

Woodbridge Board of Education WBOE
Ad Hoc Enrollment, Instructional Needs,
and Space Planning Committee
Wednesday, May 17, 2023 4:30 PM

South Assembly Room

Agenda

I. **Call to Order / Web Ex Log-in Info**

<https://woodbridgeps.webex.com/woodbridgeps/j.php?MTID=m82aec775c2b146ec66d8457cc99a65e5>

Meeting Number (access code): 2496 848 0419

Meeting Password: MZqMwMMt863

This meeting is being conducted as a hybrid meeting consistent with Sections 149-153 of Connecticut Public Act 21-2. The public may attend in person at the location indicated above or electronically via WebEx with the link provided above.

II. **Public Comment - *The Board welcomes public participation. We ask that speakers please limit their comments to three minutes. Please be aware that the Board will not respond to any comments made during the public comment period, except to clarify issues, but we will take into consideration your comments, and when appropriate, district administration will follow-up with you at a later point in time. Public Comments may be submitted electronically to mdegennaro@woodbridgeps.org***

III. **Review of Committee Charge and Goals**

IV. **Presentation by Mr. Michael Ayles, Antinozzi Associates**

V. **Review of Enrollment Projections and Space Utilization**

VI. **Envisioning Activity**

VII. **Closing Remarks**

VIII. **Adjourn**

Enrollment, Instructional Needs, and Space Planning Ad Hoc Committee

January 2023

Charge: The committee will review and address the physical, administrative, and instructional implications of increasing enrollment and student needs on the current physical space of Beecher Road School.

Time Frame: Report to the full Woodbridge Board of Education at the September 2023 Regular Meeting.

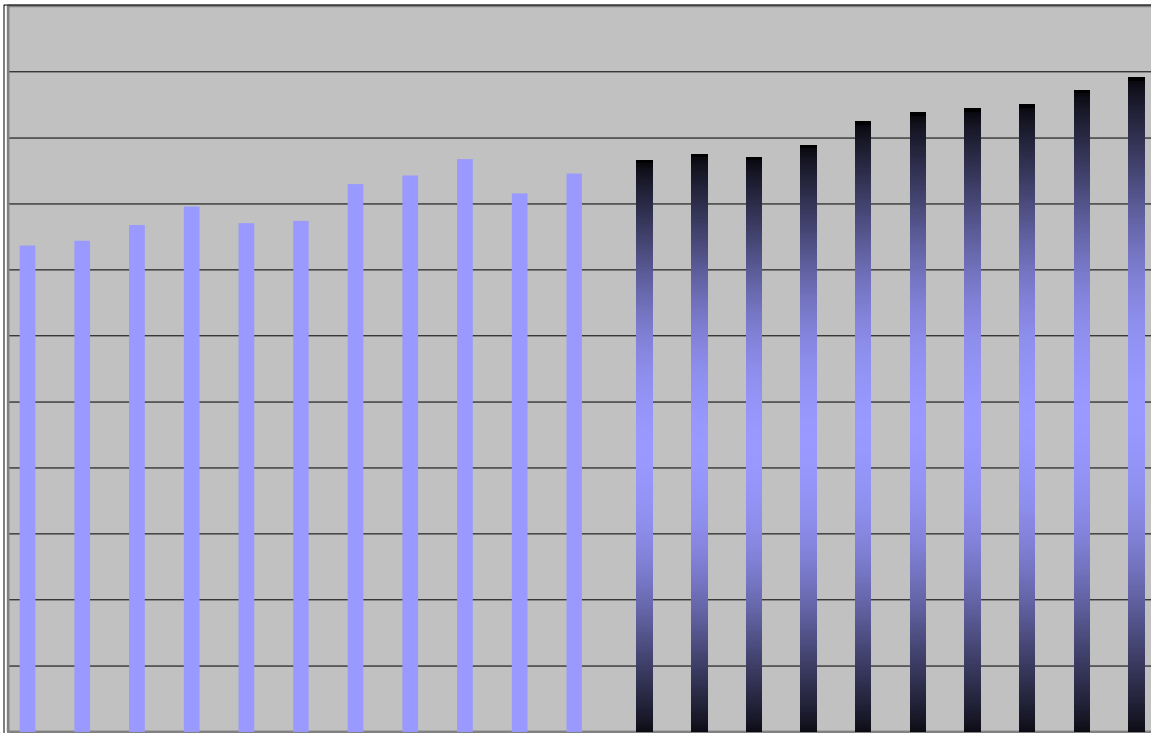
Members: Superintendent, Board of Education Chair, 2 WBOE members, BRS Principal, Director of Business Services/Operations, 1 member of Board of Selectmen, 1 member of Board of Finance, 2 teachers (1 intermediate, 1 primary), Facilities Director, community member.

Background: Board of Education Policies 1220 & 9133 authorize the Board of Education to establish ad hoc committees to perform specific tasks.

At the December 19, 2022 Board of Education meeting, the Board Chair indicated that an Ad Hoc Committee would be created in January 2023 with the charge that a report would be provided to the full board at a future meeting regarding the implications of increasing enrollment and student needs on the current physical space of Beecher Road School. Enrollment projections, programmatic and instructional needs, and staffing configurations are now posing challenges to the current size of Beecher Road School. The Ad Hoc Committee will meet and make a report to the full Board regarding possible reconfiguration, building, and space utilization options.

Ad Hoc E & SP Proposed Working Groups	Thoughts to include in work...
Enrollment	<ul style="list-style-type: none"> ○ #Classroom spaces needed vs have ○ #SpED spaces needed vs have ○ Update of space utilization report from 2021-2022 ○ Review of enrollment projections for WSD
Preschool	<ul style="list-style-type: none"> ○ Connect with legislators about the prospect of universal preschool in CT ○ Which other CT towns have begun to prepare for the space and education of preschool students ○ What might our preschool enrollment look like in numbers based on population
Regionalization	<ul style="list-style-type: none"> ○ Would Bethany consider outreach? ○ Initiate conversation. ○ Common goals
Woodbridge Town Leadership	<ul style="list-style-type: none"> ○ Existing spaces suitable for school expansion? ○ Potential town development plans? ○ Existing development plans ○ Education at the forefront of any potential bids
Repurposing	<ul style="list-style-type: none"> ○ Can our existing spaces be repurposed to fit the educational needs of pre-k through 6th grade ○ Do we have appropriate space for education and needs today?
Building Considerations	<ul style="list-style-type: none"> ○ Cost of refurbishment/ redesign vs building new?

BEECHER ROAD SCHOOL, WOODBIDGE, ENROLLMENT PROJECTED TO 2031



Peter M. Prowda, PhD
28 Old Mill Court
Simsbury, CT 06070
(860) 716-7971
peteprowda@yahoo.com

June 28, 2022

Table of Contents

<u>Section</u>	<u>Page</u>
Introduction	1
Perspective	1
Current Enrollment	2
Projection Method	3
Beecher Road School Enrollment	5
Factors Affecting the Projection	6
Context of the Projection	9
Prior Projections of Enrollment	13
Summary	14
Appendix A. Beecher Road School Enrollment Projected by Grade to 2031	15
Appendix B. Resident Growth from Grade to Grade across Years	16
List of Tables	
1. 2021 Enrollment	2
2. Beecher Road School Enrollment	5
3. Analysis of Kindergarten Enrollment	7
List of Figures	
1. Woodbridge Enrollment 1970 to Date	1
2. Schools Attended by Town Residents, 2021	2
3. Enrollment by Grade 2021	3
4. Beecher Road School Enrollment	5
5. Births since 1980	6
6. Kindergarten Yield from Birth Cohort	7
7. Grade-to-Grade Growth Rates	8
8. Town Population Growth 2010 to 2020	9
9. Woodbridge Projected Population Ages 0-14	9
10. Recent Changes in the Labor Force	10
11. Women of Child-Bearing Age	10
12. Net New Housing Units	10
13. Sales of Existing Single-Family Homes and Condominiums	11
14. Open Choice Enrollment in Woodbridge	11
15. Non-Public PK-6 School Enrollment	11
16. PK-6 Residents Enrolled in Other Public Schools	12
17. Estimated Student Migration	12
18. Prior Projections of Enrollment	13

Introduction

This report is a ten-year projection of enrollment for the Woodbridge Public Schools. It is based on residents and non-residents attending the Beecher Road School on October 1 of the school year. The school used to be divided into primary and intermediate levels. It is now organized as a single school. This projection reflects that. The report includes 52 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, the labor force, housing, migration, non-public enrollment, non-resident enrollment in Woodbridge schools 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 an eight-year school-based projection 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.

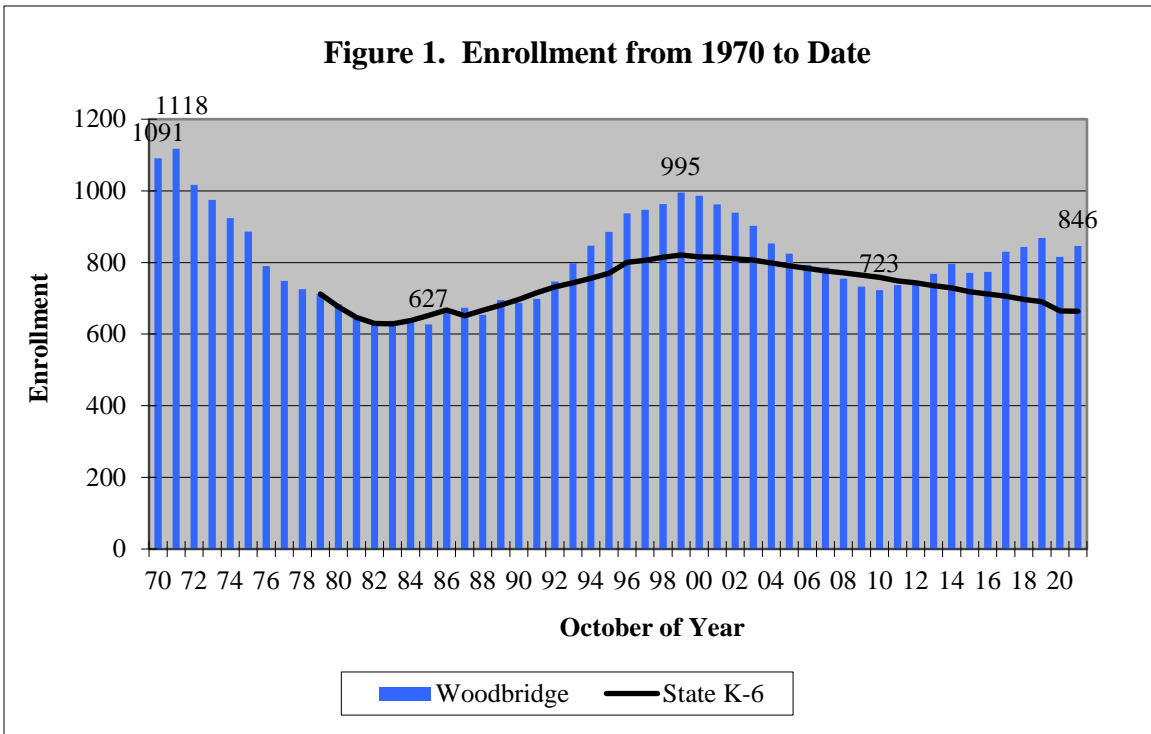
This projection was run during the Covid-19 pandemic which has had an impact mostly on elementary enrollment. In projections I have run, I have observed a continued decline in non-public school enrollment, a decline in births in 2020, an increase in births in 2021, a slight decrease in magnet school enrollment, and more families deciding to home-school their children. Each town is a little different. The trick is to observe the data and make a judgement which patterns are transient and adjust the projection accordingly. A key assumption behind the method used in this report is that enrollment patterns in the near future will be reflected in the patterns of the recent past. I now believe that the pandemic will have minimal impact on fall 2022 enrollment. I have made what I feel are the best possible adjustments to this unique situation.

Perspective

Enrollment projections typically use the most recent three to 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 Woodbridge from 1970 to date.

Enrollment in the Woodbridge Public Schools peaked at 1,129 students in 1969. Between 1969 and 1985, enrollment fell to 627 students. In those 16 years, enrollment declined by 502 students or 44.5 percent. Between 1985 and 1999 enrollment grew by 368 students, or 58.7 percent, and reached a secondary peak of 995 students. Enrollment fell to 723 students in 2010 but then grew to 868 students in 2019. Covid-19 caused a drop to 816 students in 2020, but there was a recovery to 846 students in 2021. The 2021 enrollment was 123 students (17.0 percent) above the 2010 low.

Woodbridge's enrollment pattern is different than that of the state's public schools in grades K-6. I have tracked public school elementary enrollment since 1979. Public school elementary enrollment bottomed in 1983, two years before Woodbridge. It reached a secondary peak in 1999. In those 16 years, state K-6 enrollment grew by 30.5 percent. Woodbridge's period of growth was slightly shorter than the state's, but much more intense. The state's elementary enrollment has been declining for 22 years. Between 1999 and 2021, it fell by 19.2 percent. Both Woodbridge and the state started the second downturn at the same time. The second decline in Woodbridge through 2010 was steeper than the state's. The decline in



Woodbridge is over, while the state’s is still continuing. Had Woodbridge followed the state pattern of enrollment since 1979, it would have had only 663 students on October 1, 2021 instead of the 846 that were enrolled on that date

Current Enrollment

Table 1 and Figure 2 provide a picture of where Woodbridge residents attended school on October 1, 2021. They show that 92.2 percent of Woodbridge's elementary school-age residents attended the Beecher Road School. Fifty-five students, 6.1 percent of the school-age residents, attended non-public schools in state. Thirteen students (1.4 percent) attended area magnet schools. No children attended a public school in another district. There were 18 non-residents enrolled at the Beecher Road School in 2021 through the Open Choice program. On October 1, 2021 there were 846 residents and non-residents enrolled at the Beecher Road School (see “Total Enrollment” below).

	Number	Percent
Residents		
A. Woodbridge Public	828	92.2%
B. Other Public	0	0.0%
C. Magnets	13	1.4%
D. Non-Public	55	6.1%
E. Home-Schooled	2	0.2%
Total (A+B+C+D+E)	898	
F. Non-Residents	18	
Total Enrollment (A+F)	846	

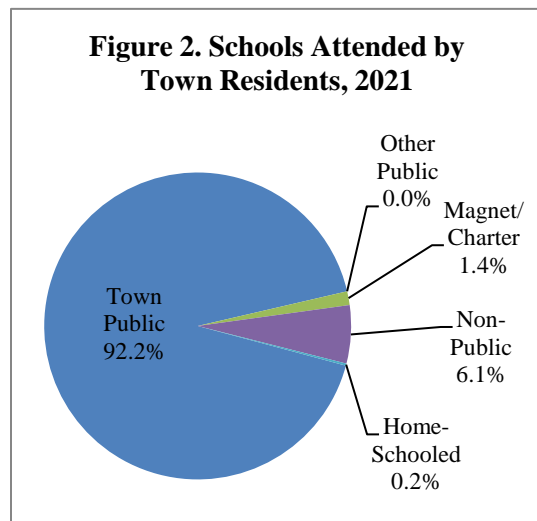
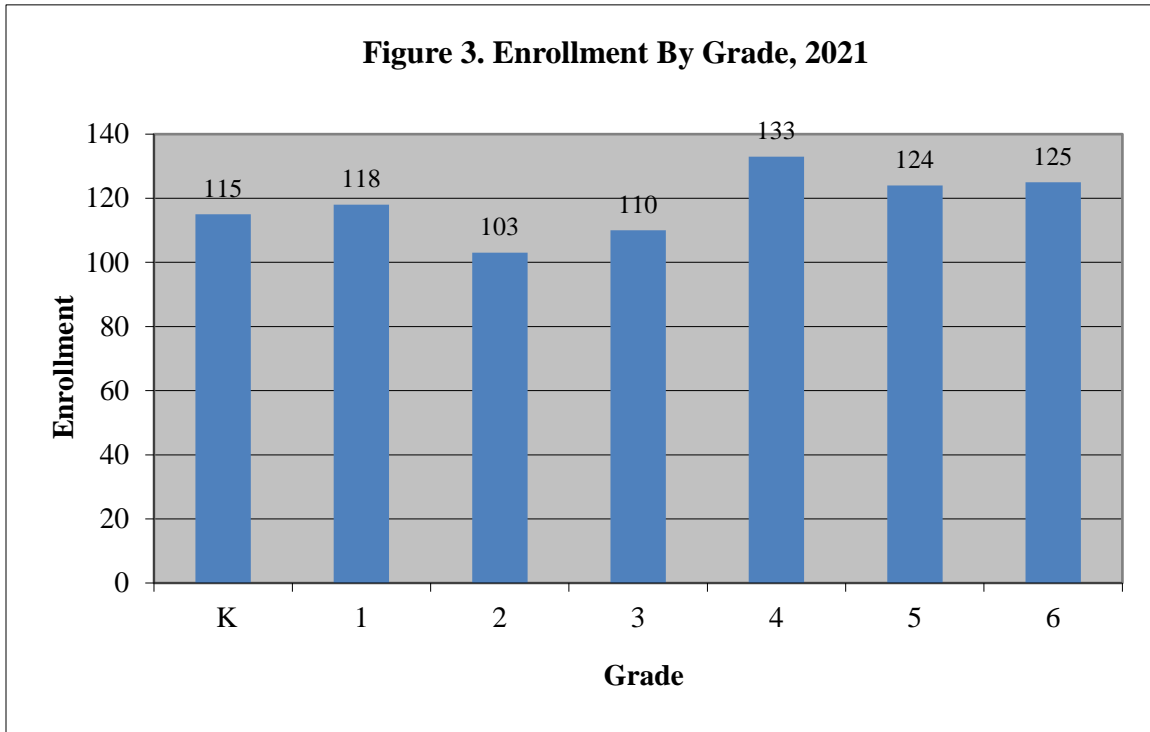


Figure 3 shows the October 2021 grade-by-grade enrollment of students in the Beecher Road School. The children in pre-kindergarten programs are not shown. Grade 4 had the largest enrollment with 133 students. It was followed by grade 6 with 125 students. Grade 2 was the smallest class with only 103 students. Grade 3 had 110 students. If current conditions continue, this year's kindergarten class will have 142 students when it enters grade 6 in 2027. 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 112 and the number of fourth graders last year was 110, then the growth rate is 1.018. A growth rate above 1.000 indicates that students moved in, transferred from a non-public school, returned from home-schooling, or were retained. A growth rate below 1.000 means that students moved out of town, left for home-schooling, transferred or were not promoted from the prior grade. For each grade I calculate four different averages of the growth rates: a three-year average; a weighted three-year average; a five-year average and a ten-year median. 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.

Because Woodbridge participates in the Open Choice Program, I broke the projection into resident and non-resident components. I calculated the annual growth rates for residents only. In 2020 and 2021, I adjusted the resident growth rates for students withdrawing to become home-schooled. I applied the three-year average resident growth rates to the number of students from Woodbury and then added in the non-residents. The three-year average was the smallest of the four I examined, although all were close. I assumed all non-residents would continue or be replaced.

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. The growth rate decline in 2020 was offset by higher-than-average growth in 2021. I used the three-year average of the three components to project kindergarten. I further assumed that you would accept between one and five students from New Haven annually under the Open Choice program such that their total enrollment would be 18 students. Kindergarten enrollment is notoriously difficult to predict. I feel that this component model can improve the predictability slightly.

To extend the projection beyond four years, I need to estimate births. The State Department of Public Health recorded 67 births in 2020. The preliminary count of birth, which is unlikely to change much, was 76 in 2021. I used the Connecticut State Data Center's 2017 projections of women of child-bearing ages in 2020, 2025 and 2030 along with my estimate of the 2020 fertility rates for similar towns (DRG B) to estimate births in 2020, 2025 and 2030. I calculated annual growth rates for 2020 to 2025 and 2025 to 2030 and applied them to the moving three-year averages of births starting in 2019 to 2021 to estimate births through 2026. That resulted in an average of 71 births annually in the 2022 to 2026 period.

Enrollment data from 2011 to 2021 were taken from files provided by the Connecticut State Department of Education. Note that current district-level data on the Department's website may include special education students educated outside of the district and exclude students in a Detention Center. These are recent changes to the way the Department reports enrollment data. Projections require consistency. The data I have chosen for this analysis **exclude** special education students educated outside of the district and may **include** students in a Detention Center. Enrollment data can change daily until an audited final file is closed. This process can take up to two years. Thus, it is possible that the enrollment data in this report could differ slightly from data in earlier reports and that may have been reported by your Board of Education to the public. Births from 1980 to 2021 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.

Beecher Road School Enrollment

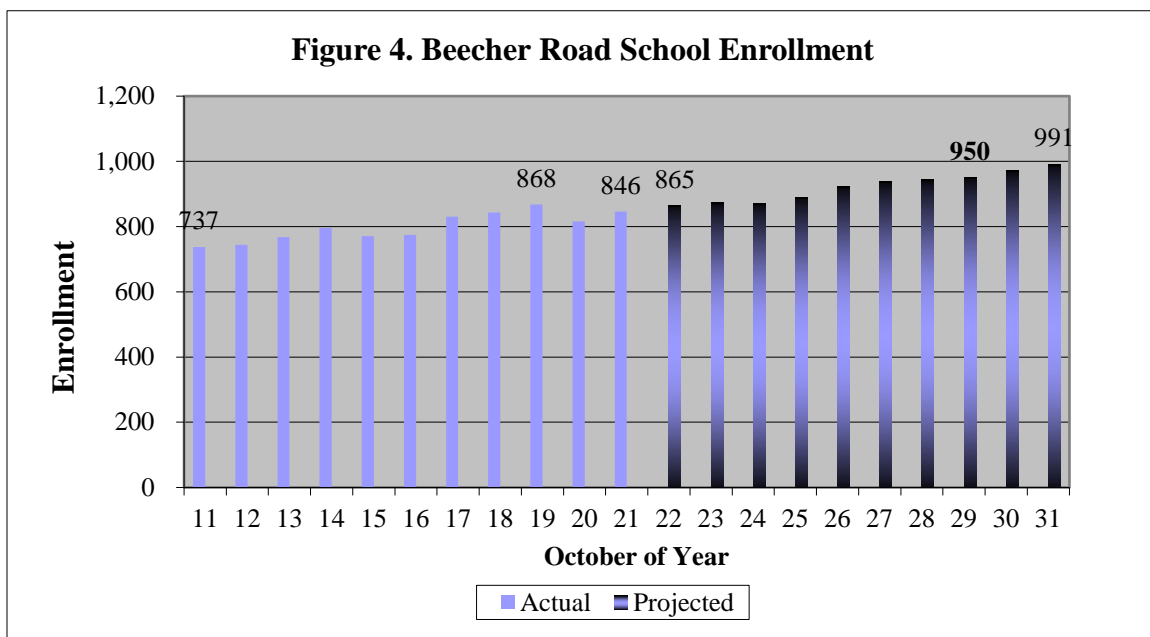
Table 2 and Figure 4 present the observed total enrollment at the Beecher Road School from 2011 to 2021 and projected enrollment through 2031. Detailed grade-by-grade data may be found in Appendix A. Between 2011 and 2012 enrollment fell from 737 to 744 students. It moved irregularly upward to 868 students in 2019. Covid-19 caused it to fall to 816 students in 2020. By 2021 it had rebounded to 846 students. Between 2011 and 2021 there was a net gain of 109 students or 14.8 percent. Statewide in that period, grade PK-6 enrollment decreased by 10.0 percent.

Woodbridge's growth of 14.8 percent between 2011 and 2021 was the greatest of similar districts in the region. Enrollment in grades PK-6 grew by 0.5 percent in Monroe, but decreased by 1.1 percent in Orange, 19.2 percent in Chester, 21.4 percent in Guilford, and 24.7 percent in Madison.

If families with pre-school age children continue to move into Woodbridge, I anticipate that enrollment will continue to move upward. Next year, I anticipate that total enrollment could increase by about 20 students. I anticipate it will grow to about 990 students by 2031. Enrollment was last near that level in 2000. The total ten-year projected gain of 145 students would be about 17 percent above the current enrollment. I have projected that K-6 enrollment statewide will be down 5.6 percent in that period. The peak growth over the next eight years for a school construction grant is 950 students. The school's enrollment could average about 920 students over the ten-year projection period. This compares to an average total enrollment of 806 students over the past ten years.

These figures include pre-kindergarten children. In the past ten years, pre-kindergarten enrollment ranged from 18 to 30 children. My projection model now bases future enrollment upon change in births three and four-years prior. I project 17 in October 2022 and an average enrollment of 20 children over the next ten years.

Year	Students	Percent Change
2011	737	
2012	744	0.9%
2013	768	3.2%
2014	796	3.6%
2015	771	-3.1%
2016	774	0.4%
2017	830	7.2%
2018	843	1.6%
2019	868	3.0%
2020	816	-6.0%
2021	846	3.7%
2022	865	2.3%
2023	875	1.1%
2024	871	-0.4%
2025	889	2.1%
2026	924	4.0%
2027	938	1.5%
2028	944	0.6%
2029	950	0.7%
2030	972	2.3%
2031	991	2.0%



Factors Affecting the Projection

The key reasons for elementary enrollment change lie in births the kindergarten yield from the birth cohort and migration. Figure 5 presents the recorded and provisional births from 1980 to 2020 and estimated births through 2026. Births ranged from a low of 46 in 2011 to a high of 106 in 1987. There was a provisional count of 67 births recorded in 2020. Based on in-state births through December of 2021, I estimated there will be 76 births in that year. Between 2000 and 2009 there was an average of 58 births annually. In the five years from 2012 to 2016 (this fall's kindergarten through 4th graders) births averaged 59. Births in the 2017 through 2021 period will average close to 67. The projection in years 2027 to 2031 assumes an average of 71 births annually between 2022 and 2026.

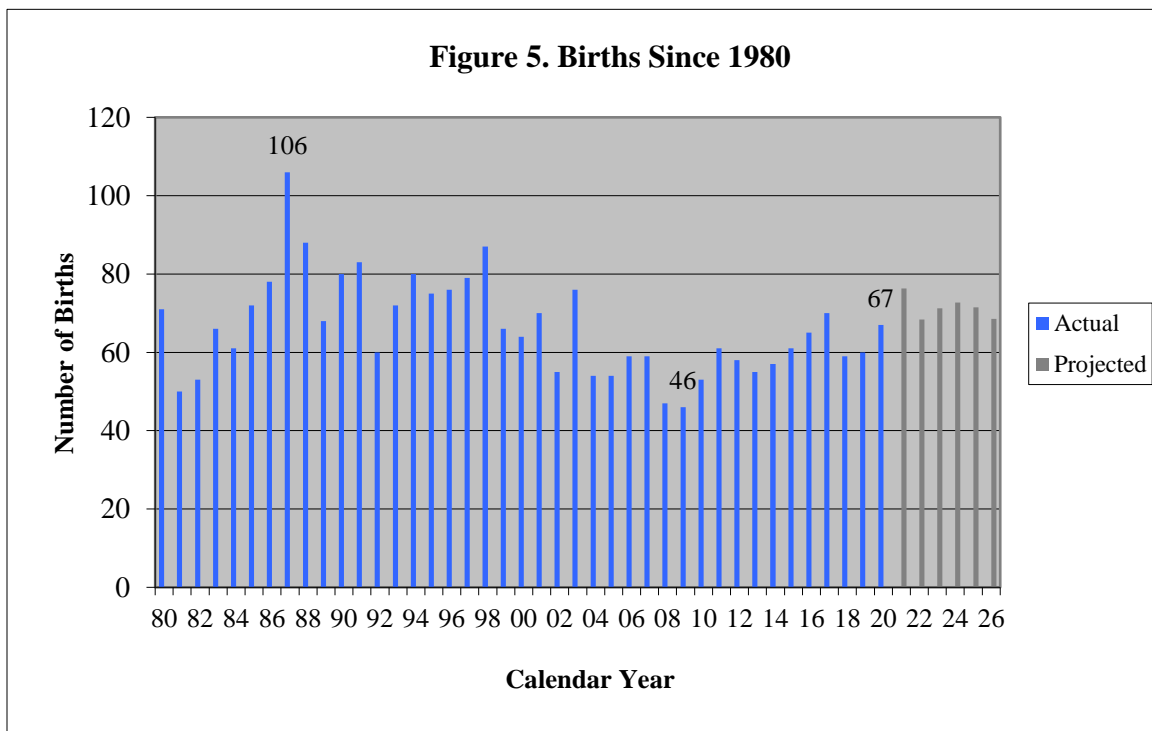
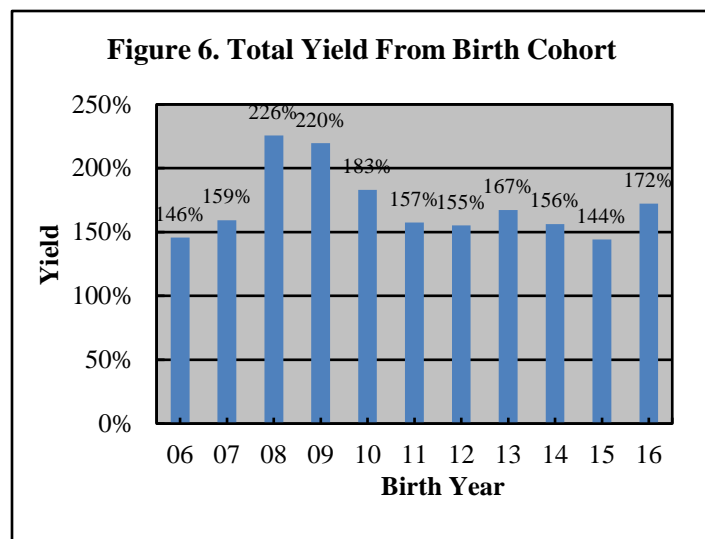


Figure 6 depicts the kindergarten yield five and six years later from the birth cohorts of 2006 to 2016 for Woodbridge residents attending kindergarten at Beecher Road. There were 61 births in 2015 and 75 resident children enrolled in the school's kindergarten at age five in 2020 and an additional 13 who first enrolled in kindergarten at age six in 2021. That is a yield of 144 percent. The recent yield from the birth cohort ranged from a low 144 percent in 2015 to a high of 226 percent in 2008. The estimated yield for births in 2016 was 172 percent. Note that 2016 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 202. Yields above 100 percent generally mean that parents move into town after giving birth elsewhere.

Table 3 gives a history of enrollment in kindergarten since 2011 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 three-year average of births five years ago, births six years ago and retentions. I estimated future kindergarten enrollment from 131.1 percent of births five years ago, 24.3 percent of births six years ago, and 7.5 percent of students retained. These rates are close to the median rates observed over the past 15 years.

Year	Birth Year	Births	K	Retained From Prior Year			----- Non-Retained -----			Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
				Born 5-Years Prior Resident	Born 5-Years Prior Non-Resident	Born 6 Years Prior	Born 5-Years Prior Resident	Born 5-Years Prior Non-Resident	Born 6 Years Prior			
2011	2006	59	91	4	71	1	15	4.7%	120.3%	27.8%	145.8%	
2012	2007	59	90	0	74	1	15	0.0%	125.4%	25.4%	159.3%	
2013	2008	47	119	0	93	4	20	0.0%	197.9%	33.9%	225.5%	
2014	2009	46	111	6	90	2	13	5.0%	195.7%	27.7%	219.6%	
2015	2010	53	102	6	82	3	11	5.4%	154.7%	23.9%	183.0%	
2016	2011	61	97	7	74	1	15	6.9%	121.3%	28.3%	157.4%	
2017	2012	58	100	8	69	1	22	8.2%	119.0%	36.1%	155.2%	
2018	2013	55	108	6	80	1	21	6.0%	145.5%	36.2%	167.3%	
2019	2014	57	98	11	72	3	12	10.2%	126.3%	21.8%	156.1%	
2020	2015	61	99	5	75	2	17	5.1%	123.0%	29.8%	144.3%	
2021	2016	65	115	7	93	2	13	7.1%	143.1%	21.3%	172.2%	
3-Year Average								7.5%	131.1%	24.3%	157.5%	
Weighted 3-Year Average								6.9%	133.6%	24.2%	160.2%	
5-Year Average								7.4%	131.4%	29.1%	159.0%	
Median, Past 15 Years								5.0%	129.1%	27.6%	157.4%	

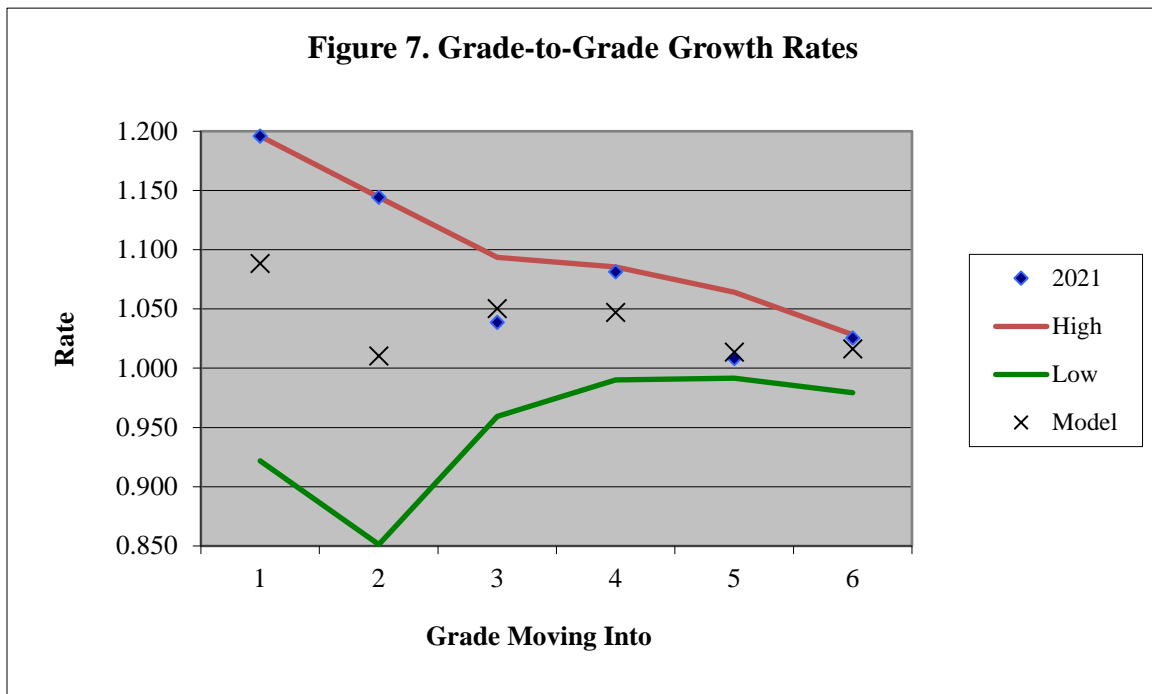
The correlation between births and kindergarten enrollment five-year later was a low to moderate 0.49 over the 1995 to 2021 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of eight children annually over the past ten years. The 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 correlation between births and birth-to-kindergarten growth was a high -0.77. This means that there is less growth between births five-years prior and kindergarten enrollment when births are relatively large. Births in the 2014-16 period, the look-back period to determine future kindergarten enrollment, averaged only 61. The upcoming kindergarten class will come primarily from a birth cohort of 70. The industry-standard cohort-survival model relies on the notion that the growth between birth to kindergarten will remain similar, independent of the number of births. That simply is not the case in Woodbridge and opens up the possibility of slightly overestimating future kindergarten enrollment. It should be monitored.

The "Connecticut Early Childhood Report on Changing the Kindergarten Date," mandated by Public Act 14-39, recommended 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 recommended the elimination of the section of C.G.S Sec. 10-184 which allows parents the option of not enrolling their age-eligible child. Funds for the implementation have not yet been made available by the General Assembly. This projection assumes that

this common-sense change will not be implemented. If implemented, the changes will very slightly decrease the size of your kindergarten class for three years and increase your pre-kindergarten enrollment.

Figure 7 gives a perspective of the grade-to-grade resident growth rates for students attending the Beecher Road School. 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. Be aware that the gap in grades 1-3 is fairly wide. The growth rates used in the projection were based on a three-year average of the observed grade-to-grade growth.



Most model growth rates were in the middle of the ten-year range. Grades five was toward the bottom and grade 6 was toward the top. All six of the elementary growth rates were well above 1.000 indicating that families with children are moving into Woodbridge. The rates in grades 1, 2, 4 and 6 were ten-year highs. In grades 3,5 and 6, the projection growth rates were close to the 2021 rates. The average of the growth rates across grades 1-6 used for the projection was a high 1.038. The average in 2021 was a very high 1.082. The median rate over the past 20 years was 1.026. This high in-migration of families with school-age children is a major driver of your expected enrollment growth.

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 several factors that could affect enrollment: town population; women of child-bearing age; people in the labor market; new home construction; sales of existing homes; non-public enrollment; resident enrollment in other public schools and student migration.

Figure 8 presents the US Census Bureau count of Woodbridge population growth between April, 2010 and 2020. In that period, the town population grew by 97 people. The population gain of 1.08 percent was the 54th ranked in the state. In contrast, New Haven County grew by 0.27 percent, the state grew by 0.89 percent and communities with similar economic and need characteristics grew by 1.72 percent. The actual population growth was more than the inter-census estimates, which had Woodbridge's population declining by 3.16 percent.

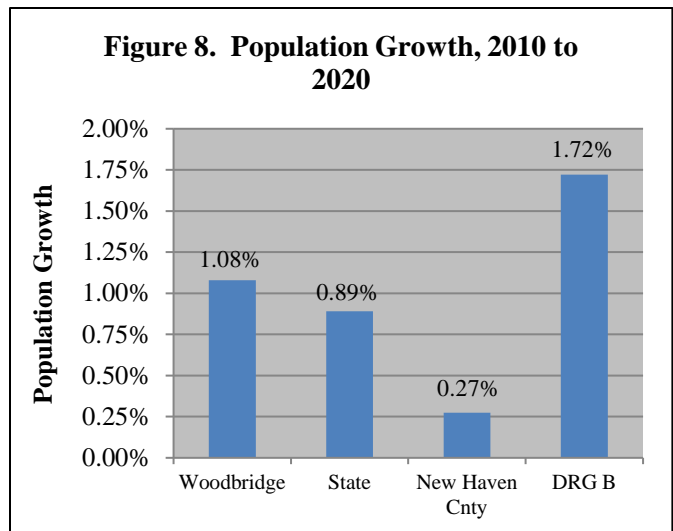


Figure 9 presents the Connecticut State Data Center's 2017 population projections for Woodbridge residents 0-14 years of age in the years 2020, 2025 and 2030. These figures include people in households and group quarters. The Center projected that population ages 0-4 would grow from 391 in 2020 to 416 in 2025 and 441 in 2030. They projected the population ages 5-9 would be unchanged between 2020 and 2025 and then grow by 4.1 percent between 2025 and 2030. The number ages 10-14 would grow from 523 in 2020 to 583 in 2025 and then decline slightly. This independent projection is consistent with the growth I have projected in this report

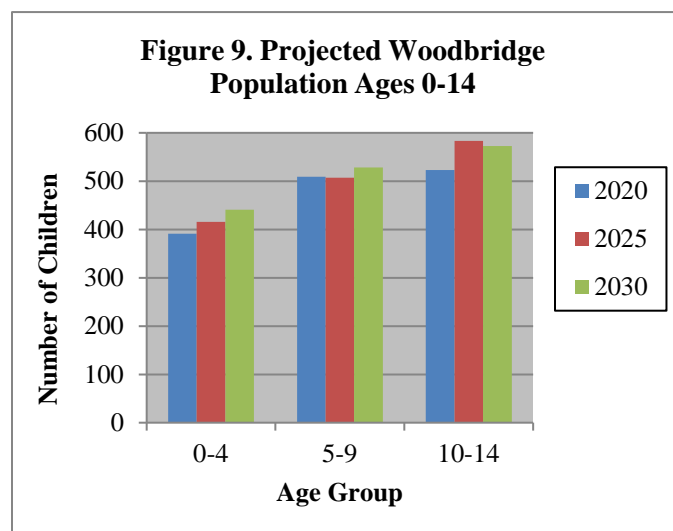


Figure 10 presents the Connecticut State Data Center 2017 projections of the number of women of child-bearing age for 2015, 2020 and 2025. In communities such as yours, women in the 30-34 age group have the highest rate of births. The Center projected the number of women in this group would grow from 156 in 2015 to 162 in 2020 and 231 in 2025. The second highest birth rate in communities like yours is women ages 25-29. The Center projected the number in that age range would grow from 115 in 2015 to 185 in 2020 and then plummet in 2025. The numbers in the 35-44 ages were projected to increase slightly while the numbers of women 15-24 were projected to decrease sharply.

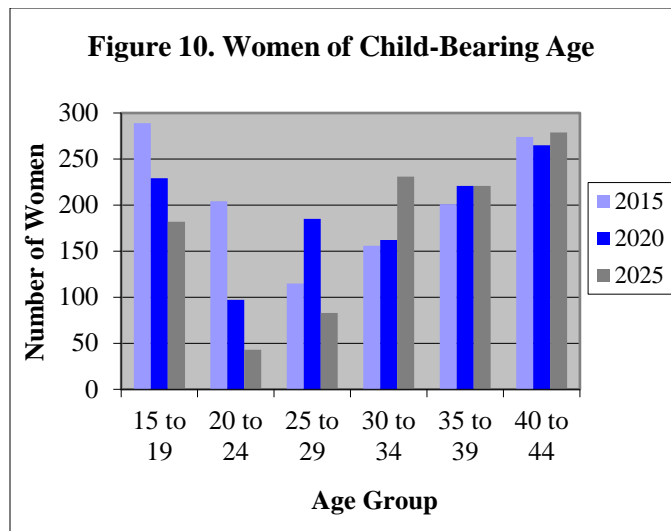


Figure 11 examines the number of people in the labor market over the past ten years from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older who work or actively are seeking employment. The Woodbridge estimated labor force peaked in 2019, fell precipitously in 2020 and did not recover in 2021. It declined an estimated 6.4 percent between 2011 and 2021. The net change was worse than the state (-3.1 percent) and New Haven County (-1.9 percent). Woodbridge's 2021 unemployment rate of 3.9 percent was down 1.7 percentage points from the 2011 has partially recovered from the Covid-19 rate of 5.4 percent in 2020. It is much better than the state rate of 6.3 percent and the New Haven County rate of 6.6 percent.

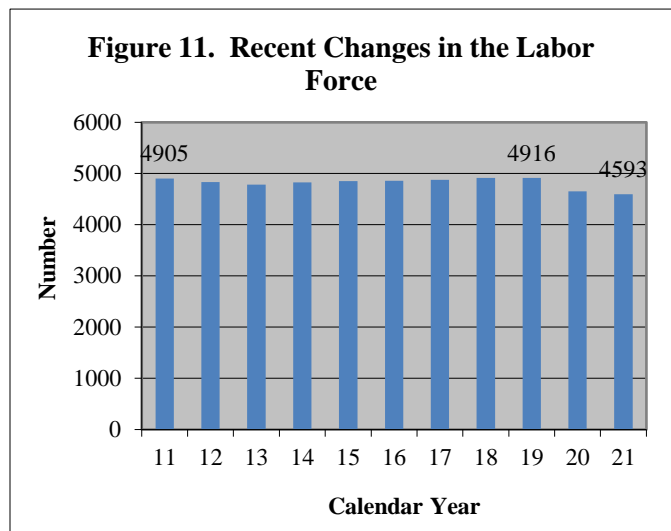


Figure 12 presents the net new housing units permitted from 2011 to 2021 from the State Department of Economic and Community Development and your Building Department. In the past ten years the number of net (of demolitions) new housing units permitted in Woodbridge ranged from a low of -3 in 2014 to a high of seven in 2021. In the three-year look-back period for this projection, there was an average of five net new housing units.

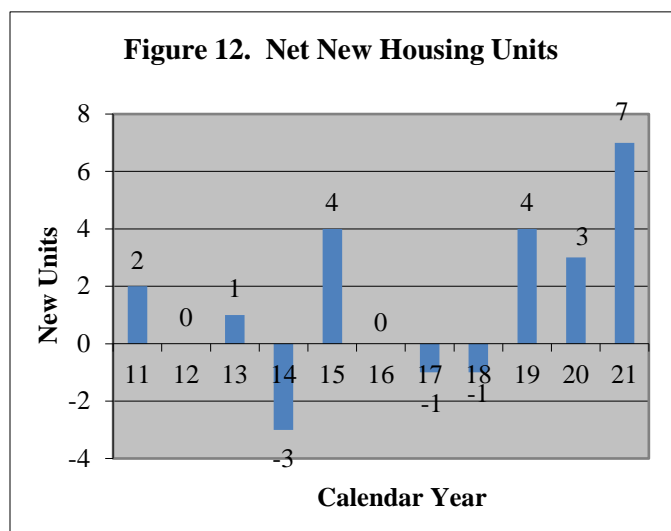


Figure 13 presents my estimate of the number of sales of existing homes. I derived it by taking the number of sales of single-family homes and condominiums from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized the prior year. The estimated number of sales of existing homes ranged from a low of 88 in 2019 to a high of 131 in 2016. There were 109 sales of existing homes in 2021. In the three-year look-back period for the projection, there were 108 sales annually.

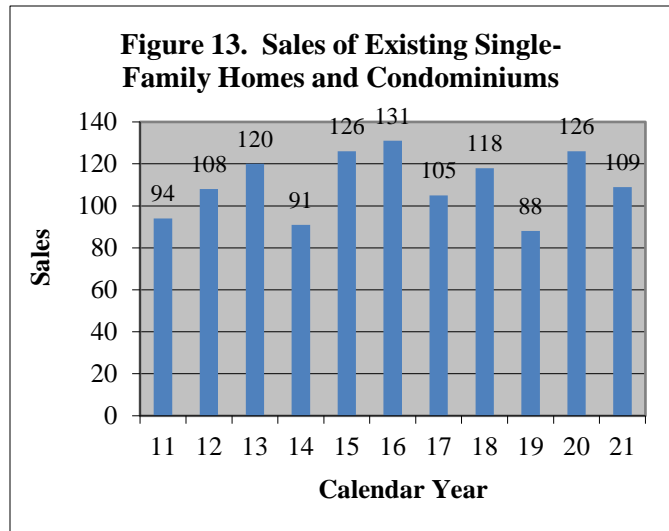


Figure 14 presents non-residents enrolled in Woodbridge Schools under the Open Choice program. In 2011 there were 13 New Haven residents enrolled at the Beecher Road School. That number grew to 18 in 2021. The projection assumes that the Beecher Road School will accept 1-5 children annually in kindergarten so that the total non-resident enrollment will remain at 18 students.

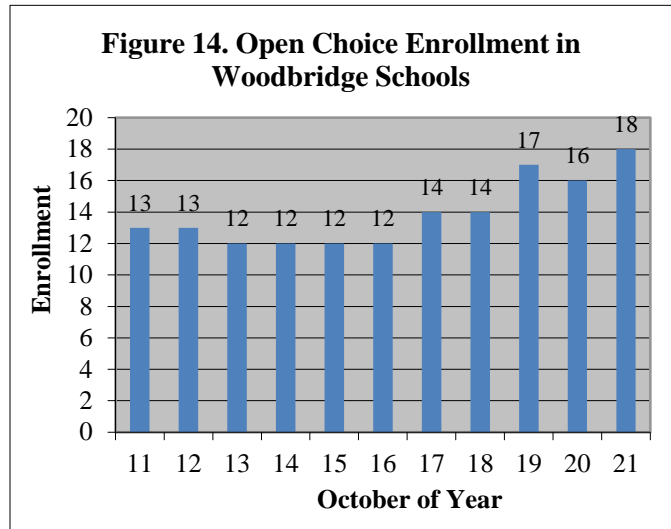


Figure 15 presents the non-public enrollment in grades PK-6 over the past ten years for students from the town of Woodbridge. The data are from the records of the Connecticut State Department of Education. Non-public enrollment declined from 86 students in 2011 to 44 students in 2021. In the past ten years, enrollment in the non-public schools decreased by 42 students or 58 percent. The 2021 enrollment represented 4.9 percent of all PK-6 students from Woodbridge. That is well below the 10.6 percent level of 2011. I project the non-public enrollment in grades PK-6 from Woodbridge will be down slightly in 2022.

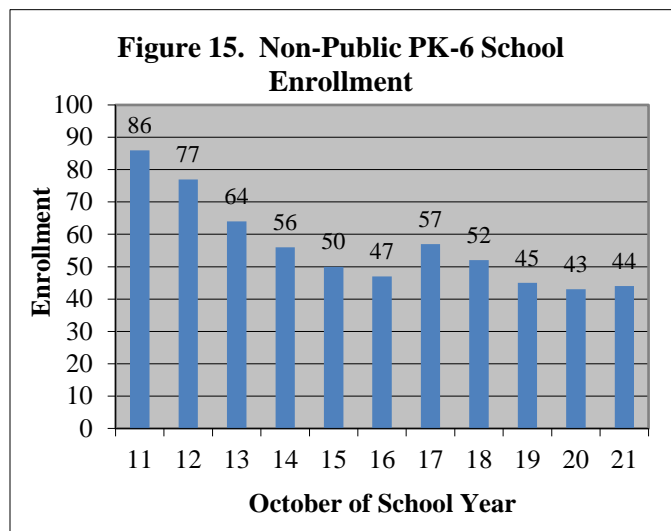


Figure 16 presents the enrollment of Woodbridge residents in grades PK-6 in other public schools in Connecticut from 2011 to 2021. The number educated out-of-district in other public schools ranged from five in 2013 to 21 in 2019. In 2021, the count fell to 13 students. Twelve attended a New Haven magnet and one attended the Wintergreen magnet. There were five children who attended prekindergarten in a New Haven magnet in 2021. That figure got as high as 11 in 2019. Covid-19 obviously impacted that count.

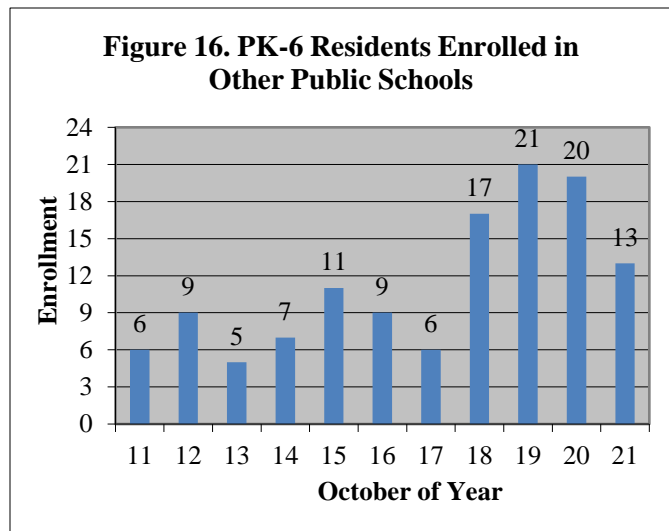
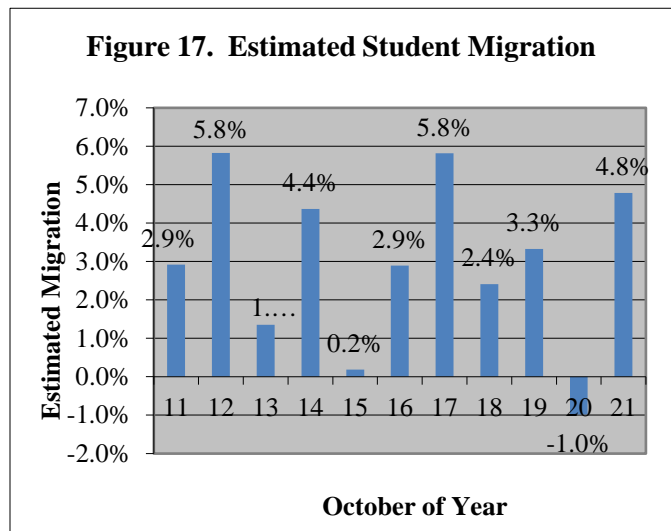
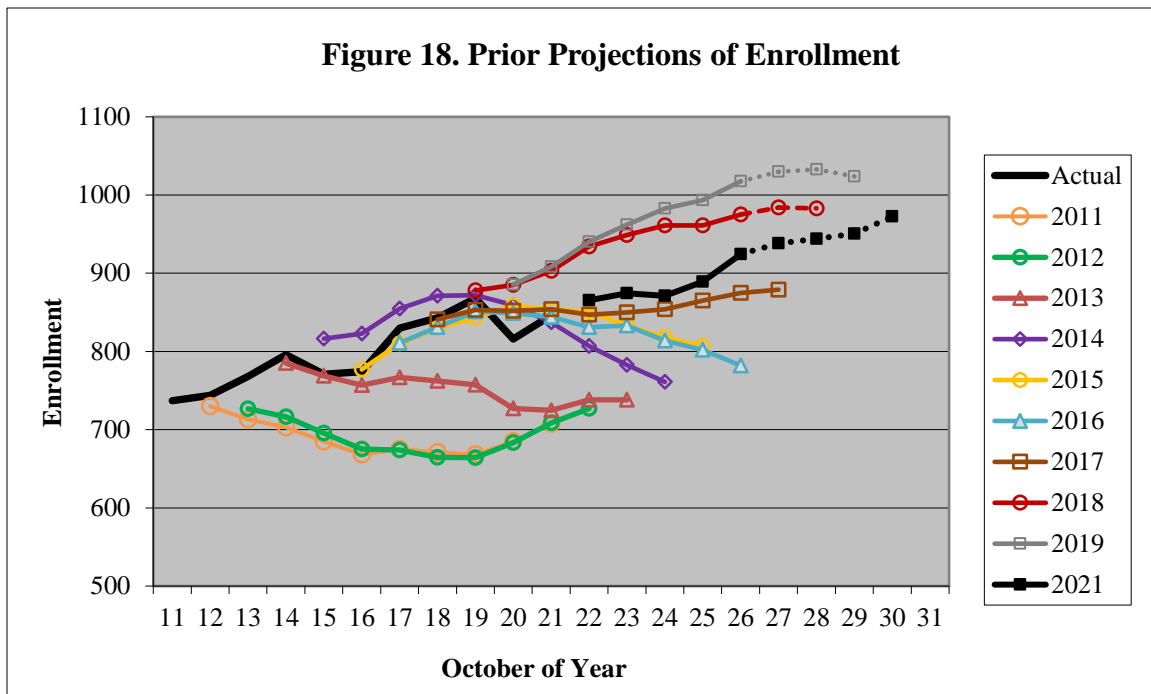


Figure 17 presents the estimated migration of students from Woodbridge. Migration includes Woodbridge students attending other public schools but excludes students attending non-public schools. Estimated migration ranged from a low of -1.0 percent in 2020 to a high of +5.8 percent in 2012 and again in 2017. The estimated migration was +4.8 percent in 2021. The data behind these figures may be found in Appendix B. In the three-year look back period of the projection, migration averaged a solid +3.07 percent. In the past 34 years, only ten of the three-year averages of migration were higher. The median three-year migration rate over the past 25 years was 2.48 percent. If migration returns to previous levels, then this projection will be slightly 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 Woodbridge since 2011.



The 2019 projection was 63 students (7.45 percent) above this year's enrollment of 846. That is an annual error rate of 3.66 percent. Obviously that projection could not have anticipated the Covid-19 epidemic. The eight other enrollment projections that I did between 2011 and 2019 had one-year error rates that averaged 2.3 percent. The five projections done between 2011 and 2016 had an average five-year error rate of 9.6 percent, which is 1.8 percent annualized.

Over the past forty years, 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. The method usually does not attempt to predict the future. Its key assumption is that the near future will be like the recent past. For example, projections done in the late 2000s did not anticipate the recession of 2011. Some policy changes such as full-day kindergarten or the expansion of Open Choice can be built into a new projection. It is incumbent upon the receiver of a projection to identify planned changes so that they can be built into a projection.

Summary

I project that Beecher Road School enrollment could grow to about 990 students by 2031. I project the ten-year net gain could be about 145 students or a little over 17 percent. I expect that there will be about 865 students enrolled next year. The school's enrollment could average 922 students over the ten-year projection period. The eight-year peak enrollment for a school construction grant is 950 students in 2029.

This report is projecting moderate continued growth over the next ten years. 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 2012 to 2016 (this fall's kindergarten through 4th graders) births averaged 59. Births in the 2017 through 2021 period will average 66.5. These births have already happened and should support a small growth in enrollment. My model assumes an average of 70.5 births in the 2022 to 2026 period. The number of births in 2022 and beyond was based in part on the Connecticut State Data Center's 2017 projection of the number of women of child-bearing ages and my estimate of fertility rates in 2020.

The big uncertainty in any projection is birth to kindergarten growth. Kindergarten classes continue to be large relative to births five years prior. Your town continues to attract families with pre-school age children. Based on recent observations, I assumed future kindergarten enrollment would be 58 percent above the birth cohorts of five and six years prior. The median growth over the past 15 years was 57 percent. Continuing sales of existing homes and condominiums at about 110 per year should support this growth.

I am concerned that as births increase in Woodbridge there is less growth between births and subsequent kindergarten enrollment. The correlation is a high $-.77$. A basic assumption of the cohort-survival model is that the number of births does not impact birth to kindergarten growth. That clearly is not the case in Woodbridge. There was an average of 61 births in 2014 to 2016, the projection's look-back period. Births in 2017-2021 averaged 66.5 and I have estimated an average of 70.5 births in 2022 to 2026. If the observed growth between births and future kindergarten enrollment does not hold up, this projection could overestimate future enrollment.

The final factor in the projection is the average grade-to-grade growth rate over grades 1-6. I used a three-year average, which was in the lowest of the four I examined. The average growth rate over grades 1-6 used to project enrollment was a high 1.038. This is above the twenty-year median growth rate of 1.026. Over the long term, this could push enrollment up more than usual.

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 full-day; retention policies will not change; little expansion of area magnet schools and enrollment of 18 New Haven students through the Open Choice program. The projection assumes a slight decrease in non-public school enrollment; about 24 percent of kindergarten enrollment will be children who will delay entry until age six; five new housing units will be constructed annually; there will be an average of 108 sales of existing homes; a little growth in the labor force; and a student migration of +3.4 percent.

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 Woodbridge and then make adjustments as necessary.

Appendix A. Beecher Road School Enrollment by Grade Projected to 2031

School Year	Birth Year ¹	Births	K ²	1	2	3	4	5	6	PreK	Total
2011-12	2006	59	91	86	109	107	95	110	116	23	737
2012-13	2007	59	90	101	94	119	112	98	111	19	744
2013-14	2008	47	119	98	104	93	121	118	96	19	768
2014-15	2009	46	111	109	108	103	97	128	120	20	796
2015-16	2010	53	102	106	109	109	102	97	126	20	771
2016-17	2011	61	97	116	109	118	107	107	97	23	774
2017-18	2012	58	100	109	125	119	127	110	110	30	830
2018-19	2013	55	108	114	114	121	124	133	109	20	843
2019-20	2014	57	101	122	118	119	125	129	134	20	868
2020-21	2015	61	99	92	104	124	123	124	131	19	816
2021-22	2016	65	115	118	103	110	133	124	125	18	846
Projected											
2022-23	2017	70	118	125	120	108	116	135	126	17	865
2023-24	2018	59	108	128	126	126	113	118	137	19	875
2024-25	2019	60	105	117	129	132	132	115	120	21	871
2025-26	2020	67	112	114	118	135	138	134	117	21	889
2026-27	2021	76	126	122	115	124	141	140	136	20	924
2027-28	2022	68	121	137	123	121	130	143	142	21	938
2028-29	2023	71	120	132	138	129	127	132	145	21	944
2029-30	2024	73	124	130	133	145	135	129	134	20	950
2030-31	2025	71	126	135	131	140	152	137	131	20	972
2031-32	2026	69	121	137	136	137	147	154	139	20	991

¹ 2006 to 2021 births were from the State Department of Public Health. Births in 2020 and 2021 are provisional. Births in 2022 to 2026 were based on the 2017 Connecticut State Data Center projections of women of child-bearing ages in Woodbridge and my estimate of 2020 fertility rates in communities like Woodbridge.

² Based on three-year averages of births five- and six- years ago plus 1-5 children in kindergarten such that total Open Choice enrollment remains at 18 students.

Appendix B. Resident Growth from Grade to Grade across Years

October of Year	K	1	2	3	4	5	6	Average	Estimated Migration¹
2012	1.508	1.111	1.095	1.093	1.048	1.032	1.009	1.065	5.82%
2013	2.447	1.090	1.030	1.000	1.017	1.064	0.979	1.030	1.35%
2014	2.370	0.922	1.103	0.990	1.043	1.059	1.017	1.022	4.36%
2015	1.868	0.954	1.009	1.009	0.990	1.000	0.984	0.991	0.19%
2016	1.574	1.131	1.029	1.075	0.991	1.050	1.000	1.046	2.89%
2017	1.707	1.125	1.063	1.093	1.078	1.028	1.028	1.069	5.82%
2018	1.945	1.141	1.046	0.966	1.043	1.048	0.991	1.039	2.41%
2019	1.719	1.131	1.035	1.044	1.035	1.041	1.008	1.049	3.33%
2020²	1.590	0.939	0.851	1.068	1.025	0.992	1.016	0.982	-0.98%
2021²	1.692	1.196	1.144	1.039	1.081	1.008	1.025	1.082	4.79%
3-Year Ave.	1.667	1.088	1.010	1.050	1.047	1.014	1.016	1.038	
Weighted 3-Year	1.663	1.099	1.029	1.050	1.055	1.008	1.019	1.043	
5-Year Ave.	1.731	1.106	1.028	1.042	1.053	1.023	1.014	1.044	
10-Year Median	1.713	1.118	1.041	1.042	1.039	1.036	1.009	1.047	
Projection Growth Rates		1.088	1.010	1.050	1.047	1.014	1.016		

¹ Adjusted for non-residents enrolled in Woodbridge and Woodbridge residents enrolled in other public schools.

² Adjusted for students withdrawn to become home-schooled.