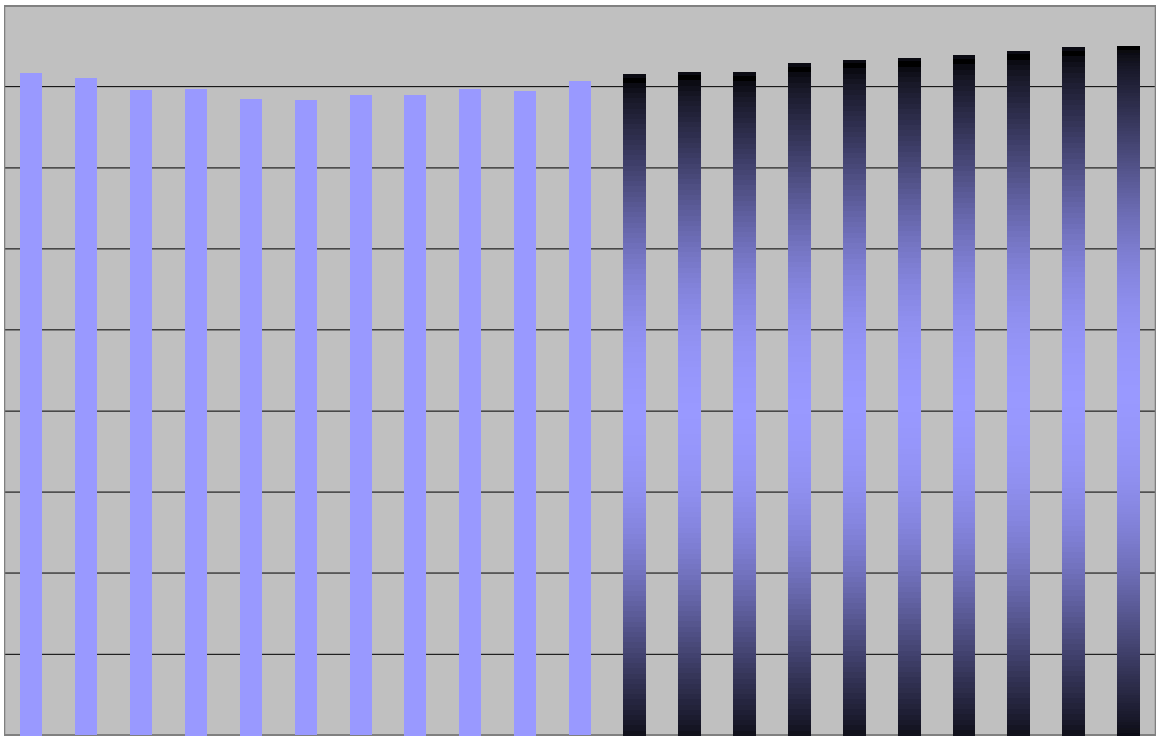
FARMINGTON PUBLIC SCHOOLS ENROLLMENT PROJECTED TO 2029



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November 21 2019

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Introduction

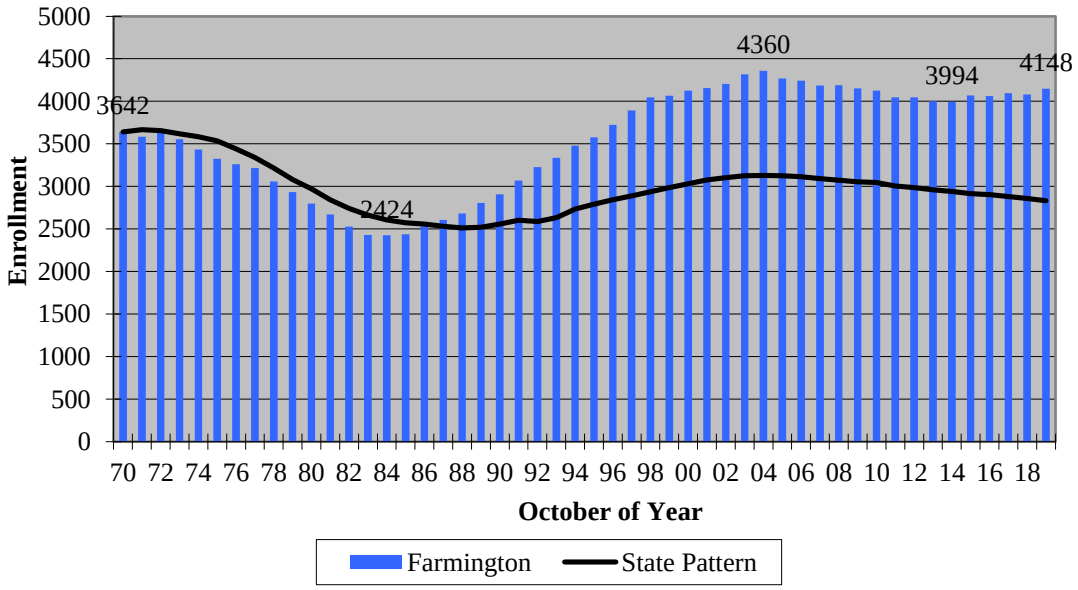
This report presents a ten-year projection of enrollment for the Farmington Public Schools. It is based on resident and non-resident students enrolled in Farmington schools. The projection is divided into the four grade levels that represent how the Farmington schools are organized: K-4, 5-6, 7-8 and 9-12. The report also includes projections for the Union, Noah Wallace, West District and East Farms schools. The report includes 50 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, labor force, housing, grade 9 repeaters, dropouts, non-public enrollment, non-resident enrollment in the Farmington schools, 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 critical and 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 for all of your schools. 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 grades PK-12 in Farmington from 1970 to date and compares it to public school enrollment statewide.

Figure 1. Farmington Enrollment 1970 to Date



Enrollment in the Farmington Public Schools fell from 3,642 students in 1970 to 2,424 in 1984. In those 14 years, enrollment declined by 1,218 students or 33.4 percent. In the 20 years between 1984 and 2004, enrollment grew by 2,116 students or 79.9 percent and reached an all-time peak of 4,360 students. Between 2004 and 2014, enrollment declined by 366 students or 8.4 percent. Enrollment has been increasing irregularly for the past five years. The October 2019 enrollment of 4,148 students was 3.9 percent above the recent low of 2014.

Farmington'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 an estimated 9.4 percent between 2004 and 2019. The 1970 to 1984 decline in Farmington was slightly shorter in duration but slightly deeper than the state's. The subsequent enrollment gain in Farmington was longer in duration than the state's growth but significantly more robust. Both Farmington and the state entered a second cycle of decline in 2005. Farmington seems to have broken out of the decline while the statewide decline is continuing. Had Farmington followed the state pattern of enrollment since 1970, it would have had only 2,834 students in October of 2019 instead of the 4,148 that were enrolled on that date.

Current Enrollment

Table 1 and Figure 2 provide a picture of where Farmington residents attended school on October 1, 2018, the latest data available. The figures include residents and non-residents in Farmington's pre-kindergarten programs. The table and figure show that 90.6 percent of Farmington's school-age residents attended the Farmington Public Schools in 2018. Two hundred eighty-one students (6.4) percent of the school-age residents attended non-public schools in state. The number attending private schools out-of-state is not known. That figure includes 12 students who were educated in non-public special education facilities at district expense. Other school-age residents attended magnet schools (2.4 percent), a State Technical High School or an agriculture science program (0.3 percent) or public schools in other districts (0.3 percent). There were 128 non-residents who were enrolled in the Farmington Public Schools in 2018. The projections in this report are based upon the 4,148 residents and non-residents who were enrolled in the Farmington Public Schools on October 1, 2019. That is equivalent to the 4,081 listed below under "Total Enrollment."

Table 1. 2018 PK-12 Enrollment

	Number	Percent
Residents		
A. Farmington Public	3,953	90.6%
B. Magnet	105	2.4%
C. Tech+Ag Sci	14	0.3%
D. Other Public	12	0.3%
E. Non-Public	281	6.4%
Total (A+B+C+D+E)	4,365	
F. Non-Residents	128	
Total Enrollment (A+F)	4,081	

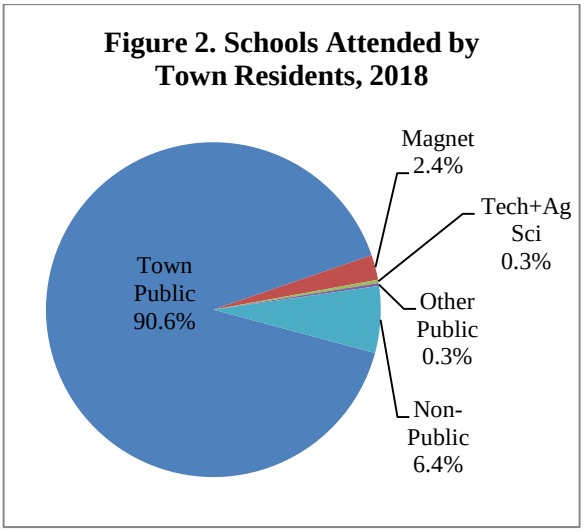
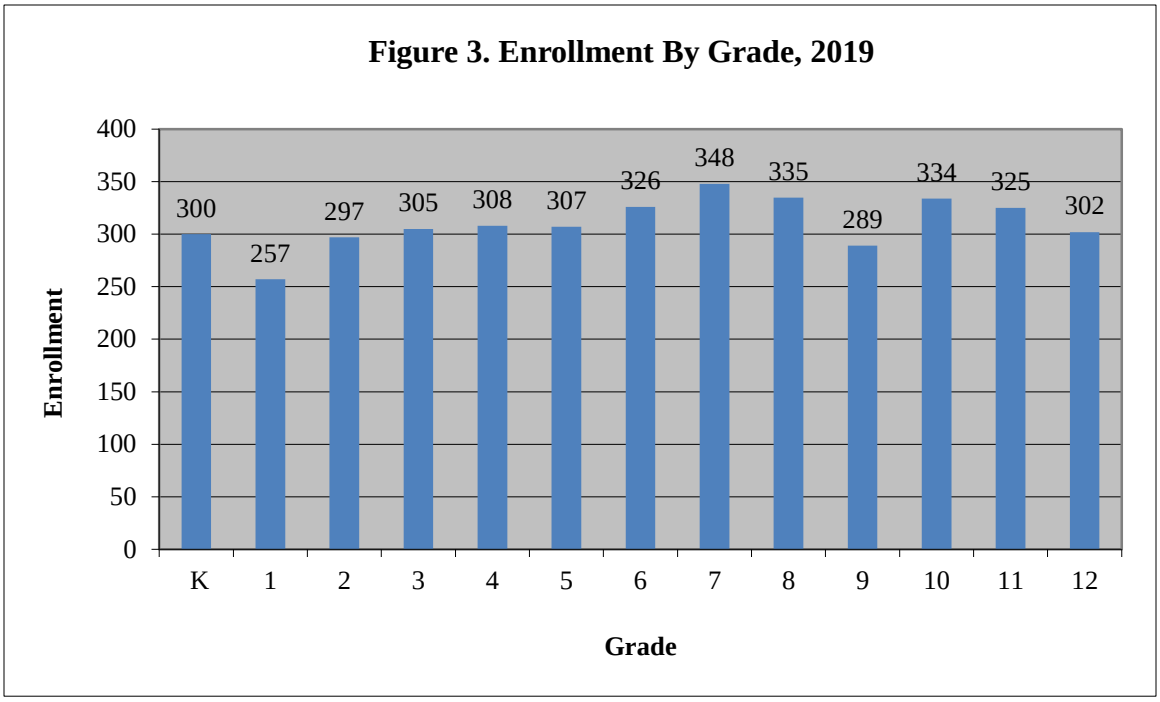


Figure 3 shows the October 2019 grade-by-grade enrollment of students in the Farmington Public Schools. The children in pre-kindergarten programs are not shown. Grade 7 had the largest enrollment with 348 students followed by grade 8 with 335 and grade 10 with 334 students. Grade 1 was the



smallest class with only 257 students followed by grade 9 with 289 students and grade 2 with 297 students. If current conditions continue, this year's kindergarten class of 300 children will have 366 students when it enters grade 5 at the West Woods Upper Elementary School in 2024, 369 students when it enters grade 7 at the Irving A. Robbins Middle School in 2026 and 371 students when it enters grade 9 at Farmington High School in 2028. All four projected enrollments are above the current enrollment in 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 303 and the number of third graders last year was 300, then the growth rate is 1.010. 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 one 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 prior year's enrollment from the prior grade. The projection builds grade by grade and year by year.

I broke this projection into two parts - residents and non-residents. Residents were calculated by taking the total enrollment and subtracting out Open Choice students from Hartford. I utilized a three-year average of the resident annual growth rates. In Farmington, all four of the averages I computed were fairly close. For the district projection, I broke kindergarten into five-year olds, six-year olds entering kindergarten for the first time and repeaters. I used the three-year average of each component. It was second of the four I examined. This breakdown was not available for the individual schools. To project kindergarten for them, I used births five-year prior.

The transition from grade 8 to grade 9 has been depressed for the past two years. The academic quality of the school has remained high. SAT scores increased from 586 in 2017 to 593 in 2019. The school recently added Psychology to the AP course offerings which helped fuel a 12 percent increase in AP exams taken between 2017 and 2019. I believe the depressed transition rate may be attributed, in part, to the discussions on the physical needs in the school as part of the effort to secure support for a new school. Whatever the reason, it cannot be ignored when planning for the size of a new school. Therefore, I used the depressed three-year average from 2017 to 2019 to project grade 9 enrollment in 2020 and 2021 and the higher three-year average (from 2015 to 2017) in 2022 to 2029. The 2015 to 2017 data were not inflated by students repeating the grade.

To project non-resident enrollment, I assumed that Farmington would continue to enroll 10 Hartford residents in pre-kindergarten and 12 children annually in kindergarten. I assumed a four percent attrition rate annually in grades 1 through 8. In grades 9-12, I used the average attrition observed over the past five years. Total Farmington enrollment was the sum of resident and non-resident (Open Choice) enrollment.

To project enrollment in your four elementary schools I used the five-year average of the grade-to-grade growth rates in grades 2-4 and the five-year average of growth from births five-years earlier for kindergarten. With full-day kindergarten starting in 2015, I used a 4-year average for the transition from kindergarten to grade 1. The fifth year (2015) was artificially inflated by children entering kindergarten in grade 1 after attending full-day kindergarten elsewhere. I wanted to get greater stability that a five-year average affords. This plus the fact that the kindergarten breakdown into 5-year olds, 6-year olds repeating the grade and 6-year-olds entering for the first time is not available by school means that the sum of the school projections will not equal the district K-4 projection.

To extend the projections beyond four years, I needed to estimate births for the years 2019 to 2024. The most recent Connecticut State Department of Public Health official count of births was 207 in 2016. The provisional counts were 187 births in 2017 and 203 in 2018. Based on the September count of in-state births in 2019, I estimate there will be 191 births to Farmington residents in 2019. To project births in 2020 to 2014 I used the Connecticut State Data Center's 2017 projections of Farmington women of child-bearing ages in 2015, 2020 and 2025 and my estimate Farmington fertility rates in 2015 and 2017. I calculated the growth in number of expected births in 2015, 2020 and 2025 and applied the annual growth rates to the moving two-year average of births starting in 2018 and 2019.

The Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health provided births in 2004 to 2018 for each of the four elementary schools school attendance zones. The 2004 to 2010 births were based on a geocoding of the mother's address. Births in 2011 to 2018 were based upon a conversion of school attendance zones into census tracts and blocks. These methods were close, but did not line up exactly in the 2011-2014 period that overlapped. Under both methods, there were a few births that could not be assigned to a school attendance zone. These were prorated into zone by the percentage of births that could be attributed to a school. To apportion births in 2019 to 2024, I calculated the percentage of births within each attendance zone in 2016 to 2018 and applied it to the number of births estimated in the district for 2019 to 2024. The sum of the births in the four attendance zones is very close to, but does not always equal the official count of births in Farmington.

Enrollment data from 2009 to 2018 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. The Farmington

central office provided enrollments in 2019. Births from 1980 to 2019 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.

Total Enrollment

Table 2 and Figure 4 present the observed total enrollment in Farmington schools from 2009 to 2019 and projected enrollment through 2029. Detailed grade-by-grade data may be found in Appendices A and B. K-12 enrollment in Farmington fell from 4,084 students in 2009 to 3,916 in 2014 and then rose to 4,033 students in 2019. Between 2009 and 2019, enrollment in grades K-12 decreased by only 51 students or 1.2 percent. Most of that loss can be attributed to the growth of area magnet and charter schools. Statewide public-school enrollment declined 7.4 percent in that period.

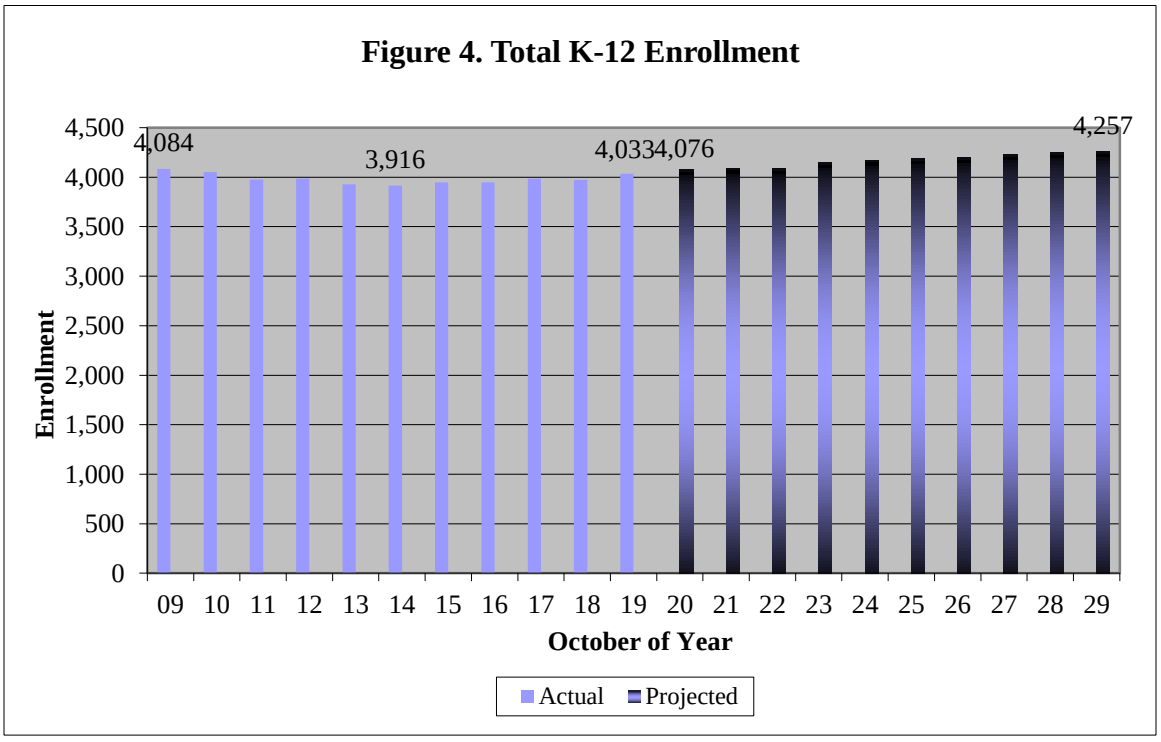
Table 2. Total Enrollment

Year	PK-12	K-12	K-12 Percent Change
2009	4,151	4,084	
2010	4,126	4,050	-0.8%
2011	4,046	3,977	-1.8%
2012	4,046	3,985	0.2%
2013	4,002	3,926	-1.5%
2014	3,994	3,916	-0.3%
2015	4,069	3,946	0.8%
2016	4,060	3,948	0.1%
2017	4,096	3,987	1.0%
2018	4,081	3,972	-0.4%
2019	4,148	4,033	1.5%
2020	4,183	4,076	1.1%
2021	4,197	4,090	0.3%
2022	4,195	4,087	-0.1%
2023	4,253	4,146	1.4%
2024	4,280	4,171	0.6%
2025	4,294	4,185	0.3%
2026	4,308	4,198	0.3%
2027	4,338	4,228	0.7%
2028	4,359	4,249	0.5%
2029	4,367	4,257	0.2%

Between 2008 and 2018, the latest data available, the enrollment loss of 2.6 percent in grades PK-12 in Farmington was smaller than similar towns in the area. The losses in West Hartford (-4.9 percent), (South Windsor (-9.4 percent), Avon (-11.8 percent), Glastonbury (-14.2 percent), Cheshire (-14.7 percent), Granby (-17.6 percent) and Simsbury (-17.7 percent) were all deeper than Farmington's enrollment decline.

I project that the enrollment recovery that started in 2015 will continue. Next year, I anticipate that total K-12 enrollment will be about 40-45 students more than this year. I expect enrollment will move very slowly upward, approaching 4,260 students by 2029. The projected 10-year growth is about 225 students or 5.6 percent. In the state's public schools, I am projecting an 8.0 percent decline between 2019 and 2029. Total enrollment in grades K-12 in Farmington could average about 4,170 students over the ten-year projection period compared to an average total enrollment of 3,974 students over the past ten years.

Figure 4. Total K-12 Enrollment



Grade K-4 Enrollment

Table 3 and Figure 5 present actual enrollment in grades K-4 in 2009 to 2019 and projected enrollment to 2029 at the Union, Noah Wallace, West District and East Farms schools. Enrollment by grade may be found in Appendix A. Enrollment in the schools drifted irregularly upward from 1,417 students in 2009 to 1,467 students in 2019. The gain of 50 students over the past ten years represented 3.5 percent of the enrollment in 2009. I project that public-school enrollment statewide in grades K-4 will have declined by 11.1 percent in that period.

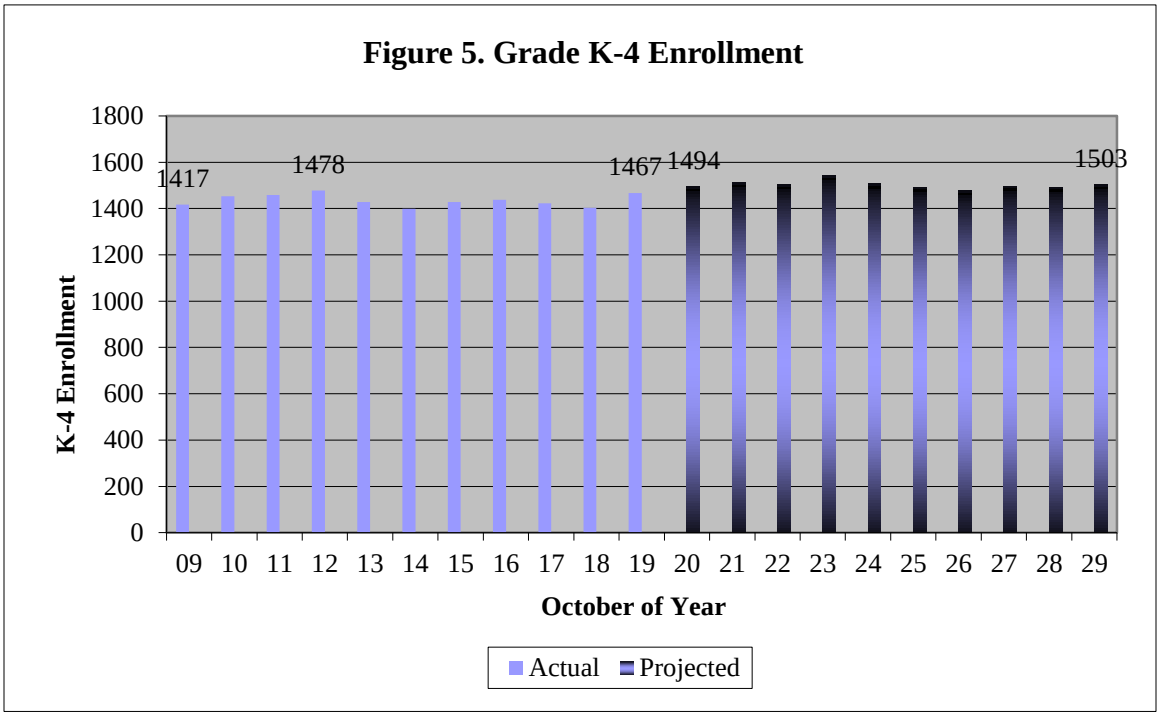
I anticipate a slow upward movement of elementary enrollment over the next ten years. Next year's elementary enrollment could be 25-30 students more that this year. By 2029, I project that grade K-4 enrollment could approach 1,505 students. That would be about 35 students more than 2019, a gain of 2.5 percent. In grades K-4 in the state's public schools, I am projecting a 6.0 percent enrollment decline. Over the ten-year projection period, I believe enrollment in grades K-4 could average about 1,500 students over the upcoming ten years compared to the average of 1,437 students observed over the past ten years.

These figures do not include the children in your pre-kindergarten programs at the Farmington Collaborative PK. In the past ten years, pre-kindergarten enrollment ranged from 61 to 123 children. There were 115 enrolled this October. My projection model is based on births three and four years prior. It has pre-kindergarten enrollment ranging from 107 to 110 students with an average of 109 from 2020 to 2029.

Table 3. Grade K-4 Enrollment

Year	Students	Percent Change
2009	1,417	
2010	1,453	2.5%
2011	1,459	0.4%
2012	1,478	1.3%
2013	1,428	-3.4%
2014	1,399	-2.0%
2015	1,428	2.1%
2016	1,437	0.6%
2017	1,422	-1.0%
2018	1,403	-1.3%
2019	1,467	4.6%
2020	1,494	1.8%
2021	1,511	1.1%
2022	1,502	-0.6%
2023	1,542	2.7%
2024	1,506	-2.3%
2025	1,491	-1.0%
2026	1,477	-0.9%
2027	1,495	1.2%
2028	1,492	-0.2%
2029	1,503	0.7%

Figure 5. Grade K-4 Enrollment



Union School Enrollment

Table 3a and Figure 5a present actual enrollment at the Union School from 2009 to 2019 and projected enrollment to 2029. Enrollment by grade may be found in Appendix C. The Union School was K-6 up until the 2002 opening of West Woods Upper Elementary School. In 2018, Farmington listed the capacity of the school as 320 students.

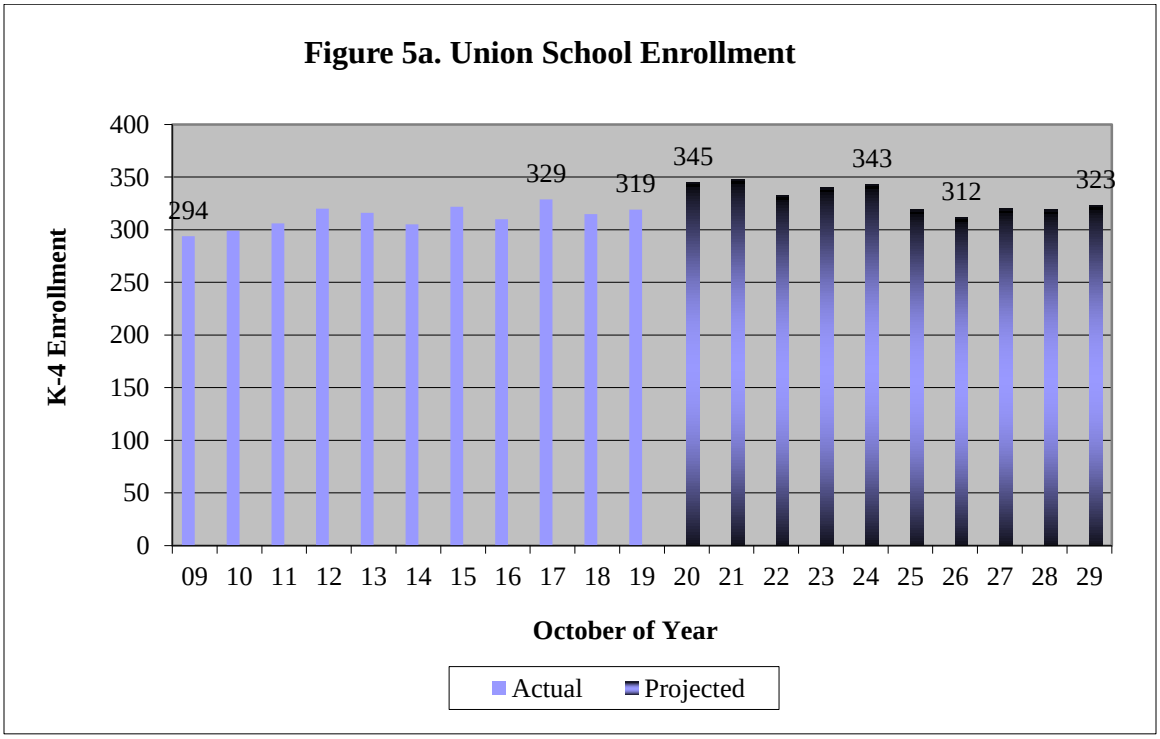
Enrollment at the school went from 294 students in 2009 to 329 students in 2017 and then eased to 319 students in 2019. Between 2009 and 2019, enrollment grew by 25 students or 8.5 percent. Enrollment in grades K-4 in Farmington grew 2.5 percent in that period. I project that public-school enrollment statewide in grades K-4 will have declined by 11.1 percent in that period.

In the upcoming years, I expect that the general enrollment trend will be very slightly upward. Next year, I anticipate that enrollment in the Union School will be about 25 more students than this year as a grade 4 class of 71 students exits and a kindergarten projected to be 82 students enters. I project a peak enrollment of almost 350 students in 2021. Enrollment could be about 325 students in 2029. This would be about five students more than 2019, a gain of a little over one percent. I am projecting an increase of 2.5 percent in grades K-4 in the Farmington Public Schools. In grades K-4 in the state's public schools, I am projecting a 6.0 percent enrollment decline. Over the ten-year projection period, I believe enrollment in the school could average 330 students compared to the average of 314 students observed over the past ten years.

Table 3a. Union School Enrollment

Year	Students	Percent Change
2009	294	
2010	299	1.7%
2011	306	2.3%
2012	320	4.6%
2013	316	-1.3%
2014	305	-3.5%
2015	322	5.6%
2016	310	-3.7%
2017	329	6.1%
2018	315	-4.3%
2019	319	1.3%
2020	345	8.2%
2021	348	0.9%
2022	333	-4.3%
2023	340	2.1%
2024	343	0.9%
2025	319	-7.0%
2026	312	-2.2%
2027	320	2.6%
2028	319	-0.3%
2029	323	1.3%

Figure 5a. Union School Enrollment



Noah Wallace School Enrollment

Table 3b and Figure 5b present actual enrollment at the Noah Wallace School from 2009 to 2019 and projected enrollment to 2029. Enrollment by grade may be found in Appendix D. The Noah Wallace School was K-6 up until the 2002 opening of West Woods Upper Elementary School. In 2004 there was a redistricting that sent students from Noah Wallace to West District. In 2018, Farmington listed the capacity of the school as 420 students.

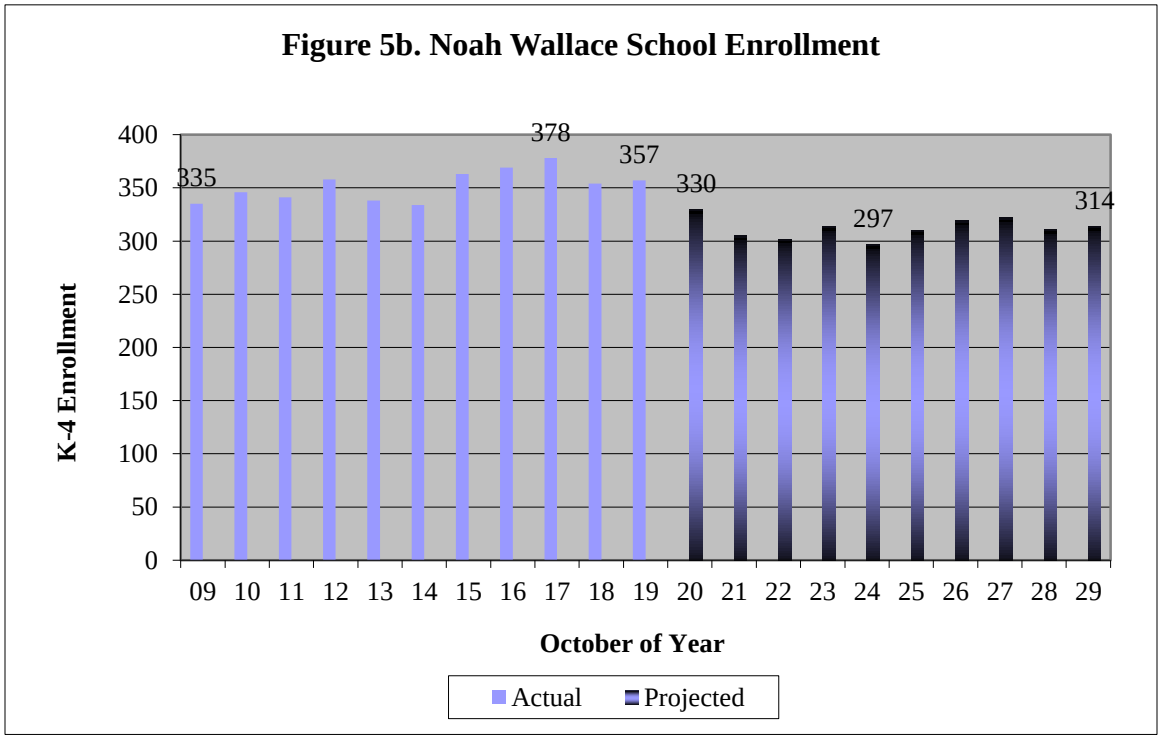
Table 3b. Noah Wallace School Enrollment

Year	Students	Percent Change
2009	335	
2010	346	3.3%
2011	341	-1.4%
2012	358	5.0%
2013	338	-5.6%
2014	334	-1.2%
2015	363	8.7%
2016	369	1.7%
2017	378	2.4%
2018	354	-6.3%
2019	357	0.8%
2020	330	-7.6%
2021	310	-6.1%
2022	304	-1.9%
2023	308	1.3%
2024	290	-5.8%
2025	300	3.4%
2026	299	-0.3%
2027	305	2.0%
2028	301	-1.3%
2029	303	0.7%

Enrollment at the school rose from 335 students in 2009 to 378 students in 2017 and then eased to 357 students in 2019. The ten-year gain of 22 students represented 6.6 percent of the enrollment in 2009 Enrollment in grades K-4 in Farmington grew 2.5 percent in that period. I project that public-school enrollment statewide in grades K-4 will have declined by 11.1 percent in that period.

In the upcoming years, I project that enrollment could decline a bit. Next fall, I anticipate that enrollment will be 25-30 less than this fall as a grade 4 of 88 students exits and a kindergarten projected to be only 47 students enters. Enrollment could range from a low of 290 students in 2024 to a high of 330 students in 2020. I project an enrollment of close to 300 students in 2029. This would be about 55 students less than 2019, a loss of 15 percent. I am projecting an increase of 2.5 percent in grades K-4 in the Farmington Public Schools. In grades K-4 in the state's public schools, I am projecting a 6.0 percent enrollment decline. Over the ten-year projection period, I believe enrollment in the Noah Wallace School could average about 305 students compared to the average of 354 students observed over the past ten years.

Figure 5b. Noah Wallace School Enrollment



West District School Enrollment

Table 3c and Figure 5c present actual enrollment at the West District School from 2009 to 2019 and projected enrollment to 2029. Enrollment by grade may be found in Appendix E. The West District School was K-6 up until the 2002 opening of West Woods Upper Elementary School. In 2004 there was a redistricting that sent students from Noah Wallace to West District. In 2018, Farmington listed the capacity of the school as 340 students.

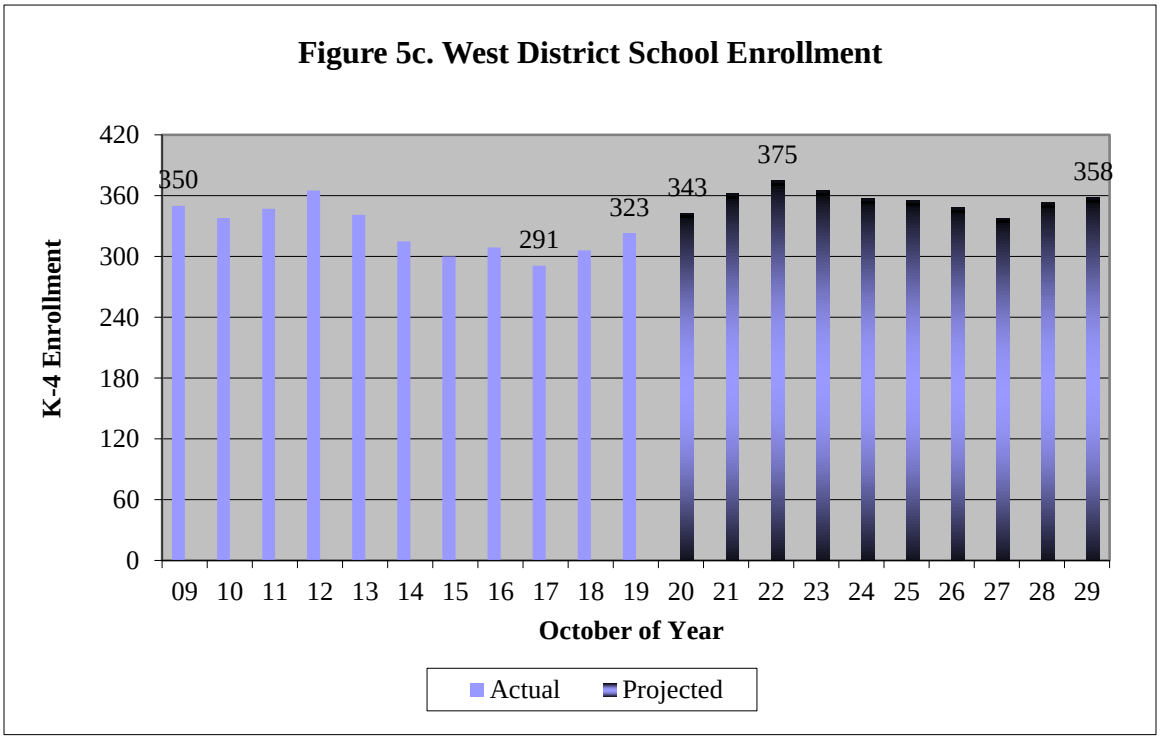
Table 3c. West District School Enrollment

Year	Students	Percent Change
2009	350	
2010	338	-3.4%
2011	347	2.7%
2012	365	5.2%
2013	341	-6.6%
2014	315	-7.6%
2015	300	-4.8%
2016	309	3.0%
2017	291	-5.8%
2018	306	5.2%
2019	323	5.6%
2020	343	6.2%
2021	362	5.5%
2022	375	3.6%
2023	365	-2.7%
2024	357	-2.2%
2025	355	-0.6%
2026	348	-2.0%
2027	338	-2.9%
2028	353	4.4%
2029	358	1.4%

Enrollment at the school declined from 350 in 2009 to 300 in 2015 and then rose to 323 students in 2019. The ten-year loss of 27 students represented 7.7 percent of the enrollment in 2009. Enrollment in grades K-4 in Farmington grew 2.5 percent in that period. I project that public-school enrollment statewide in grades K-4 will have declined by 11.1 percent in that period.

In the upcoming years, I expect that enrollment will increase slightly. Next year, I anticipate that enrollment in these grades will be 20 students more than this year as a grade 4 class of 59 students exits and a kindergarten projected to be 66 students enters. I project an enrollment peak of 375 students in 2022. I project that the West District School enrollment will be around 360 students in 2029. This would be 35 more students (about 11 percent) than 2019. I am projecting an increase of 2.5 percent in grades K-4 in the Farmington Public Schools. In grades K-4 in the state's public schools, I am projecting a 6.0 percent enrollment decline. Over the ten-year projection period, I believe enrollment in the school will average about 355 students compared to the average of 324 students observed over the past six years.

Figure 5c. West District School Enrollment



East Farms School Enrollment

Table 3d and Figure 5d present actual enrollment at the East Farms School from 2009 to 2019 and projected enrollment to 2029. Enrollment by grade may be found in Appendix F. The East Farms School was K-6 up until the 2002 opening of West Woods Upper Elementary School. In 2018, Farmington listed the capacity of the school as 420 students.

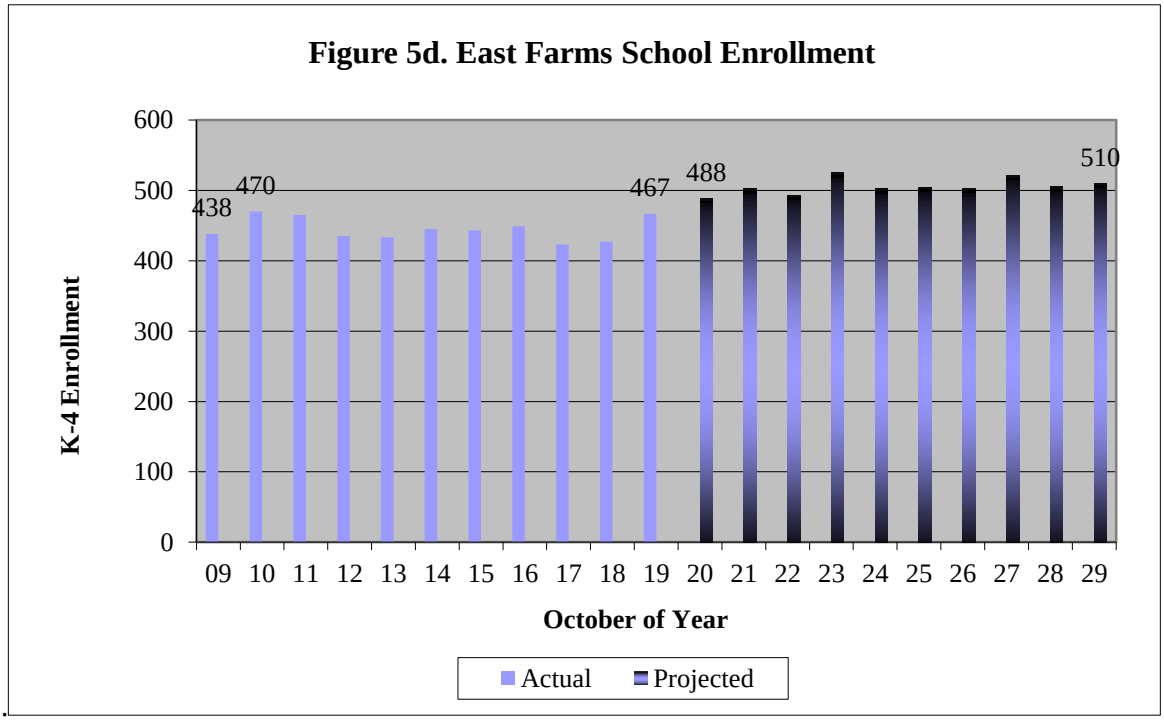
Table 3d. East Farms School Enrollment

Year	Students	Percent Change
2009	438	
2010	470	7.3%
2011	465	-1.1%
2012	435	-6.5%
2013	433	-0.5%
2014	445	2.8%
2015	443	-0.4%
2016	449	1.4%
2017	423	-5.8%
2018	427	0.9%
2019	467	9.4%
2020	488	4.5%
2021	502	2.9%
2022	493	-1.8%
2023	525	6.5%
2024	502	-4.4%
2025	504	0.4%
2026	503	-0.2%
2027	521	3.6%
2028	505	-3.1%
2029	510	1.0%

Enrollment at the school went from 438 students in 2009 to 467 students in 2019. In between it hit a low of 423 in 2017 and a high of 470 students in 2010. The ten-year gain of 29 students represented 6.6 percent of the enrollment in 2009. Enrollment in grades K-4 in Farmington grew 2.5 percent in that period. I project that public-school enrollment statewide in grades K-4 will have declined by 11.1 percent in that period.

In the upcoming years, I expect that enrollment will move slightly upward. Next year, I anticipate that enrollment in these grades will be about 20 students more than this year as a 4th grade of 89 students exits and a kindergarten projected to be 89 students enters. In-migration should provide the expected growth. I project that the East Farms School enrollment could peak at 525 students in 2023. It could be near 510 students in 2029. This would be about 40 students more than 2019, a gain of about nine percent. I am projecting an increase of 2.5 percent in grades K-4 in the Farmington Public Schools. In grades K-4 in the state's public schools, I am projecting a 6.0 percent enrollment decline. Over the ten-year projection period, I believe enrollment in the school will average about 505 students compared to the average of 446 students observed over the past six years.

Figure 5d. East Farms School Enrollment



West Woods Upper Elementary School Enrollment

Table 4 and Figure 6 present actual enrollment from 2009 to 2019 in grades 5 and 6 and projected enrollment to 2029 at the West Woods Upper Elementary School. Enrollment by grade may be found in Appendix A. West Woods opened in the fall of 2002. In 2018, Farmington listed the capacity of the school as 700 students.

Enrollment at the school declined from 658 students in 2009 to 633 students in 2019. In between it got as high as 688 students (2017) and as low as 575 students (2011). Between 2009 and 2019, enrollment declined by 25 students or 3.8 percent. I project that public-school enrollment statewide in grades 5-6 will have declined by 7.9 percent in that period.

I project that enrollment will move gradually upward over the next ten years. Next year, I anticipate that enrollment at the school will be the same as this year. I anticipate a peak enrollment of 725 students in 2025. By 2029 I project that the school's enrollment will be about 675 students. This would be about 40 students more than October, 2019. In grades 5-6 in the state's public schools, I am projecting a 10.6 percent enrollment decline. Over the ten-year projection period, I believe enrollment at West Woods Upper Elementary School could average about 670 students compared to the average of 635 students observed over the past ten years.

Table 4. West Woods Upper Elementary School Enrollment

Year	Students	Percent Change
2009	658	
2010	603	-8.4%
2011	575	-4.6%
2012	578	0.5%
2013	620	7.3%
2014	673	8.5%
2015	663	-1.5%
2016	651	-1.8%
2017	688	5.7%
2018	661	-3.9%
2019	633	-4.2%
2020	631	-0.3%
2021	653	3.5%
2022	665	1.8%
2023	634	-4.7%
2024	669	5.5%
2025	725	8.4%
2026	705	-2.8%
2027	671	-4.8%
2028	664	-1.0%
2029	673	1.4%

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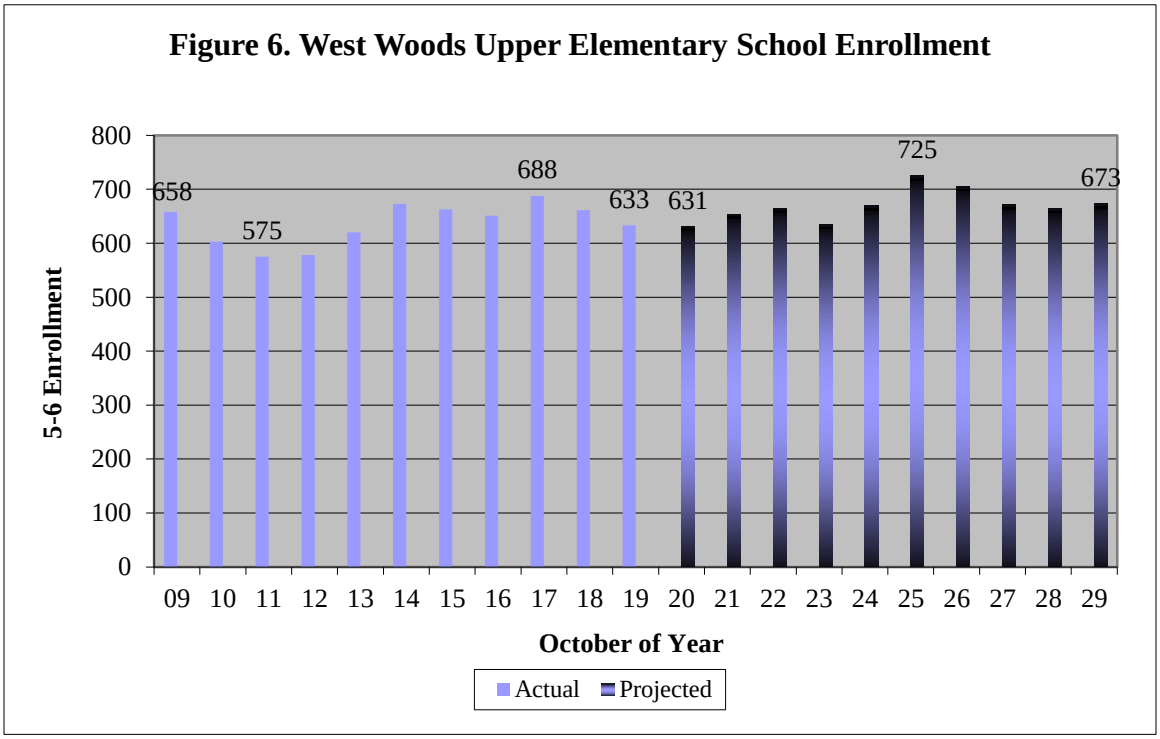
Figure 6. West Woods Upper Elementary School Enrollment



Irving A. Robbins Middle School Enrollment

Table 5 and Figure 7 present actual enrollment at Irving A. Robbins Middle School in grades 7-8 in 2009 to 2019 and projected enrollment to 2029. Enrollment by grade may be found in Appendix B. In 2018, Farmington listed the capacity of the school as 700 students. (The building also houses Farmington's pre-kindergarten program.)

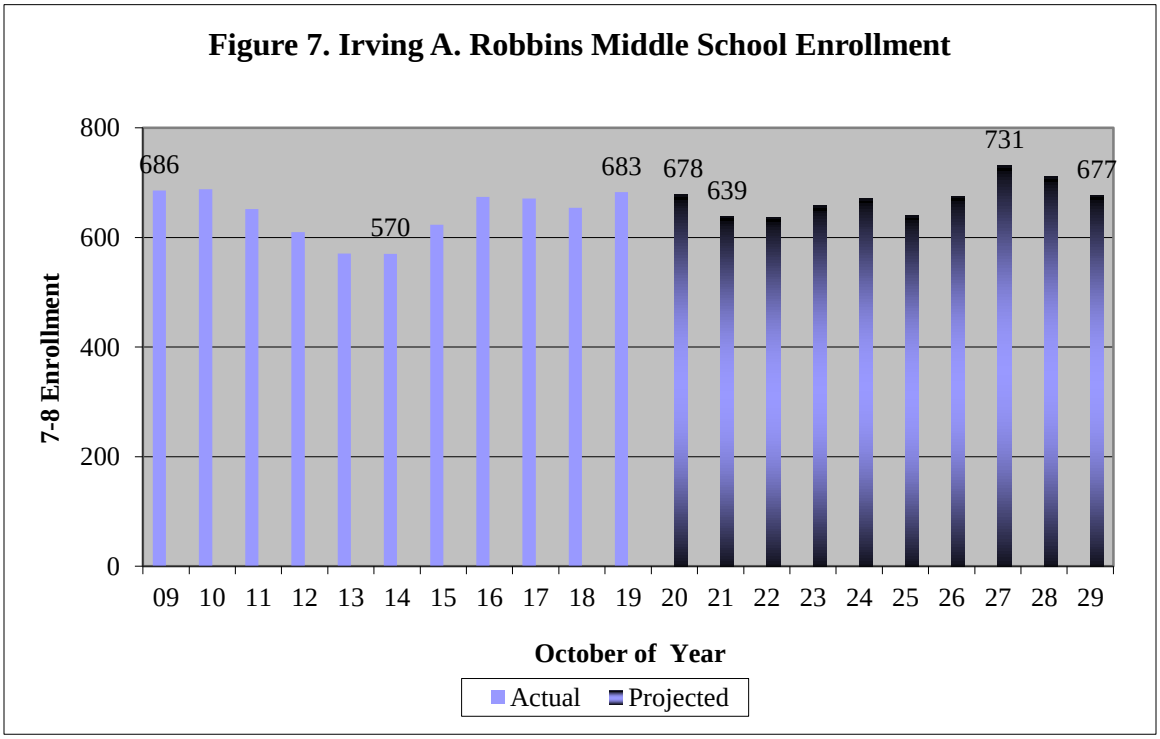
Enrollment at the school fell from 686 students in 2009 to 570 students in 2014 and then rebounded to 683 students in 2019. Between 2009 and 2019 enrollment at the school declined by three students or 0.4 percent. I project that enrollment in grades 7-8 will have declined by 5.6 percent in that period in the state's public schools.

I project that future enrollment in the Irving A. Robbins Middle School will have some movement but in the end be essentially unchanged. Next year I anticipate a decrease of five students. I project that enrollment will vary between a high of 731 students in 2027 to a low of 637 students in 2022. At the projection's end, I believe enrollment will be about 675 students. Over the ten-years, I project a net loss of about five students. Over the ten-year projection period, I believe enrollment at the school could average about 670 students compared to the average of 640 students observed over the past ten years. In the state's public schools, I project that enrollment in grades 7-8 will decline by 9.8 percent between 2019 and 2029.

Table 5. Irving A. Robbins Middle School Enrollment

Year	Students	Percent Change
2009	686	
2010	688	0.3%
2011	652	-5.2%
2012	610	-6.4%
2013	571	-6.4%
2014	570	-0.2%
2015	623	9.3%
2016	674	8.2%
2017	671	-0.4%
2018	654	-2.5%
2019	683	4.4%
2020	678	-0.7%
2021	639	-5.8%
2022	637	-0.3%
2023	658	3.3%
2024	671	2.0%
2025	640	-4.6%
2026	675	5.5%
2027	731	8.3%
2028	711	-2.7%
2029	677	-4.8%

Figure 7. Irving A. Robbins Middle School Enrollment



Farmington High School Enrollment

Grade 9 is the first opportunity to attend state technical high schools and agriculture science and technology centers. In October 2018, the latest data available, 87.7 percent of Farmington residents enrolled in grade 9 was enrolled in the district. An estimated 10.2 percent was enrolled in non-public schools in state. Only eight students (2.1 percent) were enrolled in a state technical high school, an agriculture science program, a magnet or another public high school.

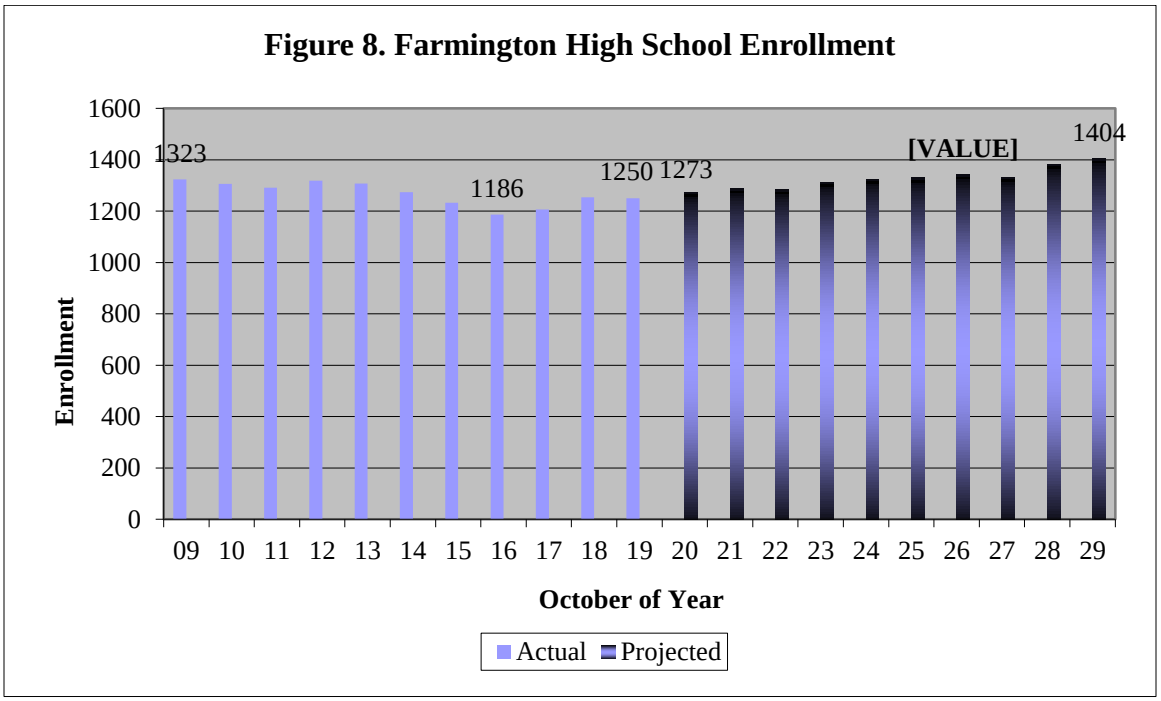
Table 6 and Figure 8 present enrollment at the Farmington High School. Grade-by-grade enrollment may be found in Appendix B. Enrollment fell from 1,323 students in 2009 to 1,186 in 2016 and then rebounded to 1,250 in 2019. Between 2009 and 2019, the high school's enrollment decreased by 73 students or 5.5 percent. Statewide, enrollment in grades 9-12 will have fallen a projected 5.5 percent in that 10-year period.

I expect that next year's enrollment at Farmington High School will be about 25 students more than this year. The anticipated enrollment of 1,347 in 2026 is the eight-year high for a school construction grant. I anticipate that enrollment could be 1,404 students in 2029. That would be about 160 students above the October 2019 count, a growth of almost 13 percent. Statewide, I have projected an 8.8 percent decline in public school grade 9-12 enrollment between 2019 and 2029. I believe enrollment at Farmington High School could average about 1,330 students over the next ten years compared to the average of 1,263 students observed over the past ten years.

Table 6. Farmington High School Enrollment

Year	Students	Percent Change
2009	1,323	
2010	1,306	-1.3%
2011	1,291	-1.1%
2012	1,319	2.2%
2013	1,307	-0.9%
2014	1,274	-2.5%
2015	1,232	-3.3%
2016	1,186	-3.7%
2017	1,206	1.7%
2018	1,254	4.0%
2019	1,250	-0.3%
2020	1,273	1.8%
2021	1,287	1.1%
2022	1,283	-0.3%
2023	1,312	2.3%
2024	1,325	1.0%
2025	1,329	0.3%
2026	1,341	0.9%
2027	1,331	-0.7%
2028	1,382	3.8%
2029	1,404	1.6%

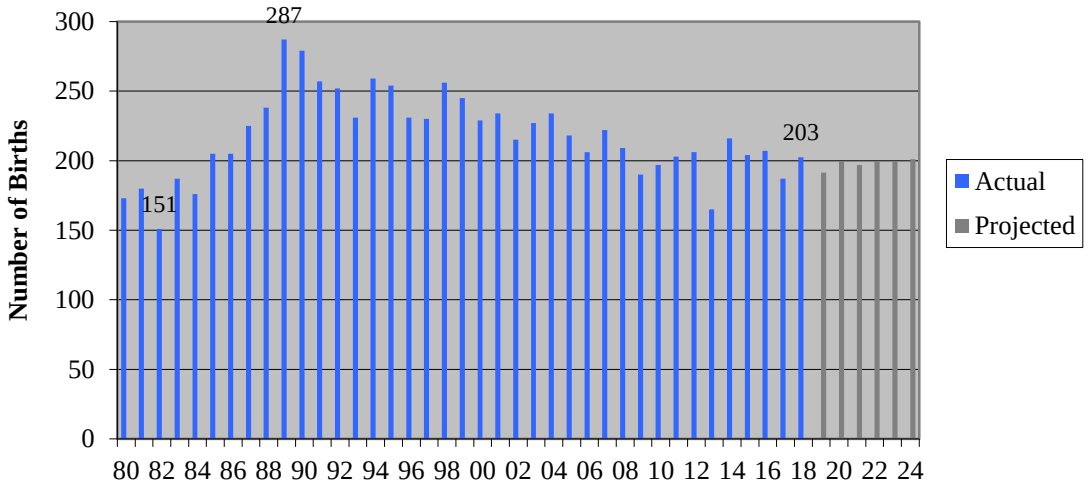
Figure 8. Farmington High School Enrollment



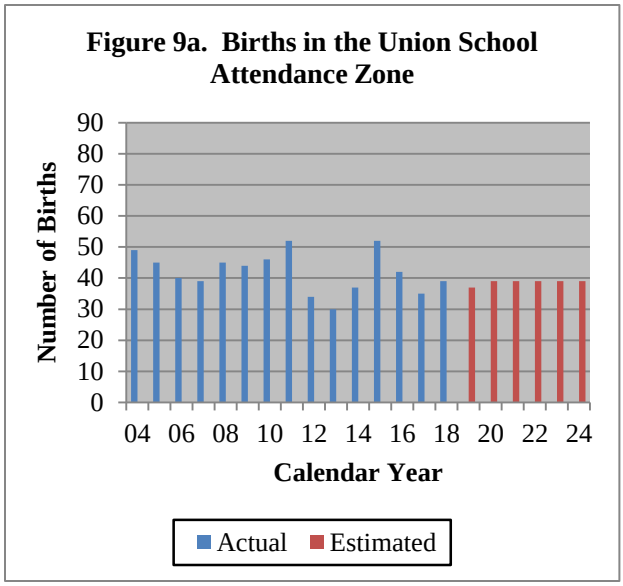
Factors Affecting the Elementary and School Projections

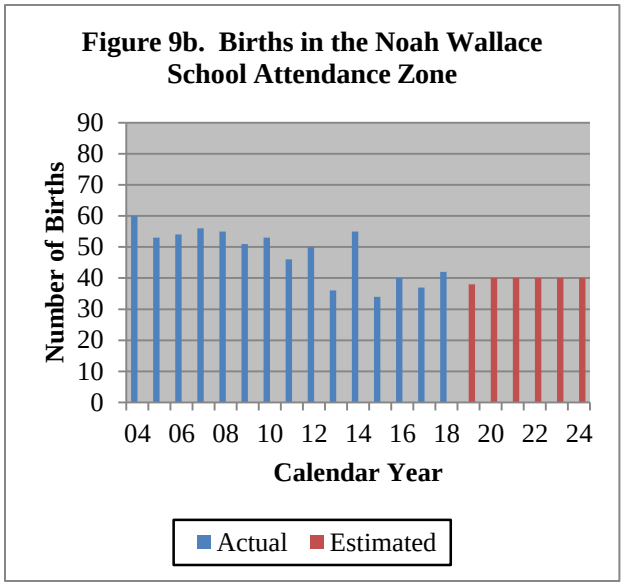
The primary reasons for elementary enrollment change lie in the number of births, yield from the birth cohort and grade-to-grade growth. Figure 9 presents the actual and provisional births from 1980 to 2018 and estimated births through 2024. Births ranged from a low of 151 in 1982 to a high of 287 in 1989. Births have been moving slowly downward since 1987. The last official count of births was 207 in 2016. The provisional counts of births were 187 in 2017 and 203 in 2018. Based on in-state births through September of 2019, I estimate there will be 191 births in 2019. In 2000-2009 there was an average of 218 births annually. In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 197. Births in the 2015 through 2019 period will average close to 198. The projection in years 2025 to 2029 assumes an average of 199 births annually between 2020 and 2024. This is based in part on the Connecticut State Data Center's 2017 projections of Farmington women of child-bearing ages.

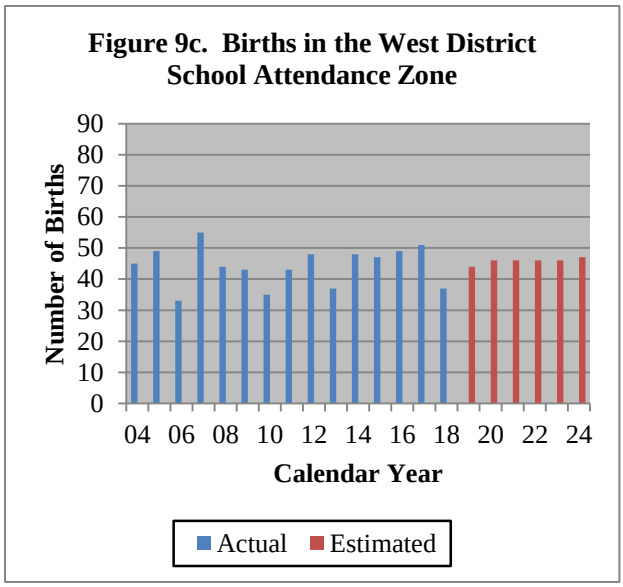
Figure 9. Births Since 1980



Figures 10a-d present actual births from 2004 to 2018 and estimated births from 2019 to 2024 in the Union, Noah Wallace, West District and East Farms attendance zones. In the Union School attendance zone, births ranged from 30 in 2013 to 52 in 2011 and 2015. In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 40. Births in the 2015 through 2019 period will average close to 41. The projection in years 2025 to 2029 assumes an average of 39 births annually between 2020 and 2024. In the Noah Wallace School attendance zone, births ranged from 34 in 2015 to 60 in 2004. In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 48. Births in the 2015 through 2019 period will average close to 38. The projection in years 2025 to 2029 assumes an average of 40 births annually between 2020 and 2024. In the West District School attendance zone, births ranged from 33 in 2006 to 55 in 2007. In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 42. Births in the 2015 through 2019 period will average close to 46. The projection in years 2025 to 2029 assumes an average of 46 births annually between 2020 and 2024. In the East Farms School attendance zone, births ranged from 55 in 2009 to 85 in 2018. In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 68. Births in the 2015 through 2019 period will average close to 73. The projection in years 2025 to 2029 assumes an average of 74 births annually between 2020 and 2024.







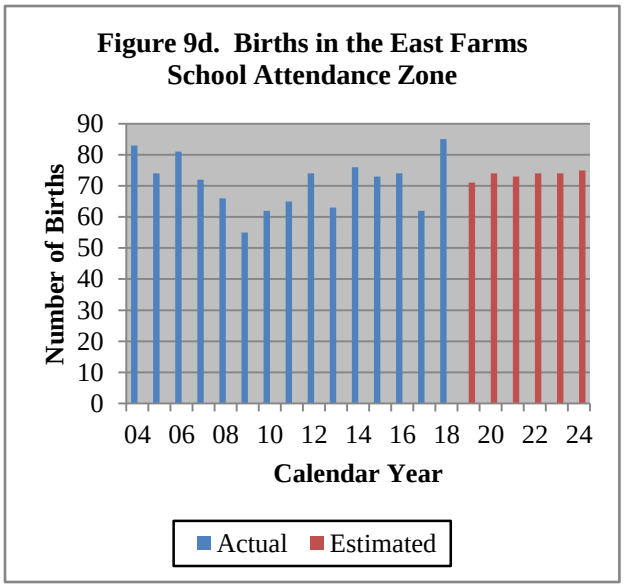
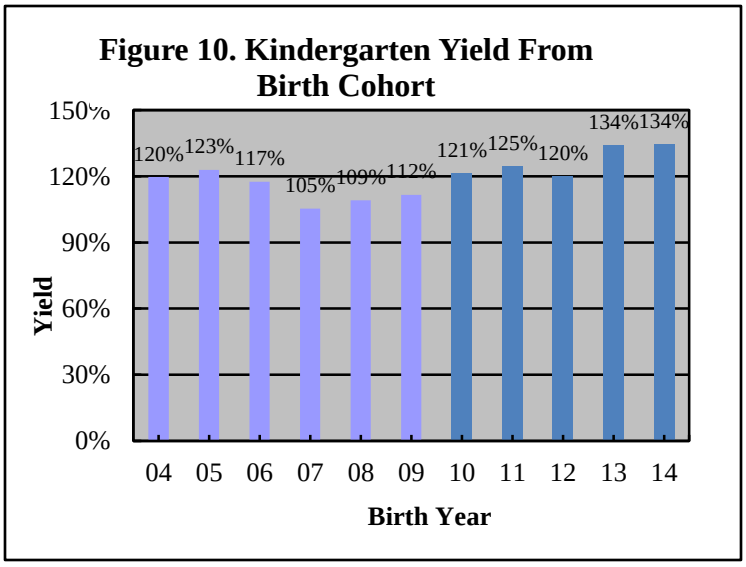


Figure 10 depicts the kindergarten yield five and six years later from the birth cohorts of 2004 to 2014 for Farmington residents attending kindergarten in the Farmington Public Schools. The dark blue indicates the years full-day kindergarten has been in effect. There were 165 births in 2018 and 196 Farmington children enrolled in Farmington kindergarten at age five in 2018 and an additional 24 who first enrolled in kindergarten at age six in 2019. That is a yield of 133 percent. The yield from the birth cohort ranged from a low of 105 percent in 2007 to a high of 133 percent for the birth cohort



of 2013. The estimated yield from births in 2014 is 134 percent. Note that 2014 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 2020. Yields above 100 percent generally mean that parents move into town after giving birth elsewhere.

Farmington has accepted kindergarten students from Hartford under the Open Choice program since 2000. The number enrolled has ranged from zero to 13. The projection assumes that Farmington will enroll 12 children from Hartford annually in kindergarten. Many of these will move up from your pre-kindergarten program.

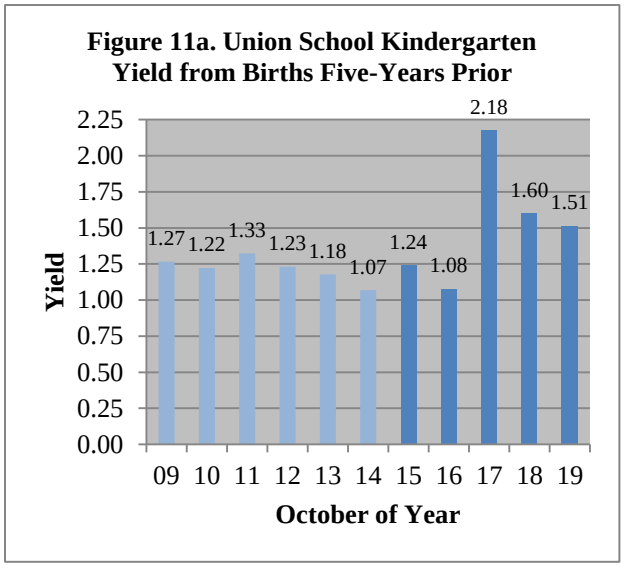
Table 7 gives a history of enrollment in kindergarten since 2009 and relates the components of kindergarten enrollment back to the appropriate birth cohort. Retention is tied to the prior year's kindergarten enrollment. To estimate kindergarten enrollment for the district projection, I used the three-year average of retentions, and yields from births five- and six-years ago. I estimated kindergarten from 114.7 percent of births five years ago, 14.8 percent of births six years ago, and 2.2 percent of current kindergarten students retained.

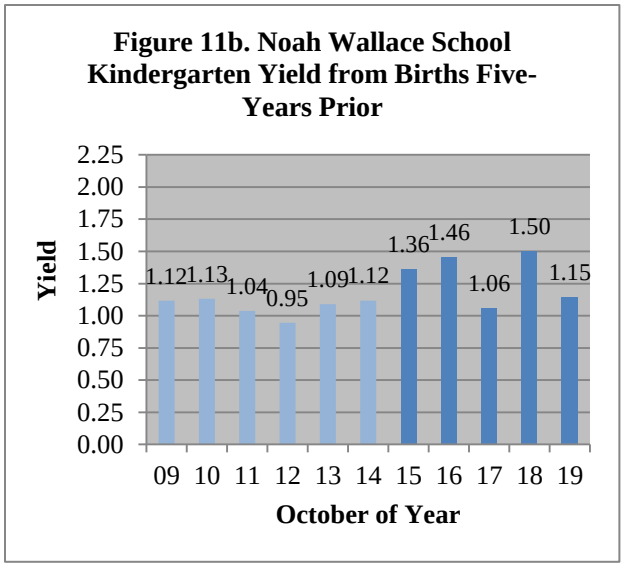
Table 7. Analysis of Kindergarten Enrollment

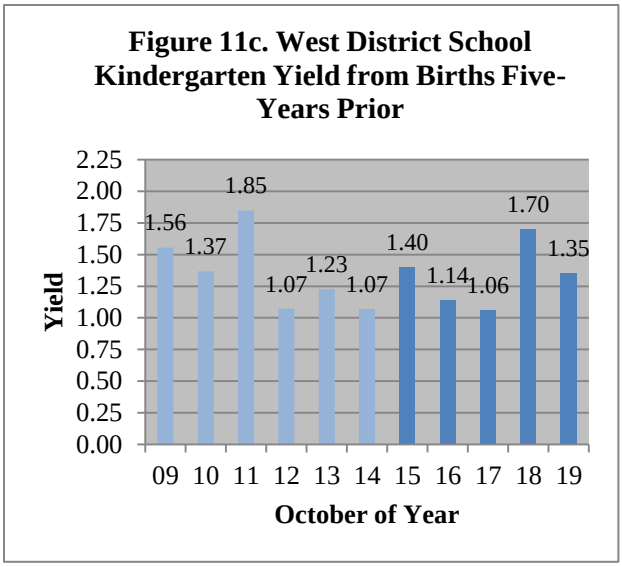
Year	Birth Year	Births	K	Retained From Prior Year	- - - - Non-Retained - - - - Born 5-Years Prior Resident	Non-Resident	Born 6 Years Prior	Percent Retained	Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
2009	2004	234	278	3	249	0	26	1.0%	106.4%	11.5%	119.7%
2010	2005	218	272	3	236	2	31	1.1%	108.3%	13.2%	122.9%
2011	2006	206	253	3	215	3	32	1.1%	104.4%	14.7%	117.5%
2012	2007	222	249	6	206	10	27	2.4%	92.8%	13.1%	105.4%
2013	2008	209	246	7	199	12	28	2.8%	95.2%	12.6%	109.1%
2014	2009	190	224	4	178	13	29	1.6%	93.7%	13.9%	111.6%
2015	2010	197	262	6	209	13	34	2.7%	106.1%	17.9%	121.3%
2016	2011	203	269	8	220	11	30	3.1%	108.4%	15.2%	124.6%
2017	2012	206	269	5	219	12	33	1.9%	106.3%	16.3%	119.9%
2018	2013	165	241	6	196	11	28	2.2%	118.8%	13.6%	133.9%
2019	2014	216	300	6	258	12	24	2.5%	119.4%	14.5%	*134.3%*
3-Year Average								**2.2%**	**114.7%**	**14.8%**	**129.2%**
Weighted 3-Year Average								2.3%	117.0%	14.5%	131.6%
5-Year Average								2.5%	111.7%	15.1%	126.7%
Weighted 5-Year Average								2.4%	114.3%	14.9%	129.0%

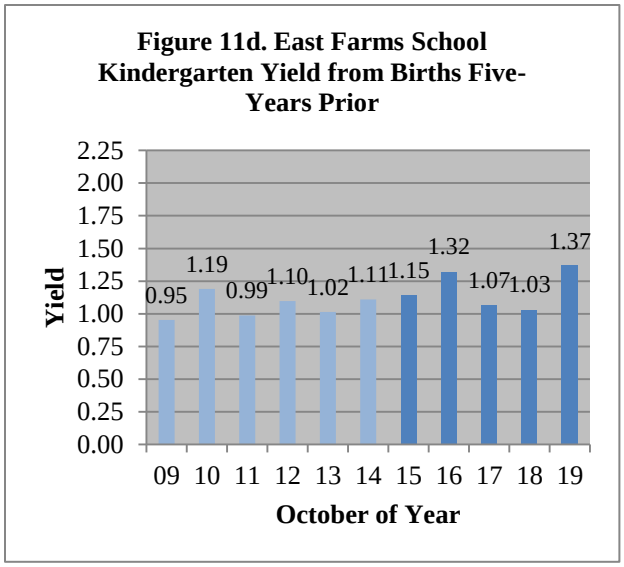
Figures 11a to d present the kindergarten yield from births five years earlier for the Union, Noah Wallace, West District and East Farms schools, respectively. The breakdown of kindergarten enrollment into five-year olds, six-year olds enrolled for the first time and students retained was not readily available by school. This, plus using a five-year average grade-to-grade growth for the schools and a three-year average for the district, means that elementary enrollment for the district as a whole will be slightly different from the sum of the enrollments of the four elementary schools. For greater stability, in each school I used the five-year average of the growth between births and kindergarten enrollment five-years later.

At the Union School the kindergarten yield from births five years prior ranged from a low of 1.07 in 2014 to a high of 2.18 in 2017. The projection of kindergarten enrollment at the school was based an average yield of a high 1.52.









At the Noah Wallace School the kindergarten yield from births five years prior ranged from a low of 0.95 in 2012 to a high of 1.50 in 2018. The projection of kindergarten enrollment at the school was based on an average yield of 1.30.

At the West District School the kindergarten yield from births five years prior ranged from a low of 1.07 in 2012 and 2014 to a high of 1.85 in 2011. The projection of kindergarten enrollment at the school was based on an average yield of 1.33.

At the East Farms School the kindergarten yield from births five years prior ranged from a low of 0.95 in 2009 to a high of 1.37 in 2019. The projection of kindergarten enrollment at the school was based on an average yield of 1.19.

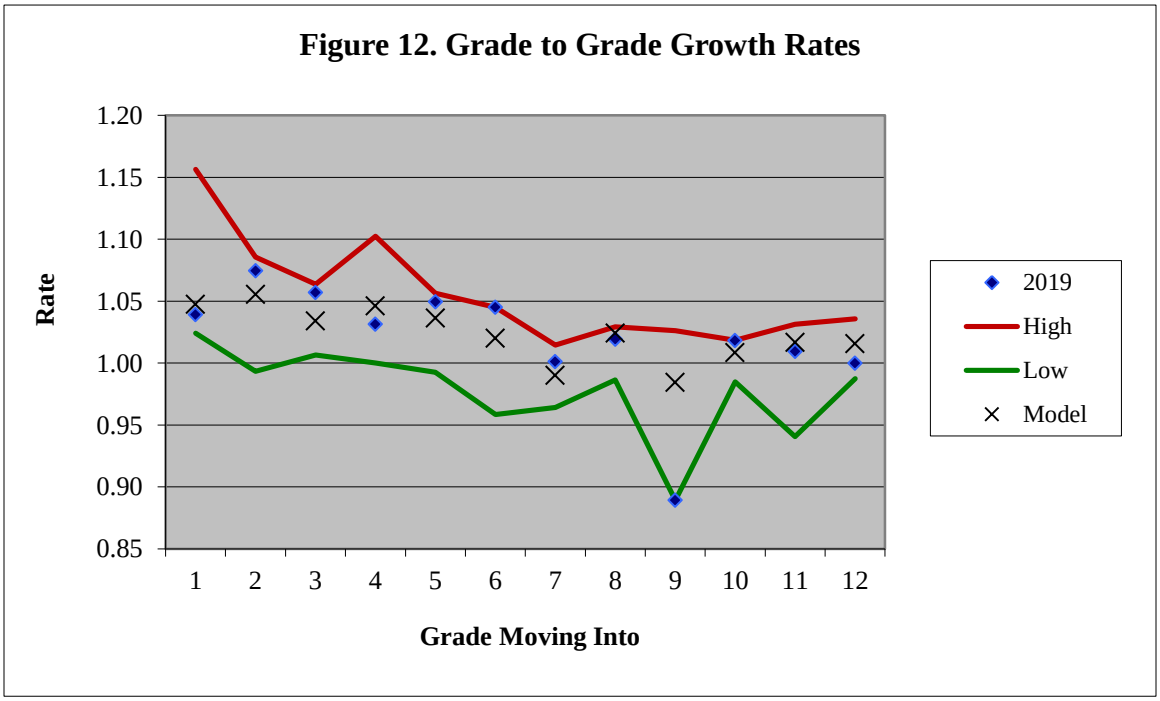
The correlation between births and kindergarten enrollment five-year later for the district as a whole was a low 0.54 over the 1990 to 2019 period. If this relationship were used to predict kindergarten enrollment for the district as a whole, the estimate would have been off by an average of 14 children 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, 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. Unless the state's fiscal situation changes for the better or a court intervenes, I do not believe this common sense change will be implemented. Once implemented, the changes will very slightly decrease 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.

Figure 12 gives a perspective of the grade-to-grade growth rates for students attending the Farmington 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. For example, in grade 2 the projection used a growth of 1.055 from grade 1 enrollment the prior year. The growth between 2018 and 2019 was 1.075. Over the past ten years the growth ranged from a low of 0.993 to a high of 1.086. In general, the narrower the gap between the two lines is, the greater the accuracy of the projection.

Most model growth rates are toward the middle or upper end of the ten-year range. Grade 1 appears to be the exception. All the elementary growth rates except grade 7 were above 1.00 indicating that children are moving into the Farmington schools. The low rate in grade 1 is a result of families entering the Farmington schools in the full-day kindergarten program instead of delaying entering until grade 1. The gap between the grade 9 rate in 2019 and the projected rate is based on my assumption that the rate will return to the rate observed over the past ten years once a new school is approved and the discussion turns away from the faults of the existing building. In most instances the model growth rates were similar to the 2019 rates. In grades 3 and 6, the model rates were lower than the 2019 rates. I have already discussed why the grade 9 rate is higher. The average model growth rate across grades 2 to 12 was 1.021. The average in 2019 was 1.018. The median growth rate observed over the past 20 years was 1.007.

Figure 12. Grade to Grade Growth Rates



Context of the Projection

The cohort-survival method typically considers 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 several factors that could affect enrollment: town population, women of child-bearing age; the labor force; new home construction; sales of existing homes; repeaters of grade 9; dropouts; non-public enrollment; non-resident enrollment in Farmington schools; resident enrollment in other public schools and student migration.

Figure 13 presents the US Census Bureau estimate of Farmington population growth between July 2010 and 2018. It is based, in part, on relative housing growth within Hartford County. Farmington's population was estimated to have grown by 149 people or 0.59 percent in that interval. That was the 37th largest growth in the state. The state declined by 0.18 percent, Hartford County declined by 0.30 percent, and similar communities grew by 0.91 percent. The 2010 census showed that from April 2000 to April 2010 Farmington's population grew from 23,641 to 25,340 people. The 1,699-person growth was the smallest in the past seven decades. The 7.2 percent increase was the 61st ranked in the state.

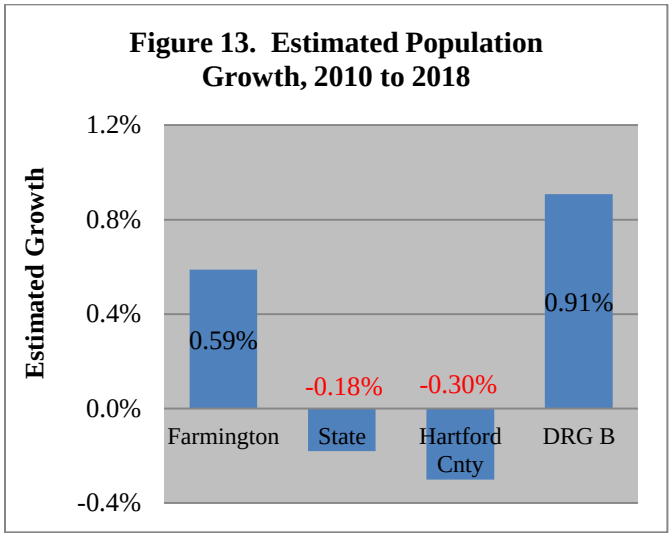


Figure 14 presents the Connecticut State Data Center's 2017 population projections for Farmington residents 0-19 years of age in the years 2015, 2020 and 2025. These figures include people in households and group quarters. They projected that population ages 0-4 would grow 8.3 percent between 2015 and 2025 with most of the growth coming between 2020 and 2025. They projected the population ages 5-9 would decline by only two percent between 2015 and 2025. They further projected a 6.4 percent decline in the number of children ages 10-14 between 2015 and 2025 and a decrease of 8.4 percent in the number 15-19 years old between 2015 and 2025. These independent projections are slightly more negative than the enrollment changes projected in this report.

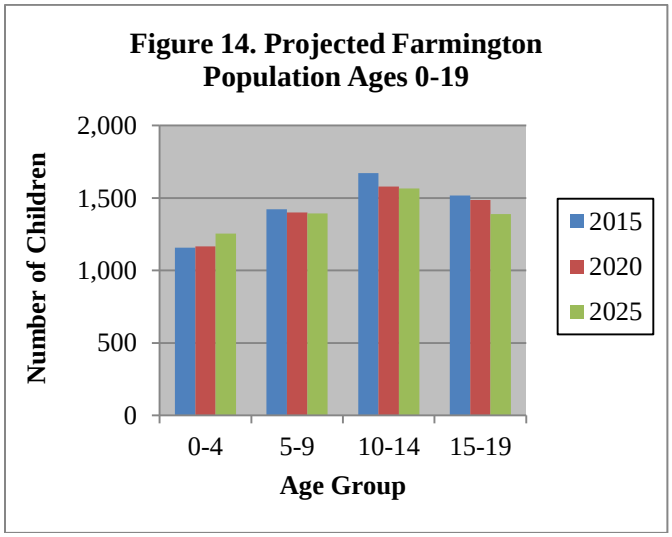


Figure 15 presents the Connecticut State Data Center's 2017 projections of Farmington women of child-bearing ages in 2015, 2020 and 2025. They projected a 1.5 percent growth in Farmington women between the ages of 15 and 44 from 2015 to 2025. In communities like yours, women 30-34 years old have the highest rate of births. The number in this group was projected to grow 14 percent between 2015 and 2020 and the remain unchanged. The second highest birth rate is women ages 25-29. The number in that age range was projected remain essentially unchanged between 2015 and 2025. Women ages 35-39 also contribute significantly to the number of births. The number in that age group was projected to grow 22 percent between 2015 and 2025.

Figure 15. Farmington Women of Child-Bearing Age

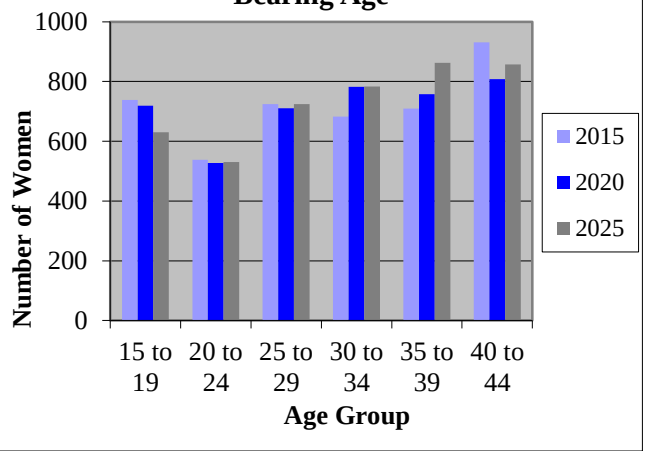


Figure 16 examines the estimated number of people in the labor force from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older who were working or actively seeking employment. The Farmington labor force decreased between 2010 and 2013, but by 2018 was 2.4 percent above the 2010 level. This was better than the state (-0.3 percent) and Hartford County (+0.1 percent). The 2018 unemployment level of 3.2 percent was down 3.6 percentage points from the 2010 high. It is better than the state rate of 4.1 percent and the Hartford County rate of 4.2 percent.

Figure 16. Recent Changes in the Labor Force

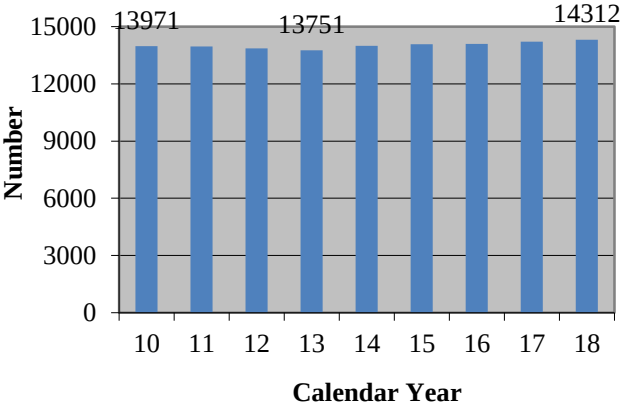


Figure 17 presents the net new housing permits authorized from 2008 to 2018 from the State Department of Economic and Community Development. In the past ten years the number (net of demolitions) of new housing permits in Farmington ranged from a high 40 in 2012 and 2013 down to a low of 14 in 2015. The town issued permits for 30 new housing units in 2018. In the three-year look-back period for this projection, there was an average of 32 net new housing units constructed. The 2010 census indicated that Farmington had 20,457 occupied housing units of which 38.2 percent were by families with children.

Figure 17. Net New Housing Units

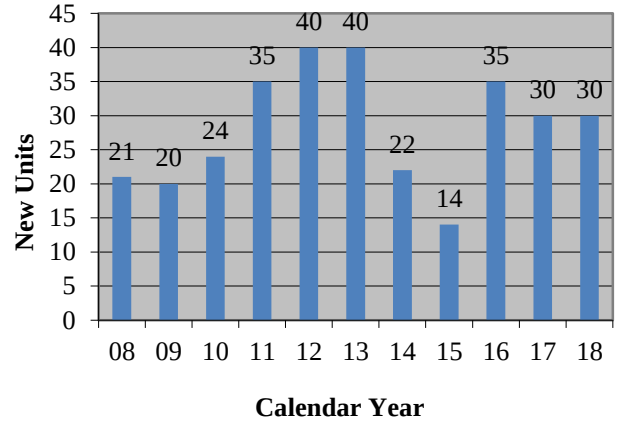


Figure 18 presents my estimate of the number of sales of existing single-family homes and condominiums. I derived it by taking the number of real estate sales from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized the prior year. The estimated number of sales of existing homes ranged from a low of 230 in 2011 to a high of 428 in 2016. There were 419 sales of existing homes in 2018. In the three-year look back period for the projection, there were 415 sales annually. From sales through August, it is likely that sales in 2019 will decline.

Figure 18. Sales of Existing Single-Family Homes and Condominiums

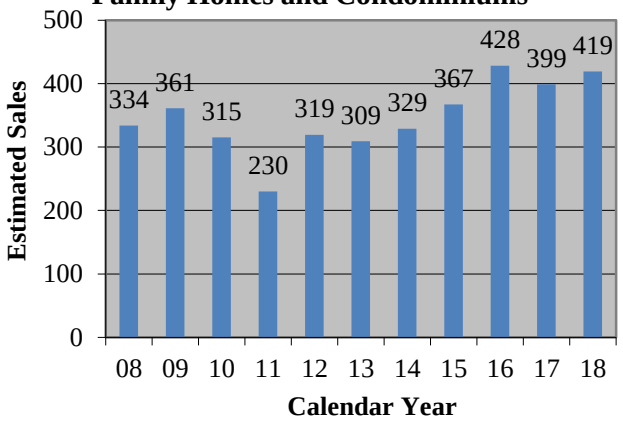


Figure 19 presents the percentage of grade 9 students who were reported as being in that grade the prior year either in Farmington or another public-school system in Connecticut. The percentage fell from 5.0 percent in 2009 to zero in 2014 and has remained there since. The percentage of students not earning enough credits to be promoted to grade 10 over the three-year look-back period of the projection was zero. The change in retention policy factored into my decision to use 2015 to 2017 transition rates in the calculation of future 9th grade enrollments in 2022 and beyond.

Figure 19. Repeaters of Grade 9

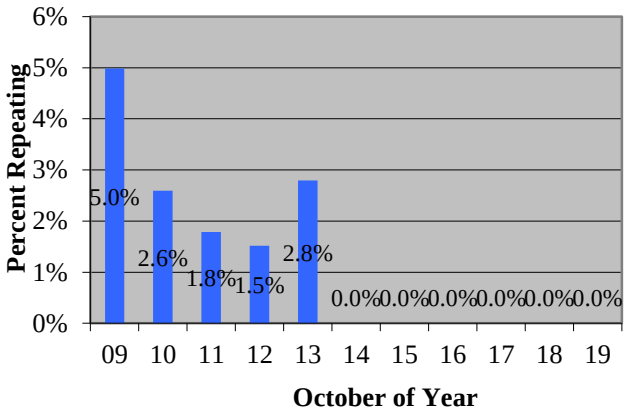


Figure 20 shows the annual percentage of dropouts from grades 9-12 for the 2008-09 to 2018-19 school years. The data through 2018 were provided by the Connecticut State Department of Education. The high school dropout rate ranged from a high of 1.1 percent in the 2010-11 to zero in the 2014-15 school year. In 2018-19, two students dropped out, a rate of a low 0.16 percent. Over the past three years an average of one student annually dropped out. In the three-year look-back period for the projection, the dropout rate averaged a low 0.11 percent.

Figure 20. Annual High School Dropout Rate

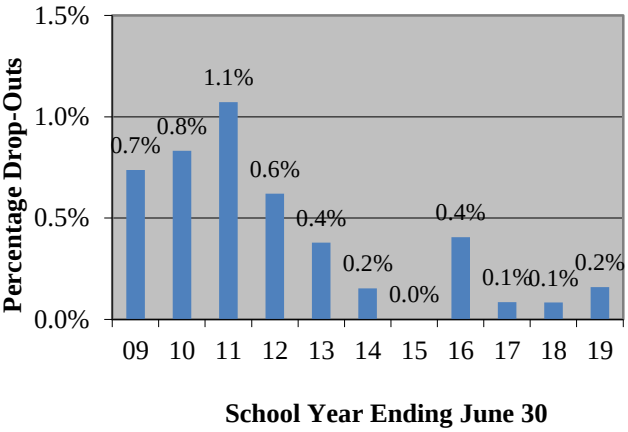


Figure 21 presents the non-public enrollment over the past ten years for students from the town of Farmington. The data are from the records of the Connecticut State Department of Education. Non-public enrollment ranged from a high of 334 students in 2011 to a low of 254 students in 2016. There were 281 students enrolled in 2018, the latest count available. In the past ten years, enrollment in the non-public schools declined by 12 students or a relatively low 4.0 percent. The 2018 enrollment represented 6.4 percent of all students from Farmington. Ten years ago, the figure was 6.5 percent. I project the 2019 non-public enrollment from Farmington will be about 270 students.

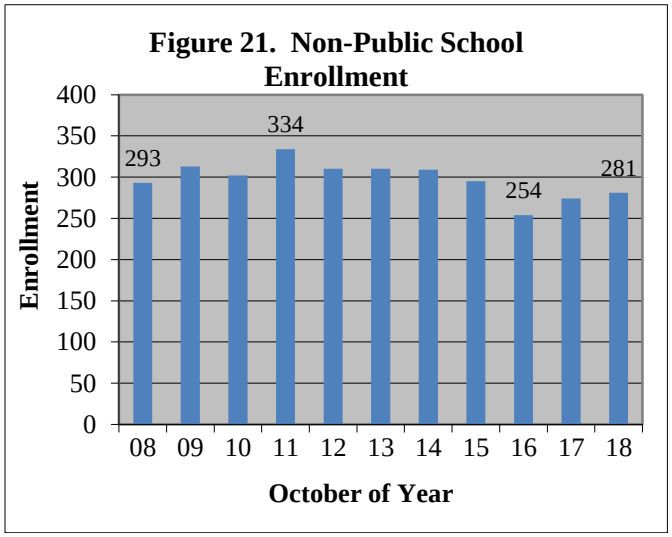


Figure 22 presents the number of Hartford residents enrolled in Farmington schools under the Open Choice program. Enrollment went from 85 in 2009 to 133 in 2017 and eased to 129 in 2019. These students were 3.1 percent of Farmington's enrollment in 2019. The projection assumes Farmington will enroll 10 Hartford children in pre-kindergarten and 12 in kindergarten annually. That is projected to bring the number of Hartford residents to 140 in 2029. That would represent 3.2 percent of Farmington's projected 2029 enrollment.

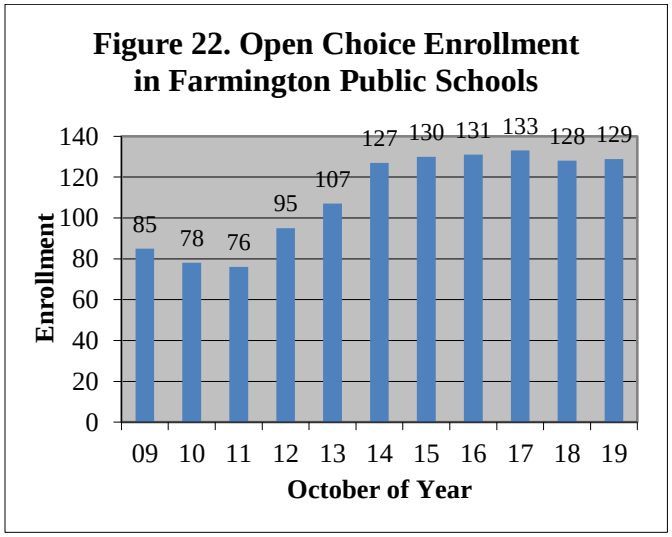


Figure 23 presents the enrollment of Farmington residents in other public schools in Connecticut from 2008 to 2018, the latest data available. The number educated out-of-district rose from 69 in 2009 to 156 in 2017 and then declined to 131 in 2018. The number enrolled in area magnet or charter schools got as high as 124 in 2017, but fell back to 105 in 2018. In 2018, there were 29 Farmington residents in Hartford magnets, 72 in CREC magnets, four in other area magnets, 12 in a state technical high school or satellite, 12 in a public special education facility and two in an agriculture science center.

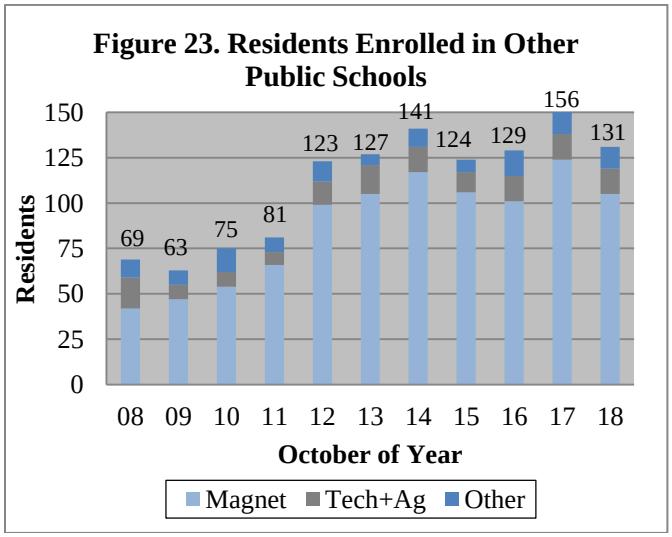
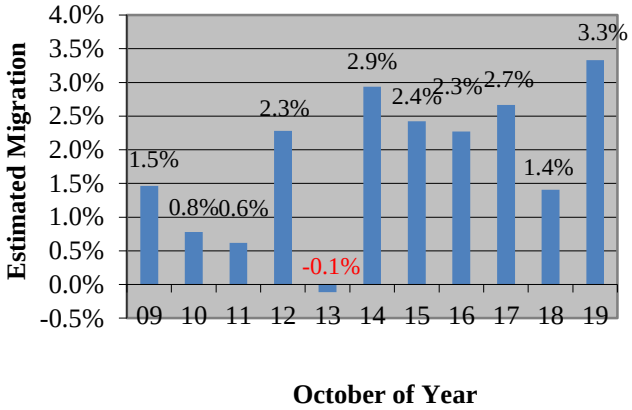


Figure 24 presents the estimated migration of students from Farmington. The calculation takes into account non-residents enrolled in Farmington and Farmington residents enrolled in other public schools. Estimated migration ranged from a low of -0.1 percent in 2013 to a high of +3.3 percent in 2019. The data behind these figures may be found in Appendices A and B. The average migration in the three-year look-back period of the projection was a high +2.47 percent. In the past 32 years, this three-year average was exceeded only four times. The median three-year migration rate over the past 20 years was 1.45 percent.

Figure 24. Estimated Student Migration



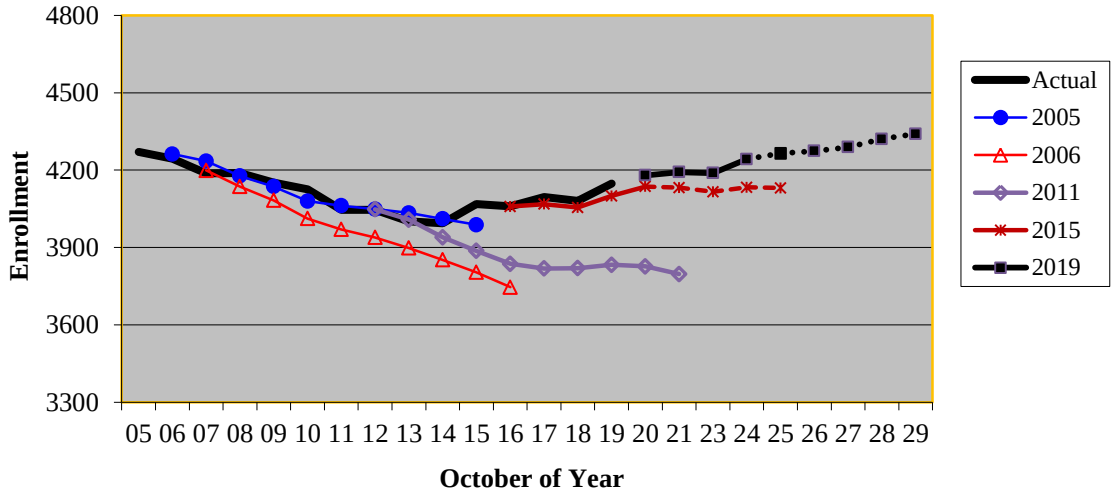
Prior Projections of Enrollment

The cohort-survival projection method works very well when change is stable. One way to know if that assumption is valid is to examine how past projections have fared. Figure 25 presents the enrollment projections that I have run for Farmington since 2005. The four enrollment projections that I did between 2005 and 2017 had one-year error rates that averaged 0.2 percent. The three projections done between 2005 and 2014 had an average five-year error rate of 2.8 percent, which is 0.6 percent annualized.

My 2015 projection for Farmington is running 1.2 percent low after four years, an annual rate of 0.3 percent. In that analysis, I projected that K-4 enrollment would be 1,423 students in 2019. The actual enrollment of 1,467 was 44 students more than projected. The projection was low by 3.0 percent after four years or 0.8 percent per year. I projected that enrollment in grades 5-6 would be 599 students in 2019. The actual enrollment of 633 was 34 students more than projected. The projection was low by 5.4 percent after four years or an average of 1.4 percent per year. I projected that enrollment in grades 7-8 would be 654 students in 2019. The actual enrollment of 683 was 29 students less than projected. The projection was high by 4.3 percent after four years or an average of 1.1 percent per year. In 2011, I projected that high school enrollment would be 1,300 students in 2019. The actual enrollment of 1,250 was 50 students less than projected. The projection was high by 4.0 percent or an average of 1.0 percent per year. The 2015 projection kept pre-kindergarten enrollment constant at 124 children. The actual 2019 enrollment was 115 children.

I also examined the accuracy of the projections of your elementary school enrollment. At Union School my 2015 projection was high by 7 students, a 4-year error rate of 2.2 percent (0.5 percent annually). At the Noah Wallace School my projection was low by 15 students, a 4-year error rate of 4.2 percent (1.1 percent annually). At the West District School my projection was low by 21 students for a 4-year error rate of 6.5 percent (1.7 percent annually). At East Farms School my projection was low by 15 students for a 4-year error rate of 3.2 percent (0.8 percent annually).

Figure 25. Prior Projections of Enrollment



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 projection period for a school construction grant is at the limit of the useful accuracy of the method. The method 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 2010. 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 total enrollment in grades K-12 will increase 5-6 percent, going from 4,033 students in 2019 to about 4,260 students in 2029. I project that K-4 enrollment will grow from 1,467 in 2019 to about 1,500 students in 2029. This will be a gain of about 35 students or 2.5 percent. I project that enrollment at Union School will move from 319 to about 325 students in the next ten years, a gain of a little over one percent. I project that enrollment at the Noah Wallace School could decline 15 percent from 357 students in 2019 to close to 300 students in 2029. I project that enrollment at the West District School could increase by 11 percent, moving from 323 students in 2019 to almost 360 students in 2029. I project that enrollment at the East Farms School could grow nine percent from 467 students in 2019 to about 510 in 2029. I believe that future enrollment at the West Woods Upper Elementary School could increase six percent going from 633 students in 2019 to about 675 students in 2029. In between, it could hit a high of 725 students in 2025. I project that future enrollment in the Irving A. Robbins Middle School could dip from 683 students in 2019 to about 640 students somewhere between 2021 and 2025 and then rebound to about 680 students at the projection's end. If the community supports a renovation project, Farmington High School's enrollment could approach 1,405 students in 2029. The maximum 8-year enrollment for a school construction grant would be 1,341 students in 2026.

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 reasonable? In the five years from 2010 to 2014 (this fall's kindergarten through 4th graders) births averaged 197. Births in the 2015 through 2019 period will average close to 198. My model assumes an average of 199 births in the 2020 to 2024 period. Full-day kindergarten started in 2015. The key rate of kindergarten enrollment from births five-years ago used for the school projections averaged 1.358. It was 1.389 for the 2019 kindergarten. The average growth rate over grades 2-12 used to project enrollment was 1.021. This compares to the 1.018 rate observed in 2019 and the twenty-year median growth rate of 1.007. Taking these three key factors into consideration, I believe the projection is neither too optimistic nor 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 full-day; retention policies will not change; little expansion of area magnet schools and no change in the drop-out rate or the grade 9 retention rate. The projection assumes the following population growth factors will not change appreciably: births will average 199 over the 2020 to 2024 period; a 30.4 percent increase between the number of births and subsequent kindergarten enrollment; no students repeating grade 9; a dropout rate of 0.1 percent; and a student migration of +2.5 percent. Additionally, there will be little change in non-public school enrollment; 32 new housing units will be constructed annually; there will be an average of 410 sales of existing single-family homes and condominiums and a slowly increasing labor force.

In the report you will find that the sum of the elementary projections is close but does not equal the district K-4 projection. Over the ten-year projection period, the sum of the school projections averages five less students than the district projection. This is to be expected for several reasons. First, to get greater stability in the school projections I used a five-year average of the grade-to-grade growth rates and the birth to kindergarten rate. In the district projection, I used a three-year average to catch the most recent patterns. Second, I used a different model to project kindergarten for the district as a whole because kindergarten enrollment could be broken down by five-year olds, six-year olds entering for the first time and six-year old repeaters.

As you observe the birth data for the elementary schools and the birth-to-kindergarten growth rates, you will notice considerable year-to-year variation. This lack of consistency means that in any one year the projection could be off. However, the accuracy of the 2015 projection means that the trend over time the projection appears to be fairly accurate.

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 Farmington and then make adjustments as necessary.

Appendix A. Farmington Enrollment Projected by Grade to 2029: Grades PK-6

School Year	Birth Year	Births[1]	K	1	2	3	4	5	6	PK	Total K-4	Total 5-6
2009-10	2004	234	278	295	282	281	281	316	342	67	1417	658
2010-11	2005	218	272	301	313	286	281	289	314	76	1453	603
2011-12	2006	206	253	295	300	315	296	279	296	69	1459	575
2012-13	2007	222	249	284	299	322	324	297	281	61	1478	578
2013-14	2008	209	246	266	290	304	322	335	285	76	1428	620
2014-15	2009	190	224	270	289	308	308	340	333	78	1399	673
2015-16	2010	197	261	256	281	303	327	317	346	123	1428	663
2016-17	2011	203	269	270	277	288	333	337	314	112	1437	651
2017-18	2012	206	269	281	288	279	305	346	342	109	1422	688
2018-19	2013	165	241	278	290	300	294	313	348	109	1403	661
2019-20	2014	216	300	257	297	305	308	307	326	115	1467	633
Projected[2]												
2020-21	2015	206	287	313	270	306	318	318	313	107	1494	631
2021-22	2016	206	285	300	329	278	319	329	324	107	1511	653
2022-23	2017	185	261	297	316	339	289	330	335	108	1502	665
2023-24	2018	203	278	272	312	326	354	298	336	107	1542	634
2024-25	2019	191	268	290	286	322	340	366	303	109	1506	669
2025-26	2020	200	275	280	305	295	336	352	373	109	1491	725
2026-27	2021	197	273	287	294	315	308	347	358	110	1477	705
2027-28	2022	200	276	285	302	303	329	318	353	110	1495	671
2028-29	2023	200	277	288	300	311	316	340	324	110	1492	664
2029-30	2024	201	278	289	303	309	324	327	346	110	1503	673
Projection Growth Rates[2]			[3]	1.047	1.055	1.034	1.046	1.036	1.020			

Annual Growth Rates								Estimated Migration[4]
2010	1.239	1.083	1.062	1.015	1.000	1.033	0.997	1.34%
2011	1.214	1.074	0.993	1.006	1.040	0.993	1.025	0.50%
2012	1.077	1.116	1.000	1.064	1.026	1.000	1.004	2.03%
2013	1.120	1.075	1.022	1.017	1.003	1.031	0.958	-0.17%
2014	1.111	1.090	1.086	1.063	1.010	1.056	0.994	2.44%
2015	1.259	1.156	1.043	1.050	1.056	1.027	1.024	2.42%
2016	1.271	1.024	1.074	1.026	1.102	1.034	0.993	2.27%
2017	1.248	1.043	1.079	1.015	1.066	1.040	1.012	2.67%
2018	1.394	1.043	1.041	1.047	1.060	1.031	1.006	1.41%
2019	1.333	1.039	1.075	1.057	1.031	1.050	1.045	3.33%
3-Year Ave.	1.380	**1.047**	**1.055**	**1.034**	**1.046**	**1.036**	**1.020**	
Weighted 3-year	1.339	1.041	1.064	1.047	1.047	1.042	1.027	
5-Year Ave.	1.358	1.062	1.058	1.035	1.060	1.034	1.014	
Weighted 5-Year Ave.	1.319	1.047	1.064	1.042	1.057	1.039	1.020	

[1] Births in 2004 to 2018 from the Connecticut State Department of Public Health. The 2017 and 2018 births are provisional. 2019 births were based on in-state births through September. 2020 – 2024 births based in part on Connecticut State Data Center's 2017 projections of Farmington Women of child-bearing ages in 2015, 2020 and 2025.

[2] Growth rates based on 3-year averages of annual growth rates by grade.

[3] Kindergarten based on 3-year averages of the yield from births five- and six-years ago and retention +12 children from Hartford.

[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 non-residents in and residents out to public schools.

Appendix B. Farmington Enrollment Projected by Grade to 2029: Grades 7-12

School Year	7	8	9	10	11	12	7-8 Total	9-12 Total	K-12 Total	PK-12 Total
2009-10	337	349	341	307	328	347	686	1,323	4,084	4,151
2010-11	344	344	347	336	289	334	688	1,306	4,050	4,126
2011-12	311	341	336	342	323	290	652	1,291	3,977	4,046
2012-13	298	312	329	332	339	319	610	1,319	3,985	4,046
2013-14	276	295	322	328	321	336	571	1,307	3,926	4,002
2014-15	289	281	292	324	332	326	570	1,274	3,916	3,994
2015-16	331	292	285	298	317	332	623	1,232	3,946	4,069
2016-17	344	330	294	286	292	314	674	1,186	3,948	4,060
2017-18	317	354	322	295	290	299	671	1,206	3,987	4,096
2018-19	329	325	328	323	304	299	654	1,254	3,972	4,081
2019-20	348	335	289	334	325	302	683	1,250	4,033	4,148
Projected[2]										
2020-21	322	356	312	292	339	330	678	1,273	4,076	4,183
2021-22	310	329	332	315	296	344	639	1,287	4,090	4,197
2022-23	320	317	328	335	320	300	637	1,283	4,087	4,195
2023-24	331	327	316	331	340	325	658	1,312	4,146	4,253
2024-25	332	339	326	319	335	345	671	1,325	4,171	4,280
2025-26	300	340	338	329	323	339	640	1,329	4,185	4,294
2026-27	369	306	339	341	334	327	675	1,341	4,198	4,308
2027-28	354	377	305	342	346	338	731	1,331	4,228	4,338
2028-29	349	362	376	308	347	351	711	1,382	4,249	4,359
2029-30	320	357	361	379	312	352	677	1,404	4,257	4,367
Projection Growth Rates[1]			[2]							
	0.990	1.024	0.990	1.008	1.017	1.016				
Annual Growth Rates										**Migration[3]**
2010	1.009	1.021	0.991	0.994	0.941	1.019				1.34%
2011	0.990	0.991	0.979	0.991	0.964	1.004				0.50%
2012	1.007	1.000	0.964	0.985	0.994	0.987				2.03%
2013	0.985	0.986	1.026	0.997	0.969	0.994				-0.17%
2014	1.014	1.019	0.990	1.000	1.019	1.013				2.44%
2015	0.994	1.014	1.018	1.018	0.984	0.997				2.42%
2016	0.994	0.997	1.007	1.004	0.983	0.990				2.27%
2017	1.013	1.029	0.972	1.003	1.011	1.028				2.67%
2018	0.964	1.026	0.926	1.003	1.031	1.036				1.41%
2019	1.001	1.019	0.889	1.018	1.009	1.000				3.33%
3-Year Ave.	**0.990**	**1.024**	**0.931**	**1.008**	**1.017**	**1.016**				
Weighted 3-Year	0.991	1.023	0.915	1.011	1.017	1.017				
5-Year Ave.	0.992	1.016	0.960	1.010	1.001	1.007				
Weighted 5-Year	0.992	1.020	0.940	1.009	1.010	1.014				
3-year 2015-2017			**0.998**							

[1] Based on 3-year averages of annual growth rates by grade.
[2] Grade 9 growth rate set 3-year average in 2020 to 2021 and at the 3-year average from 2015-2017 for 2022-2029.
[3] 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 non-residents in and residents out to public schools.

Appendix C. Union School Enrollment Projected by Grade to 2029

School Year	Birth Year	Births[1]	K	1	2	3	4	Total K-4
2009-10	2004	49	62	56	54	63	59	294
2010-11	2005	45	56	72	60	49	62	299
2011-12	2006	40	55	63	71	64	53	306
2012-13	2007	39	52	67	62	73	66	320
2013-14	2008	45	54	54	68	65	75	316
2014-15	2009	44	51	61	57	73	63	305
2015-16	2010	46	58	60	65	63	76	322
2016-17	2011	52	56	59	62	61	72	310
2017-18	2012	34	75	57	67	58	72	329
2018-19	2013	30	52	73	59	67	64	315
2019-20	2014	37	58	54	70	66	71	319
Projected[2]								
2020-21	2015	52	82	58	58	73	74	345
2021-22	2016	42	67	81	60	59	81	348
2022-23	2017	35	56	66	84	62	65	333
2023-24	2018	39	62	55	69	86	68	340
2024-25	2019	37	59	61	57	71	95	343
2025-26	2020	39	62	58	63	58	78	319
2026-27	2021	39	62	61	60	65	64	312
2027-28	2022	39	62	61	63	62	72	320
2028-29	2023	39	62	61	63	65	68	319
2029-30	2024	39	62	61	63	65	72	323
Projection Growth Rates[2]			1.521	0.989	1.042	1.027	1.107	
Annual Growth Rates								**Migration[3]**
2010			1.222	1.161	1.071	0.904	0.983	-1.16%
2011			1.325	1.127	0.986	1.067	1.085	3.87%
2012			1.231	1.189	0.984	1.028	1.031	1.52%
2013			1.178	1.042	1.016	1.049	1.027	2.97%
2014			1.068	1.132	1.060	1.078	0.969	3.21%
2015			1.239	1.191	1.067	1.132	1.029	6.81%
2016			1.077	0.965	1.018	0.938	1.150	3.72%
2017			2.176	1.018	1.145	0.947	1.183	8.24%
2018			1.600	0.973	1.035	1.000	1.111	4.40%
2019			1.514	1.000	0.944	1.119	1.063	4.02%
3-Year Ave.			1.832	1.005	1.037	1.016	1.113	
Weighted 3-Year Ave.			1.653	0.994	1.008	1.051	1.099	
5-Year Ave.			**1.521**	**1.029**	**1.042**	**1.027**	**1.107**	
Weighted 5-Year			1.593	1.004	1.027	1.029	1.109	

[1] Births in 2004 to 2018 based on actual births in the school attendance area. Births in 2019 to 2024 based upon percentage of births in school attendance zone in 2016 to 2018 applied to estimated district-wide births.

[2] Projection growth rates in kindergarten based on 5-year average of growth to kindergarten from births 5-years prior. Grade 1 growth based on 4-year average of annual growth rates. Growth in grades 2-4 based on 5-year average of annual growth rates.

[3] Migration estimated from enrollment in grades 2-4 one year compared to enrollment in grades 1-3 the prior year.

Appendix D. Noah Wallace School Enrollment Projected by Grade to 2029

School Year	Birth Year	Births[1]	K	1	2	3	4	Total K-4
2009-10	2004	60	67	74	62	72	60	335
2010-11	2005	53	61	68	80	63	74	346
2011-12	2006	54	57	71	64	84	65	341
2012-13	2007	56	59	66	75	74	84	358
2013-14	2008	55	63	58	67	74	76	338
2014-15	2009	51	57	73	63	70	71	334
2015-16	2010	53	74	63	79	68	79	363
2016-17	2011	46	71	79	66	82	71	369
2017-18	2012	50	58	79	83	70	88	378
2018-19	2013	36	57	57	79	84	77	354
2019-20	2014	55	68	56	62	83	88	357
Projected[2]								
2020-21	2015	34	47	70	59	65	89	330
2021-22	2016	40	55	49	74	62	70	310
2022-23	2017	37	51	57	52	77	67	304
2023-24	2018	42	58	53	60	54	83	308
2024-25	2019	38	53	60	56	63	58	290
2025-26	2020	40	55	55	64	58	68	300
2026-27	2021	40	55	57	58	67	62	299
2027-28	2022	40	55	57	60	61	72	305
2028-29	2023	40	55	57	60	63	66	301
2029-30	2024	40	55	57	60	63	68	303
Projection Growth Rates[2]			1.304	1.038	1.062	1.046	1.080	
Annual Growth Rates								**Migration[3]**
2010			1.132	1.015	1.081	1.017	1.029	4.33%
2011			1.037	1.167	0.941	1.050	1.050	0.95%
2012			0.946	1.161	1.014	1.156	0.988	6.39%
2013			1.091	1.038	1.015	0.972	1.027	0.93%
2014			1.118	1.167	1.091	1.045	0.942	2.51%
2015			1.358	1.105	1.086	1.067	1.130	9.71%
2016			1.457	1.056	1.048	1.039	1.047	4.29%
2017			1.060	1.134	1.066	1.061	1.076	6.17%
2018			1.500	1.019	1.000	1.012	1.100	3.45%
2019			1.145	0.944	1.111	1.053	1.049	5.91%
3-Year Ave.			1.298	1.032	1.042	1.039	1.072	
Weighted 3-Year Ave.			1.249	1.001	1.067	1.041	1.070	
5-Year Ave.			**1.304**	***1.038***	**1.062**	**1.046**	**1.080**	
Weighted 5-Year			1.279	1.028	1.062	1.043	1.073	

[1] Births in 2004 to 2018 based on actual births in the school attendance area. Births in 2019 to 2024 based upon percentage of births in school attendance zone in 2016 to 2018 applied to estimated district-wide births.

[2] Projection growth rates in kindergarten based on 5-year average of growth to kindergarten from births 5-years prior. Grade 1 growth based on 4-year average of annual growth rates. Growth in grades 2-4 based on 5-year average of annual growth rates.

[3] Migration estimated from enrollment in grades 2-4 one year compared to enrollment in grades 1-3 the prior year.

Appendix E. West District School Enrollment Projected by Grade to 2029

School Year	Birth Year	Births[1]	K	1	2	3	4	Total K-4
2009-10	2004	45	70	78	65	60	77	350
2010-11	2005	49	67	70	77	63	61	338
2011-12	2006	33	61	70	74	78	64	347
2012-13	2007	55	59	64	77	80	85	365
2013-14	2008	44	58	62	68	72	81	341
2014-15	2009	43	48	60	65	68	74	315
2015-16	2010	35	56	51	57	67	69	300
2016-17	2011	43	52	55	65	62	75	309
2017-18	2012	48	53	54	56	68	60	291
2018-19	2013	37	65	59	58	58	66	306
2019-20	2014	48	69	65	68	62	59	323
Projected[2]								
2020-21	2015	47	66	71	71	72	63	343
2021-22	2016	49	68	68	78	75	73	362
2022-23	2017	51	71	70	74	83	77	375
2023-24	2018	37	52	73	77	78	85	365
2024-25	2019	44	62	53	80	82	80	357
2025-26	2020	46	64	64	58	85	84	355
2026-27	2021	46	64	66	70	61	87	348
2027-28	2022	46	64	66	72	74	62	338
2028-29	2023	46	64	66	72	76	75	353
2029-30	2024	47	66	66	72	76	78	358
Projection Growth Rates[2]			1.332	1.025	1.099	1.062	1.021	
Annual Growth Rates								**Migration[3]**
2010			1.367	1.000	0.987	0.969	1.017	-0.99%
2011			1.848	1.000	1.043	1.013	1.016	2.86%
2012			1.073	1.049	1.090	1.041	1.092	9.01%
2013			1.227	1.051	1.063	0.945	1.026	0.00%
2014			1.070	1.019	1.048	1.000	1.029	2.48%
2015			1.400	1.043	0.945	1.031	1.015	0.00%
2016			1.140	0.980	1.250	1.096	1.119	15.43%
2017			1.063	1.020	1.042	1.050	0.965	1.10%
2018			1.703	1.118	1.100	1.060	0.968	2.25%
2019			1.354	0.984	1.158	1.073	1.038	8.00%
3-Year Ave.			1.406	1.047	1.083	1.050	0.984	
Weighted 3-Year Ave.			1.422	1.035	1.119	1.065	1.002	
5-Year Ave.			**1.332**	***1.025***	**1.099**	**1.062**	**1.021**	
Weighted 5-Year			1.363	1.030	1.117	1.065	1.014	

[1] Births in 2004 to 2018 based on actual births in the school attendance area. Births in 2019 to 2024 based upon percentage of births in school attendance zone in 2016 to 2018 applied to estimated district-wide births.

[2] Projection growth rates in kindergarten based on 5-year average of growth to kindergarten from births 5-years prior. Grade 1 growth based on 4-year average of annual growth rates. Growth in grades 2-4 based on 5-year average of annual growth rates.

[3] Migration estimated from enrollment in grades 2-4 one year compared to enrollment in grades 1-3 the prior year.

Appendix F. East Farms School Enrollment Projected by Grade to 2029

School Year	Birth Year	Births[1]	K	1	2	3	4	Total K-4
2009-10	2004	83	79	87	101	86	85	438
2010-11	2005	74	88	91	96	111	84	470
2011-12	2006	81	80	91	91	89	114	465
2012-13	2007	72	79	87	85	95	89	435
2013-14	2008	66	71	92	87	93	90	433
2014-15	2009	55	68	76	104	97	100	445
2015-16	2010	62	74	82	79	105	103	443
2016-17	2011	65	90	77	84	83	115	449
2017-18	2012	74	83	91	82	83	84	423
2018-19	2013	63	67	89	94	91	86	427
2019-20	2014	76	105	82	97	94	89	467
Projected[2]								
2020-21	2015	73	89	114	86	101	98	488
2021-22	2016	74	91	96	121	89	105	502
2022-23	2017	62	76	98	101	126	92	493
2023-24	2018	85	104	82	103	105	131	525
2024-25	2019	71	87	112	87	107	109	502
2025-26	2020	74	91	94	118	90	111	504
2026-27	2021	73	90	98	99	122	94	503
2027-28	2022	74	91	97	103	103	127	521
2028-29	2023	74	91	98	102	107	107	505
2029-30	2024	75	92	98	103	106	111	510
Projection Growth Rates[2]			1.187	1.083	1.058	1.038	1.041	
Annual Growth Rates								**Migration[3]**
2010			1.189	1.152	1.105	1.102	0.976	6.20%
2011			0.988	1.034	1.000	0.926	1.028	-1.34%
2012			1.097	1.088	0.934	1.044	1.000	-0.74%
2013			1.015	1.139	1.000	1.094	0.947	1.12%
2014			1.109	1.045	1.122	1.115	1.075	10.66%
2015			1.145	1.262	1.043	1.010	1.052	3.61%
2016			1.323	1.056	1.026	1.055	1.098	6.02%
2017			1.068	1.000	1.067	1.000	1.026	2.05%
2018			1.032	1.076	1.047	1.113	1.051	5.86%
2019			1.368	1.200	1.106	1.011	0.978	2.19%
3-Year Ave.			1.197	1.092	1.062	1.031	1.008	
Weighted 3-Year Ave.			1.206	1.125	1.080	1.043	1.010	
5-Year Ave.			**1.187**	***1.083***	**1.058**	**1.038**	**1.041**	
Weighted 5-Year			1.198	1.112	1.067	1.042	1.028	

[1] Births in 2004 to 2018 based on actual births in the school attendance area. Births in 2019 to 2024 based upon percentage of births in school attendance zone in 2016 to 2018 applied to estimated district-wide births.

[2] Projection growth rates in kindergarten based on 5-year average of growth to kindergarten from births 5-years prior. Grade 1 growth based on 4-year average of annual growth rates. Growth in grades 2-4 based on 5-year average of annual growth rates.

[3] Migration estimated from enrollment in grades 2-4 one year compared to enrollment in grades 1-3 the prior year