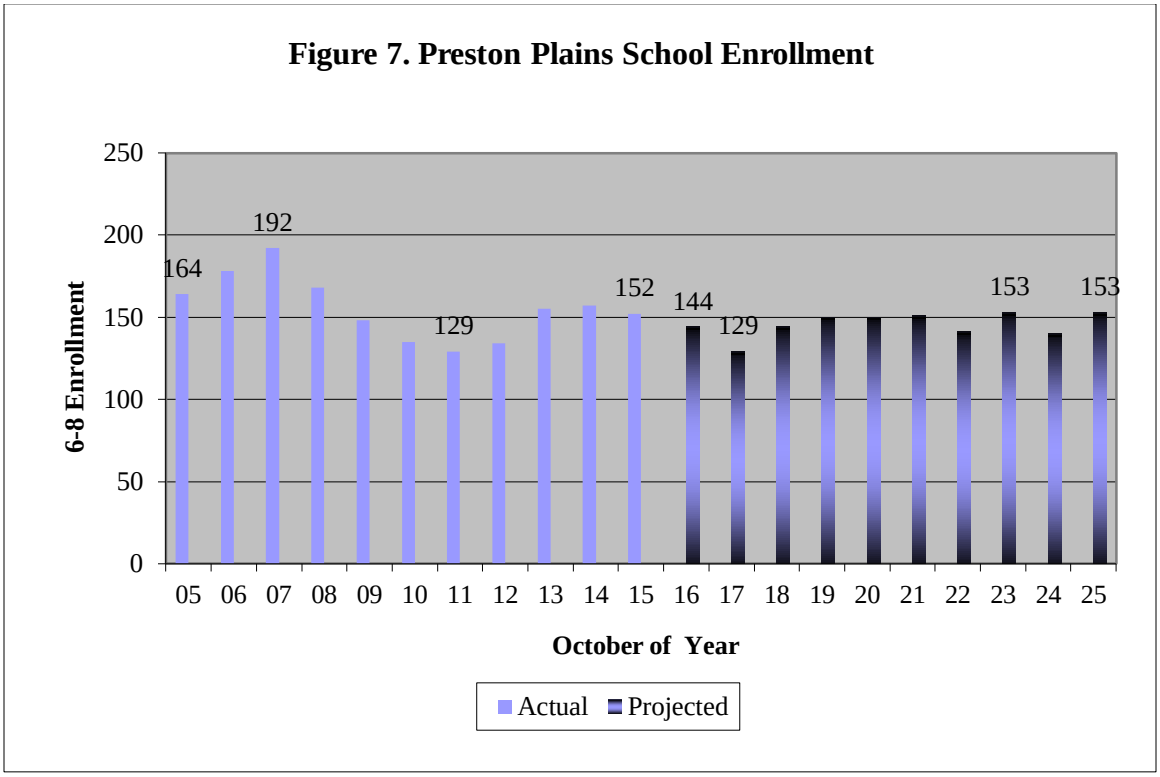
Table 4 and Figure 7 present past enrollment from 2005 to 2015 and projected future enrollment to 2025 at the Preston Plains School. Enrollment rose from 164 students in 2005 to 192 students in 2007 and then plummeted to 129 students in 2011. Since then, it has rebounded to 152 students in 2015. Enrollment losses were particularly heavy in 2005, 2008 and 2009. This year's enrollment was similar to last year's. Between 2005 and 2015, enrollment declined by 12 students or 7.3 percent. I project that public school enrollment in grades 6-8 statewide will have decreased 9.2 percent between 2005 and 2015.

I believe that next year's enrollment at Preston Plains School enrollment will be five to ten students lower than this year's. I expect the ten year low will come in 2017 at about 130 students. I expect the ten-year peak to come in 2023 between 150 and 155 students. The projected 2025 enrollment of 153 students would be one student above the current level, a growth of less than one percent. I project that public school enrollment in grades 6-8 statewide will decline by 14.4 percent in that period. Over the ten-year projection period, enrollment at the Preston Plains School is expected to average 146 students. This is slightly below to the average of 155 students observed over the past ten years.

Table 4. Preston Plains School Enrollment

Year	Students	Percent Change
2005	164	
2006	178	8.5%
2007	192	7.9%
2008	168	-12.5%
2009	148	-11.9%
2010	135	-8.8%
2011	129	-4.4%
2012	134	3.9%
2013	155	15.7%
2014	157	1.3%
2015	152	-3.2%
2016	144	-5.3%
2017	129	-10.4%
2018	144	11.6%
2019	150	4.2%
2020	150	0.0%
2021	151	0.7%
2022	141	-6.6%
2023	153	8.5%
2024	140	-8.5%
2025	153	9.3%

Figure 7. Preston Plains School Enrollment



Factors Affecting the Projection

The primary reasons for elementary enrollment change lie in the births and yield from the birth cohort. Figure 8 presents the official birth counts from 1980 to 2012 and estimated and projected births through 2020. Births ranged from a low of 15 in 1982 to a high of 59 in 1993. There were 39 births in 2012, the last official count. The preliminary counts of births are 33 in 2013 and 36 in 2014. Based on births through July of 2015, I estimate there will be also 36 births in 2015. In the 1990s there was an average of 44 births annually. In the five years from 2006 to 2010 (this fall's kindergarten through 4th graders) births averaged 37. Births in the 2011 through 2016 period will likely average 34. The projection in years 2021 to 2025 assumes an average of 36 births annually between 2016 and 2020. This is based in part upon the Connecticut State Data Center projection of Preston women of child-bearing ages.

Figure 8. Births Since 1980

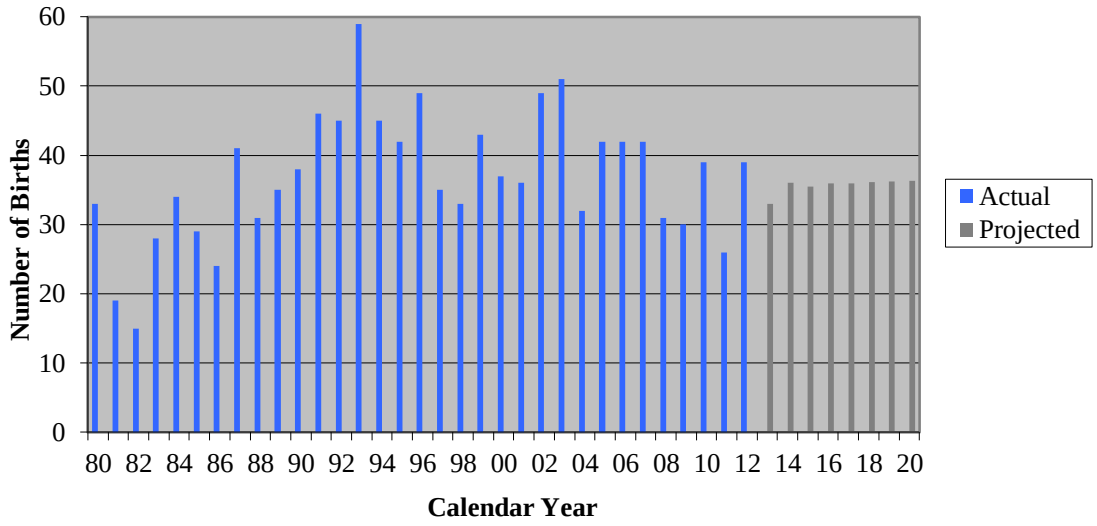
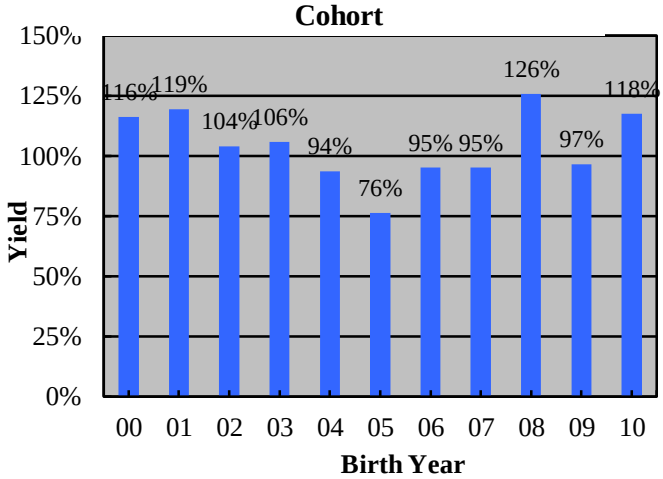


Figure 9 depicts the kindergarten yield five and six years later from the birth cohorts of 2000 to 2010 for Preston residents attending kindergarten in Preston. For example, there were 30 births in 2009 and 27 children enrolled in Preston kindergarten at age five in 2014 and two who first enrolled in kindergarten at age six in 2015. That is a yield of 97 percent. The yield from the birth cohort ranged from a low 76 percent in 2005 to a high of 126 percent in 2008. The estimated yield in 2010 was 118 percent. Note that 2010 yield is an estimate because we will not know the actual number of children who will enter kindergarten for the first time as

Figure 9. Kindergarten Yield From Birth Cohort



six-year olds until October 2016. 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.

Table 5 gives a history of enrollment in kindergarten since 2005 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 five-year weighted average of retentions, and yields from births five and six years ago. I estimated kindergarten from 103.2 percent of births five years ago, 6.4 percent of births six years ago, and 2.9 percent of current Kindergarten students retained. The weighted five-year average is lower than the estimated figures for 2015.

Table 5. Analysis of Kindergarten Enrollment

Year	Birth Year	Births	K	Retained From Prior Year	- - - - Non-Retained - - - - Born 5-Years Prior Resident	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
2005	2000	37	45	1	41	0	2	2.5%	110.8%	4.7%	116.2%
2006	2001	36	44	1	41	0	2	2.2%	113.9%	5.4%	119.4%
2007	2002	49	52	0	50	0	2	0.0%	102.0%	5.6%	104.1%
2008	2003	51	51	0	49	0	1	0.0%	96.1%	2.0%	105.9%
2009	2004	32	35	1	29	0	5	2.0%	90.6%	9.8%	93.8%
2010	2005	42	31	0	30	0	1	0.0%	71.4%	3.1%	76.2%
2011	2006	42	38	0	36	0	2	0.0%	85.7%	4.8%	95.2%
2012	2007	42	46	2	40	0	4	5.3%	95.2%	9.5%	95.2%
2013	2008	31	36	0	36	0	0	0.0%	116.1%	0.0%	125.8%
2014	2009	30	33	3	27	0	3	8.3%	90.0%	9.7%	96.7%
2015	2010	39	46	0	44	0	2	0.0%	112.8%	6.7%	*117.7%*
3-Year Average								2.6%	107.0%	4.9%	113.4%
Weighted 3-Year Average								2.8%	105.8%	6.6%	112.0%
5-Year Average								2.7%	99.5%	5.9%	106.1%
Weighted 5-Year Average								**2.9%**	**103.2%**	**6.4%**	**109.2%**

The correlation between births and kindergarten enrollment five-year later was a very low 0.25 over the 1985 to 2015 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of 10 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.

The "Connecticut Early Childhood Report on Changing the Kindergarten Date," mandated by Public Act 14-39, recommends that the start date for kindergarten be moved back to October 1st phased in one month increments over the course of three years. It further recommends the elimination of the section of C.G.S Sec. 10-184 which allows parents the option of not enrolling their age-eligible child. The date of implementation of the changes should be determined following the early 2016 release of the results of a study of the availability of early care and education for those students who would be impacted by the change. The report indicated that in 2014, Preston had 10 children who would have been impacted by the date change and three children who were eligible to enroll the prior year (redshirted). Once implemented, the changes would very slightly reduce the size of your kindergarten class for three years and increase your pre-kindergarten enrollment. This change is not built into this projection, but will be built into future projections once the implementation date is set.

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 10 presents the US Census Bureau estimate of Preston population growth between July, 2010 and 2014. In those four years, the town population is estimated to have increased by 23 people. The population gain of 0.49 percent was the 50th ranked in the state. In contrast, New London County declined by 0.12 percent, the state grew by 0.59 percent and communities with similar economic and need characteristics declined by 0.41 percent. The 2010 census population data show that from April 2000 to April 2010 Preston's population grew from 4,688 people to 4,726. The 38-person growth was the third smallest in the past ten decades. The 0.8 percent increase between 2000 and 2010 was the 49th largest in the state.

Figure 10. Estimated Population Growth, 2010 to 2014

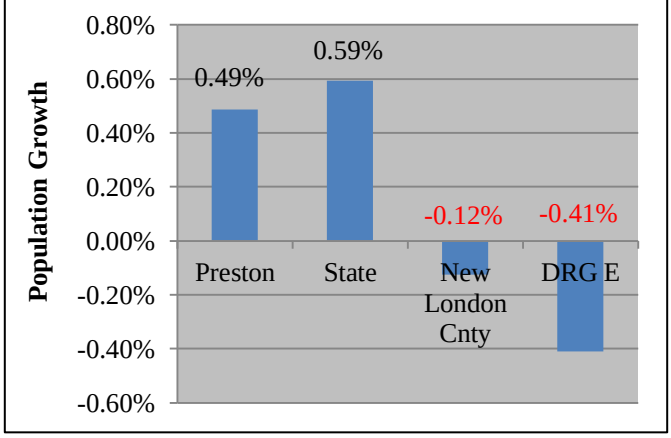


Figure 11 presents the number of women of child-bearing age from the 2000 and 2010 censuses and projected in 2015. There were 37 births to Preston residents in 2000 and 39 in 2010. In Preston, women in the 25-29 age group had the highest rate of births in 2010. The number of women in this group fell from 118 in 2000 to 100 in 2010 and is projected to decline further in 2015. The second highest birth rate in communities like yours is women ages 30-34. The number in that age range fell from 161 in 2000 to 110 in 2010 and is projected to decline slightly. The only age range that increased was 20 to 24. This age range typically has low birth rates in communities like yours.

Figure 11. Women of Child-Bearing Age

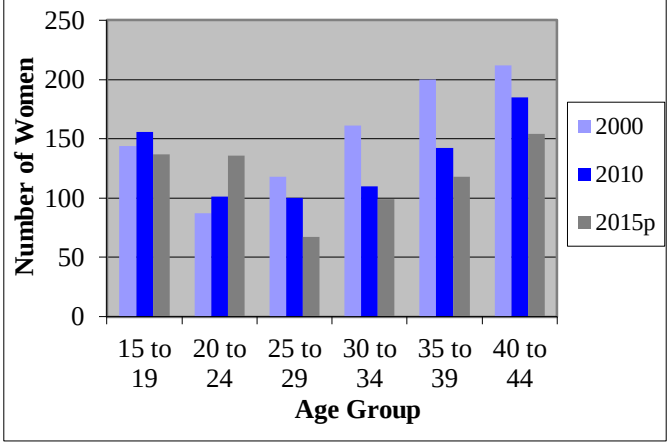


Figure 12 examines the number of people in the labor market from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older working or actively seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Preston labor force decreased 4.4 percent between 2010 and 2014. This was worse than the state (-1.4 percent) but better than New London County (-5.0 percent). The 2014 unemployment level of 6.8 percent was down from the 8.6 percent recent high set in 2010. It is slightly worse than the state rate of 6.6 percent and the New London County rate of 6.7 percent.

Figure 12. Recent Changes in the Labor Market

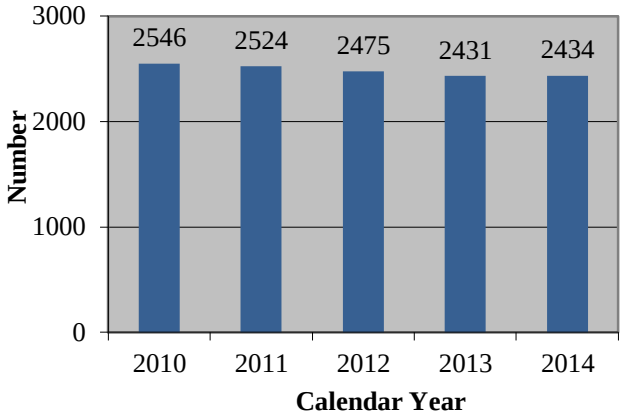


Figure 13 presents the net new housing units constructed from 2004 to 2014 from the State Department of Economic and Community Development. In the past ten years the number of net (of demolitions) new housing units constructed in Preston ranged from a high 41 in 2005 down to a low of zero in 2014. In the five-year look-back period for this projection, there was an average of five net new housing units constructed. The 2010 census indicated that Preston had 2,019 housing units of which 92.6 percent were occupied in April 2010. There was an average of 2.53 people per household and 29.2 percent of household had a child under 18.

Figure 13. Net New Housing Units

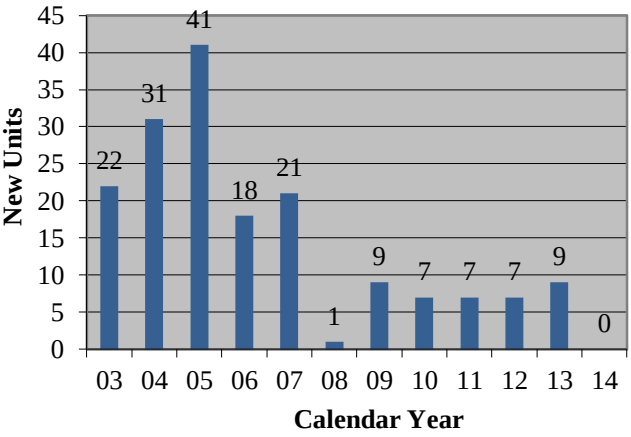


Figure 14 presents my estimate of the number of sales of existing homes. I derived it by taking the number of real estate transactions from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized. This is an estimate because of the lag between the time a new house is authorized and it is sold. The estimated number of sales of existing homes ranged from a low of 42 in 2009 to a high of 90 in 2006. There were 65 existing houses sold in 2014. In the five-year look back period for the projection, there were 57 sales annually. Based on sales through July, I anticipate there will be about 75 sales of existing houses in 2015.

Figure 14. Sales of Existing Homes

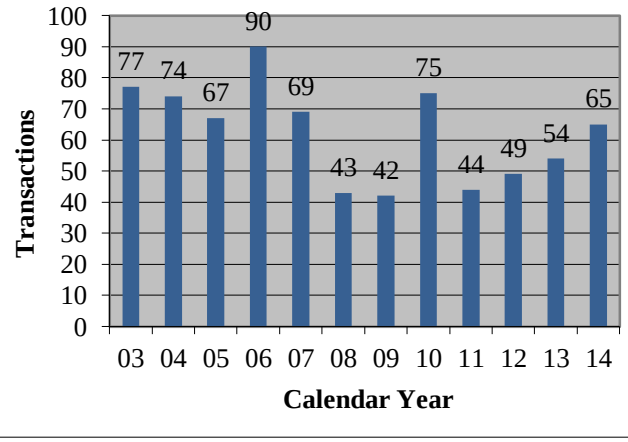


Figure 15 presents the non-public enrollment in grades PK-8 over the past ten years for students from the town of Preston. The data are from the records of the Connecticut State Department of Education. Non-public enrollment ranged from a high of 39 students in 2009 to a low of 26 students in 2005. There were 28 students enrolled in 2014. In the past ten years, enrollment in the non-public schools decreased by four students or 12.5 percent. The 2014 enrollment represented 4.3 percent of all PK-8 students from Preston. That is down from the 6.7 percent recent high recorded in 2011. I expect the non-public enrollment from Preston will be down slightly in 2015.

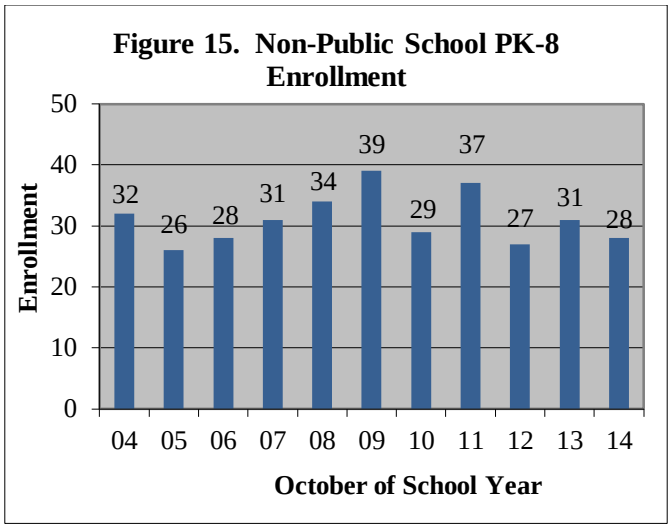


Figure 16 presents the enrollment of Preston residents in other public schools in Connecticut in grades PK-8 from 2005 to 2015. The 2015 figure is a preliminary count provided by the central office. The number educated out-of-district ranged from five in 2003 to 28 in 2010. In 2015, a total of 12 students attended the Integrated Day Charter, four attended the Multicultural Magnet, one attended the Interdistrict School for Arts and Communication and two attended the Nathan Hale Magnet School in New London. I assumed that the three students who attended other public schools in 2014 continued to do so in 2015.

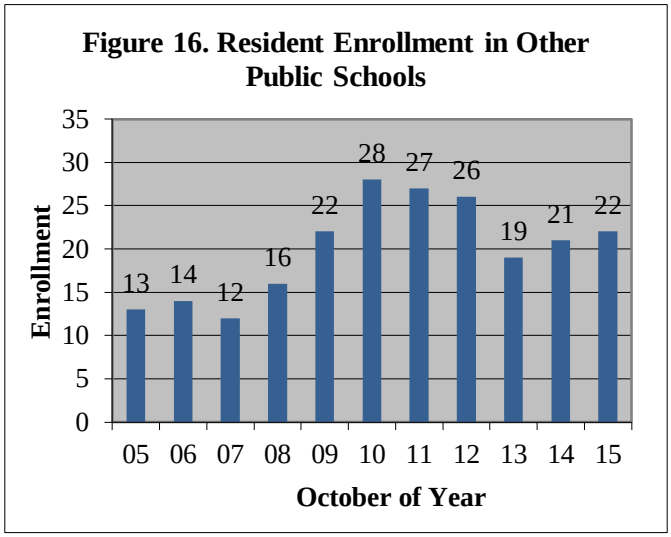
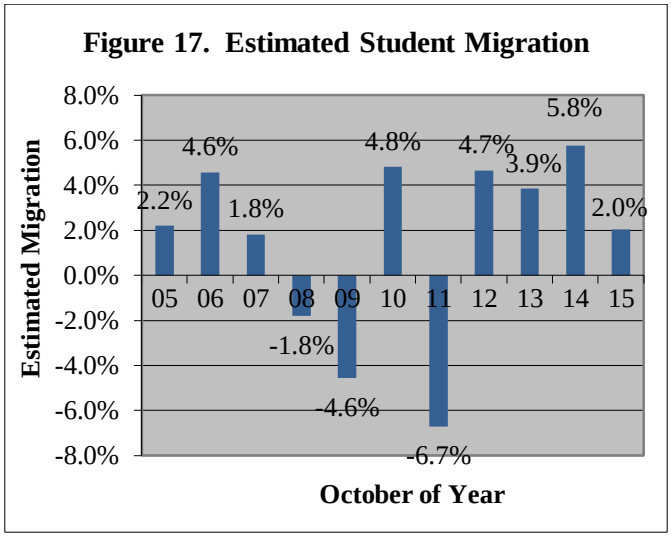


Figure 17 presents the estimated migration of students from Preston. Estimated migration ranged from a low of -6.7 percent in 2011 to a high of +5.8 percent in 2014. I estimate there was 2.0 percent in-migration in 2015. The data behind these figures may be found in Appendix B. In the five-year look-back period for this projection, the average migration was +3.2 percent. In the past 32 years, only five of the five-year weighted averages of migration surpassed this figure. The median five-year migration rate is 1.92 percent over the past 25 years. If migration returns to previous levels, then this projection will be a little high.

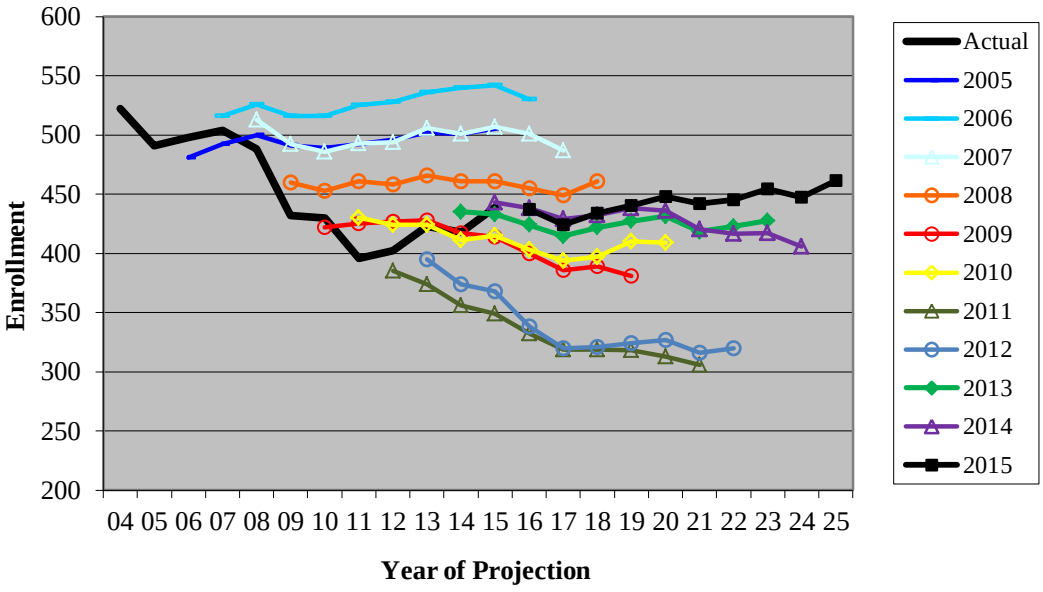


Prior Projections of Enrollment

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 18 presents the enrollment projections that I have run for Preston since 2005. Last year's projection was four students (0.9 percent) above this year's enrollment of 439. The nine other enrollment projections that I did between 2005 and 2013 had one-year error rates that averaged 4.8 percent. The six projections done between 2005 and 2010 had an average five-year error rate of 14.2 percent, which is 2.7 percent annualized.

Last year's projection for Preston is running 0.9 percent high after one year. In that analysis, I projected that K-5 enrollment would be 259 students in 2015. The actual enrollment of 256 was three students less than projected. The projection was high by 1.2 percent. I projected that enrollment in grades 6-8 would be 158 students in 2015. The actual enrollment of 152 was six students less than projected. The projection was high by 4.0 percent. The 2014 projection expected that pre-kindergarten classes in 2015 would serve all four-year olds in town. Fully 31 students were enrolled in pre-kindergarten programs in 2015; I projected that 26 would be enrolled.

Figure 18. Prior Projections of Enrollment



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 2005. I found for the 67 district-level projections that I ran in 2005 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 15percent of the projections. Among the 87 elementary projections run, the median projection was 9.5 percent high (1.1 percent annually). Among the 70 middle school projections run, the median projection was 8.2 percent high (1.0 percent annually). This illustrates what an economic downturn can do to projections run with the cohort-survival method.

Summary

Total enrollment is projected to grow about five percent from 439 in 2015 to about 460 students in 2025. Your total enrollment should average almost 445 students over the ten-year projection period. Enrollment at the Preston Veterans' Memorial School is projected to grow slightly from its current enrollment of 287 students to about 310 students in 2025. Over the ten-year projection period, I believe the school's enrollment will average about 300 students. Enrollment at the Preston Plains School was 152 students in October 2015. Over the next ten years, I anticipate a low of 129 students in 2017 and a high of 153 students in 2023. The projected 2025 enrollment of 153 students is one student above the current level, an increase of less than one percent. Over the ten-year projection period, the school's enrollment is expected to average about 145 students.

This report is projecting a slight increase 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 2006 to 2010 (this fall's kindergarten through 4th graders) births averaged 37. Births in the 2011 through 2015 period will average 34. This change in births, which except for the last half of 2015 has already happened, would normally lead to a decline. My model is based on a slight increase in the average number of births over the 2016 to 2020 period. My kindergarten model expects a nine percent growth between births and eventual kindergarten enrollment. The median growth over the past 15 years was 4.1 percent. The average of the grade-to grade growth rates across grades 1-8 that I used to grow future enrollment was 1.038. The annual growth rate was1.031 in 2015 and the median over the last 20 years was only 1.027. Taking these three key factors into consideration, I consider the projection may be very slightly optimistic.

I set the pre-kindergarten enrollment to births four-years prior. This assumes no migration between birth and age four. When you look at the growth between birth and five-year old kindergartners the range is roughly -29 percent to +16 percent. The median growth over the past 15 years was -3.9 percent. On average, my estimated pre-kindergarten will remain several students below your capacity of 40 students. However, it is also possible that next year, the pre-kindergarten enrollment might slightly exceed the 40 children capacity. We also have no data on how the availability of universal pre-kindergarten for four-year olds might affect families with young children to choose Preston over neighboring communities.

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 and continued enrollment of Preston residents in regional magnet schools. The projection assumes the following population growth factors will not change appreciable: births will average 36 over the 2016 to 2020 period, a nine percent growth between the number of births and kindergarten enrollment and a student migration of +3.2 percent. Additionally, about five 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 five new housing units constructed annually and 57 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 Preston and then make adjustments as necessary.

Appendix A. Enrollment Projected By Grade to 2025

School Year	Birth Year	Births[1]	K[2]	1	2	3	4	5	6	7	8	PreK[3]	PK-5	6-8	Total
2005-06	2000	37	44	42	46	46	57	58	62	53	49	22	315	164	479
2006-07	2001	36	44	47	42	51	47	60	63	61	54	29	320	178	498
2007-08	2002	49	52	40	53	40	50	48	65	67	60	29	312	192	504
2008-09	2003	51	51	51	45	52	41	54	45	59	64	26	320	168	488
2009-10	2004	32	35	50	53	41	52	38	48	43	57	15	284	148	432
2010-11	2005	42	31	38	56	55	44	49	38	48	49	22	295	135	430
2011-12	2006	42	38	36	35	50	50	41	47	39	43	17	267	129	396
2012-13	2007	42	46	36	33	33	50	55	41	52	41	15	268	134	402
2013-14	2008	31	36	53	38	37	37	52	57	41	57	14	267	155	422
2014-15	2009	30	33	40	52	40	39	39	53	57	47	18	261	157	418
2015-16	2010	39	46	37	42	48	41	42	38	59	55	31	287	152	439
Projected															
2016-17	2011	26	31	51	37	42	50	43	42	40	62	39	293	144	437
2017-18	2012	39	43	34	51	37	44	53	43	44	42	33	295	129	424
2018-19	2013	33	36	47	34	51	39	47	53	45	46	36	290	144	434
2019-20	2014	36	40	40	47	34	53	41	47	56	47	36	291	150	441
2020-21	2015	36	40	44	40	47	35	56	41	50	59	36	298	150	448
2021-22	2016	36	41	44	44	40	49	37	56	43	52	36	291	151	442
2022-23	2017	36	41	45	44	44	42	52	37	59	45	36	304	141	445
2023-24	2018	36	41	45	45	44	46	44	52	39	62	36	301	153	454
2024-25	2019	36	41	45	45	45	46	49	44	55	41	36	307	140	447
2025-26	2020	36	41	45	45	45	47	49	49	46	58	36	308	153	461

[1] 2000 to 2014 births from the State Department of Public Health. Births in 2013 and 2014 are preliminary. Births in 2015 were estimated from the 2015 count of in-state births through July. Births in 2016-20 were based growth in births on estimated from 2013 town fertility rates and the Connecticut State Data Center projections of Preston women of child-bearing ages in 2015 and 2020.

[2] Based on five-year weighted averages of births 5- and 6- years ago and retention.

[3] Projected pre-kindergarten based on births four-years prior.

Appendix B. Growth from Grade-to-Grade Across Years

	Grade Moved Into from Prior Year										
October of Year	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**PreK**	**Estimated Migration[1]**
2006	1.222	1.068	1.000	1.109	1.022	1.053	1.086	0.984	1.019		4.57%
2007	1.061	0.909	1.128	0.952	0.980	1.021	1.083	1.063	0.984		1.81%
2008	1.000	0.981	1.125	0.981	1.025	1.080	0.938	0.908	0.955		-1.81%
2009	1.094	0.980	1.039	0.911	1.000	0.927	0.889	0.956	0.966		-4.56%
2010	0.738	1.086	1.120	1.038	1.073	0.942	1.000	1.000	1.140		4.81%
2011	0.905	1.161	0.921	0.893	0.909	0.932	0.959	1.026	0.896		-6.73%
2012	1.095	0.947	0.917	0.943	1.000	1.100	1.000	1.106	1.051		4.66%
2013	1.161	1.152	1.056	1.121	1.121	1.040	1.036	1.000	1.096		3.86%
2014	1.100	1.111	0.981	1.053	1.054	1.054	1.019	1.000	1.146		5.76%
2015	1.179	1.121	1.050	0.923	1.025	1.077	0.974	1.113	0.965		2.03%
3-Year Ave.	1.147	1.128	1.029	1.032	1.067	1.057	1.010	1.038	1.069		
Weighted 3-Year	1.150	1.123	1.028	0.999	1.051	1.063	1.000	1.057	1.047		
5-Year Ave.	1.088	1.099	0.985	0.987	1.022	1.041	0.998	1.049	1.031		
Weighted 5-year	1.125	**1.104**	**1.006**	**0.998**	**1.041**	**1.057**	**1.001**	**1.054**	**1.046**		
Enrollment Multiplier		1.104	1.006	0.998	1.041	1.057	1.001	1.054	1.046		

[1] Adjusted for Preston residents enrolled in magnet schools**.**