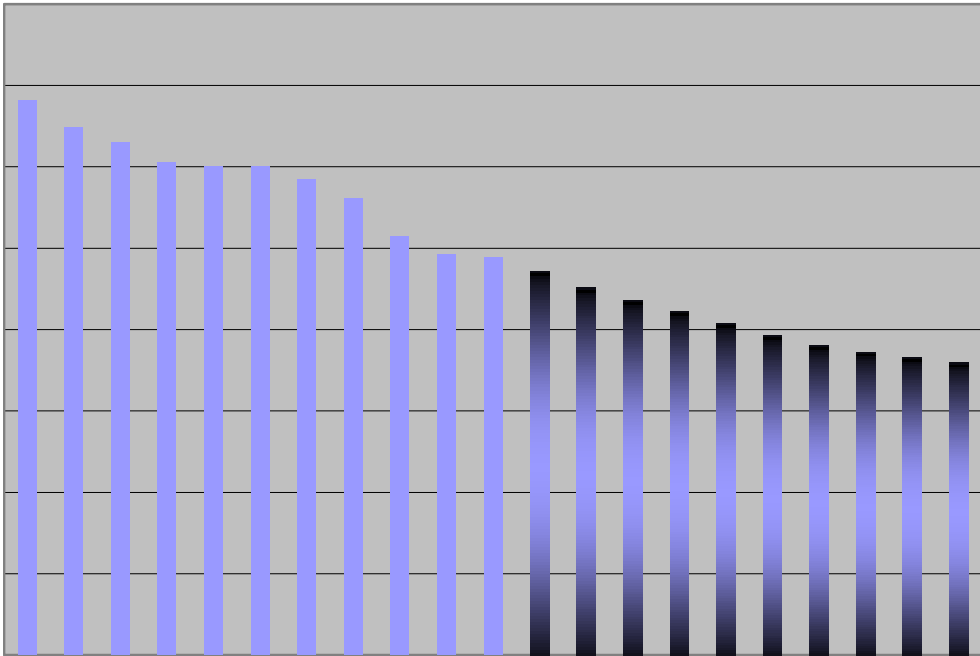


LITCHFIELD PUBLIC SCHOOLS ENROLLMENT PROJECTED TO 2024



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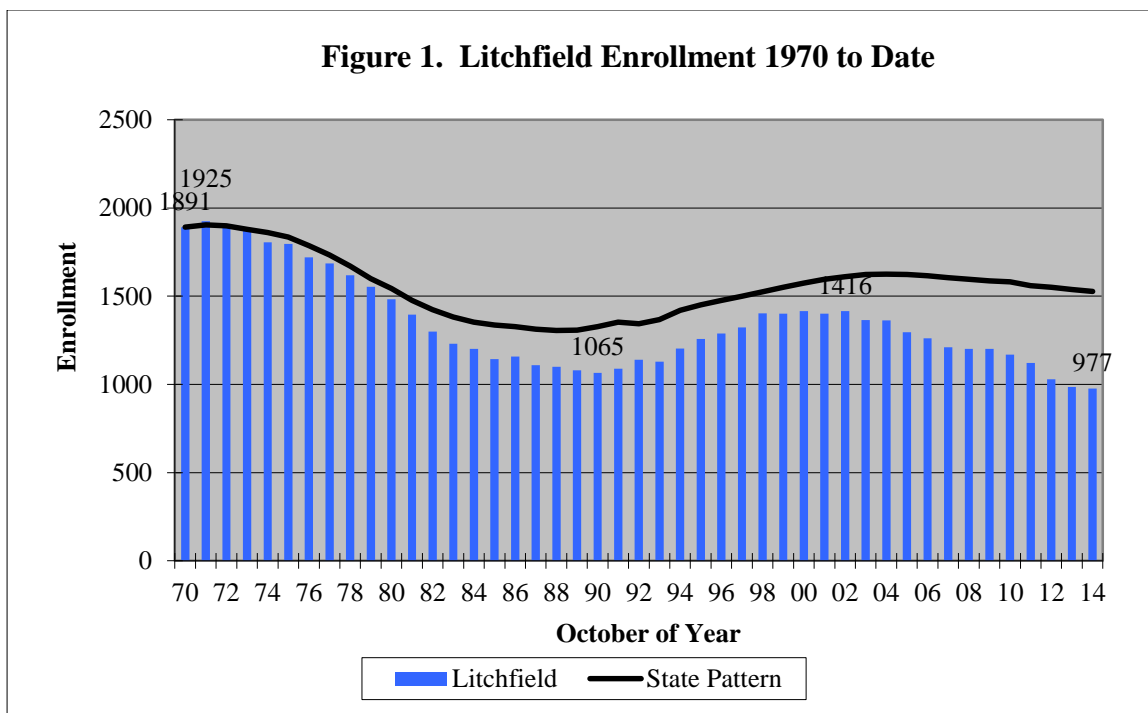
Introduction

This report presents a ten-year projection of enrollment for the Litchfield Public Schools. It is based on students enrolled in Litchfield schools. The projection is divided into the three grade levels that represent how the Litchfield schools are organized: PK-3, 4-6 and 7-12. 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, growth in the labor market, dropouts, non-public enrollment, resident enrollment in other public schools, and migration - 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 required step in planning for school facilities. The State of Connecticut requires eight-year school-based projections as a critical component of determining the size of the project for which reimbursement is eligible. This report is appropriate for that purpose. 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 enrollment in Litchfield from 1970 to date.



Enrollment in the Litchfield Public Schools grew from 1,891 students in 1970 to an all-time high of 1,925 students in 1971. Between then and 1990, enrollment moved downward to 1,065 students. In those 19 years, enrollment declined by 860 students or 44.7 percent. Between 1990 and 2004 enrollment grew by 351 students or 33.0 percent. Enrollment then entered a second downward cycle. Between 2004 and 2014 enrollment declined from 1,416 to 977 students. That represented a loss of 439 students or 31.0 percent.

Litchfield's enrollment pattern is fairly similar to that of the state's public schools. Between its 1971 peak and 1988, Connecticut public school 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 6.1 percent between 2004 and 2014. The 1971 to 1990 decline in Litchfield was longer in duration and deeper than the state's decline. The subsequent enrollment gain in Litchfield was shorter in duration, but more robust than the state's. Litchfield entered a second cycle of decline earlier than the state. To date the decline has been deeper in Litchfield than the state. Had Litchfield followed the state pattern of enrollment since 1970, it would have had 1,527 students on October 1, 2014 instead of the 977 that were enrolled on that date.

Current Enrollment

Table 1 and Figure 2 provide a picture of where Litchfield residents attended school in October of 2014. The non-public enrollment is preliminary. They show that 84.3 percent of Litchfield's school-age residents attended the Litchfield Public Schools in 2014. An estimated 10.9 percent of the school-age residents attended non-public schools in state. The number attending private schools out-of-state is not known. Other school-age residents attended area magnet schools (0.7 percent), state technical high schools, an agriculture science center (3.5 percent) or other public schools in other districts (0.5 percent). There were three non-residents enrolled in the Litchfield Public Schools in 2014. The projections in this report are based off of the 977 students who attend the Litchfield Public Schools in October of 2014.

Table 1. 2014 Enrollment		
	Number	Percent
Residents		
A. Litchfield Public	974	84.3%
B. Tech/Ag Sci.	41	3.5%
C. Magnets	8	0.7%
D. Other Public	6	0.5%
E. Non-Public	126	10.9%
Total (A+B+C+D+E)	1,155	
F. Non-Residents	3	
Total Enrollment (A+F)	977	

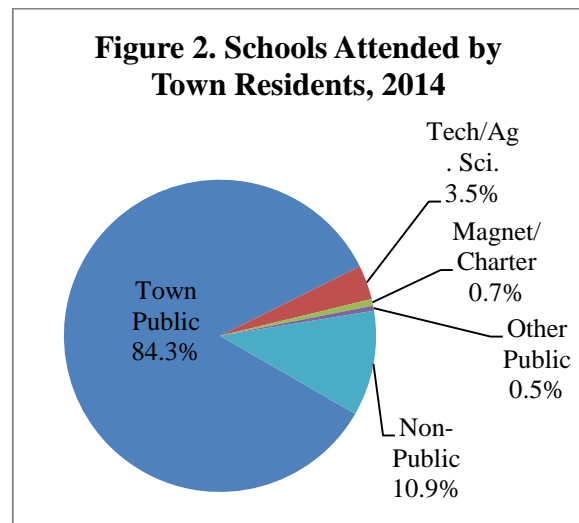
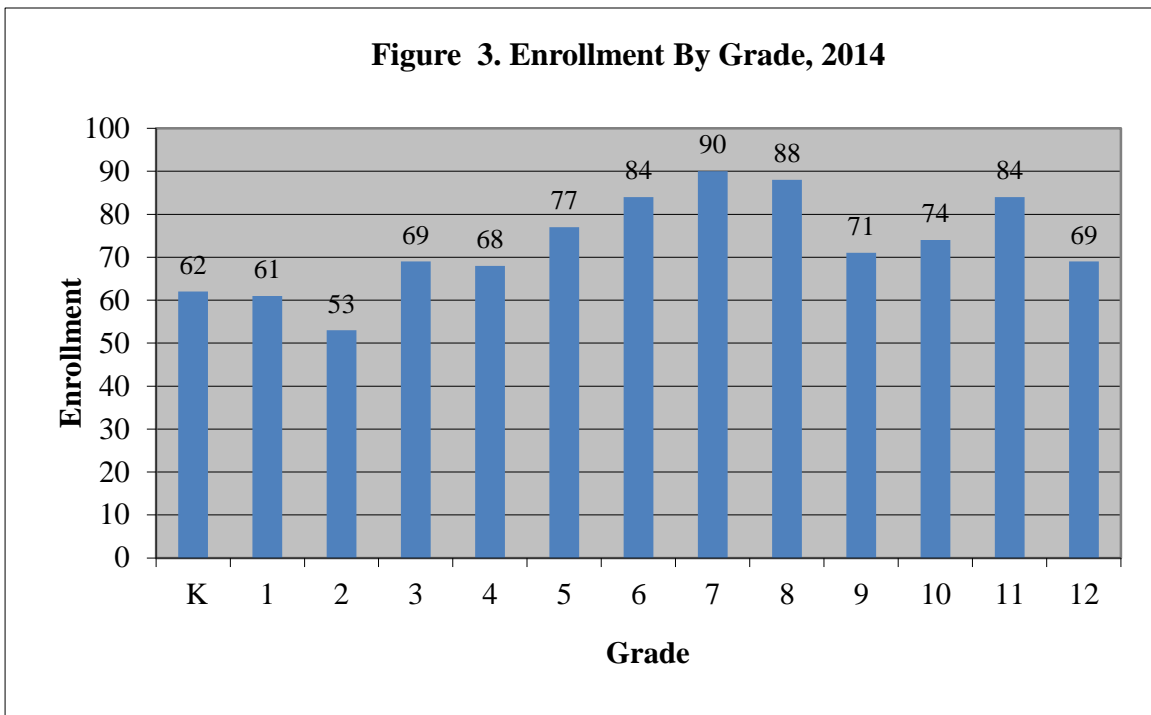


Figure 3 shows the October 2014 grade-by-grade enrollment by of students in the Litchfield Public Schools. The children in pre-kindergarten programs are not shown. Grade 7 had the largest enrollment with 90 students. This was followed by Grade 8 with 88 students and grades 6 and 11 with 84 students enrolled. Grade 2 was the smallest class with 53 students followed by Grade 1 with 61 students and Kindergarten with 62 students. This is the pattern for future enrollment decline. If current conditions continue, this year's Kindergarten class will have 60 students when it enters Grade 4 in Litchfield

Figure 3. Enrollment By Grade, 2014



Intermediate School in 2018 and 62 students when it enters Grade 7 in Litchfield High School in 2021. Both these figures are below the current enrollment in each of those grades. 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 primarily 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 Appendices A and B). For example, if the number of fourth graders this year is 81 and the number of third graders last year was 80, then the growth rate is 1.0125. Growth rates above 1.000 indicate that students moved in, transferred from non-public schools or other public schools or were retained. Growth rates below 1.000 mean that students moved out, transferred to private or other public schools, dropped out, or were not promoted from the prior grade. For each grade I calculate four different averages of the year-to-year 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 enrollment from the prior grade. The projection builds grade by grade and year by year.

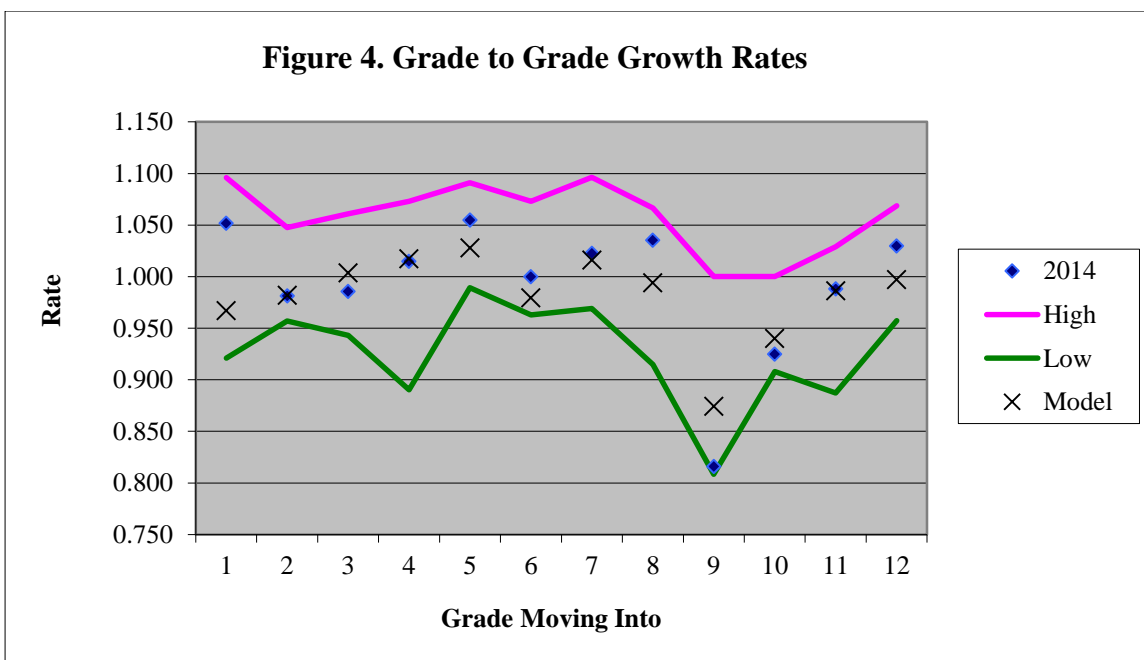
To project enrollment of students in Litchfield schools, I utilized a five-year average of the annual growth rates. This was in the middle of the four I examined. I broke kindergarten into five year olds, six year olds entering kindergarten for the first time and repeaters. I used the five-year average of each component in the projection. In 2014, 9.7 percent of the Litchfield Public School kindergarten enrollment was students who entered late and 1.6 percent was students who had been retained. I believe that this approach will improve the kindergarten projection modestly.

To extend the projections beyond four years, I needed to estimate births for the years 2015 to 2019. The Connecticut State Department of Public Health recorded 55 births to Litchfield residents in 2012. That was the near official count. The 2013 preliminary count was 50 births. To estimate births in 2014, I used the in-state count through December 2014 (53) plus the average of the 2012 and 2013 out-of-state births (0). To estimate births in 2015, I used the in-state count through May 2015 (22) plus the average of the

2013 and 2014 births from June to December (22) plus the average of the 2012 and 2013 out-of-state births (0). I set births in 2016-2019 to the average of births in 2013 to 2015 (52). Normally, I estimate 2015 births from the estimated 2013 Litchfield fertility rates and the Connecticut State Data Center's 2015 projection by age group of Litchfield women ages 15-44. That yielded only 39 births in 2015. I don't think the end-of-year count will be that low. The Connecticut State Data Center's projection of women of child-bearing ages in 2020 indicates no growth in births between 2015 and 2020.

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

The growth rates have been in a fairly wide band for the past 10 years. This can affect the accuracy of the projection. Most of the projection growth rates are in the middle or lower section of the ten-year range. Four of the eight elementary growth rates were above 1.000 which indicates a net zero migration of students. The low rate in Grade 9 is a reflection of people choosing other school systems and low retention in the grade. The lower rates in grades 10-12 are usually an indicator of drop-outs. The average growth rate across grades 1-12 used for the projection was 0.982. The rate in 2014 was 0.992; the median rate over the past 30 years was 0.996.



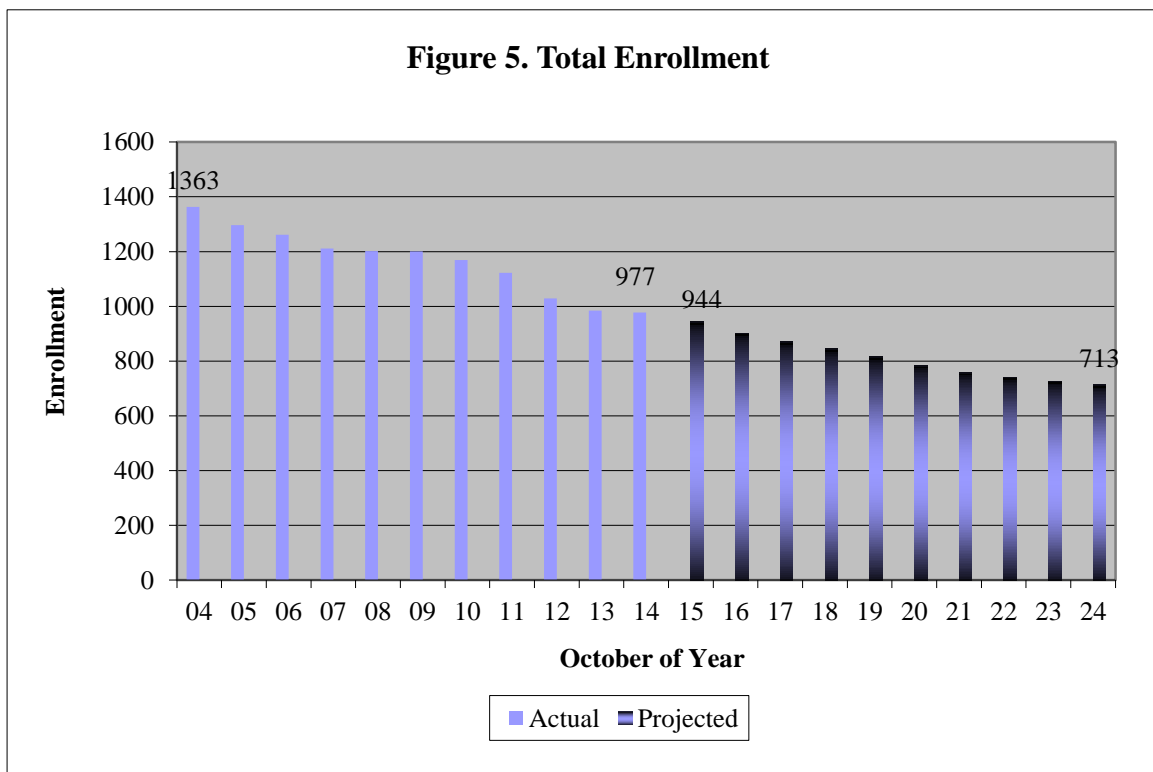
Enrollment data from 2004 to 2014 were taken from the files of the Connecticut State Department of Education. The public school data are available on the Department's website at www.sde.ct.gov. Data for 2014 were provided by the Department's Bureau of Data Collection, Research and Evaluation. All enrollment data after 2012 are subject to minor changes as they are reviewed and audited. The Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health provided births from 1980 to 2014.

Total Enrollment

Table 2 and Figure 5 present the observed total enrollment in Litchfield schools from 2004 to 2014 and projected enrollment through 2024. Detailed grade-by-grade data may be found in Appendices A and B. Total enrollment in Litchfield decreased from 1,363 students in 2004 to 977 in 2014. In the 57 years that I have enrollment records, Litchfield's enrollment has never been that low. Enrollment decreased by 386 students or 28.3 percent between 2004 and 2014. Statewide public school enrollment declined 6.1 percent in that period. Between 2004 and 2014, the enrollment loss in Litchfield was second largest among similar towns in the area. Only the 30.9 percent loss in Thomaston was greater. The losses in North Branford (-22.2 percent), Region 16 (-13.2 percent), Region 6 (-9.8 percent) and Portland (-7.1 percent) were all less than Litchfield's loss.

I project that your enrollment will continue to decline. Next year, I anticipate that total enrollment will decrease by 30-35 students. I anticipate that the enrollment will fall below 800 in 2020. It may end the projection period around 715 students. The projected ten-year decline is almost 265 students or 27 percent. In the state's public schools, I am projecting a 9.6 percent decline between 2014 and 2024. Total enrollment in Litchfield should average 810 students over the ten-year projection period compared to an average total enrollment of 1,145 students over the past ten years.

Year	Students	Percent Change
2004	1,363	
2005	1,296	-4.9%
2006	1,261	-2.7%
2007	1,211	-4.0%
2008	1,202	-0.7%
2009	1,201	-0.1%
2010	1,169	-2.7%
2011	1,122	-4.0%
2012	1,029	-8.3%
2013	985	-4.3%
2014	977	-0.8%
2015	944	-3.4%
2016	903	-4.3%
2017	872	-3.4%
2018	845	-3.1%
2019	816	-3.4%
2020	784	-3.9%
2021	759	-3.2%
2022	741	-2.4%
2023	727	-1.9%
2024	713	-1.9%



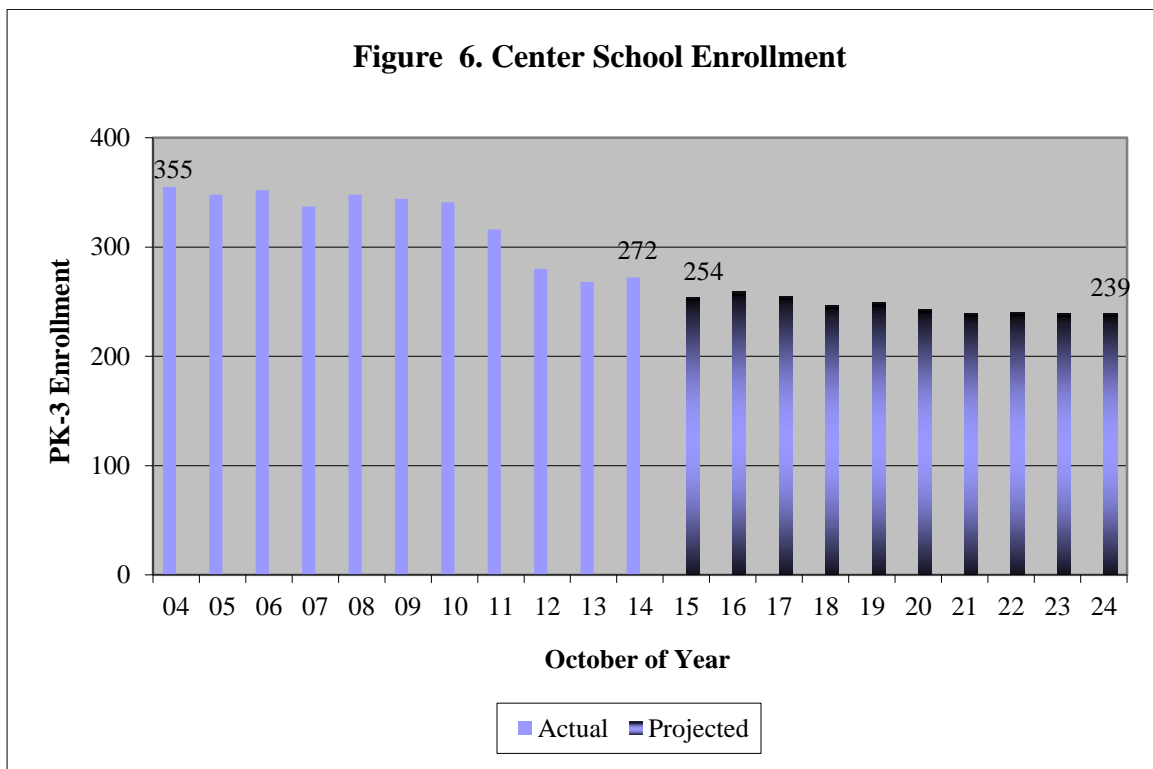
Center School Enrollment

Table 3 and Figure 6 present actual enrollment in grades PK-3 in 2004 to 2014 and projected enrollment to 2024 at the Center School. Enrollment by grade may be found in Appendix A. Enrollment in grades PK-3 fell from 355 students in 2004 to 272 students in 2014. The ten-year loss was 83 students or 23.4 percent. Public school enrollment statewide in grades K-3 declined by 9.2 percent in that period.

I expect that enrollment will continue to move downward through 2021 and then stabilize. Next year, I anticipate that enrollment in the school will decrease by 15-20 students. By 2024 I project that the school's enrollment will fall to about 240 students. That will be almost 35 students less than 2014, a loss of about 12 percent. This is based on the assumption of no further decline in births. In grades K-3 in the state's public schools, I am projecting a 9.8 percent enrollment decline. Over the ten-year projection period, I believe enrollment in grades PK-3 will average about 245 students compared to the average of 321 students observed over the past ten years.

These figures include the children in your pre-kindergarten programs. In the past ten years, pre-kindergarten enrollment grew from 18 to 27 children. My projection model keeps pre-kindergarten enrollment at 27 children for the next ten years. If births do not recover, 27 children will represent about 25 percent of the three- and four-year olds in Litchfield.

Year	Students	Percent Change
2004	355	
2005	348	-2.0%
2006	352	1.1%
2007	337	-4.3%
2008	348	3.3%
2009	344	-1.1%
2010	341	-0.9%
2011	316	-7.3%
2012	280	-11.4%
2013	268	-4.3%
2014	272	1.5%
2015	254	-6.6%
2016	259	2.0%
2017	255	-1.5%
2018	247	-3.1%
2019	249	0.8%
2020	243	-2.4%
2021	239	-1.6%
2022	240	0.4%
2023	239	-0.4%
2024	239	0.0%

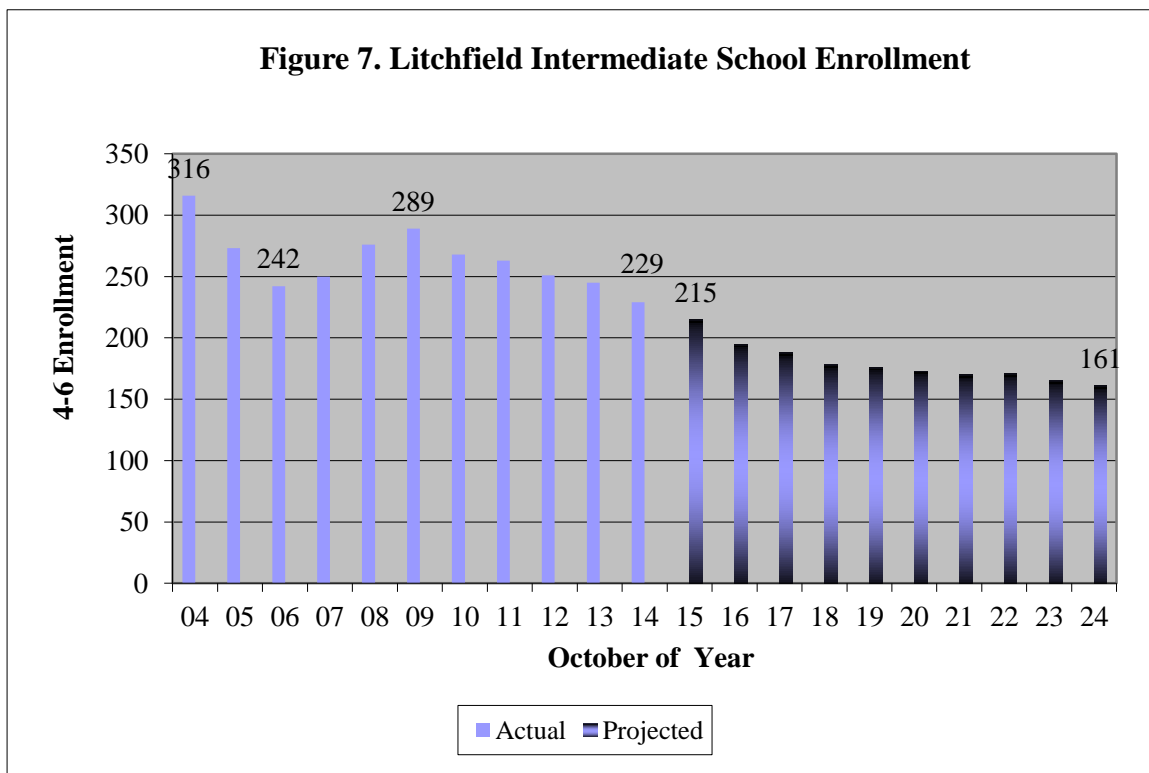


Litchfield Intermediate School Enrollment

Table 4 and Figure 7 present actual enrollment in grades 4-6 in 2004 to 2014 and projected enrollment at Litchfield Intermediate School to 2024. Enrollment by grade may be found in Appendix A. Enrollment declined from 316 students in 2004 to 242 students in 2006 and then rebounded to 289 students in 2009. Between then and 2014, it fell to 229 students. The last time that grade 4-6 enrollment was around 230 students was before my records started in 1970. Between 2004 and 2014 enrollment at the school fell by 87 students or 27.5 percent. Enrollment in grades 4-6 declined by 8.0 percent in that period in the state's public schools.

I believe that future enrollment at Litchfield Intermediate School will move steadily downward. Next year I anticipate a loss of almost 15 students. A sizeable decline should occur in 2016. I expect enrollment to fall below 200 students in 2016 and end the projection close to 160 students. Over the ten-year projection period, I project a decrease of almost 70 students or almost 30 percent. Between 2014 and 2024, I believe enrollment at the school will average 180 students compared to the average of 259 students observed over the past ten years. In the state's public schools, I project that enrollment in grades 4-6 will decline by 14.1 percent in that period.

Year	Students	Percent Change
2004	316	
2005	273	-13.6%
2006	242	-11.4%
2007	250	3.3%
2008	276	10.4%
2009	289	4.7%
2010	268	-7.3%
2011	263	-1.9%
2012	251	-4.6%
2013	245	-2.4%
2014	229	-6.5%
2015	215	-6.1%
2016	195	-9.3%
2017	188	-3.6%
2018	178	-5.3%
2019	176	-1.1%
2020	173	-1.7%
2021	170	-1.7%
2022	171	0.6%
2023	165	-3.5%
2024	161	-2.4%



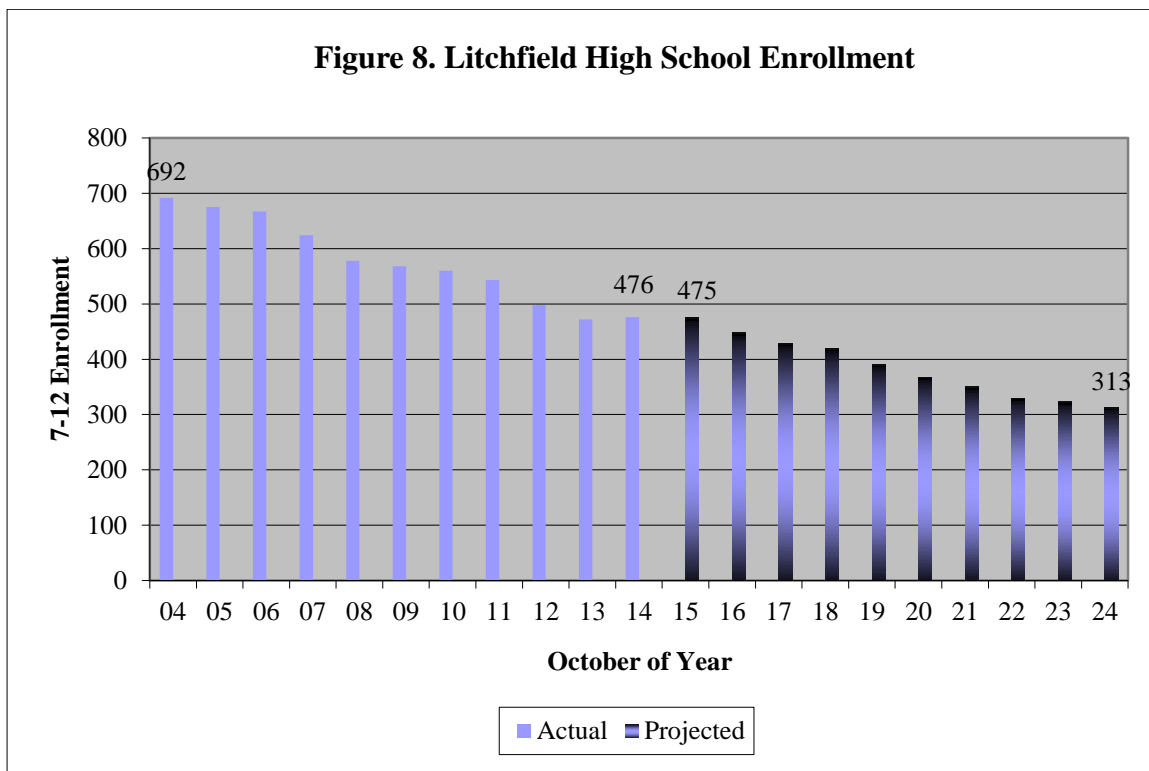
Litchfield High School Enrollment

Grade 9 is the first opportunity to attend state technical high schools and agriculture science and technology centers. In October 2014, 72.4 percent of Litchfield residents enrolled in Grade 9 were enrolled in the district. An estimated 13.3 percent were enrolled in non-public schools in state. Also 13.3 percent were enrolled in a state technical high school or an agriculture science center. Only one percent was enrolled in magnet or other public school.

Table 5 and Figure 8 present enrollment in grades 7-12 at Litchfield High School. Grade-by-grade enrollment may be found in Appendix B. The 692 students enrolled in 2004 ended 14 years of high school enrollment growth. Enrollment retreated to 476 students in 2014. In the past ten years, grade 7-12 enrollment decreased by 216 students or 31.2 percent. Statewide public school enrollment in grades 7-12 fell 5.9 percent in that period.

I expect that next year's enrollment in high school will be about the same as this year. I anticipate that enrollment will fall to about 315 students in 2024. The smallest enrollment that I have on record was 437 students in 1990. The projected loss of over 160 students between 2014 and 2024 is 34 percent. Statewide, I have projected a 9.8 percent decline in public school grades 7-12 enrollment between 2014 and 2024. I believe your enrollment at Litchfield High will average about 385 students over the next ten years compared to the average of 566 students observed over the past ten years.

Year	Students	Percent Change
2004	692	
2005	675	-2.5%
2006	667	-1.2%
2007	624	-6.4%
2008	578	-7.4%
2009	568	-1.7%
2010	560	-1.4%
2011	543	-3.0%
2012	498	-8.3%
2013	472	-5.2%
2014	476	0.8%
2015	475	-0.2%
2016	449	-5.5%
2017	429	-4.5%
2018	420	-2.1%
2019	391	-6.9%
2020	368	-5.9%
2021	350	-4.9%
2022	330	-5.7%
2023	323	-2.1%
2024	313	-3.1%



Factors Affecting the Elementary Projection

The primary reasons for elementary enrollment change lie in the births and yield from the birth cohort. Figure 9 presents the births from 1980 to 2012 and preliminary and estimated births through 2019. Births ranged from a low of 53 in 1995 and again in 2008 to a high of 114 in 1990. The last official count of births was 55 in 2012. The preliminary counts of births are 50 in 2013 and 53 in 2014. From recorded births in-state births through May, I estimate there will be 52 births to Litchfield residents in calendar year 2015. In the 1990s there was an average of 83 births annually. In the five years from 2005 to 2009 (this fall's kindergarten through 4th graders) births averaged 61. Births in the 2010 through 2014 period will average 53. The projection in years 2020 to 2024 assumes an average of 52 births annually between 2015 and 2019.

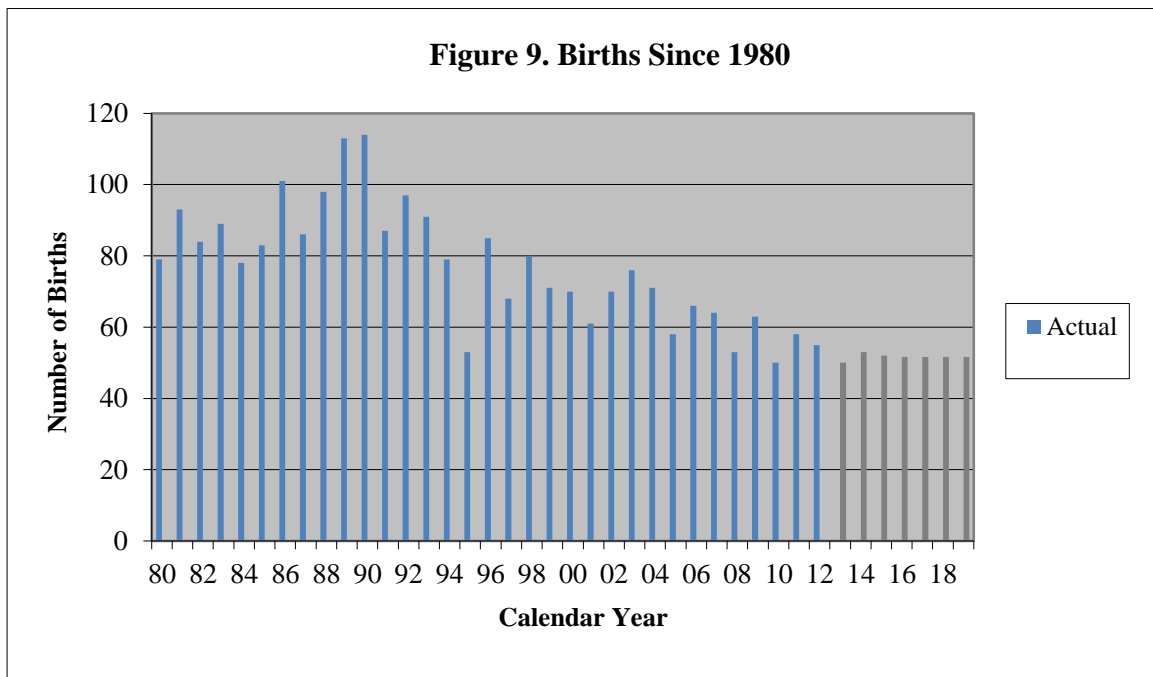
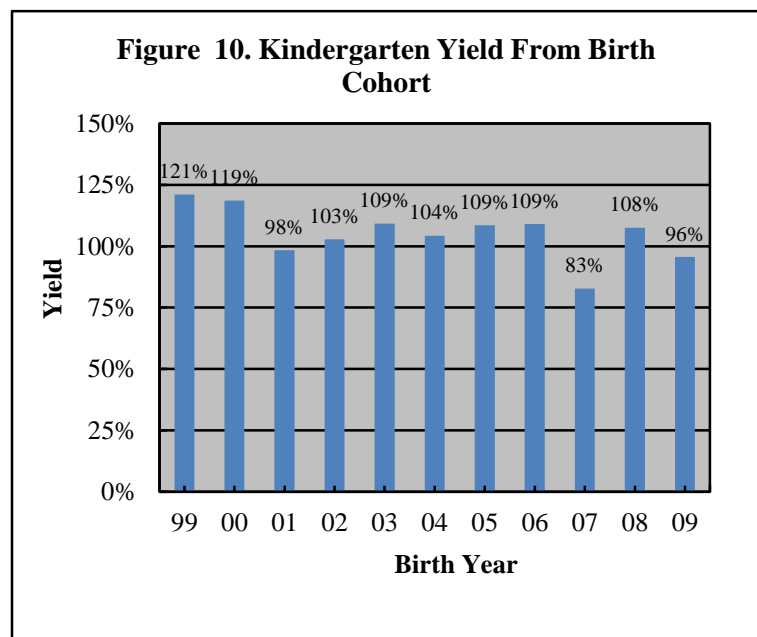


Figure 10 depicts the kindergarten yield five and six years later from the birth cohorts of 1999 to 2009 for Litchfield residents attending kindergarten in Litchfield. For example, there were 53 births in 2008 and 51 resident children enrolled in Litchfield kindergarten at age five in 2013 and an additional six who first enrolled in kindergarten at age six in 2014. That is a yield of 108 percent. The yield from the birth cohort ranged from a low 83 percent in 2007 to a high of 121 percent in 1999. The estimated yield for births in 2009 was only 96 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 below 100 percent generally mean that parents move out of town after giving birth in town or choose another school system for their child. Yields above 100 percent generally mean that families with young children move into town after giving birth elsewhere. In the five-year look-back period for the projection, the yield was 101 percent.

Table 6 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 five-year average of retentions, and yields from births five and six years ago. I estimated kindergarten from 93.8 percent of births five years ago, 8.3 percent of births six years ago, and 3.8 percent of current kindergarten students retained.

Year	Birth Year	Retained From Prior Year						Percent Retained	Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
		Births	K	Born 5-Years Prior Resident	Non-Resident	Born 6 Years Prior	Non-Resident				
2004	1999	71	83	0	77	0	6	0.0%	108.5%	7.5%	121.1%
2005	2000	70	76	1	66	0	9	1.2%	94.3%	12.7%	118.6%
2006	2001	61	62	2	53	0	17	2.6%	86.9%	24.3%	98.4%
2007	2002	70	73	7	59	0	7	11.3%	84.3%	11.5%	102.9%
2008	2003	76	90	4	73	0	13	5.5%	96.1%	18.6%	109.2%
2009	2004	71	77	4	63	0	10	4.4%	88.7%	13.2%	104.2%
2010	2005	58	76	4	61	0	11	5.2%	105.2%	15.5%	108.6%
2011	2006	66	74	2	69	1	2	2.6%	104.5%	3.4%	109.1%
2012	2007	64	55	3	49	0	3	4.1%	76.6%	4.5%	82.8%
2013	2008	53	58	3	51	0	4	5.5%	96.2%	6.3%	107.5%
2014	2009	63	62	1	55	0	6	1.7%	87.3%	11.3%	95.6%
3-Year Average								3.7%	86.1%	7.1%	95.3%
Weighted 3-Year Average								3.4%	88.5%	8.5%	97.5%
5-Year Average								3.8%	93.8%	8.3%	100.7%
Weighted 5-Year Average								3.5%	91.0%	7.8%	98.9%

The correlation between births and kindergarten enrollment five-year later was a moderate 0.78 over the 1985 to 2014 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of seven 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 then 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, Litchfield had 14 children who would have been impacted by the date change and 6 children who were eligible to enroll the prior year (redshirted). Once implemented, the changes would 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 typically 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 ten factors that could affect enrollment: population growth; projected population ages 0-19; women of child-bearing age; new home construction; sales of existing homes; the labor force; high school dropouts; non-public enrollment; resident enrollment in other public schools and student migration.

Figure 11 presents the US Census Bureau estimate of Litchfield population growth between April of 2010 and April of 2014. It is based, in part, on relative housing growth within the county. In that interval, the population decreased by an estimated 193 people or 2.28 percent. That was the 154th ranked growth in the state. Litchfield's growth compares to +0.59 percent for the state, -2.51 percent for Litchfield County and -0.41 percent for similar communities (DRG E). Census population data show that from April 2000 to April 2010 Litchfield's population grew from 8,316 people to 8,466. The 150-person growth was the second smallest in the past 10 decades. The 1.8 percent increase between 2000 and 2010 was the 108th ranked in the state.

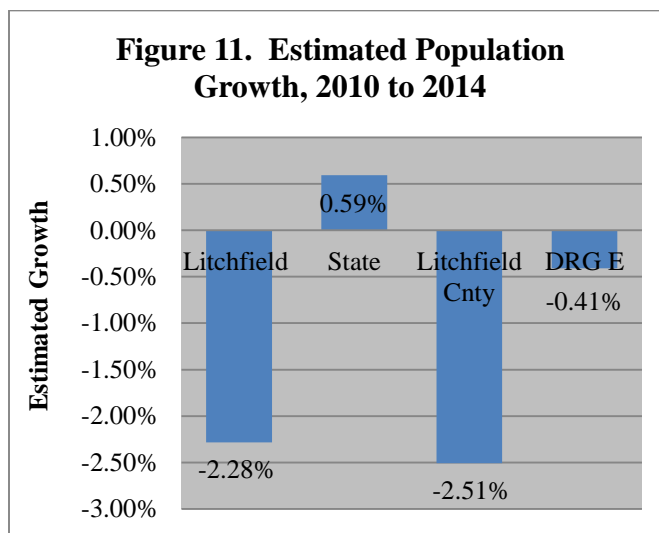


Figure 13 presents the Connecticut State Data Center's population projections for Litchfield residents 0-19 years of age in the years 2015 and 2020 along with the 2010 Census population. They project that population ages 0-4 will decline from 350 children in 2010 to 213 children in 2020. The population ages 5-9 is projected to decline 39 percent between 2010 and 2020. The number of children ages 10-14 is projected to decrease 13 percent between 2010 and 2020 with most of the decline coming after 2015. The number of youth ages 15-19 is projected to remain essentially level between 2010 and 2020.

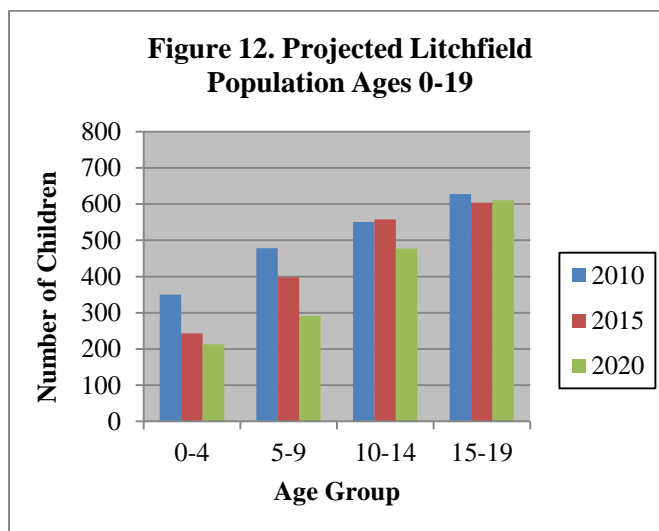


Figure 13 presents the number of women of child-bearing age from the 2000 and 2010 censuses and the Connecticut State Data Center projection for 2015. There were 70 births to Litchfield residents in 2000 and 50 in 2010. In communities like yours, women in the 30-34 age-group have the highest rate of births. The number in that age range fell 31.5 percent from 216 in 2000 to 148 in 2010. It is projected to fall to 107 in 2015. The second highest birth rate in communities like yours is women ages 25-29. The number in this group eased from 124 in 2000 to 120 in 2010 and is projected to fall to 58 in 2015. The numbers under age 24 grew between 2000 and 2010 and are projected to grow in 2015. The numbers in the two older age cohorts both declined significantly.

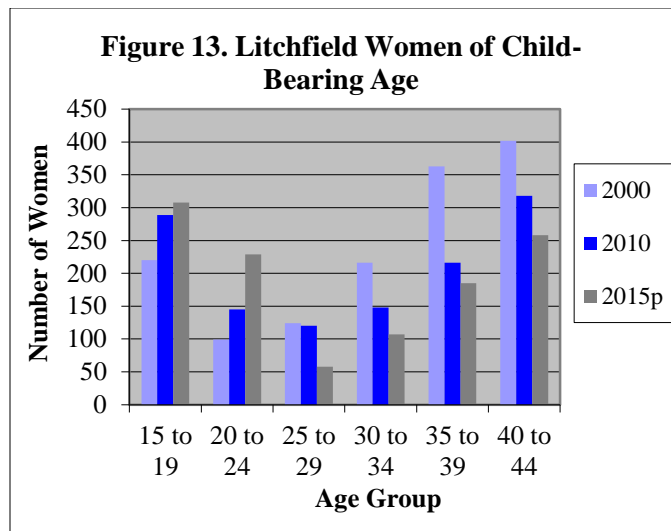


Figure 14 presents the net new housing units constructed from 2004 to 2014 from the State Department of Economic and Community Development. In the past ten years the number of net (of demolitions) new housing units constructed in Litchfield ranged from a high 55 in 2004 down to a low of three in 2009. There were permits for 12 new housing units issued in 2014. In the five-year look-back period for this projection, there was an average of eight net new housing units constructed. The 2010 census indicated that 27.2 percent of the occupied units had children under 18. That is below the county average (29.5 percent) and similar communities (30.3 percent).

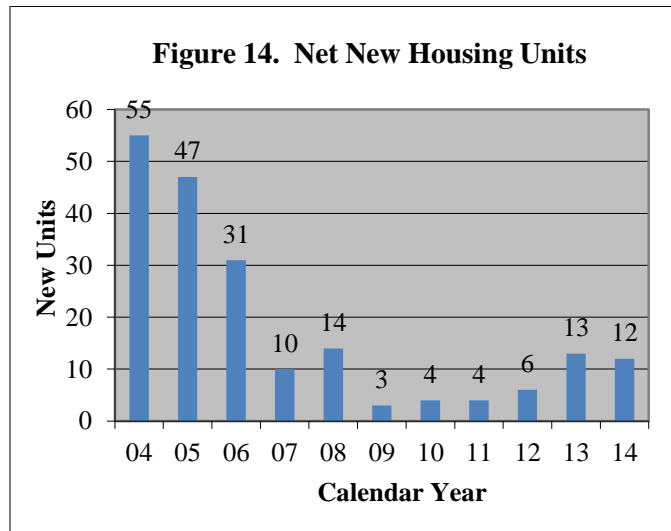


Figure 15 presents my estimate of the number of sales of existing homes. I derived it from the number of real estate transactions from The Warren Group/Commercial Record. The estimated number of sales of existing homes ranged from a low of 81 in 2009 to a high of 157 in 2006. There were an estimated 87 sales of existing homes in 2014. In the five-year look back period for the projection, there were 90 sales annually.

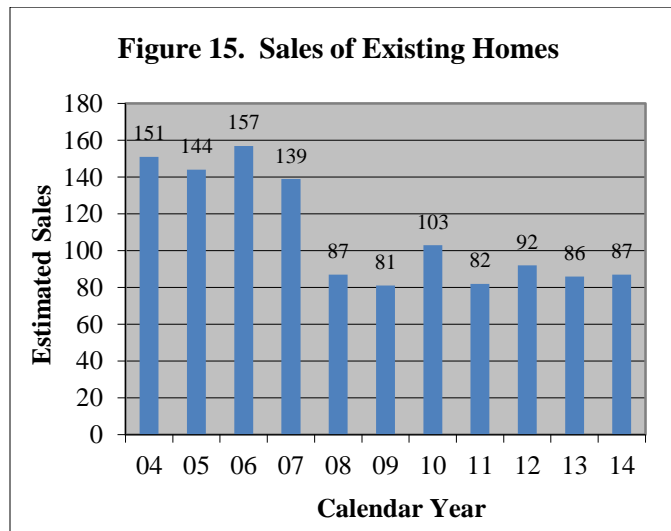


Figure 16 examines the number of people in the labor force from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older who were working or actively were seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Litchfield labor force decreased 0.1 percent between 2010 and 2014. This was a smaller loss than the state (-1.4 percent) and Litchfield County (-2.0 percent). The 2014 unemployment level of 5.1 percent was down 2.1 percentage points from the 2010 high. It is better than the state rate of 6.6 percent and the Litchfield County rate of 5.9 percent.

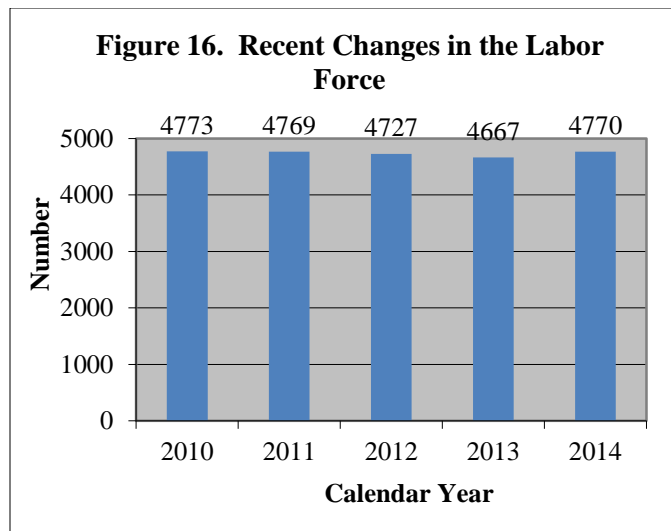


Figure 17 shows the annual percentage of dropouts from grades 9-12 for the 2003-04 to 2012-13 school years, the most recent data available from the Connecticut State Department of Education. The high school dropout rate ranged from 2.26 percent in the 2004-05 school year to zero percent in the 2010-11 and 2011-12 school years. The rate in 2012-13 was 0.40 percent. Over the past five years an average of 1.2 students annually dropped out. In the five-year look-back period for the projection, the dropout rate averaged 0.30 percent.

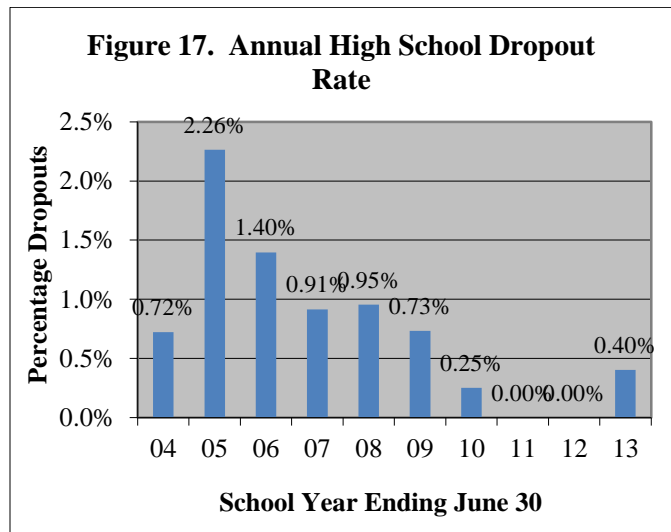


Figure 18 presents the non-public enrollment over the past ten years for students from the town of Litchfield. The data are from the records of the Connecticut State Department of Education. The 2014 figure is preliminary. Non-public enrollment in Connecticut ranged from a high of 193 students in 2004 to a low of 126 students in 2014. In the past ten years, enrollment in the non-public schools decreased by 67 students or 34.7 percent. The 2014 enrollment represented 10.9 percent of all students from Litchfield. That is down 0.7 percentage points from 2013, and down from the 13.4 percent recent high set in 2008.

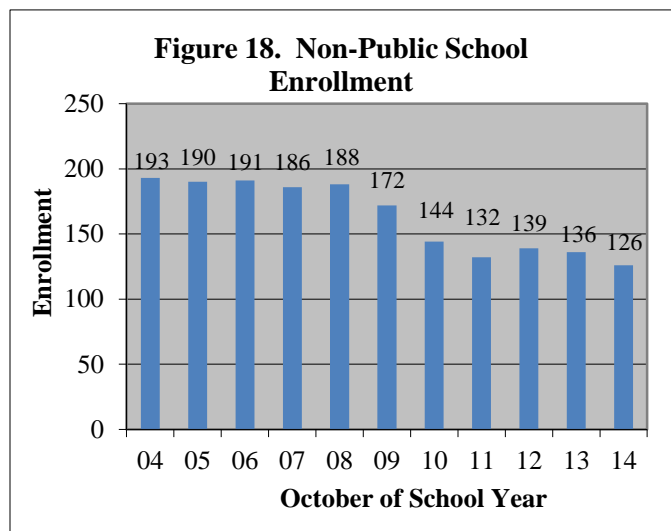


Figure 19 presents the enrollment of Litchfield residents in other public schools in Connecticut from 2004 to 2014. The number educated out-of-district went from 28 in 2004 to 67 in 2009, fell to 40 in 2010 and rebounded to 55 in 2014. The jump in 2009 was caused by a one-year expansion of Education Connection’s Head Start program. In 2014, 25 students attended the a technical high school, 16 attended the agriculture science program at Wamogo High, three children attended the Head Start program run by Education Connection, eight attended a magnet or charter school, one attended a special education program run by ACES and two attended another public school.

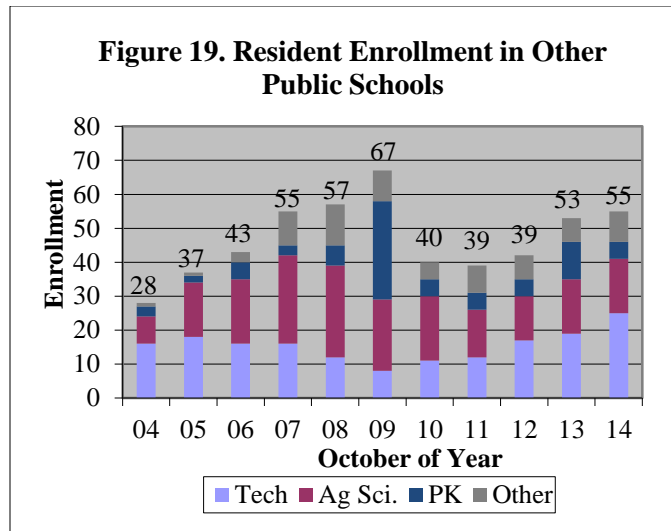
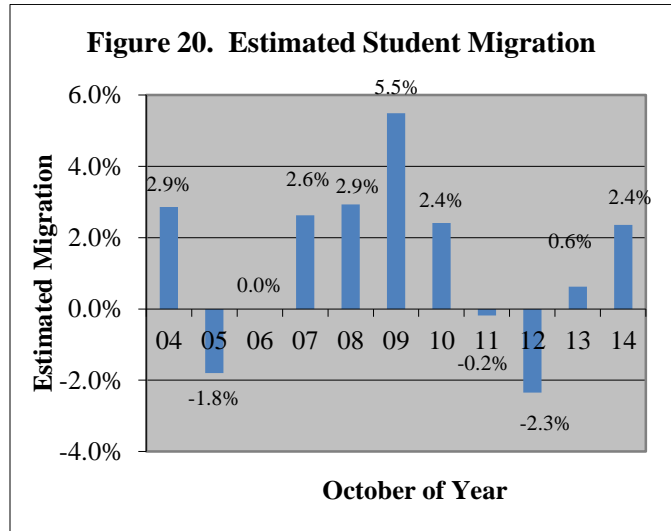


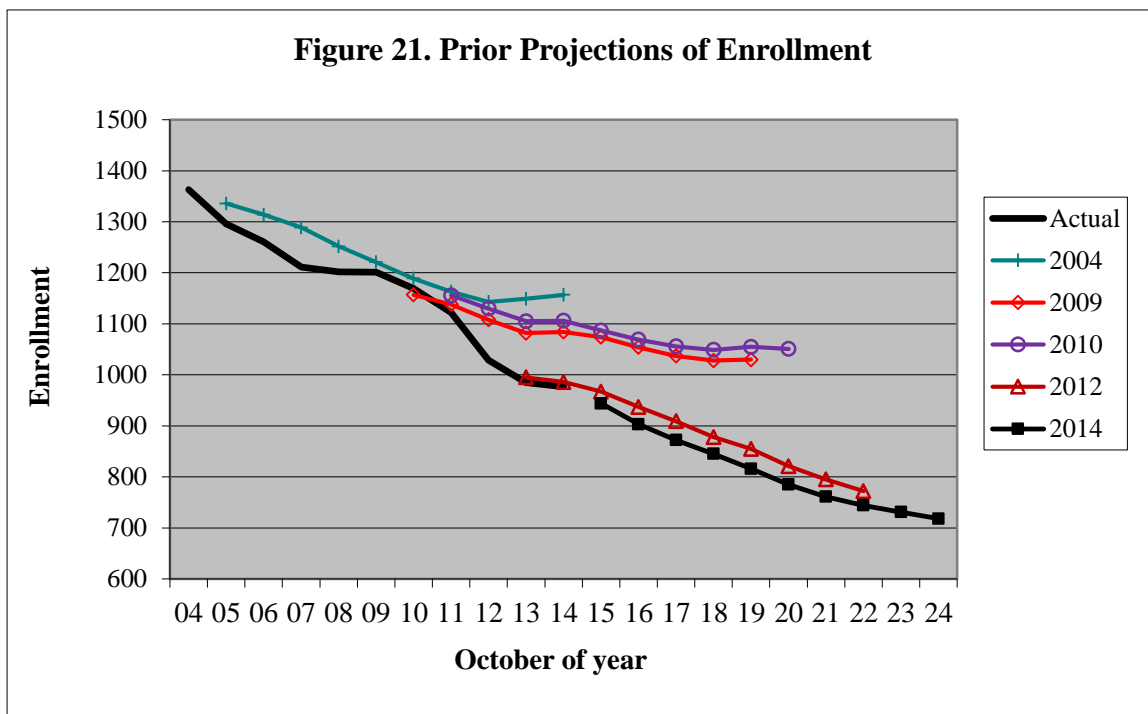
Figure 20 presents the estimated migration of students from Litchfield. The estimate takes into account non-residents in Litchfield and Litchfield residents attending other public schools. Estimated migration ranged from a low of -2.3 percent in 2012 to a high of +5.5 percent in 2009. The estimated migration was +2.4 percent in 2014. The data behind these figures may be found in Appendices A and B. The average migration in the projection’s five-year look-back period was +0.57 percent. This figure was exceeded in 30 of the past 34 years. The median five-year migration over the past 30 years was +1.62 percent.



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 21 presents the enrollment projections that I have run for Litchfield since 2004. The four enrollment projections that I did between 2004 and 2012 had one-year error rates that averaged 2.0 percent. The two projections done between 2004 and 2010 had an average five-year error rate of 6.3 percent, which is 1.2 percent annualized.

My 2012 projection for Litchfield is running 0.92 percent high after two years. In that analysis, I projected that K-3 enrollment would be 250 students in 2014. The actual enrollment of 245 was five students less than projected. The projection was high by 2.0 percent over two years. I projected that enrollment in grades 4-6 would be 233 students in 2014. The actual enrollment of 229 was four students less than projected. The projection was high by 1.8 percent over two years or 0.87 percent per year. I projected that high school enrollment would be 484 students in 2014. The actual enrollment of 476 was eight students less than projected. The projection was high by 1.7 percent (0.84 percent per year). The 2012 projection kept pre-kindergarten enrollment constant at 16 children. The actual enrollment in 2014 was 27 children.



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 percent 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). Among the 70 Windham Middle School projections run, the median projection was 8.2 percent high (1.0 percent annually). Among the 72 high school projections run, the median projection was 3.1 percent high (0.4 percent per year). This illustrates what an economic downturn can do to projections run with the cohort-survival method.

Summary

I project that total enrollment will decrease 27 percent, going from 977 students in 2014 to about 715 students in 2024. I project that enrollment at the Center School will continue downward from 272 in 2014 to about 240 students in 2021. This will be 30-35 student loss, a decline of about 12 percent. I believe that Litchfield Intermediate School enrollment will move downward from 229 students in 2014 to about 160 students in 2024. The decrease between 2014 and 2024 will be about 70 students or about 30 percent. Between 2014 and 2024, I project that enrollment at Litchfield High School will decline from 476 students to about 315 students. That is a projected decrease of 160 students, representing a loss of 34 percent.

This report is projecting a significant decline in enrollment. It is critical to remember that a projection is just a moving forward of recent trends. Is the forecast too severe? In the five years from 2005 to 2009 (this fall's kindergarten through 4th graders) births averaged 61. Births in the 2010 through 2014 period will average only 53. My model assumes births will average 52 in the 2015 to 2019 period. This will not affect enrollment until 2020. I used a 0.7 percent increase between births and eventual kindergarten enrollment. I estimated that the rate for the most recent birth cohort (2009) will be -4 percent. The median over the past 15 years was a 7.5 percent increase. The average of the grade-to-grade growth rates across grades 1-12 that I used to grow future enrollment was 0.982. The growth rate averaged 0.992 in 2014 and the median over the last 30 years was 0.996. Taking these three key factors into consideration, I feel the projection may be very slightly pessimistic.

These projections are based upon several other 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 a full-day; retention policies will not change; no change in area magnet schools and no change in the drop-out rate. The projection assumes the following population growth factors will not change appreciably: births will average 52 over the 2015 to 2019 period; practically no increase between the number of births and subsequent kindergarten enrollment; and a student migration of +0.57 percent. Additionally, there will be a slight decline in non-public school enrollment; eight new housing units will be constructed annually; there will be an average of 90 sales of existing homes and little change in the size of the labor force.

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 Litchfield and then make adjustments as necessary.

Appendix A. Litchfield Enrollment Projected by Grade to 2024: Grades PK-6

School Year	Birth Year	Births ¹	K	1	2	3	4	5	6	PK	Total PK-3	Total 4-6	
2004-05	1999	71	83	86	86	82	85	112	119	18	355	316	
2005-06	2000	70	76	84	84	83	73	86	114	21	348	273	
2006-07	2001	61	79	79	88	89	81	75	86	17	352	242	
2007-08	2002	70	73	75	80	92	88	85	77	17	337	250	
2008-09	2003	76	90	80	77	82	97	96	83	19	348	276	
2009-10	2004	71	77	88	82	78	88	98	103	19	344	289	
2010-11	2005	58	76	71	88	87	79	92	97	19	341	268	
2011-12	2006	66	74	70	70	83	92	81	90	19	316	263	
2012-13	2007	64	55	71	67	72	82	91	78	15	280	251	
2013-14	2008	53	58	54	70	67	73	84	88	19	268	245	
2014-15	2009	63	62	61	53	69	68	77	84	27	272	229	
Projected													
2015-16	2010	50	54	60	60	53	70	70	75	27	254	215	
2016-17	2011	58	61	52	59	60	54	72	69	27	259	195	
2017-18	2012	55	59	59	51	59	61	56	71	27	255	188	
2018-19	2013	50	54	57	58	51	60	63	55	27	247	178	
2019-20	2014	53	56	52	56	58	52	62	62	27	249	176	
2020-21	2015	52	55	54	51	56	59	53	61	27	243	173	
2021-22	2016	52	55	53	53	51	57	61	52	27	239	170	
2022-23	2017	52	55	53	52	53	52	59	60	27	240	171	
2023-24	2018	52	55	53	52	52	54	53	58	27	239	165	
2024-25	2019	52	55	53	52	52	53	56	52	27	239	161	
Projection Growth²			³	0.967	0.982	1.004	1.017	1.028	0.980				
Annual Growth Rates⁴											Estimated Migration⁵		
2005			1.086	1.012	0.977	0.965	0.890	1.012	1.018				-1.80%
2006			1.295	1.039	1.048	1.060	0.976	1.027	1.000				0.00%
2007			1.043	0.949	1.013	1.045	0.989	1.049	1.027				2.63%
2008			1.184	1.096	1.027	1.025	1.054	1.091	0.976				2.93%
2009			1.085	0.978	1.025	1.013	1.073	1.010	1.073				5.49%
2010			1.310	0.922	1.000	1.061	1.013	1.045	0.990				2.41%
2011			1.121	0.921	0.986	0.943	1.057	1.025	0.978				-0.18%
2012			0.859	0.959	0.957	1.029	0.988	0.989	0.963				-2.35%
2013			1.094	0.982	0.986	1.000	1.014	1.024	0.967				0.63%
2014			0.984	1.052	0.981	0.986	1.015	1.055	1.000				2.36%
3-Year Average			0.979	0.998	0.975	1.005	1.006	1.023	0.977				
Weighted 3-Year			1.000	1.013	0.979	0.998	1.010	1.034	0.983				
5-Year Average			1.074	0.967	0.982	1.004	1.017	1.028	0.980				
Weighted 5-Year			1.029	0.989	0.980	0.997	1.015	1.029	0.980				

¹ The 2013 & 2014 births are preliminary. Births in 2015 based on in-state births through May. Births in 2016-19 set to the average of births between 2013 and 2015. ² Grades 1-6 based on 5-year averages of annual growth rates by grade.

³ Kindergarten based on five-year averages of estimated yields from births five- and six-years ago and retention.

⁴ Estimated by comparing the enrollment in grades 3-8 one year with the enrollment in grades 2-7 the prior year with an adjustment for residents out and non-residents in.

Appendix B. Litchfield Enrollment Projected by Grade to 2024: Grades 7-12

School Year	7	8	9	10	11	12	7-12 Total	PK-12 Total
2004-05	128	122	129	107	96	110	692	1363
2005-06	120	125	109	124	102	95	675	1296
2006-07	114	115	115	104	110	109	667	1261
2007-08	90	115	100	111	97	111	624	1211
2008-09	75	94	107	95	109	98	578	1202
2009-10	91	80	94	105	89	109	568	1201
2010-11	104	94	76	94	102	90	560	1169
2011-12	94	105	76	69	94	105	543	1122
2012-13	89	86	91	71	71	90	498	1029
2013-14	85	87	80	85	67	68	472	985
2014-15	90	88	71	74	84	69	476	977
Projected								
2015-16	85	89	77	67	73	84	475	944
2016-17	76	84	78	72	66	73	449	903
2017-18	70	76	73	73	71	66	429	872
2018-19	72	70	66	69	72	71	420	845
2019-20	56	72	61	62	68	72	391	816
2020-21	63	56	63	57	61	68	368	784
2021-22	62	63	49	59	56	61	350	759
2022-23	53	62	55	46	58	56	330	741
2023-24	61	53	54	52	45	58	323	727
2024-25	59	61	46	51	51	45	313	713
Projection Growth²	1.016	0.994	0.874	0.940	0.986	0.997		
Annual Growth Rates⁴								Migration²
2005	1.008	0.977	0.893	0.961	0.953	0.990		-1.80%
2006	1.000	0.958	0.920	0.954	0.887	1.069		0.00%
2007	1.047	1.009	0.870	0.965	0.933	1.009		2.63%
2008	0.974	1.044	0.930	0.950	0.982	1.010		2.93%
2009	1.096	1.067	1.000	0.981	0.937	1.000		5.49%
2010	1.010	1.033	0.950	1.000	0.971	1.011		2.41%
2011	0.969	1.010	0.809	0.908	1.000	1.029		-0.18%
2012	0.989	0.915	0.867	0.934	1.029	0.957		-2.35%
2013	1.090	0.978	0.930	0.934	0.944	0.958		0.63%
2014	1.023	1.035	0.816	0.925	0.988	1.030		2.36%
3-Year Average	1.034	0.976	0.871	0.931	0.987	0.982		
Weighted 3-Year	1.039	0.996	0.863	0.930	0.980	0.994		
5-Year Average	1.016	0.994	0.874	0.940	0.986	0.997		
Weighted 5-Year	1.026	0.992	0.865	0.932	0.985	0.995		

¹ Grades 7-12 based on 5-year averages.

² Estimated by comparing the enrollment in grades 3-8 one year with the enrollment in grades 2-7 the prior year with an adjustment for residents out to public schools and non-residents in to the Litchfield.