



Demographic Study Update

for the

**Katonah-Lewisboro
Union Free School District**

November 2016

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Table of Contents

	Page
Executive Summary	3
Introduction	7
Enrollment Projections from November 2015 Report	7
District Overview	8
Explanation of the Cohort-Survival Ratio Method	9
Historical Enrollment Trends	11
Student Withdrawals and New Registrants	16
Non-Public School Enrollment	17
Kindergarten and First Grade Replacement	18
Birth Data	20
Effects of Housing Growth	22
1. Katonah CDP	22
2. Town of Lewisboro	23
3. Town of North Salem	22
4. Town of Pound Ridge	22
Homes Sales	26
Enrollment Projections	27
Projected Enrollment by Grade Configuration	30
Elementary School Projections	31
1. Increase Miller Elementary School	32
2. Katonah Elementary School	33
3. Meadow Pond Elementary School	34

Executive Summary

At the request of the Katonah-Lewisboro Union Free School District (“Katonah-Lewisboro”), Statistical Forecasting LLC completed a demographic study update where the main objective was to compute grade-by-grade enrollment projections from 2017-18 to 2021-22, a five-year projection period. The previous study was completed for the district in November 2015. Information was collected related to community birth rates, historical enrollment data, home sales, and new housing starts.

Historical Enrollment Trends

As of October 2016, enrollment (K-12) in Katonah-Lewisboro was 3,112 students. After peaking in 2005-06 with 4,115 students, enrollment has declined in each of the last eleven years, which is a loss of 1,003 students over this time period.

At the K-5 level, enrollment had declined for 17 consecutive years before increasing (+5) in 2016-17. Enrollment is 1,236 students in 2016-17, which represents a loss of 780 students from the peak enrollment in 1998-99.

For John Jay Middle School, which contains grades 6-8, enrollment increased through 2001-02, peaking at 1,042 students. Grade 6-8 enrollment is 801 students in 2016-17, which represents a loss of 241 students from the peak enrollment in 2001-02.

Finally, for John Jay High School, which contains grades 9-12, enrollment increased through 2007-08, peaking at 1,311 students. Enrollment has declined in each of the last seven years and is 1,075 in 2016-17, which represents a loss of 236 students from the peak enrollment in 2007-08.

With respect to student survival ratios from one grade to the next, nine of 11 survival ratios (three-year average) were above 1.000, which indicates a general net inward migration. This is a reversal in trend from just two years ago, where 8 of 13 ratios (six-year average) were below 1.000, indicating a general net outward migration.

Kindergarten Replacement

Kindergarten replacements were analyzed to determine whether there was any relationship between overall enrollment change and kindergarten replacement, which is the numerical difference between the number of graduating 12th graders and the number of entering kindergarten students. The district has experienced negative kindergarten replacement in the last three years, and negative first grade replacement for the eight years prior. Negative kindergarten replacement occurs when the number of graduating 12th grade students is larger than the number of kindergarten students replacing them in the next year. Since the district had a half-day kindergarten program prior to instituting a full-day program in 2014-15, it was more appropriate to compare the 12th grade student population to the first grade student population, as the district gains a number of students from kindergarten to first grade when parents elect to send their child to a full-day kindergarten program elsewhere before enrolling them in the public school district

for the first grade. In the last six years, the district has lost an average of 114 students per year due to kindergarten/first grade replacement.

Non-Public School Enrollments

In 2016-17, approximately 7% of the Katonah-Lewisboro resident population attends non-public schools. Nearly two-thirds of Katonah-Lewisboro's non-public school population attends one of five schools. The Harvey School and The Rippowam Cisqua School receive the greatest number of Katonah-Lewisboro resident students.

Birth Rates

The number of births, which is used to project kindergarten enrollment, has been declining in the Katonah-Lewisboro attendance area. Births have declined from a high of 219 in 2002 to a low of 104 in 2012, a decline of 52.5%. Since 2012, the number of births has been slightly higher. It appears that the birth count has stabilized in the Katonah-Lewisboro attendance area. While births have also declined in Westchester County from 12,807 in 2002 to 10,641 in 2014, the percentage decline is much smaller at 16.9%.

Potential New Housing

Planning and Zoning Departments were contacted in Bedford (Katonah), Lewisboro, Pound Ridge, and North Salem. There are no pending residential subdivisions in Pound Ridge or North Salem that would impact the school district. Regarding Katonah and Lewisboro, there are there are no new developments and little change in the status of many of the pending developments since the November 2015 demographic study. In total, 110 public school children are projected from kindergarten to 12th grade as a result of the proposed housing units, provided that each development comes to fruition. Many of the developments discussed in this report were also listed in our first demographic study for the district in August 2012 and therefore may never get completed.

Home Sales

Home sales peaked in 2004 with 318 sales before declining sharply in 2008 during the banking and financial crises. After reaching a low of 131 home sales in 2009, the number of sales has been steadily increasing. As of October 2016, there were 243 home sales with an additional 46 sales pending. If all homes under contract close by the end of the year, there would be 289 home sales in 2016, which would be the most since 2005.

It appears that the increase in home sales is having an effect on enrollment in the district. In 2016-17, five of 13 survival ratios, which reflect net incoming and outgoing migration, were the highest values (a sign of in-migration) the district has experienced in the last twenty years. While not known for certain, it is likely that the increase in home sales has led to inward migration of parents with school-age children and an increase in the survival ratios.

Enrollment Projections

Enrollments were computed for a five-year period, 2017-18 through 2021-22. To provide a range for future enrollment, two sets of projections were computed based on three and four years of historical enrollment. Using three historical years will serve to capture the most recent trends of in-migration and the associated increase in the survival ratios. The projections using four years of historical data will serve as a “low” projection if the survival ratios return closer to historical averages.

Total enrollment (K-12), using three years of historical enrollments, is projected to be 2,907 in 2021-22, which would be a loss of 205 students from the 2016-17 enrollment of 3,112 students.

The projected decline in enrollment again appears to be partially due to negative kindergarten replacement, where the loss of students is projected to range from 80 to 129 students per year for the next five years. However, the magnitude of negative kindergarten replacement is projected to be progressively smaller before increasing in the last year of the projection period.

Enrollment projections were also computed at the individual school level. The following table compares the projected enrollments by school in 2021-22 to the actual enrollments in 2016-17. At the elementary level, small declines are projected at Increase Miller and Katonah Elementary Schools while a small increase is projected at Meadow Pond Elementary School.

Summary of Projected Enrollments by School

School	Actual Enrollment 2016-17	Projected Enrollment 2021-22¹	Difference
Increase Miller Elementary School (K-5)	461	450	-11
Katonah Elementary School (K-5)	432	405	-27
Meadow Pond Elementary School (K-5)	343	347	+4
John Jay Middle School (6-8)	801	714	-87
John Jay High School (9-12)	1,075	1,000	-75

Note: ¹Using cohort survival ratios and three years of historical data

At John Jay Middle School, enrollment is projected to decline through 2020-21 before reversing trend. Enrollment is projected to be 714 in 2021-22, which would represent a loss of 87 students from the 2016-17 enrollment of 801 students.

For John Jay High School (grades 9-12), enrollment is projected to decline throughout the projection period. Enrollment is projected to be 1,000 in 2021-22, which would represent a loss of 75 students from the 2016-17 enrollment of 1,075 students.

Final Thoughts

Over the last decade, Katonah-Lewisboro has had a significant decline in enrollment. While a decline in total enrollment (K-12) is projected to occur for the next five years, it appears that a change is on the horizon. In the near term, enrollments in the elementary schools are projected to be close to stabilizing. Eventually, the steady elementary cohorts will advance into the middle and high schools, which will stabilize the enrollments in these configurations as well over time. While it is evident that families with children under the age of 5 are moving into the sending area to have their children enroll in a highly-rated and excellent school district, the inward migration is not sufficient enough to overcome the declining birth rate and lower number of children entering kindergarten. Negative kindergarten replacement is expected to continue, which again will be partially offset by inward migration, but not enough to prevent an overall decline in enrollment.

Introduction

Statistical Forecasting completed a demographic study update for the Katonah-Lewisboro Union Free School District (“Katonah-Lewisboro”). The previous study was completed for the district in November 2015. The purpose of the current study is to project grade-by-grade enrollments from 2017-18 through 2021-22, a five-year projection period. Information was collected related to community birth rates, historical enrollment data, home sales, and new housing starts.

Enrollment Projections from November 2015 Report

In our previous demographic study, enrollments were projected from 2016-17 through 2020-21, a five-year projection period. Table 1 below compares the actual and projected enrollments in 2016-17 for the entire district (K-12), as well as for the elementary (K-5), middle (6-8), and high (9-12) school grade configurations. Since two projections were computed in the previous study, the table shows the percent error by year for each of the projections. Positive error rates indicate over-projections while negative error rates indicate under-projections.

Table 1
Comparison of Projected to Actual Enrollments
from November 2015 Report

Year	Actual Enrollment 2016-17	Projected CSR 3-YR 2016-17			Projected CSR 5-YR 2016-17		
		Count	Diff.	% Error	Count	Diff.	% Error
Total (K-12)	3,112	3,046	-66	-2.1%	3,047	-65	-2.1%
Elementary (K-5)	1,236	1,204	-32	-2.6%	1,199	-37	-3.0%
Middle (6-8)	801	783	-18	-2.2%	786	-15	-1.9%
High (9-12)	1,075	1,059	-16	-1.5%	1,062	-13	-1.2%

As the table shows, the total enrollment (K-12) was under-projected by 66 (-2.1%) and 65 (-2.1%) students. Most of the error occurred at the elementary school level, accounting for approximately half of the under-projection. The largest under-projections occurred in the third and fourth grades. Elementary enrollments were under-projected by 32 and 37 students respectively, which corresponds to error rates of -2.6% and -3.0%.

Error rates at the middle and high school levels were smaller. Middle school enrollments were under-projected by 18 (-2.2%) and 15 (-1.9%) students. High school enrollments were under-projected by 16 (-1.5%) and 13 (-1.2%) students.

In a survey of educational planners who complete enrollment projections, two-thirds believe that an error rate of 1% per year for the total enrollment is acceptable¹. For a five-year projection, this would mean that a 5% error rate would be acceptable. Both projections exceeded the error rate of 1% for the first projection year. As a result of the higher error rates, adjustments have been made to the enrollment projection methodology. Specifically, a smaller number of historical years (three) were used to compute the survival ratios, which will reflect the recent growth patterns in the school district.

District Overview

Katonah-Lewisboro has five schools that serve children in grades kindergarten through twelve. The district receives children from the unincorporated hamlet of Katonah in the Town of Bedford, approximately the northern one-third of the Town of Bedford, the Town of Lewisboro, and also small sections of the Towns of Pound Ridge and North Salem. There are three elementary schools containing grades K-5 (Increase Miller, Katonah, and Meadow Pond). The district closed Lewisboro Elementary School after the conclusion of the 2013-14 school year. John Jay Middle School contains grades 6-8 while John Jay High School contains grades 9-12. The locations of the schools are shown in Figure 1.

In this study, historical enrollments from 1997-98 through 2016-17 were obtained from the New York State Basic Education Data System (“BEDS”) reports and Katonah-Lewisboro and were used to project enrollments for five years into the future. Future enrollments were projected using the Cohort-Survival Ratio method.

¹ Schellenberg, S. J., & Stephens, C. E. (1987). Enrollment projection: variations on a theme. Paper presented at the Annual Meeting of the American Educational Research Association, Washington D.C., (ERIC Document Reproduction Service No. ED 283 879)

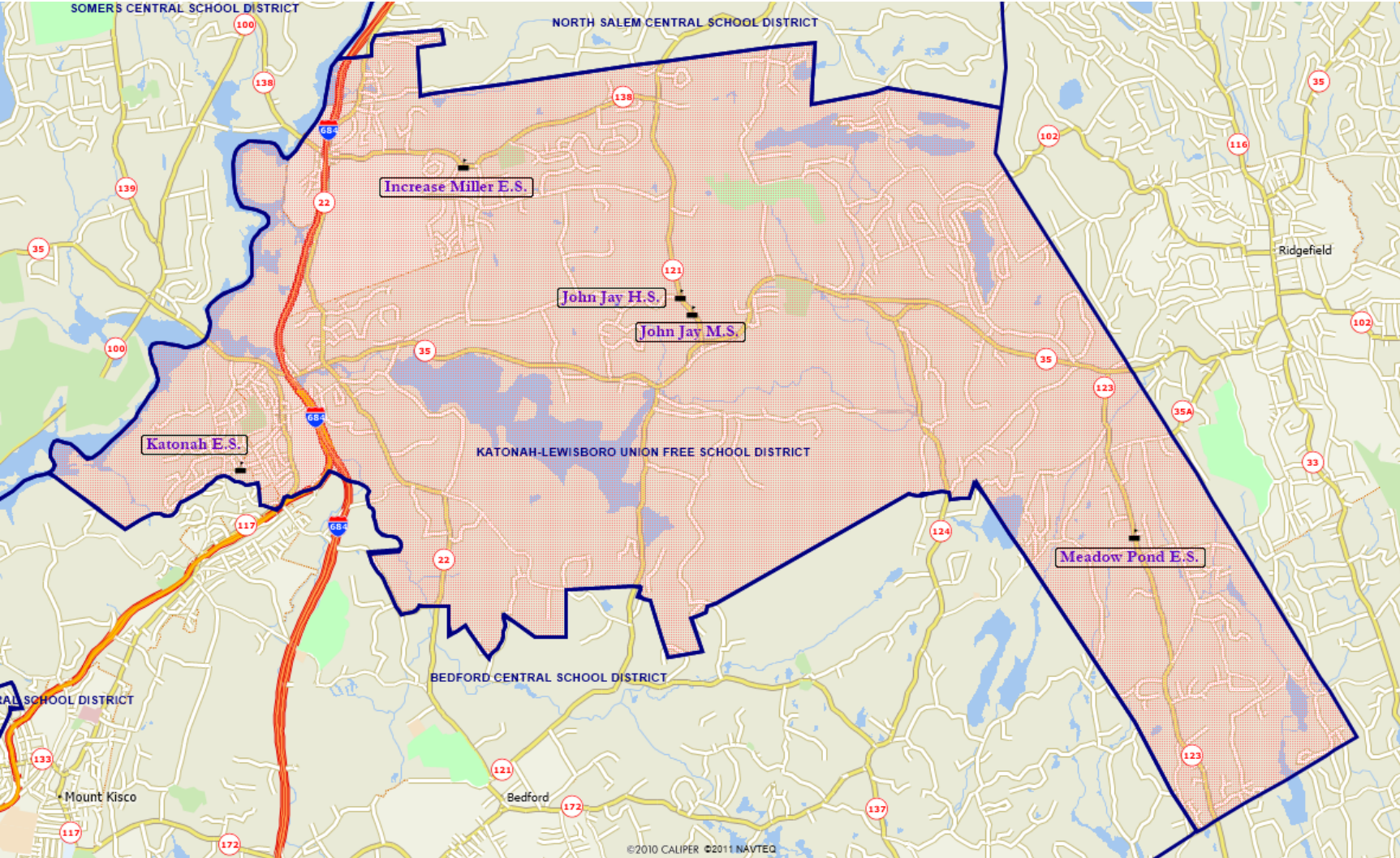
Explanation of the Cohort-Survival Ratio Method

In 1930, Dublin and Lodka provided an explicit age breakdown, which enabled analysts to follow each cohort through its life stages and apply appropriate birth and death rates for each generation. A descendant of this process is the Cohort-Survival Ratio (“CSR”) method, which is used to project public school enrollments. In this method, a survival ratio is computed for each grade progression, which essentially compares the number of students in a particular grade to the number of students in the previous grade during the previous year. The survival ratio indicates whether the enrollment is stable, increasing, or decreasing. A survival ratio of one indicates stable enrollment, less than one indicates declining enrollment, while greater than one indicates increasing enrollment. If, for example, a school district had 100 fourth graders and the next year only had 95 fifth graders, the survival ratio would be 0.95.

The CSR method assumes that what happened in the past will also happen in the future. In essence, this method provides a linear projection of the population. The CSR method is most applicable for districts that have relatively stable increasing or decreasing trends without any major unpredictable fluctuations from year to year. In school districts encountering rapid growth not experienced historically (a change in the historical trend), the CSR method must be modified and supplemented with additional information. As discussed previously, the district’s enrollment has not declined as much as expected. To account for the change in trend that is occurring, three years of historical enrollment were used to compute the survival ratios, which reflect the recent growth patterns in the school district. In addition, the average birth-to-kindergarten survival ratio was based on the last two years of historical enrollment to account for the district’s change to a full-day kindergarten. Recent home sales, private school enrollments, student withdrawals and new registrations were also reviewed and influenced the decision to use fewer years of historical enrollment to generate survival ratios.

In this study, survival ratios were calculated using historical data from the last twenty years for birth to kindergarten, kindergarten to first grade, first grade to second grade, etc. Due to the fluctuation in survival ratios from year to year, it is appropriate to calculate an average survival ratio, which is then used to calculate grade enrollments five years into the future.

Figure 1
School Locations - Katonah-Lewisboro Union Free School District



Historical Enrollment Trends

Historical enrollments (K-12) for Katonah-Lewisboro from 1997-98 through 2016-17 are shown in Figure 2 and Table 2. Enrollment increased through 2002-03, where it was then essentially constant for three years. Peak enrollment occurred in 2005-06 when there were 4,115 students in the district. Enrollment began declining in 2006-07 and has declined in each of the last eleven years. As of October 2016, enrollment was 3,112 students, which represents a loss of 1,003 students since the 2005-06 peak enrollment.

Figure 2
Historical K-12 Enrollment in Katonah-Lewisboro
1997-98 to 2016-17

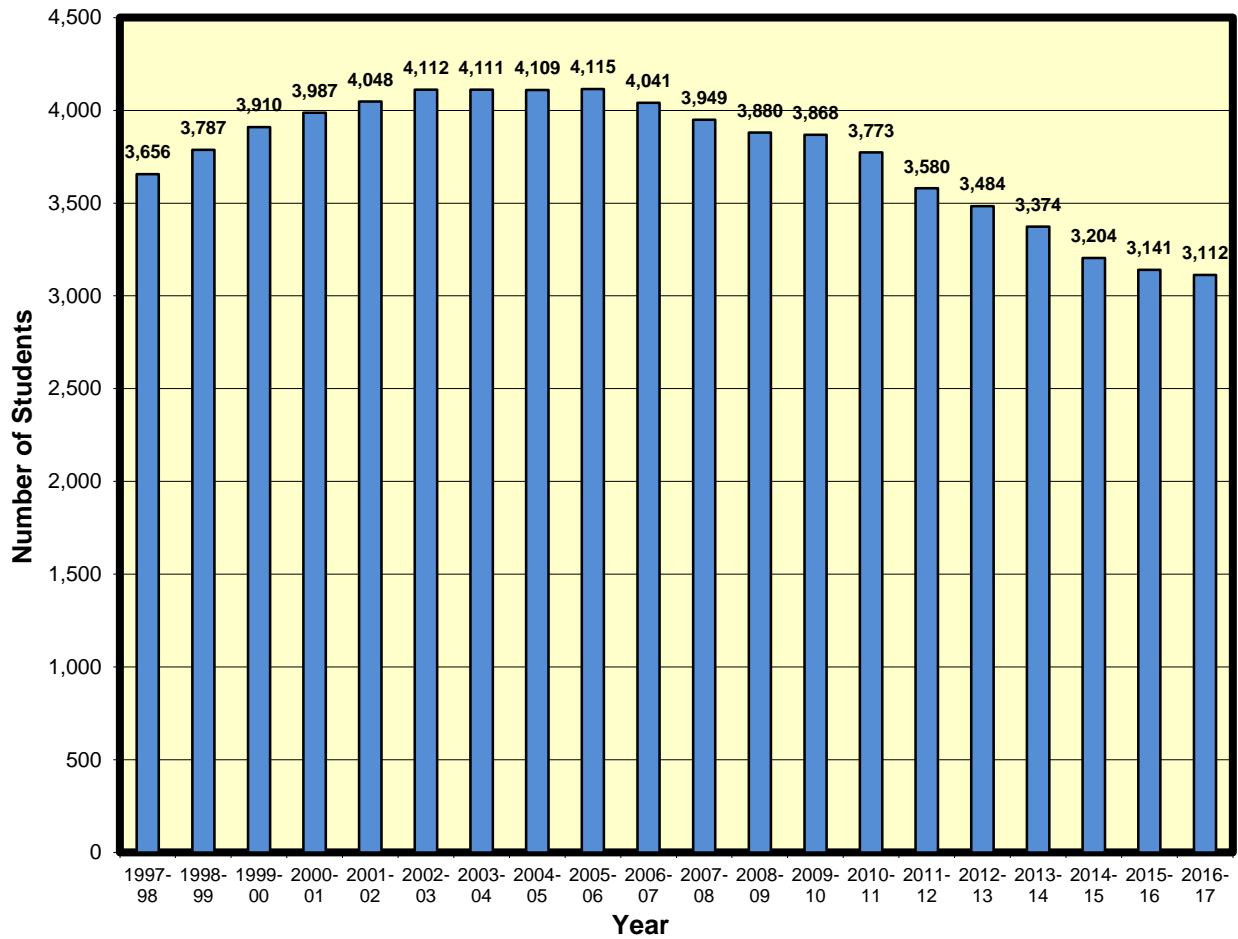


Table 2
Katonah-Lewisboro Historical Enrollments
1997-98 to 2016-17

Year¹	K	1	2	3	4	5	6	7	8	9	10	11	12	SE²	K-5 Total	6-8 Total	9-12 Total	K-12 Total
1997-98	301	321	342	350	301	278	279	271	241	250	261	205	218	38	1,931	791	934	3,656
1998-99	329	320	330	361	355	319	288	277	268	230	251	254	203	2	2,016	833	938	3,787
1999-00	300	353	315	337	351	354	332	292	279	271	227	251	244	4	2,014	903	993	3,910
2000-01	302	321	354	321	346	357	350	343	290	288	265	218	229	3	2,004	983	1,000	3,987
2001-02	297	318	325	363	315	349	356	346	340	289	285	251	211	3	1,970	1,042	1,036	4,048
2002-03	298	323	313	325	355	311	330	355	346	328	285	283	257	3	1,928	1,031	1,153	4,112
2003-04	268	317	315	309	327	362	321	327	352	334	321	269	284	5	1,903	1,000	1,208	4,111
2004-05	269	287	315	318	307	328	367	319	319	362	328	316	267	7	1,831	1,005	1,273	4,109
2005-06	285	294	289	306	320	305	318	369	319	310	349	327	315	9	1,800	1,006	1,309	4,115
2006-07	235	302	283	299	310	320	308	320	371	323	304	348	318	0	1,749	999	1,293	4,041
2007-08	251	260	300	281	305	312	305	307	317	355	309	303	344	0	1,709	929	1,311	3,949
2008-09	260	261	264	309	281	309	314	311	312	308	350	306	295	0	1,684	937	1,259	3,880
2009-10	262	279	257	266	313	286	303	310	317	307	313	352	303	0	1,663	930	1,275	3,868
2010-11	215	275	282	267	271	318	278	296	305	314	299	302	351	0	1,628	879	1,266	3,773
2011-12	190	225	279	272	252	269	306	275	287	304	314	290	294	23	1,497	871	1,212	3,580
2012-13	189	197	230	280	278	248	265	308	285	273	299	319	288	25	1,437	858	1,189	3,484
2013-14	174	210	195	233	279	277	242	267	303	279	275	300	322	18	1,386	812	1,176	3,374
2014-15	149	190	211	204	228	286	267	244	257	293	281	278	293	23	1,278	777	1,149	3,204
2015-16	200	174	191	221	207	228	292	267	248	249	296	275	283	10	1,231	807	1,103	3,141
2016-17	167	224	177	213	233	216	239	295	267	241	258	295	281	6	1,236	801	1,075	3,112

Notes: ¹Data were obtained from the New York State Department of Education BEDS reports and the Katonah-Lewisboro Union Free School District

²Ungraded special education enrollment

Table 3
Historical Survival Ratios
1997-98 to 2016-17

Progression Years	B-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
1997-98 to 1998-99	N/A	1.0631	1.0280	1.0556	1.0143	1.0598	1.0360	0.9928	0.9889	0.9544	1.0040	0.9732	0.9902
1998-99 to 1999-00	N/A	1.0729	0.9844	1.0212	0.9723	0.9972	1.0408	1.0139	1.0072	1.0112	0.9870	1.0000	0.9606
1999-00 to 2000-01	N/A	1.0700	1.0028	1.0190	1.0267	1.0171	0.9887	1.0331	0.9932	1.0323	0.9779	0.9604	0.9124
2000-01 to 2001-02	N/A	1.0530	1.0125	1.0254	0.9813	1.0087	0.9972	0.9886	0.9913	0.9966	0.9896	0.9472	0.9679
2001-02 to 2002-03	N/A	1.0875	0.9843	1.0000	0.9780	0.9873	0.9456	0.9972	1.0000	0.9647	0.9862	0.9930	1.0239
2002-03 to 2003-04	N/A	1.0638	0.9752	0.9872	1.0062	1.0197	1.0322	0.9909	0.9915	0.9653	0.9787	0.9439	1.0035
2003-04 to 2004-05	N/A	1.0709	0.9937	1.0095	0.9935	1.0031	1.0138	0.9938	0.9755	1.0284	0.9820	0.9844	0.9926
2004-05 to 2005-06	N/A	1.0929	1.0070	0.9714	1.0063	0.9935	0.9695	1.0054	1.0000	0.9718	0.9641	0.9970	0.9968
2005-06 to 2006-07	N/A	1.0596	0.9626	1.0346	1.0131	1.0000	1.0098	1.0063	1.0054	1.0125	0.9806	0.9971	0.9725
2006-07 to 2007-08	1.1461	1.1064	0.9934	0.9929	1.0201	1.0065	0.9531	0.9968	0.9906	0.9569	0.9567	0.9967	0.9885
2007-08 to 2008-09	1.1927	1.0398	1.0154	1.0300	1.0000	1.0131	1.0064	1.0197	1.0163	0.9716	0.9859	0.9903	0.9736
2008-09 to 2009-10	1.3646	1.0731	0.9847	1.0076	1.0129	1.0178	0.9806	0.9873	1.0193	0.9840	1.0162	1.0057	0.9902
2009-10 to 2010-11	1.2216	1.0496	1.0108	1.0389	1.0188	1.0160	0.9720	0.9769	0.9839	0.9905	0.9739	0.9649	0.9972
2010-11 to 2011-12	1.3768	1.0465	1.0145	0.9645	0.9438	0.9926	0.9623	0.9892	0.9696	0.9967	1.0000	0.9699	0.9735
2011-12 to 2012-13	1.1455	1.0368	1.0222	1.0036	1.0221	0.9841	0.9851	1.0065	1.0364	0.9512	0.9836	1.0159	0.9931
2012-13 to 2013-14	1.1447	1.1111	0.9898	1.0130	0.9964	0.9964	0.9758	1.0075	0.9838	0.9789	1.0073	1.0033	1.0094
2013-14 to 2014-15	1.2735	1.0920	1.0048	1.0462	0.9785	1.0251	0.9639	1.0083	0.9625	0.9670	1.0072	1.0109	0.9767
2014-15 to 2015-16	1.4493	1.1678	1.0053	1.0474	1.0147	1.0000	1.0210	1.0000	1.0164	0.9689	1.0102	0.9786	1.0180
2015-16 to 2016-17	1.4649	1.1200	1.0172	1.1152	1.0543	1.0435	1.0482	1.0103	1.0000	0.9718	1.0361	0.9966	1.0218
Avg. 20-Year Ratios	N/A	1.0777	1.0004	1.0202	1.0028	1.0095	0.9948	1.0013	0.9964	0.9829	0.9909	0.9857	0.9875
Maximum Ratio	1.4649	1.1678	1.0280	1.1152	1.0543	1.0598	1.0482	1.0331	1.0364	1.0323	1.0361	1.0159	1.0239
Minimum Ratio	1.1447	1.0368	0.9626	0.9645	0.9438	0.9841	0.9456	0.9769	0.9625	0.9512	0.9567	0.9439	0.9124
Avg. 3-Year Ratios	1.4571	1.1439	1.0113	1.0813	1.0345	1.0217	1.0346	1.0051	1.0082	0.9703	1.0232	0.9876	1.0199
Avg. 4-Year Ratios	1.3331	1.1266	1.0091	1.0696	1.0158	1.0229	1.0110	1.0062	0.9930	0.9692	1.0179	0.9954	1.0055

Notes: Orange shaded cells reflect birth-to-kindergarten survival ratios for a half-day kindergarten program

Green shaded cells reflect birth-to-kindergarten survival ratios for a full-day kindergarten program

Blue shaded cells reflect kindergarten-to-first grade survival ratios for a full-day kindergarten program

Table 3 shows computed grade-by-grade survival ratios for the past twenty years, 1997-98 to 2016-17. In addition, the average, minimum, and maximum survival ratios are shown for the past twenty years along with the three-year and four-year averages, which will be used to project future enrollments. Survival ratios from birth-to-kindergarten could not be computed for the entire twenty-year period since birth data by the school district's geographical boundaries were not available prior to 2002. The average survival ratios also indicate the net migration by grade, where values over 1.000 reflect inward migration and values below 1.000 reflect outward migration. Eleven of the 13 average survival ratios in the three-year trend were above 1.000, indicating a general net inward migration. In addition, five ratios in 2016-17 (three of which were in the elementary grades) were the highest values the district has experienced in the last twenty years.

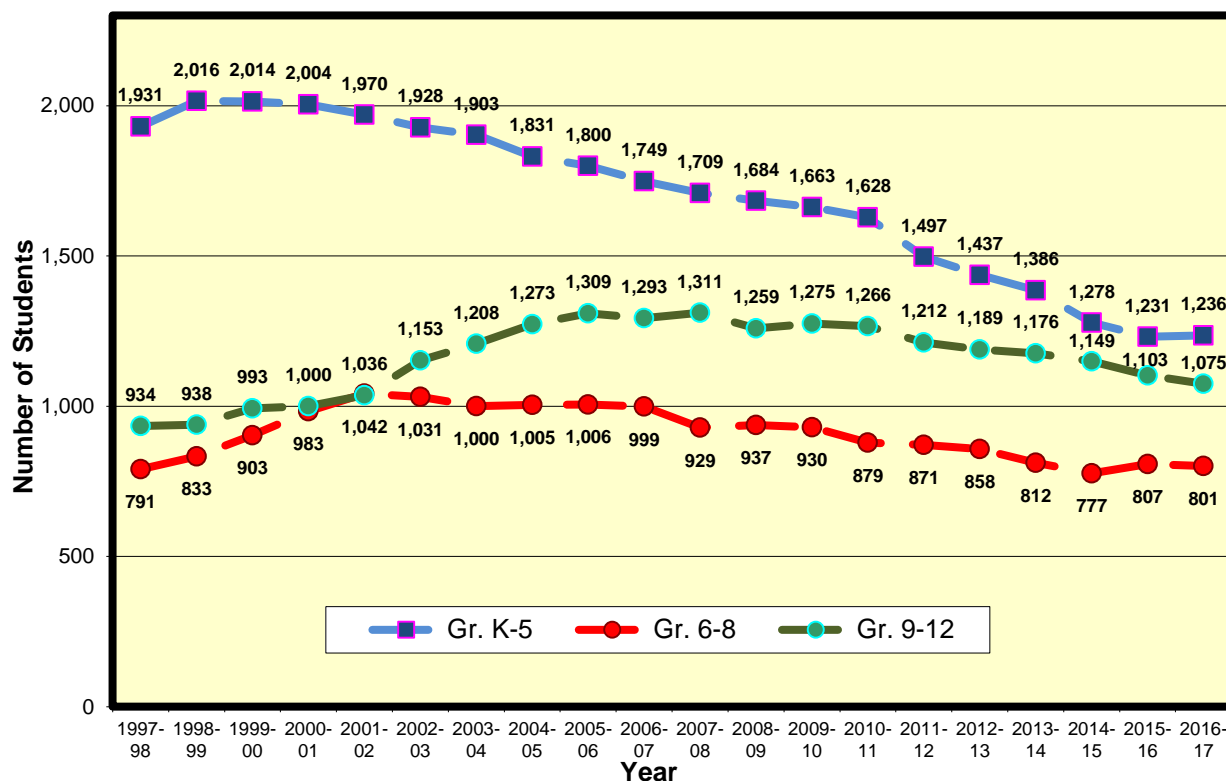
Factors related to inward migration include families with school children purchasing an existing home or a new housing unit. The reasons for families moving into a community vary. For instance, a family could move into the Katonah-Lewisboro area for economic reasons, as it provides convenient mass transportation to New York City for commuting to work. Another plausible reason for inward migration is the reputation of the school district, as the appeal of a school district draws families into a community, resulting in transfers of students into the district. On the flip side, outward migration is caused by families with children moving out of the community, perhaps due to difficulty in finding employment. Outward migration in the school district can also be caused by parents choosing to withdraw their children from public school to attend private or parochial schools, or to attend a more appealing public school district. The district does collect data on new registrants and withdrawals which will be discussed later in the report.

Since full-day kindergarten was instituted in the district for the first time in September 2014, there are only three historical birth-to-kindergarten survival ratios that reflect the program change, which are shaded green in Table 3. In addition, there are only two historical full-day kindergarten-to-first grade survival ratios, which are shaded blue in Table 3.

Historical enrollments are also shown in Table 2 and Figure 3 by level (K-5, 6-8, and 9-12), which represents the current configuration of the school district. Self-contained special education/ungraded students were incorporated into the totals by level, as well as for the district-wide total.

At the K-5 level, enrollment had declined for 17 consecutive years before increasing (+5) in 2016-17. Enrollment is 1,236 students in 2016-17, which represents a loss of 780 students from the peak enrollment in 1998-99.

Figure 3
Historical Enrollment by Level
1997-98 to 2016-17



For John Jay Middle School, which contains grades 6-8, enrollment increased through 2001-02, peaking at 1,042 students. Enrollment was essentially constant from 2003-04 to 2006-07 at approximately 1,000 students before declining to 777 in 2014-15. Grade 6-8 enrollment was 801 students in October 2016, which represents a loss of 241 students from the peak enrollment in 2001-02.

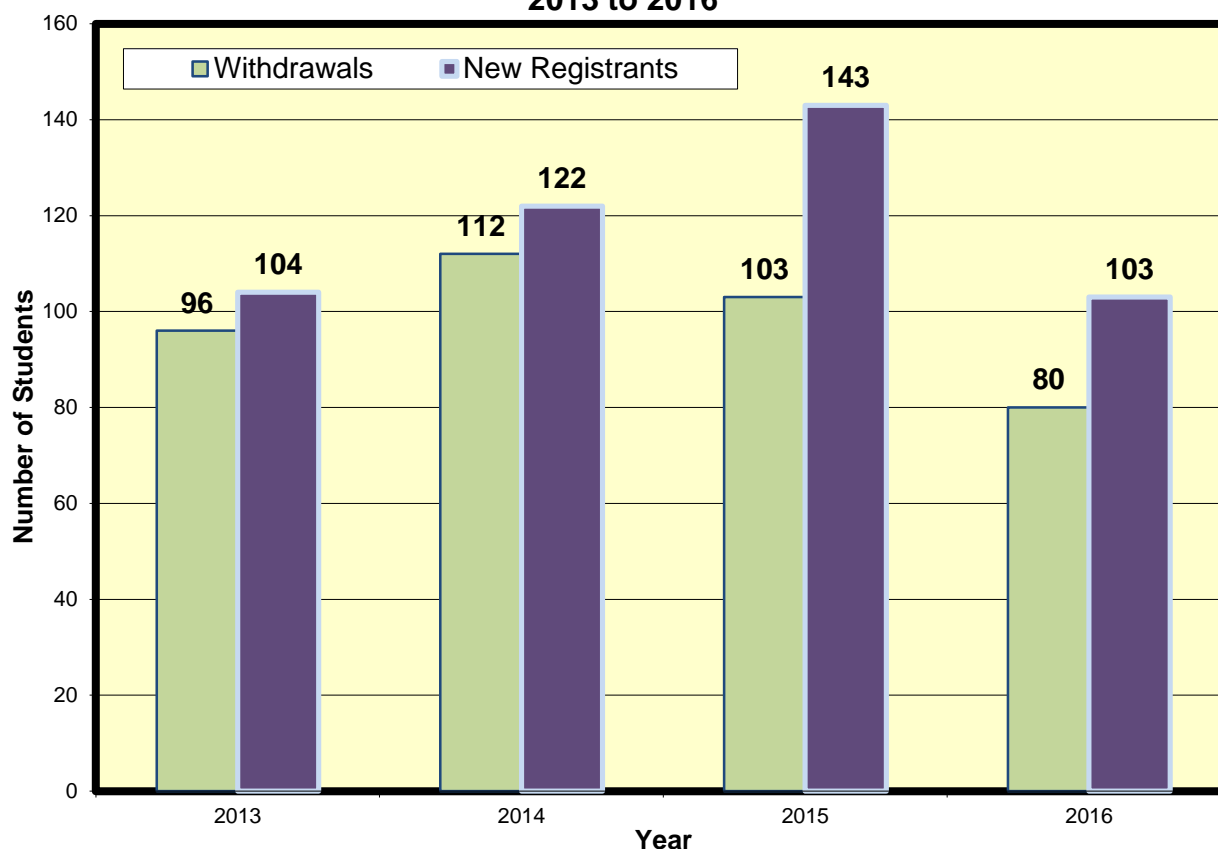
Finally, for John Jay High School, which contains grades 9-12, enrollment increased through 2007-08, peaking at 1,311 students. After a period of stable enrollment, the school has experienced declining enrollment in each of the last seven years. Enrollment in 2016-17 is 1,075 students, which represents a loss of 236 students from the peak enrollment in 2007-08.

Student Withdrawals and New Registrants

Student withdrawals were reviewed as of July 1, 2016, corresponding to the time between the 2015-16 and 2016-17 school years. Highlights of the data are as follows:

- 80 students² withdrew from the district, of which 41 students (51%) relocated out of the district.
- 34 students (43%) withdrew to attend private or parochial schools.
- 103 new children entered the district, of which 89 moved into the district (86%).
- 14 students (14%) returned from private schools to attend public school.

Figure 4
Student Withdrawals and New Registrants
2013 to 2016



In the last four years, the number of withdrawals has been exceeded by the number of new registrants. In the last two years, the school district had a net gain (new registrants – withdrawals) of 40 and 23 students respectively, which is sizably larger than the gains in 2013 (+8) and 2014 (+10).

² Five students withdrew for other reasons.

Non-Public School Enrollment

In Table 4 below, the number of Katonah-Lewisboro resident students attending non-public schools is shown for 2013-14 and 2014-15, the only years in which data were available from the BEDS reports. Counts are shown by school for elementary (K-6) and secondary (7-12). Pre-kindergarten students were excluded. The number of non-public students was fairly similar for both years, representing approximately 7% of the Katonah-Lewisboro resident population.

Table 4
Non-Public School Enrollment of Katonah-Lewisboro Resident Students

School	2013-14			2014-15		
	K-6	7-12	Total	K-6	7-12	Total
Cheder Chabad Of Monsey	1	1	2	1	1	2
Corpus Christi-Holy Rosary School	3	0	3	3	0	3
Fordham Preparatory School	0	5	5	0	7	7
French-American School	2	0	2	0	0	0
German School Ny	2	0	2	0	0	0
Gow School (The)	0	2	2	0	2	2
Hackley School	4	14	18	6	15	21
Harvey School (The)	6	43	49	5	46	51
Horace Mann Upper School	0	0	0	0	1	1
Hudson Valley Christian Academy	0	0	0	1	0	1
Iona Prep School	0	10	10	0	7	7
John Cardinal O'Connor School	1	0	1	0	0	0
John F. Kennedy Catholic High School	0	27	27	0	23	23
Longview School	1	1	2	0	1	1
Masters School (The)	1	9	10	1	8	9
Millbrook School	0	4	4	0	5	5
Montfort Academy	0	1	1	0	1	1
Our Montessori School	1	0	1	1	0	1
Poughkeepsie Day School	0	0	0	3	0	3
Professional Children's School	0	1	1	0	0	0
Regis High School	0	1	1	0	2	2
Rippowam Cisqua School (The)	35	13	48	33	13	46
Ross School	0	0	0	0	1	1
Rye Country Day School	1	6	7	1	5	6
School Of The Holy Child	0	3	3	0	3	3
Seed Day Care Center (The)	0	0	0	1	0	1
Solomon Schechter School-Westchester	0	0	0	1	0	1
Soundview Prep School	0	4	4	0	3	3
St. Elizabeth Ann Seton School	0	1	1	0	0	0
St. Patrick School	23	5	28	20	1	21
St. Patrick School	3	1	4	3	2	5
Storm King School	0	1	1	0	1	1
Trinity Pawling School	0	5	5	0	5	5
Ursuline School	0	1	1	0	1	1
Westfield Day School (The)	0	2	2	0	1	1
Windward School	8	1	9	8	1	9
Total	92	162	254	88	156	244

Source: New York State Department of Education BEDS Report

Nearly two-thirds of Katonah-Lewisboro's non-public school population attends one of five schools. In 2014-15, the five non-public schools that had the greatest number of Katonah-Lewisboro resident students were:

1. The Harvey School – 51 students (20.9% of Katonah-Lewisboro non-public population)
2. The Rippowam Cisqua School – 46 students (18.9%)
3. John F. Kennedy Catholic High School – 23 students (9.4%)
4. Hackley School – 21 students (8.6%)
5. St. Patrick School – 21 students (8.6%)

Kindergarten and First Grade Replacement

The district has experienced negative kindergarten replacement in the last three school years, and negative first grade replacement for the eight years prior. Negative kindergarten replacement occurs when the number of graduating 12th grade students is larger than the number of kindergarten students replacing them in the next year. Positive kindergarten replacement occurs when the number of graduating 12th grade students is less than the number of kindergarten students entering the district in the next year. Since the district had a half-day kindergarten program prior to instituting a full-day program in 2014-15, it was more appropriate to compare the 12th grade student population to the first grade student population, as the district gains a number of students from kindergarten to first grade when parents elect to send their child to a full-day kindergarten program elsewhere before enrolling them in the public school district for the first grade. In the last six years, the district has lost an average of 114 students per year due to kindergarten/first grade replacement. As shown in Figure 5, the loss of students due to kindergarten replacement was 116 students in 2016-17, as 283 12th graders graduated in 2015-16 and were replaced by 167 kindergarten students in 2016-17.

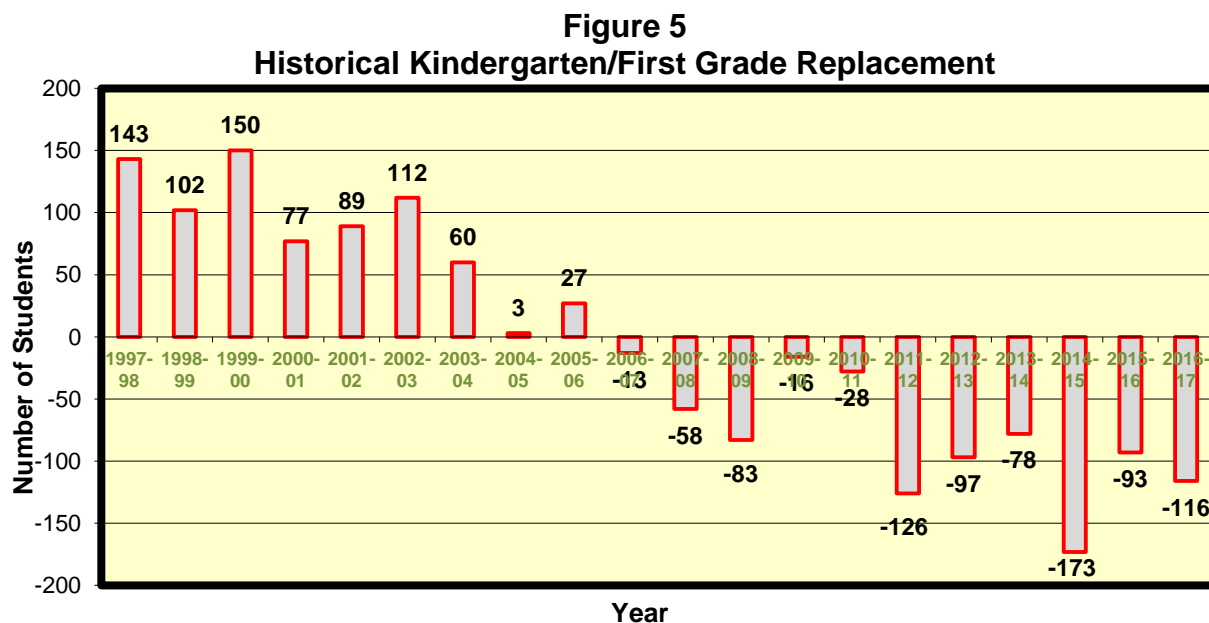
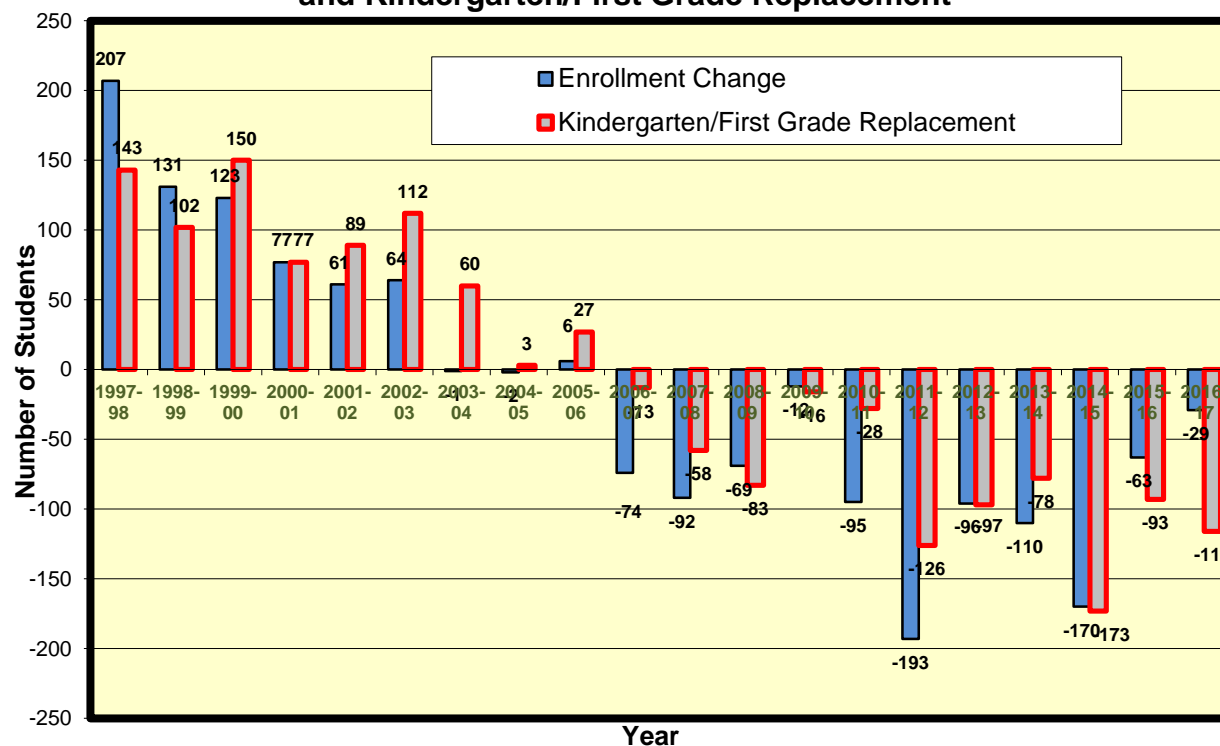


Figure 6 shows the annual change in enrollment compared to kindergarten/first grade replacement. As the figure demonstrates, there appears to be a strong relationship between the overall change in enrollment and kindergarten/first grade replacement. Although this data represents a small sample, the correlation coefficient between the two variables was 0.91, indicating a very strong relationship. Correlation coefficients measure the relationship or association between two variables; this does not imply that there is cause and effect between the two variables. Other variables, known as lurking variables, may have an effect on the true relationship between kindergarten/first grade replacement and total enrollment change. Negative correlation coefficients indicate that as one variable is increasing (decreasing), the other variable is decreasing (increasing). Positive correlation coefficients indicate that as one of the variables increases (decreases), the other variable increases (decreases) as well. The computed linear correlation coefficient is always between -1 and $+1$. Values near -1 or $+1$ indicate a strong linear relationship between the variables while values near 0 indicate a weak linear relationship. Based on the correlation of 0.91 , there appears to be a strong statistical relationship between kindergarten/first grade replacement and enrollment change in the school district in the last twenty years.

In 2016-17, the district's enrollment declined by 29 students, which is much less than the negative kindergarten replacement (-116). This would indicate that the losses due to negative kindergarten replacement are being offset by a net inward migration of students in the other grades (K to 1, 1 to 2, 2 to 3, etc.). This was confirmed earlier as eleven of 13 average survival ratios (three-year trend) were above 1.000 and the net migration (new registrants – withdrawals) was 23 students as of July 1. This value likely increased by the opening of school in September.

Figure 6
Comparison of K-12 Enrollment Change
and Kindergarten/First Grade Replacement



Birth Data

Birth data were needed to compute kindergarten enrollments, which were calculated as follows. Birth data, which are lagged five years behind their respective kindergarten classes, were used to calculate the survival ratio for each birth-to-kindergarten cohort. For instance, in 2011, there were 114 births in the Katonah-Lewisboro attendance area. Five years later (the 2016-17 school year), 167 children enrolled in kindergarten, which is equal to a survival ratio of 1.465 from birth to kindergarten. Birth counts and birth-to-kindergarten survival ratios are displayed in Table 5. Values greater than 1.000 indicate that some children are born outside of a school district's attendance boundaries and are attending kindergarten in the school district five years later, i.e. an inward migration of children. This type of inward migration is typical in school districts with excellent reputations, because the appeal of a good school district draws families into the community. Inward migration is also seen in communities where there are a large number of new housing starts, with families moving into the community having children of age to attend kindergarten. Birth-to-kindergarten survival ratios that are below 1.000 indicate that a number of children born within a community are not attending kindergarten in the school district five years later. This is common in communities where a high proportion of children attend private, parochial, or out-of-district special education facilities, or where there is a net migration of families moving out of the community. It is also common in school districts that have a half-day kindergarten program, where parents choose to send their child to a private full-day kindergarten for the first year.

Birth-to-kindergarten survival ratios have been consistently above 1.000 in Katonah-Lewisboro and have ranged from 1.145 to 1.465 in the last ten years. Since birth data by the district's geographical area were not available prior to 2002, birth-to-kindergarten survival ratios could not be computed prior to that year. While the effect of the district's change from a half-day to a full-day kindergarten program was not readily apparent in 2014, the last two birth-to-kindergarten survival ratios, 1.449 and 1.465, are much higher than previous years. The increase in the birth-to-kindergarten survival ratio may not only be related to the change to a full-day kindergarten program, but also may be due to an increase in the number of families moving into the school district's geographical catchment area with children under the age of five.

Birth data were geocoded by the New York State Department of Health from 2002 to 2014 by assigning geographic coordinates to a birth mother based on her street address, which allows for tabulation of births by the school district's attendance area. Birth data were not yet available for 2015 and 2016 and were estimated by using a four-year rolling average. The 2015 and 2016 birth cohorts will become the kindergarten classes of 2020 and 2021. The birth count used for 2015 and 2016 was 114 and 113 respectively.

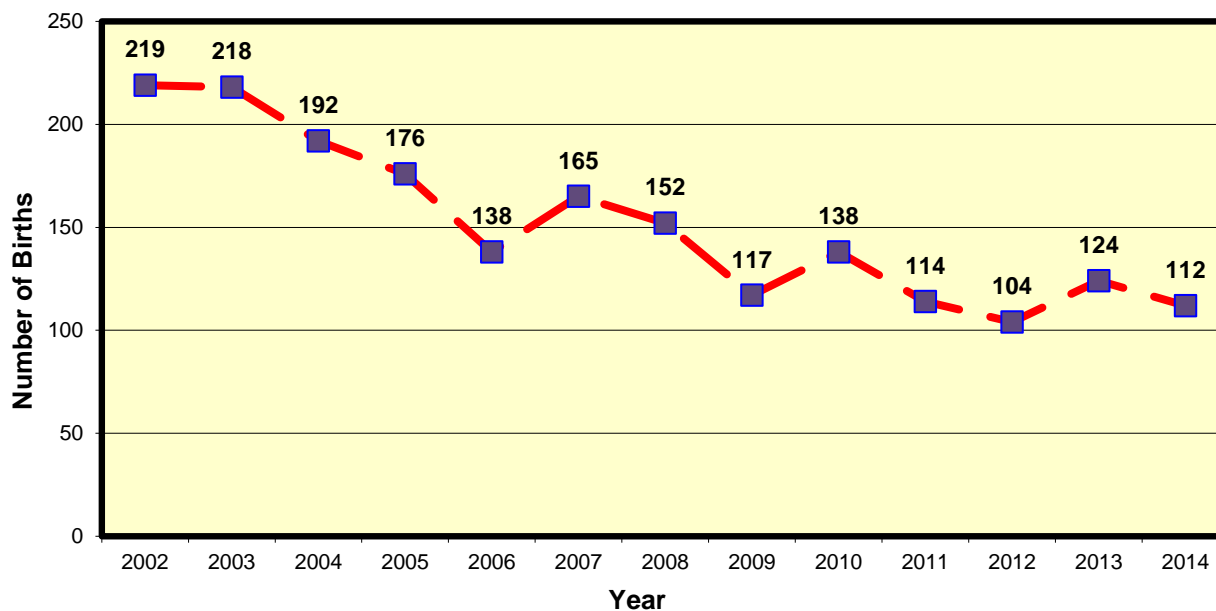
Figure 7 shows the number of births in the Katonah-Lewisboro attendance area since 2002, which depicts a declining birth rate. Births have declined from a high of 219 in 2002 to a low of 104 in 2012, a decline of 52.5%. Since 2012, the number of births has been slightly higher. It appears that the birth count has stabilized in the Katonah-Lewisboro attendance area. While births have also declined in Westchester County from 12,807 in 2002 to 10,641 in 2014, the percentage decline is much smaller at 16.9%.

Table 5
Birth Rates and Historical Birth-to-Kindergarten Survival Ratios
in the Katonah-Lewisboro School District

Birth Year ¹	Total Number of Births in School Attendance Area	Number of Kindergarten Students Five Years Later	Birth-to-Kindergarten Survival Ratio
2002	219	251	1.146
2003	218	260	1.193
2004	192	262	1.365
2005	176	215	1.222
2006	138	190	1.377
2007	165	189	1.145
2008	152	174	1.145
2009	117	149	1.274
2010	138	200	1.449
2011	114	167	1.465
2012	104	N/A	N/A
2013	124	N/A	N/A
2014	112	N/A	N/A

Notes: ¹Birth data were provided by the New York State Department of Health from 2002-2014. Shaded areas reflects implementation of a full-day kindergarten program

Figure 7
Historical Birth Data for Katonah-Lewisboro School District
2002 to 2014



Effects of Housing Growth

Planning and Zoning Departments were contacted in Bedford (Katonah), Lewisboro, Pound Ridge, and North Salem to provide a status update regarding new housing developments as reported in the November 2015 demographic study.

1. Katonah CDP

Mr. Jeffrey Osterman, Director of Planning for the Town of Bedford, provided information regarding current and future development in the hamlet of Katonah. As shown in Table 6, there is the potential for three residential developments. Since our last report in November 2015, there has been no change in the status of either the Bailey Hall or American Capital Enterprises developments. With the addition of one detached single-family home on Hillside Avenue, there is the potential for 32 detached single-family homes. To project the anticipated number of public school children, an assumption was made:

1. Detached single-family homes were assumed to have 4+ bedrooms and would have the following student yield multiplier: 0.878.

Using the student yield multiplier, it is estimated that 28 public school children in grades K-12 would come from the developments.

Table 6
Potential New Residential Subdivisions in Katonah

Development	Number of Units	Housing Type	Notes
Bailey Hall	21	Single-Family	Not yet under construction. In FEIS phase (Final Environmental Impact Statement). No change in status since 2014 report.
American Capital Enterprises	10	Single-Family	Not yet under construction. Preparing Draft Environmental Impact Statement (DEIS). To be located on Upper Hook Road. No change in status since 2014 report.
Hillside Avenue	1	Single-Family	Anticipated construction in summer 2017.
Total	32		

Source: Mr. Jeffrey Osterman, Director of Planning for the Town of Bedford

With respect to historical new construction, a total of 13 building permits were issued from 2011 to 2016 for new residential housing units in Bedford in the area served by Katonah-Lewisboro as shown in Table 7.

Table 7
Number of Building Permits by Year in the Town of Bedford

	Town of Bedford <small>(Katonah-Lewisboro sending area only)</small>
Year	Total
2011	2
2012	1
2013	4
2014	4
2015	0
2016 <small>(through October)</small>	2
Total	13

Source: Town of Bedford Building Department

2. Town of Lewisboro

Ms. Ciorsdan Conran, Lewisboro Planning Board Secretary, provided information regarding current and future development in the community. A list of potential developments, number of new housing units, and development status is shown in Table 8, which is an update to the table shown in the November 2015 demographic study. Not only are there no new developments from the last report, but there has been little change in the status of many of the developments. Several developments listed in the table were also reported in our first demographic study for the district in August 2012.

To project the anticipated number of public school children, several assumptions were made:

1. Detached single-family homes were assumed to have 4+ bedrooms and would have the following student yield multiplier: 0.878.
2. Affordable townhouse rental units in Wilder Balter would have the following student yield multiplier: 0.490³.
3. Market-rate, multi-family units in Oakridge Gardens would have the following student yield multiplier: 0.234⁴.

³ Based on a comparable development, Bridleside in North Salem, which had 32 students from 65 units attending the North Salem Central School District in 2015-16.

⁴ Based on 65 Katonah-Lewisboro children in grades K-12 living in 278 existing Oakridge units in 2013-14.

In total, it is estimated that 82 public school children in grades K-12 would come from the 148 new housing units if they are all constructed. However, since many of the developments have been in the housing pipeline for at least four years, it is uncertain whether they will ever get constructed.

Table 8
Potential New Residential Subdivisions in the Town of Lewisboro

Development	Number of Units	Housing Type	Status
Arias/Lexus	2	Single-Family	Plat filed, one unit occupied
Cedar Knolls	2	Single-Family	Plat filed, one unit occupied
Falcon Ridge	11	Single-Family	One building permit has been pulled
Hayes Stein	3	Single-Family	Pending, one unit occupied
Leitner/Hubsher	2	Single-Family	Plat filed, one unit occupied
Mumbach	3	Single-Family	Plat filed, two units occupied
Oakridge Gardens	46	Multi-Family 2-BR units	Certificates of Occupancy issued for 17 units.
Pinheiro	2	Single-Family	Plat filed, one unit occupied
Plechavicius	3	Single-Family	Plat filed, one unit occupied
Popoli	6	Single-Family	Construction plans signed, plat not filed, one unit occupied
Silvermine	13	Single-Family	Pending
Syms	2	Single-Family	Plat filed, one unit occupied
Todd Management Subdivision	4	Single-Family	Pending
Wilder Balter	49	Multi-Family Units	Pending- Affordable townhouse rental units with approximately 15 1-BR, 30 2-BR, and 5 3-BR
Total			53 Detached Single-Family 46 Multi-Family (Market-rate) 49 Multi-family (Affordable)

Source: Ms. Ciorsdan Conran, Lewisboro Planning Board Secretary

With respect to historical new construction in Lewisboro, the number of certificates of occupancy (“COs”) issued for new homes is shown in Table 9. A total of 29 COs were issued from 2011 to 2016.

Table 9
Number of Residential Certificates of Occupancy by Year
in the Town of Lewisboro

	Town of Lewisboro
Year	Total
2011	5
2012	2
2013	2
2014	2
2015	11
2016 (thru October)	7
Total	29

Source: Mr. Peter Barrett, Town of Lewisboro Building Inspector

3. Town of North Salem

Ms. Dawn Onufrik, North Salem Planning Board Secretary, provided information regarding current and future development in the section of the town that sends to Katonah-Lewisboro. Ms. Onufrik stated that there are no development applications before the planning board in that section of the town, which is unchanged from our last demographic study.

4. Town of Pound Ridge

Ms. Karen Taft, Pound Ridge Planning Board Administrator, provided information regarding current and future development in the section of the town that sends to Katonah-Lewisboro School. Ms. Taft stated that there are no potential developments in that section of the town, which is unchanged from our last demographic study.

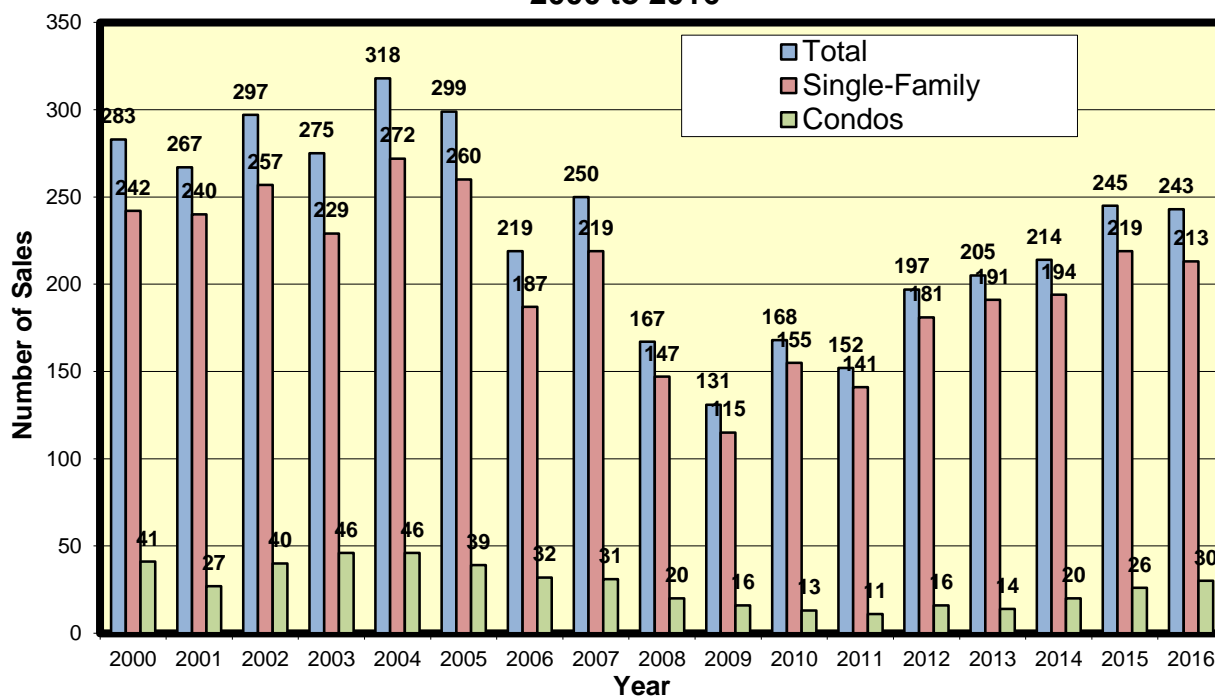
Home Sales

In Figure 8 following, the number of annual home sales is shown from 2000 to 2016 for the area served by Katonah-Lewisboro. Total home sales are broken down for detached single-family homes and for condos. The majority of home sales are for detached single-family homes. In the last five years, an average of 91% of the sales was for detached single-family homes.

Home sales peaked in 2004 with 318 sales before declining sharply in 2008 during the banking and financial crises. After reaching a low of 131 home sales in 2009, the number of sales has been steadily increasing. As of October 2016, there were 243 home sales with an additional 46 sales pending. If all homes under contract close by the end of the year, there would be 289 home sales in 2016, which would be the most since 2005.

It appears that the increase in home sales is having an effect on enrollment in the district. As discussed previously in the report, five of 13 survival ratios in 2016-17, which reflect net incoming and outgoing migration, were the highest values the district has experienced in the last twenty years. While not known for certain, it is likely that an increase in home sales has led to inward migration of parents with school age children and an increase in the survival ratios.

Figure 8
Home Sales in Katonah-Lewisboro Sending Area
2000 to 2016



Enrollment Projections

Enrollment projections were calculated using cohort-survival ratios based on the last three and four years of historical enrollment data. Using three historical years will serve to capture the most recent trends of in-migration and the associated increase in the survival ratios. The projections using four years of historical data will serve as a “low” projection if the survival ratios return closer to historical averages. Enrollments were computed for each grade from 2017-18 through 2021-22.

Since full-day kindergarten was instituted for the first time in September 2014, there are only three historical birth-to-kindergarten survival ratios that reflect the program change. The average birth-to-full-day kindergarten survival ratio from the last two years (1.457) was used in both projections, as it was assumed that this ratio may best capture the change to a full-day program, as well as the increase in home sales where young children are entering the district.

It had been previously postulated that after the district implemented the full-day kindergarten program, it would no longer experience an increase in the number of students from kindergarten to first grade, and that the kindergarten-to-first grade survival ratio would be approximately 1.000. However, the actual kindergarten-to-first grade ratio in the last two years has been 1.168 and 1.120 respectively, which is likely due to an influx of children enrolling in the district as new residents. Therefore, historical data from the last three and four years were used to compute survival ratios from kindergarten to first grade, and includes enrollment from both the half-day and full-day kindergarten programs as there has been little change to this ratio after implementation of the full-day kindergarten program.

Projected K-12 enrollments using cohort-survival ratios based on historical data from the last three years follows in Table 10 and Figure 9. Total enrollment is projected to slowly decline throughout the projection period and be 2,907 in 2021-22, which would be a loss of 205 students from the 2016-17 enrollment of 3,112 students.

Projected K-12 enrollments using cohort-survival ratios based on historical data from the last four years follows in Table 11 and Figure 9. Using this method, total enrollment is projected to decline at a slightly faster rate and be 2,810 in 2021-22, which would be a loss of 302 students from the 2016-17 enrollment.

Table 10
Projected Grade K-12 Enrollments Using Cohort-Survival Ratios
and 3 Years of Historical Data
2017-18 to 2021-22

Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Sp. Ed	K-12 Total
2017-18	152	191	227	191	220	238	223	240	297	259	247	255	301	8	3,049
2018-19	181	174	193	245	198	225	246	224	242	288	265	244	260	8	2,993
2019-20	163	207	176	209	253	202	233	247	226	235	295	262	249	8	2,965
2020-21	165	186	209	190	216	259	209	234	249	219	240	291	267	8	2,942
2021-22	165	189	188	226	197	221	268	210	236	242	224	237	297	7	2,907

Figure 9
Katonah-Lewisboro School District
Enrollment Projections
2017-18 to 2021-22

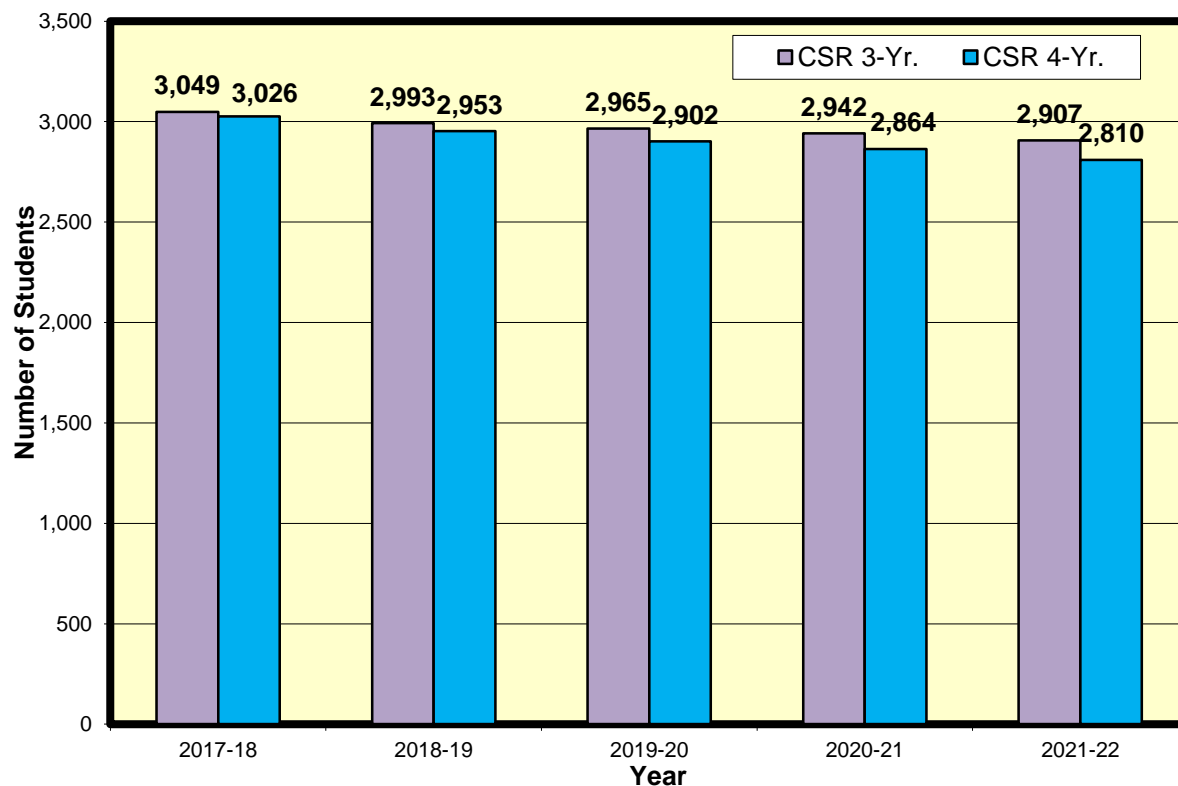
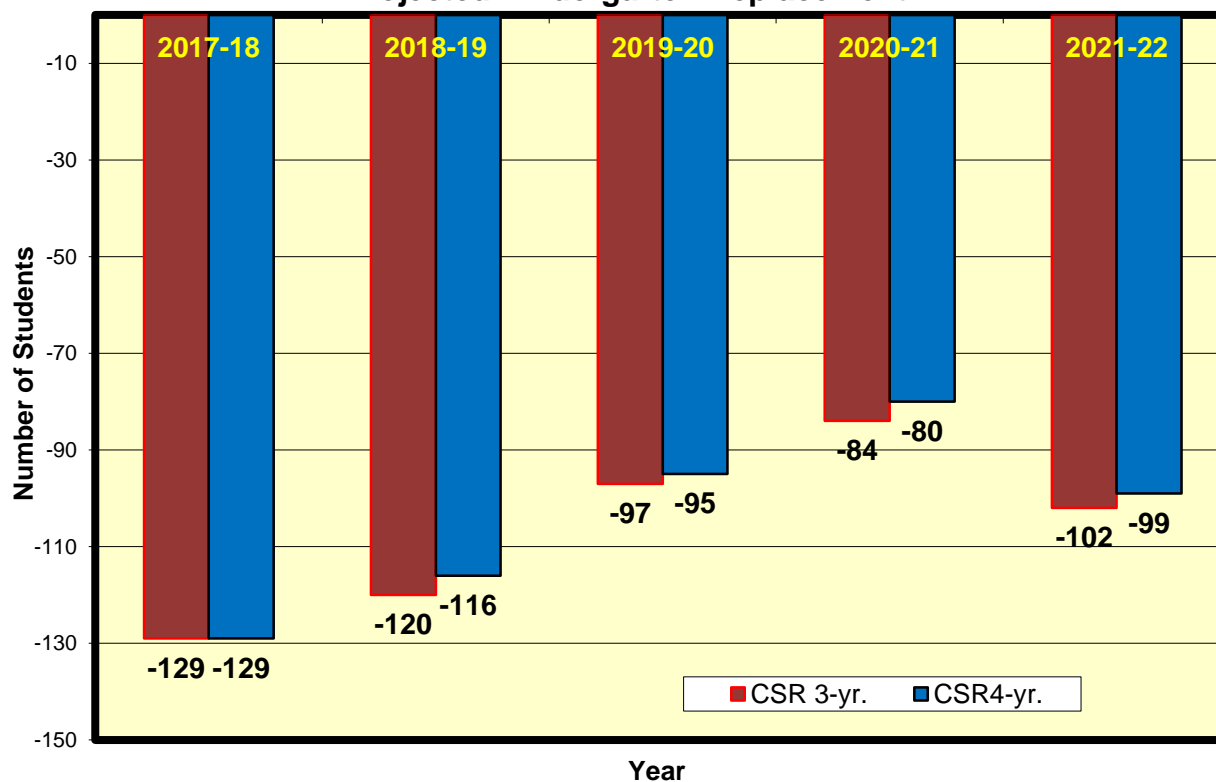


Table 11
Projected Grade K-12 Enrollments Using Cohort-Survival Ratios
and 4 Years of Historical Data
2017-18 to 2021-22

Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Sp. Ed	K-12 Total
2017-18	152	188	226	189	216	238	218	240	293	259	245	257	297	8	3,026
2018-19	181	171	190	242	192	221	241	219	238	284	264	244	258	8	2,953
2019-20	163	204	173	203	246	196	223	242	217	231	289	263	245	7	2,902
2020-21	165	184	206	185	206	252	198	224	240	210	235	288	264	7	2,864
2021-22	165	186	186	220	188	211	255	199	222	233	214	234	290	7	2,810

In each instance, the decline in enrollment appears to be partially due to negative kindergarten replacement. In the next five years, the loss of students due to this phenomenon is projected to range from 80 to 129 students per year as shown in Figure 10. However, the magnitude of negative kindergarten replacement is projected to be progressively smaller before increasing in the last year of the projection period.

Figure 10
Katonah-Lewisboro School District
Projected Kindergarten Replacement



Projected Enrollment by Grade Configuration

In Table 12 following, historical and projected enrollments are broken down by the current grade configurations (K-5, 6-8, and 9-12) in Katonah-Lewisboro for each of the enrollment projection calculations. Ungraded special education students were reassigned into each of the school configurations.

Table 12
Projected Enrollments for Grades K-5, 6-8,
and 9-12 for Each Projection Method

HISTORICAL	K-5		6-8		9-12	
2016-17	1,236		801		1,075	
PROJECTED	K-5 CSR 3-YR	K-5 CSR 4-YR	6-8 CSR 3-YR	6-8 CSR 4-YR	9-12 CSR 3-YR	9-12 CSR 4-YR
2017-18	1,227	1,217	760	751	1,062	1,058
2018-19	1,224	1,205	712	698	1,057	1,050
2019-20	1,218	1,192	706	682	1,041	1,028
2020-21	1,233	1,205	692	662	1,017	997
2021-22	1,193	1,163	714	676	1,000	971
5-year Change	-43	-73	-87	-125	-75	-104

At the elementary level containing grades K-5, enrollment is projected to slowly decline, in general. The CSR method based on three years of historical data is projecting enrollment to be 1,193 in 2021-22, which would represent a loss of 43 students from the 2016-17 enrollment of 1,236. Using CSR and four years of historical data, enrollment is projected to decline at a faster rate and be 1,163 in 2021-22, which would be a loss of 73 students from the 2016-17 enrollment.

For John Jay Middle School (grades 6-8), enrollment is projected to decline through 2020-21 before reversing trend. The CSR method based on three years of historical data is projecting enrollment to be 714 in 2021-22, which would represent a loss of 87 students from the 2016-17 enrollment of 801. Using CSR and four years of historical data, enrollment is projected to decline at a faster rate and be 676 in 2021-22, which would be a loss of 125 students from the 2016-17 enrollment.

For John Jay High School (grades 9-12), enrollment is projected to decline throughout the projection period. The CSR method based on three years of historical data is projecting enrollment to be 1,000 in 2021-22, which would represent a loss of 75 students from the 2016-17 enrollment of 1,075. Using CSR and four years of historical data, enrollment is projected to decline at a faster rate and be 971 in 2021-22, which would be a loss of 104 students from the 2016-17 enrollment.

Elementary School Projections

In Tables 13-15 following, historical and projected enrollments are shown for each of the three elementary schools in the district. Only the last three years of historical enrollments are shown, as the district closed Lewisboro Elementary School after the 2013-14 year. As a result, the elementary attendance boundaries were changed, which would prevent a meaningful comparison of the historical enrollments beyond three years. Two sets of elementary school projections were completed using data from the last three and four historical years. For enrollments prior to 2013-14, the number of students was tabulated by grade for each of the three elementary schools, simulating the enrollments if the current boundaries had been in effect. Like the district-wide analysis, grades one through five were then computed using cohort survival ratios.

Kindergarten enrollments were not computed using birth-to-kindergarten survival ratios as performed earlier in the district-wide projections. Instead, historical proportions of the number of kindergarten students in each elementary school from the last two years were used and multiplied by the projected kindergarten enrollments shown previously in Tables 10 and 11.

Enrollments for the self-contained special education classes were computed by calculating the historical proportion of self-contained special education students with respect to the regular education subtotals at each school and multiplying that value by the future regular education subtotals. The proportions will be shown in the forthcoming tables. Only Increase Miller Elementary School has had self-contained special education students in the last three years.

Due to the different methodology in projecting the elementary totals shown previously in Table 12, which was based on computing enrollments districtwide, the aggregated projected grade counts by school in the forthcoming tables do not exactly equal the K-5 counts shown in Table 12, but they are within a reasonable tolerance.

1. Increase Miller Elementary School

In Table 13, historical enrollments for Increase Miller Elementary School are shown, along with projected enrollments from 2017-18 to 2021-22 using the CSR method with three and four years of historical data. In the projections using CSR and three years of historical data, enrollment is projected to be fairly stable, ranging from 450 to 471 students per year. In the projections using CSR and four years of historical data, enrollment is projected to steadily decline and be 428 in 2021-22, which would be a loss of 33 students from the 2016-17 enrollment of 461.

Table 13
Historical and Projected Enrollments of Increase Miller Elementary School

Historical ¹								
Year	K	1	2	3	4	5	SE	K-5 Total
2014-15	51	80	81	66	85	106	10	479
2015-16	68	58	77	82	67	83	10	445
2016-17	61	83	65	89	87	70	6	461
CSR 3-Yr. Ratios	0.3526 ²	1.1789	1.0416	1.0841	1.0381	1.0106	0.0192 ³	
CSR 4-Yr. Ratios	0.3526 ²	1.1563	1.0362	1.0370	1.0293	0.9950	0.0192 ³	
Projected (CSR 3-Yr.)								
2017-18	54	72	86	70	92	88	9	471
2018-19	64	64	75	93	73	93	9	471
2019-20	57	75	67	81	97	74	9	460
2020-21	58	67	78	73	84	98	9	467
2021-22	58	68	70	85	76	85	8	450
Projected (CSR 4-Yr.)								
2017-18	54	71	86	67	92	87	9	466
2018-19	64	62	74	89	69	92	9	459
2019-20	57	74	64	77	92	69	8	441
2020-21	58	66	77	66	79	92	8	446
2021-22	58	67	68	80	68	79	8	428

Notes: ¹Data provided by the Katonah-Lewisboro Union Free School District

²Two-year average proportion of kindergarten students with respect to district totals

³Average proportion of self-contained special education students with respect to K-5 subtotals based on last three years of historical data.

2. Katonah Elementary School

In Table 14, historical enrollments for Katonah Elementary School are shown, along with projected enrollments from 2017-18 to 2021-22 using the CSR method with three and four years of historical data. In the projection using three historical years, enrollment is projected to be fairly stable before declining in 2021-22. Enrollment is projected to be 405 in 2021-22, which would be a loss of 27 students from the 2016-17 enrollment of 432. In the projection using four years of historical data, enrollment is also projected to be fairly stable before declining in 2021-22. In 2021-22, enrollment is projected to be 399, which would be a loss of 33 students from the 2016-17 enrollment.

Table 14
Historical and Projected Enrollments of Katonah Elementary School

Historical ¹								
Year	K	1	2	3	4	5	SE	K-5 Total
2014-15	61	59	69	75	72	79	0	415
2015-16	73	71	60	76	78	72	0	430
2016-17	55	79	70	66	80	82	0	432
CSR 3-Yr. Ratios	0.3472 ²	1.1231	1.0014	1.1007	1.0463	1.0256	0.0000 ³	
CSR 4-Yr. Ratios	0.3472 ²	1.0999	1.0109	1.1015	1.0309	1.0349	0.0000 ³	
Projected (CSR 3-Yr.)								
2017-18	53	62	79	77	69	82	0	422
2018-19	63	60	62	87	81	71	0	424
2019-20	57	71	60	68	91	83	0	430
2020-21	57	64	71	66	71	93	0	422
2021-22	57	64	64	78	69	73	0	405
Projected (CSR 4-Yr.)								
2017-18	53	60	80	77	68	83	0	421
2018-19	63	58	61	88	79	70	0	419
2019-20	57	69	59	67	91	82	0	425
2020-21	57	63	70	65	69	94	0	418
2021-22	57	63	64	77	67	71	0	399

Notes: ¹Data provided by the Katonah-Lewisboro Union Free School District

²Two-year average proportion of kindergarten students with respect to district totals

³Average proportion of self-contained special education students with respect to K-5 subtotals based on last three years of historical data.

3. Meadow Pond Elementary School

In Table 15, historical enrollments for Meadow Pond Elementary School are shown, along with projected enrollments from 2017-18 to 2021-22 using the CSR method with three and four years of historical data. In the projections using CSR and three years of historical data, enrollment is projected to be fairly stable, ranging from 335 to 352 students per year. In the projection using four years of historical data, enrollment is also projected to be fairly stable, ranging from 324 to 335 students per year.

Table 15
Historical and Projected Enrollments of Meadow Pond Elementary School

Historical ¹								
Year	K	1	2	3	4	5	SE	K-5 Total
2014-15	37	51	61	63	71	101	0	384
2015-16	59	45	54	63	62	73	0	356
2016-17	51	62	42	58	66	64	0	343
CSR 3-Yr. Ratios	0.3002 ²	1.1335	0.9961	1.0534	1.0159	1.0302	0.0000 ³	
CSR 4-Yr. Ratios	0.3002 ²	1.0890	0.9818	1.0644	0.9731	1.0303	0.0000 ³	
Projected (CSR 3-Yr.)								
2017-18	46	58	62	44	59	68	0	337
2018-19	54	52	58	65	45	61	0	335
2019-20	49	61	52	61	66	46	0	335
2020-21	50	56	61	55	62	68	0	352
2021-22	50	57	56	64	56	64	0	347
Projected (CSR 4-Yr.)								
2017-18	46	56	61	45	56	68	0	332
2018-19	54	50	55	65	44	58	0	326
2019-20	49	59	49	59	63	45	0	324
2020-21	50	53	58	52	57	65	0	335
2021-22	50	54	52	62	51	59	0	328

Notes: ¹Data provided by the Katonah-Lewisboro Union Free School District

²Two-year average proportion of kindergarten students with respect to district totals

³Average proportion of self-contained special education students with respect to K-5 subtotals based on last three years of historical data.