



# **Demographic Study Update**

for the

**Katonah-Lewisboro  
Union Free School District**

**November 2017**

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## Table of Contents

	Page
Executive Summary .....	3
Introduction .....	7
Enrollment Projections from November 2016 Report .....	7
District Overview .....	8
Explanation of the Cohort-Survival Ratio Method .....	10
Historical Enrollment Trends .....	11
Student Withdrawals and New Registrants .....	16
Non-Public School Enrollments .....	17
Kindergarten and First Grade Replacement .....	19
Birth Data .....	21
New Housing Growth .....	23
1. Katonah CDP .....	23
2. Town of Lewisboro .....	24
3. Town of North Salem .....	26
4. Town of Pound Ridge .....	26
Homes Sales .....	27
Enrollment Projections .....	28
Projected Enrollments by Grade Configuration.....	31
Elementary School Projections .....	32
1. Increase Miller Elementary School .....	33
2. Katonah Elementary School .....	34
3. Meadow Pond Elementary School .....	35

## **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 2018-19 to 2022-23, a five-year projection period. The previous study was completed for the district in November 2016. Information was collected related to community birth rates, historical enrollment data, home sales, and new housing starts.

### *Historical Enrollment Trends*

In 2017-18, enrollment in Katonah-Lewisboro is 3,039 students. After peaking in 2005-06 with 4,115 students, enrollment has declined in each of the last twelve years, which is a loss of 1,076 students (-26.1%) over this time period.

At the elementary level (grades K-5), enrollment had declined for 17 consecutive years (1999-2000 to 2015-16) before stabilizing. Enrollment is 1,229 students in 2017-18. In the last three years, elementary enrollment has been fairly stable, ranging from 1,229-1,236 students per year.

For John Jay Middle School, which contains grades 6-8, enrollment increased through 2001-02, peaking at 1,042 students. In 2017-18, enrollment is 751, which represents a loss of 291 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 eight years. Enrollment is 1,059 in 2017-18, which represents a loss of 252 students from the peak enrollment in 2007-08.

With respect to student survival ratios from one grade to the next, 12 of 13 survival ratios (three-year average) were above 1.000, which indicates a general net inward migration of students. This is a reversal in trend from just three years ago, where 8 of 13 ratios (six-year average) were below 1.000, indicating a general net outward migration.

### *Student Withdrawals and New Registrants*

Student withdrawals and new registrations that occurred over the summer and prior to the new school year were reviewed from 2013-2017. For the 5<sup>th</sup> consecutive year, new registrants exceeded withdrawals. In the last three years, the net gain of students has ranged from 23-53 students.

### *Non-Public School Enrollments*

In 2017-18, approximately 7% of the Katonah-Lewisboro resident student 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 Cissqua School

receive the greatest number of Katonah-Lewisboro resident students, accounting for nearly 44% of the Katonah-Lewisboro resident student population attending non-public schools.

### *Kindergarten and First Grade Replacements*

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 12<sup>th</sup> graders and the number of entering kindergarten students. The district has experienced negative kindergarten replacement in the last four years, and negative first grade replacement for the eight years prior. Negative kindergarten replacement occurs when the number of graduating 12<sup>th</sup> 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 12<sup>th</sup> 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. Since the full-day program was instituted, the district has lost an average of 122 students per year due to kindergarten replacement.

### *Birth Rates*

The number of births in the Katonah-Lewisboro attendance area, which is used to project kindergarten enrollments, declined from a high of 219 in 2002 to a low of 104 in 2012. However, in the last three years, births have stabilized, ranging from 112-124 births per year.

### *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 has been little change in the status of many of the pending developments since the November 2016 demographic study. In total, 110 public school children are projected from kindergarten to 12<sup>th</sup> 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 constructed.

### *Home Sales*

Home sales in the Katonah-Lewisboro attendance area were reviewed from 2000-2017. Home sales peaked at 318 in 2004 before declining through 2009 due to the banking and financial crises. After reaching a low of 131 home sales in 2009, the number of sales has been steadily increasing, as there were nearly 300 home sales in 2016. As of October 2017, there were 206 home sales with an additional 36 sales pending. If all homes under contract close by the end of the year, there would be 232 home sales in 2017. While the value would be lower than 2016, it would be comparable to the value in 2015.

It appears that the increase in home sales is having an effect on enrollment in the district. As discussed previously, 12 of 13 survival ratios in 2017-18 are above 1.000, indicating net inward migration. While not known for certain, it is likely that the increase in home sales has resulted in an 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, 2018-19 through 2022-23. To provide a range for future enrollments, two sets of projections were computed based on three and four years of historical enrollments. Using three historical years will serve to capture the most recent trends of in-migration and the associated increase in the survival ratios, particularly in the lower elementary grades. 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 data, is projected to be 2,866 in 2022-23, which would be a loss of 173 students from the 2017-18 enrollment of 3,039 students. Using four years of historical data, total enrollment is projected to decline at a slightly faster rate and be 2,806 in 2022-23, which would be a loss of 233 students from the 2017-18 enrollment.

Enrollment projections were also computed at the individual school level. The following table compares the projected enrollments by school in 2022-23 to the actual enrollments in 2017-18. At the elementary level, small gains are projected in each of the elementary schools.

### **Summary of Projected Enrollments by School**

<b>School</b>	<b>Actual Enrollment 2017-18</b>	<b>Projected Enrollment 2022-23<sup>1</sup></b>	<b>Difference</b>
<b>Increase Miller Elementary School (K-5)</b>	462	465	<b>+3</b>
<b>Katonah Elementary School (K-5)</b>	419	424	<b>+5</b>
<b>Meadow Pond Elementary School (K-5)</b>	348	365	<b>+17</b>
<b>John Jay Middle School (6-8)</b>	751	683	<b>-68</b>
<b>John Jay High School (9-12)</b>	1,059	929	<b>-130</b>

**Note:** <sup>1</sup>Using cohort survival ratios and three years of historical data

For John Jay Middle School (grades 6-8), enrollment is projected to slowly decline through 2020-21 before reversing trend. Enrollment is projected to be 683 in 2022-23, which would represent a loss of 68 students from the 2017-18 enrollment of 751.

For John Jay High School (grades 9-12), enrollment is projected to decline throughout the projection period. In 2022-23, enrollment is projected to be 929, which would represent a loss of 130 students from the 2017-18 enrollment of 1,059.

### *Final Thoughts*

In 2017-18, Katonah-Lewisboro's total enrollment (K-12) declined for the 12<sup>th</sup> consecutive year. While a decline in total enrollment is projected to occur for the next five years, it appears that a change is on the horizon, as not all of the grade configurations (elementary, middle, high) are projected to decline. Only the middle and high schools are projected to have fewer students at the end of the five-year projection period.

In the last three years, enrollments in the elementary schools have stabilized. While the prior smaller elementary cohorts are advancing into the middle and high school resulting in a projected enrollment decline in those schools, the steady elementary cohorts will eventually advance into the middle and high schools, leading to enrollment stabilization in these configurations as well. 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 as evidenced by the number of new registrants, the inward migration is not sufficient enough to overcome the district's negative kindergarten replacement.

## 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 2016. The purpose of the current study is to project grade-by-grade enrollments from 2018-19 through 2022-23, 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 2016 Report

In our previous demographic study, enrollments were projected from 2017-18 through 2021-22, a five-year projection period. Table 1 below compares the actual and projected enrollments in 2017-18 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 2016 Report**

Year	Actual Enrollment 2017-18	Projected CSR 3-YR 2017-18			Projected CSR 4-YR 2017-18		
		Count	Diff.	% Error	Count	Diff.	% Error
<b>Total (K-12)</b>	3,039	3,049	+10	+0.3%	3,026	-13	-0.4%
<b>Elementary (K-5)</b>	1,229	1,227	-2	-0.2%	1,217	-12	-1.0%
<b>Middle (6-8)</b>	751	760	+9	+1.2%	751	0	0.0%
<b>High (9-12)</b>	1,059	1,062	+3	+0.3%	1,058	-1	-0.1%

As the table shows, total enrollment (K-12) was over-projected by ten students (+0.3%) in the first projection and under-projected by 13 students (-0.4%) in the second projection. 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 acceptable<sup>1</sup>. For a five-year projection, this would mean that a 5% error rate would be acceptable. Both projections were well within the error rate of 1% for the first projection year.

<sup>1</sup> 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)

At the elementary level, enrollments were under-projected by two and twelve students respectively, which corresponds to error rates of -0.2% and -1.0%. At the middle school level, enrollments were over-projected by nine students (+1.2%) in the first projection while the second projection accurately projected the enrollment. At the high school level, enrollments were over-projected by three students (+0.3%) in the first projection while the second projection under-projected enrollments by one student (-0.1%).

The accuracy of the projections is contingent on the most recent historical trends continuing into the future. If there is a departure from these trends caused by, for example, numerous new housing starts, changes in school district policy, changes to immigration laws, an economic downturn, a change in the housing resale market, etc., the enrollment projections presented are less likely to be accurate in future years, as this analysis does not forecast future trends. Therefore, the projections need to be revised annually to detect potential reversals in enrollment trends. Changes in enrollment are dependent on several factors such as birth counts, migration of students into or out of the school district, the presence of alternative schools such as charter schools, private schools, or parochial schools, and school district policy changes.

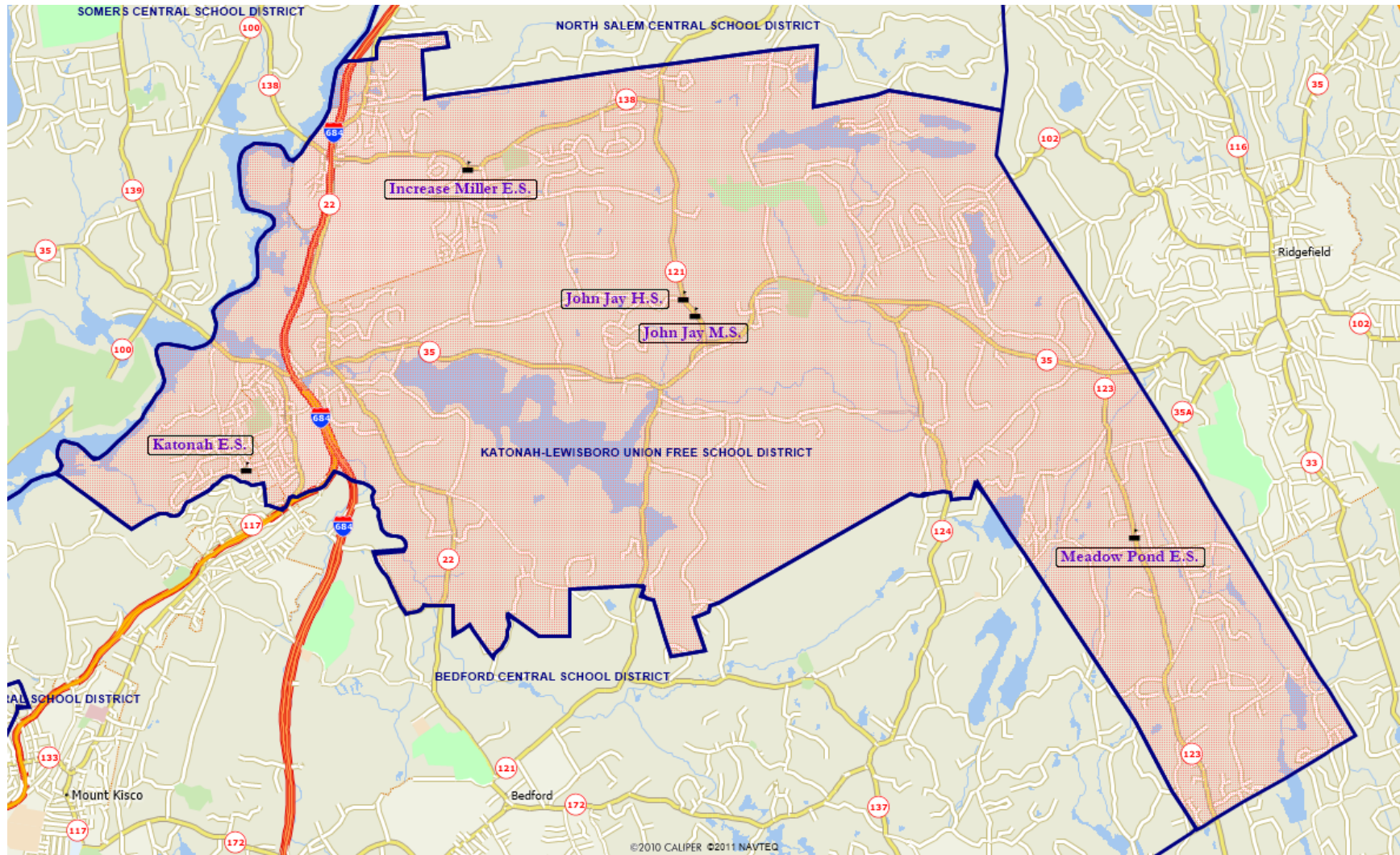
## **District Overview**

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 1998-99 through 2017-18, a twenty-year period, were obtained from the New York State Basic Education Data System (“BEDS”) reports and were used to project enrollments for five years into the future. Future enrollments were projected using the Cohort-Survival Ratio method.



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



## **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.

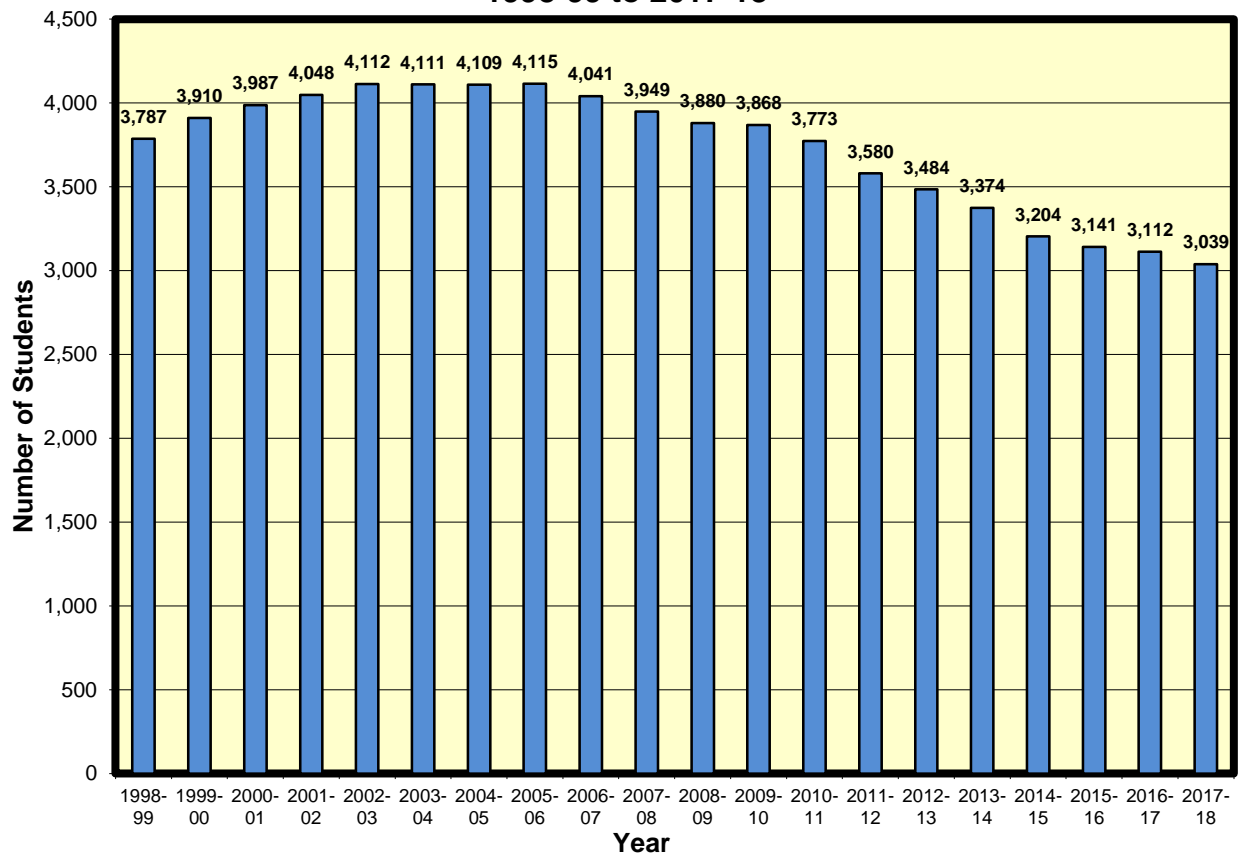
The CSR method assumes that what happened in the past will also happen in the future. In essence, this method provides a linear projection of the population. The CSR method is most applicable for districts that have relatively stable increasing or decreasing trends without any major unpredictable fluctuations 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 an example, in previous years the district’s enrollment did not decline as much as expected. To account for more recent trends, a smaller number of years (three) of historical enrollment were used to compute the survival ratios to capture the current 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.

## Historical Enrollment Trends

Historical enrollments (K-12) for Katonah-Lewisboro from 1998-99 through 2017-18, a twenty-year period, 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 twelve years. In 2017-18, enrollment is 3,039 students, which represents a loss of 1,076 students (-26.1%) since the 2005-06 peak enrollment.

**Figure 2**  
**Historical K-12 Enrollments in Katonah-Lewisboro**  
**1998-99 to 2017-18**



**Table 2**  
**Katonah-Lewisboro Historical Enrollments**  
**1998-99 to 2017-18**

<b>Year<sup>1</sup></b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>SE<sup>2</sup></b>	<b>K-5 Total</b>	<b>6-8 Total</b>	<b>9-12 Total</b>	<b>K-12 Total</b>
<b>1998-99</b>	329	320	330	361	355	319	288	277	268	230	251	254	203	2	<b>2,016</b>	<b>833</b>	<b>938</b>	<b>3,787</b>
<b>1999-00</b>	300	353	315	337	351	354	332	292	279	271	227	251	244	4	<b>2,014</b>	<b>903</b>	<b>993</b>	<b>3,910</b>
<b>2000-01</b>	302	321	354	321	346	357	350	343	290	288	265	218	229	3	<b>2,004</b>	<b>983</b>	<b>1,000</b>	<b>3,987</b>
<b>2001-02</b>	297	318	325	363	315	349	356	346	340	289	285	251	211	3	<b>1,970</b>	<b>1,042</b>	<b>1,036</b>	<b>4,048</b>
<b>2002-03</b>	298	323	313	325	355	311	330	355	346	328	285	283	257	3	<b>1,928</b>	<b>1,031</b>	<b>1,153</b>	<b>4,112</b>
<b>2003-04</b>	268	317	315	309	327	362	321	327	352	334	321	269	284	5	<b>1,903</b>	<b>1,000</b>	<b>1,208</b>	<b>4,111</b>
<b>2004-05</b>	269	287	315	318	307	328	367	319	319	362	328	316	267	7	<b>1,831</b>	<b>1,005</b>	<b>1,273</b>	<b>4,109</b>
<b>2005-06</b>	285	294	289	306	320	305	318	369	319	310	349	327	315	9	<b>1,800</b>	<b>1,006</b>	<b>1,309</b>	<b>4,115</b>
<b>2006-07</b>	235	302	283	299	310	320	308	320	371	323	304	348	318	0	<b>1,749</b>	<b>999</b>	<b>1,293</b>	<b>4,041</b>
<b>2007-08</b>	251	260	300	281	305	312	305	307	317	355	309	303	344	0	<b>1,709</b>	<b>929</b>	<b>1,311</b>	<b>3,949</b>
<b>2008-09</b>	260	261	264	309	281	309	314	311	312	308	350	306	295	0	<b>1,684</b>	<b>937</b>	<b>1,259</b>	<b>3,880</b>
<b>2009-10</b>	262	279	257	266	313	286	303	310	317	307	313	352	303	0	<b>1,663</b>	<b>930</b>	<b>1,275</b>	<b>3,868</b>
<b>2010-11</b>	215	275	282	267	271	318	278	296	305	314	299	302	351	0	<b>1,628</b>	<b>879</b>	<b>1,266</b>	<b>3,773</b>
<b>2011-12</b>	190	225	279	272	252	269	306	275	287	304	314	290	294	23	<b>1,497</b>	<b>871</b>	<b>1,212</b>	<b>3,580</b>
<b>2012-13</b>	189	197	230	280	278	248	265	308	285	273	299	319	288	25	<b>1,437</b>	<b>858</b>	<b>1,189</b>	<b>3,484</b>
<b>2013-14</b>	174	210	195	233	279	277	242	267	303	279	275	300	322	18	<b>1,386</b>	<b>812</b>	<b>1,176</b>	<b>3,374</b>
<b>2014-15</b>	149	190	211	204	228	286	267	244	257	293	281	278	293	23	<b>1,278</b>	<b>777</b>	<b>1,149</b>	<b>3,204</b>
<b>2015-16</b>	200	174	191	221	207	228	292	267	248	249	296	275	283	10	<b>1,231</b>	<b>807</b>	<b>1,103</b>	<b>3,141</b>
<b>2016-17</b>	167	224	177	213	233	216	239	295	267	241	258	295	281	6	<b>1,236</b>	<b>801</b>	<b>1,075</b>	<b>3,112</b>
<b>2017-18</b>	176	176	234	183	216	237	208	245	298	265	240	260	294	7	<b>1,229</b>	<b>751</b>	<b>1,059</b>	<b>3,039</b>

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

<sup>2</sup>Ungraded special education enrollment

**Table 3**  
**Katonah-Lewisboro Historical Survival Ratios**  
**1998-99 to 2017-18**

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
<b>1998-99 to 1999-00</b>	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
<b>1999-00 to 2000-01</b>	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
<b>2000-01 to 2001-02</b>	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
<b>2001-02 to 2002-03</b>	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
<b>2002-03 to 2003-04</b>	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
<b>2003-04 to 2004-05</b>	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
<b>2004-05 to 2005-06</b>	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
<b>2005-06 to 2006-07</b>	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
<b>2006-07 to 2007-08</b>	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
<b>2007-08 to 2008-09</b>	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
<b>2008-09 to 2009-10</b>	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
<b>2009-10 to 2010-11</b>	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
<b>2010-11 to 2011-12</b>	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
<b>2011-12 to 2012-13</b>	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
<b>2012-13 to 2013-14</b>	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
<b>2013-14 to 2014-15</b>	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
<b>2014-15 to 2015-16</b>	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
<b>2015-16 to 2016-17</b>	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
<b>2016-17 to 2017-18</b>	1.6923	1.0539	1.0446	1.0339	1.0141	1.0172	0.9630	1.0251	1.0102	0.9925	0.9959	1.0078	0.9966
<b>Avg. 20-Year Ratios</b>	N/A	1.0772	1.0013	1.0190	1.0028	1.0073	0.9910	1.0030	0.9975	0.9849	0.9905	0.9876	0.9878
<b>Maximum Ratio</b>	1.4649	1.1678	1.0446	1.1152	1.0543	1.0435	1.0482	1.0331	1.0364	1.0323	1.0361	1.0159	1.0239
<b>Minimum Ratio</b>	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
<b>Avg. 3-Year Ratios</b>	1.5355	1.0869	1.0309	1.0745	1.0342	1.0303	1.0056	1.0177	1.0051	0.9821	1.0160	1.0022	1.0092
<b>Avg. 4-Year Ratios</b>	1.4700	1.1139	1.0224	1.0655	1.0277	1.0202	1.0107	1.0118	1.0089	0.9777	1.0141	0.9943	1.0121

**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, 1998-99 to 2017-18. 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. Twelve of the 13 average survival ratios in the three-year trend were above 1.000, indicating a general net inward migration. One ratio in 2017-18, grade 1-2, had the highest value (1.0446) the district has experienced in the last twenty years for that particular grade progression.

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 or affordable housing. 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.

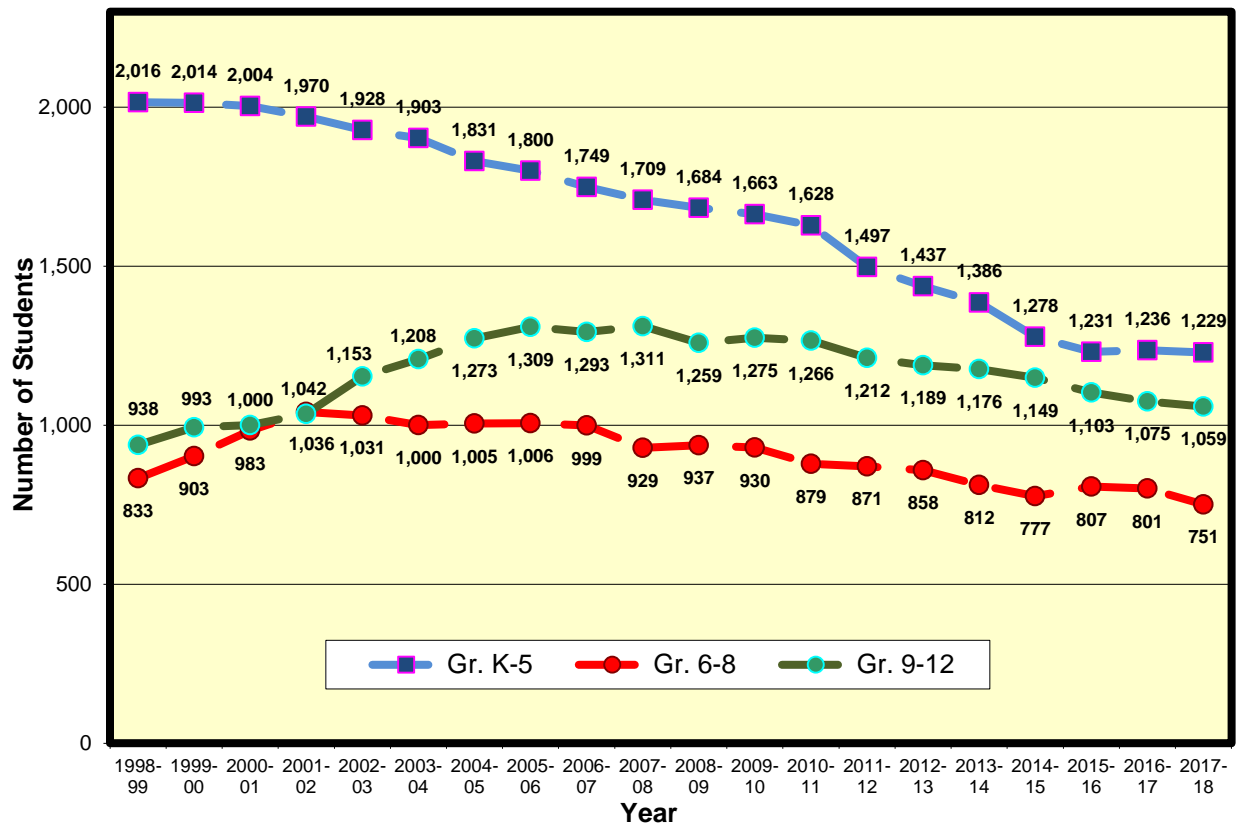
Since full-day kindergarten was instituted in the district for the first time in September 2014, there are only four historical birth-to-kindergarten survival ratios that reflect the program change, which are shaded green in Table 3. In addition, there are only three historical full-day kindergarten-to-first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

At the K-5 level, enrollment had declined for 17 consecutive years (1999-2000 to 2015-16) before stabilizing. Enrollment is 1,229 students in 2017-18, which represents a loss of 787 students from the peak enrollment in 1998-99. However, in the last three years, elementary enrollment has been fairly stable, ranging from 1,229-1,236 students per year.

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. After increasing in 2015-16, enrollment has declined in each of the last two years. In 2017-18, enrollment is 751, which represents a loss of 291 students from the peak enrollment in 2001-02.

**Figure 3**  
**Katonah-Lewisboro Historical Enrollments by Level**  
**1998-99 to 2017-18**



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 eight years. Enrollment is 1,059 in 2017-18, which represents a loss of 252 students from the peak enrollment in 2007-08.

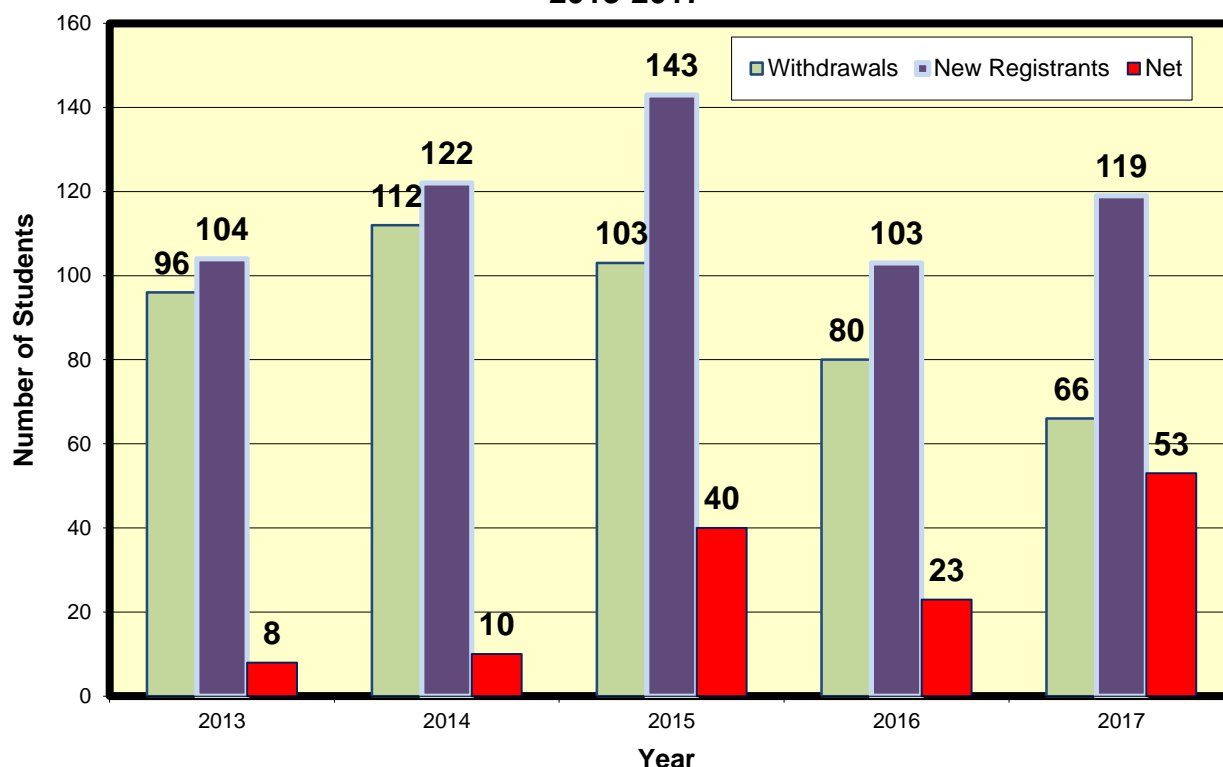


## Student Withdrawals and New Registrants

Student withdrawals and new registrations that occurred over the summer and prior to the new school year were reviewed from 2013-2017 and are displayed in Figure 4. The data for each year corresponds to the summer between school years. For example, data from 2017 represent withdrawals and new registrants that occurred after the 2016-17 school year and before the 2017-18 year. For the 5<sup>th</sup> consecutive year, new registrants exceeded withdrawals. In the last three years, the net gain of students has ranged from 23-53 students. Highlights of the data are as follows:

- 66 students withdrew from the district in 2017, of which 37 students (56%) relocated out of the district.
- 29 students (44%) withdrew to attend private or parochial schools or to be homeschooled.
- 119 new children entered the district, of which 81 (68%) moved into the district from another community.
- 28 students (24%) returned from private or parochial schools to attend public school.

**Figure 4**  
**Student Withdrawals and New Registrants**  
**2013-2017**





## **Non-Public School Enrollments**

In Table 4 following, the number of Katonah-Lewisboro resident students attending non-public schools is shown from 2013-14 through 2016-17, 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 has been fairly constant, ranging from 227-254 students per year. At the elementary level, the number of Katonah students attending non-public schools has ranged from 84-92. At the secondary level, the number of Katonah students attending non-public schools is 141 in 2016-17, which is slightly lower than the number for the three prior years (156-162). In 2016-17, the number of Katonah-Lewisboro resident students attending non-public schools represents approximately 7% of the Katonah-Lewisboro resident student population.

Two-thirds of Katonah-Lewisboro's non-public school population attends one of five schools, which have consistently educated the largest number of Katonah-Lewisboro students over the four-year period. In 2016-17, the five non-public schools that had the greatest number of Katonah-Lewisboro resident students were:

1. The Harvey School – 59 students (26.0% of Katonah-Lewisboro non-public population)
2. The Rippowam Cisqua School – 40 students (17.6%)
3. Hackley School – 20 students (8.8%)
4. St. Patrick School – 18 students (7.9%)
5. John F. Kennedy Catholic High School – 14 students (6.2%)

**Table 4**  
**Non-Public School Enrollments of Katonah-Lewisboro Resident Students**

School	2013-14			2014-15			2015-16			2016-17		
	K-6	7-12	Total	K-6	7-12	Total	K-6	7-12	Total	K-6	7-12	Total
Archbishop Stepinac High School	0	0	0	0	0	0	0	2	2	0	5	5
Chapel School (The)	0	0	0	0	0	0	0	0	0	0	1	1
Cheder Chabad Of Monsey	1	1	2	1	1	2	1	0	1	1	0	1
Convent Of The Sacred Heart	0	0	0	0	0	0	0	1	1	0	1	1
Corpus Christi-Holy Rosary School	3	0	3	3	0	3	3	0	3	2	0	2
Fordham Preparatory School	0	5	5	0	7	7	0	6	6	0	8	8
French-American School	2	0	2	0	0	0	2	0	2	0	0	0
German School Ny	2	0	2	0	0	0	0	0	0	0	0	0
Gow School (The)	0	2	2	0	2	2	0	0	0	0	0	0
Hackley School	4	14	18	6	15	21	10	15	25	10	10	20
Harvey School (The)	6	43	49	5	46	51	7	56	63	8	51	59
Horace Mann Upper School	0	0	0	0	1	1	0	0	0	0	0	0
Hudson Valley Christian Academy	0	0	0	1	0	1	0	0	0	0	0	0
Iona Prep School	0	10	10	0	7	7	0	6	6	0	6	6
John Cardinal O'Connor School	1	0	1	0	0	0	0	0	0	1	0	1
John F. Kennedy Catholic High School	0	27	27	0	23	23	0	18	18	0	14	14
Longview School	1	1	2	0	1	1	0	1	1	0	0	0
Maplebrook School (The)	0	0	0	0	0	0	0	0	0	0	1	1
Masters School (The)	1	9	10	1	8	9	1	6	7	2	8	10
Millbrook School	0	4	4	0	5	5	0	6	6	0	4	4
Montfort Academy	0	1	1	0	1	1	0	0	0	0	0	0
Oakwood Friends School	0	0	0	0	0	0	0	1	1	0	1	1
Our Montessori School	1	0	1	1	0	1	3	0	3	4	0	4
Poughkeepsie Day School	0	0	0	3	0	3	2	1	3	0	0	0
Professional Children's School	0	1	1	0	0	0	0	0	0	0	1	1
Regis High School	0	1	1	0	2	2	0	3	3	0	1	1
Rippowam Ciska School (The)	35	13	48	33	13	46	31	18	49	29	11	40
Robert Louis Stevenson School	0	0	0	0	0	0	0	0	0	0	1	1
Ross School	0	0	0	0	1	1	0	0	0	0	0	0
Rye Country Day School	1	6	7	1	5	6	1	4	5	1	3	4
School For Young Performers	0	0	0	0	0	0	0	1	1	0	0	0
School Of The Holy Child	0	3	3	0	3	3	0	2	2	0	2	2
Seed Day Care Center (The)	0	0	0	1	0	1	0	0	0	0	0	0
Solomon Schechter School- Westchester	0	0	0	1	0	1	0	0	0	0	0	0
Solomon Schechter Upper School	0	0	0	0	0	0	0	1	1	0	1	1
Soundview Prep School	0	4	4	0	3	3	0	3	3	0	0	0
St. Augustine School	0	0	0	0	0	0	0	0	0	1	0	1
St. Elizabeth Ann Seton School	0	1	1	0	0	0	0	0	0	0	0	0
St. Patrick School	23	5	28	20	1	21	14	1	15	16	2	18
St. Patrick School	3	1	4	3	2	5	2	0	2	2	1	3
Storm King School	0	1	1	0	1	1	0	0	0	0	0	0
Trinity Pawling School	0	5	5	0	5	5	0	5	5	0	5	5
Ursuline School	0	1	1	0	1	1	0	1	1	0	1	1
Westfield Day School (The)	0	2	2	0	1	1	0	0	0	4	0	4
Windward School	8	1	9	8	1	9	7	3	10	0	0	0
Windward School- MS Campus	0	0	0	0	0	0	0	0	0	5	2	7
<b>Total</b>	<b>92</b>	<b>162</b>	<b>254</b>	<b>88</b>	<b>156</b>	<b>244</b>	<b>84</b>	<b>161</b>	<b>245</b>	<b>86</b>	<b>141</b>	<b>227</b>

**Source:** New York State Department of Education BEDS Report

## Kindergarten and First Grade 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 12<sup>th</sup> graders and the number of entering kindergarten students. The district has experienced negative kindergarten replacement in the last four school years, and negative first grade replacement for the eight years prior. Negative kindergarten replacement occurs when the number of graduating 12<sup>th</sup> grade students is larger than the number of kindergarten students replacing them in the next year. Conversely, positive kindergarten replacement occurs when the number of graduating 12<sup>th</sup> grade students is less than the number of kindergarten students entering the district in the next year. The district has not experienced positive kindergarten replacement since 2005-06, the last year it experienced a gain in enrollment. 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 12<sup>th</sup> 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. Since the full-day program was instituted, the district has lost an average of 122 students per year due to kindergarten replacement. As shown in Figure 5, the loss of students due to kindergarten replacement was 105 students in 2017-18, as 281 12<sup>th</sup> graders graduated in 2016-17 and were replaced by 176 kindergarten students in 2017-18.

**Figure 5**  
**Historical Kindergarten/First Grade Replacement**

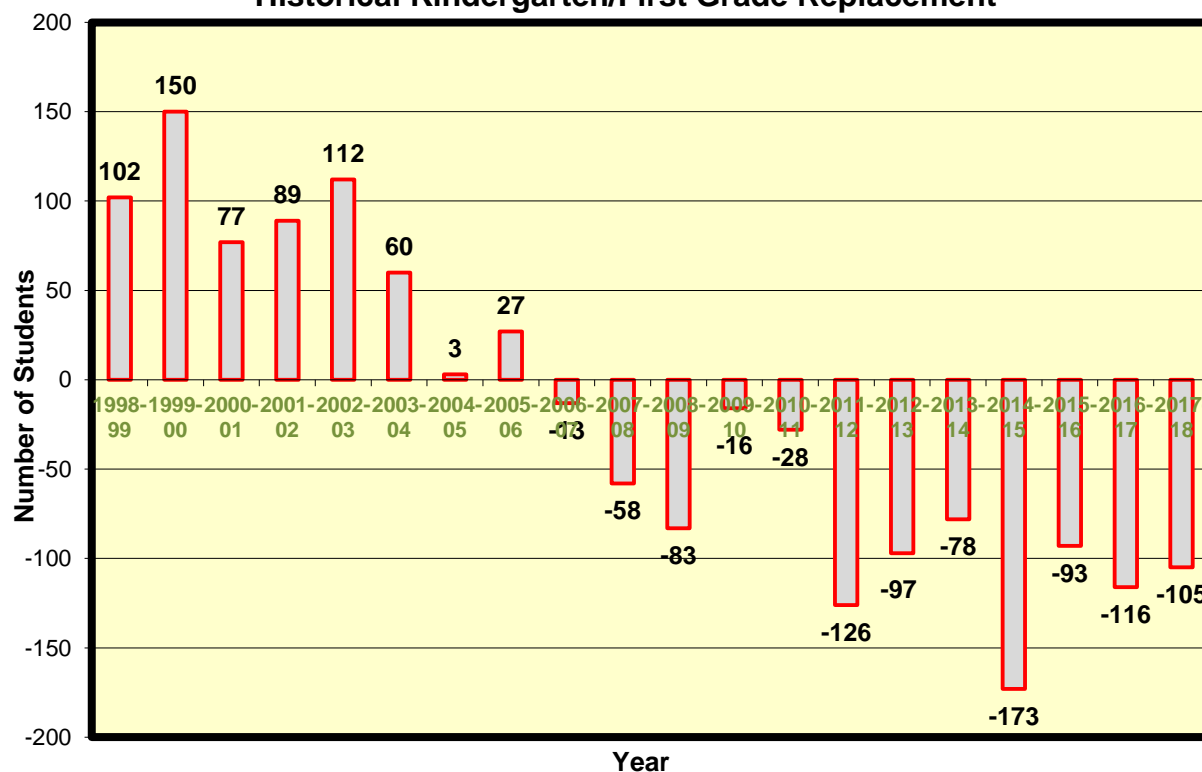
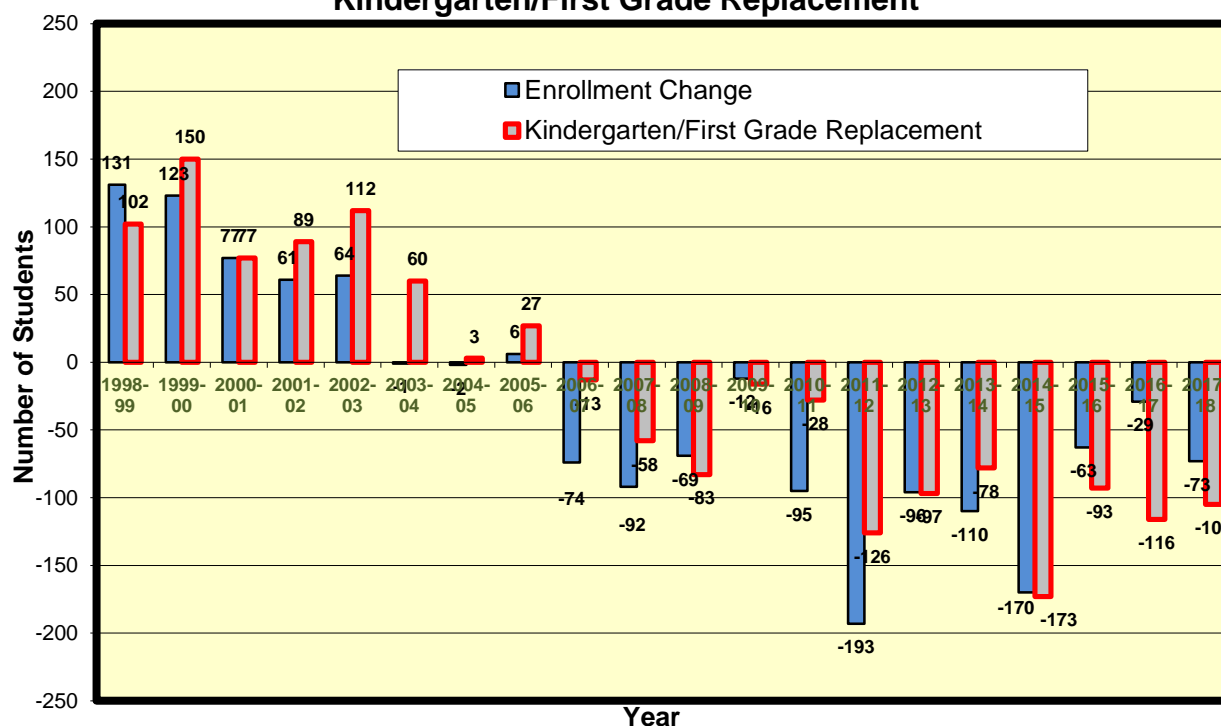


Figure 6 shows the annual change in enrollment compared to kindergarten/first grade replacement. As the figure demonstrates, there appears to be a strong relationship between the overall change in enrollment and kindergarten/first grade replacement. Although this data represents a small sample, the correlation coefficient between the two variables was 0.90, indicating a 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  $0.90$ , 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 73 students, which is less than the negative kindergarten replacement (-105). In the last four years, 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 twelve of 13 average survival ratios (three-year trend) were above 1.000 and the net gain of students (new registrants – withdrawals) after the end of the 2016-17 year and before the 2017-18 year was 53.

**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 2012, there were 104 births in the Katonah-Lewisboro attendance area. Five years later (the 2017-18 school year), 176 children enrolled in kindergarten, which is equal to a survival ratio of 1.692 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.

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

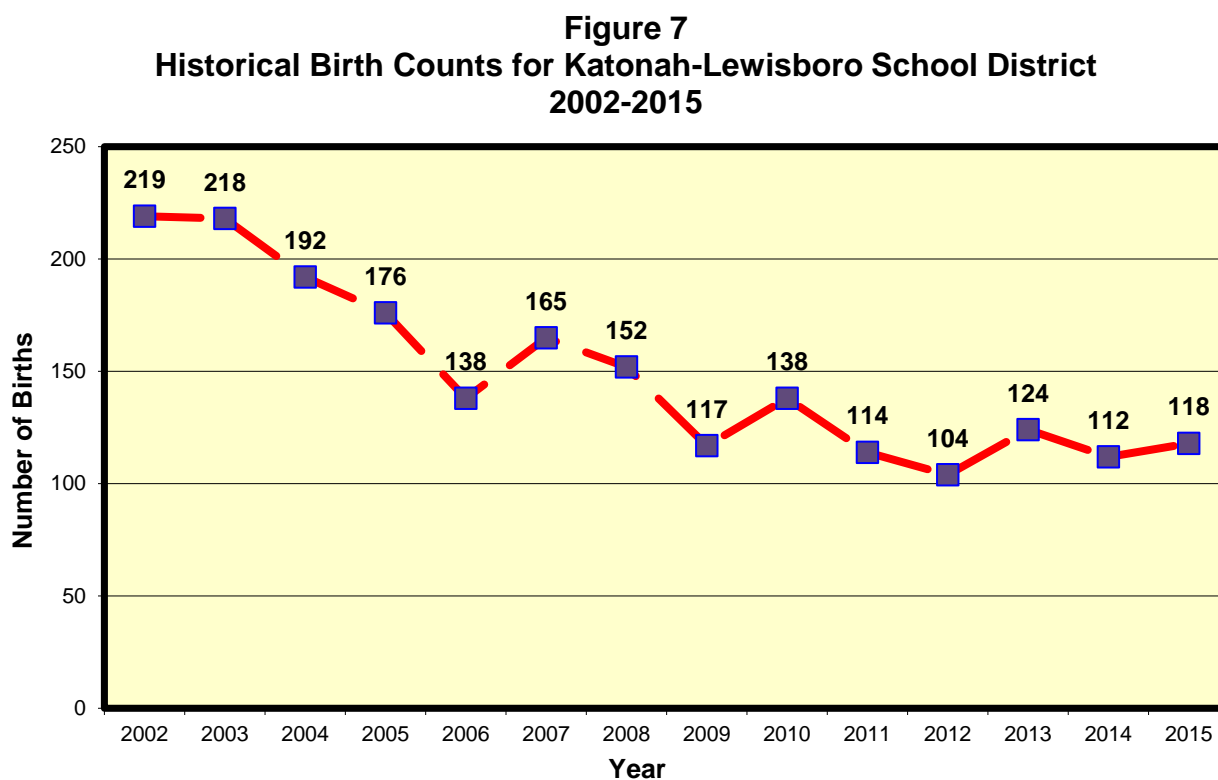
<b>Birth Year<sup>1</sup></b>	<b>Total Number of Births in School Attendance Area</b>	<b>Number of Kindergarten Students Five Years Later</b>	<b>Birth-to-Kindergarten Survival Ratio</b>
<b>2002</b>	219	251	1.146
<b>2003</b>	218	260	1.193
<b>2004</b>	192	262	1.365
<b>2005</b>	176	215	1.222
<b>2006</b>	138	190	1.377
<b>2007</b>	165	189	1.145
<b>2008</b>	152	174	1.145
<b>2009</b>	117	149	1.274
<b>2010</b>	138	200	1.449
<b>2011</b>	114	167	1.465
<b>2012</b>	104	176	1.692
<b>2013</b>	124	N/A	N/A
<b>2014</b>	112	N/A	N/A
<b>2015</b>	118	N/A	N/A

**Notes:** <sup>1</sup>Birth data were provided by the New York State Department of Health from 2002-2015. Blue shaded cells reflect implementation of a full-day kindergarten program

Birth-to-kindergarten survival ratios have been consistently above 1.000 in Katonah-Lewisboro and have ranged from 1.145 to 1.692 in the last eleven 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. Birth-to-kindergarten survival ratios have increased steadily in the last four 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 2002-2015 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 2016 or 2017 and were estimated by using a three-year rolling average. The 2016 and 2017 birth cohorts will become the kindergarten classes of 2021 and 2022. The birth counts used for these years were 118 and 116 respectively.

Figure 7 shows the number of births in the Katonah-Lewisboro attendance area since 2002. Births have declined from a high of 219 in 2002 to a low of 104 in 2012. However, in the last three years, births have stabilized, ranging from 112-124 births per year.



## New 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 2016 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 2016, there has been no change in the status of either the Bailey Hall or American Capital Enterprises developments. Neither of these developments have had any significant change in status since 2014. In total, 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<sup>2</sup>.

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	Has not been approved. In FEIS phase (Final Environmental Impact Statement). No change in status since 2014 report.
American Capital Enterprises	10	Single-Family	Has not been approved. 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	Approved. Building permit expect soon.
<b>Total</b>	<b>32</b>		

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

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<sup>2</sup>Listokin, David, et al. (2006). Who Lives in New Jersey Housing?, Rutgers University Center for Urban Policy Research.

## 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 follows in Table 7, which is an update to the table shown in the November 2016 demographic study. In most instances, there was little change in the status of many of the developments. The notable changes from the previous demographic study are as follows:

- A new development, SSEL, will consist of two single-family homes.
- Eight (8) certificates of occupancy (“COs”) were issued at Oakridge Gardens over the past year.
- The number of units at Wilder Balter was reduced from 49 to 46 and the bedroom distribution was changed with more one-bedroom units and fewer two-bedroom units.

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: 0.490<sup>3</sup>.
3. Market-rate, multi-family units in Oakridge Gardens would have the following student yield multiplier: 0.234<sup>4</sup>.

In total, it is estimated that 82 public school children in grades K-12 would come from the 147 new housing units if they are all constructed. However, since many of the developments have been in the housing pipeline for at least five years, it is uncertain whether they will ever get constructed.

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<sup>3</sup> 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.

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



**Table 7**  
**Potential New Residential Subdivisions in the Town of Lewisboro**

<b>Development</b>	<b>Number of Units</b>	<b>Housing Type</b>	<b>Status</b>
<b>Arias/Lexus</b>	2	Single-Family	Plat filed, one unit occupied
<b>Cedar Knolls</b>	2	Single-Family	Plat filed, one unit occupied
<b>Falcon Ridge</b>	11	Single-Family	One occupied and two building permits have been pulled
<b>Hayes Stein</b>	3	Single-Family	Pending, one unit occupied
<b>Leitner/Hubsher</b>	2	Single-Family	Plat filed, one unit occupied
<b>Mumbach</b>	3	Single-Family	Plat filed, two units occupied
<b>Oakridge Gardens</b>	46	Multi-Family	Certificates of Occupancy issued for 25 units. Units are 2-bedroom.
<b>Pinheiro</b>	2	Single-Family	Plat filed, one unit occupied
<b>Plechavicius</b>	3	Single-Family	Plat filed, one unit occupied
<b>Popoli</b>	6	Single-Family	Construction plans signed, plat not filed, one unit occupied
<b>Silvermine</b>	13	Single-Family	Pending
<b>SSEL</b>	2	Single-Family	Pending
<b>Syms</b>	2	Single-Family	Plat filed, one unit occupied
<b>Todd Management Subdivision</b>	4	Single-Family	Pending
<b>Wilder Balter</b>	46	Multi-Family	Pending- Affordable townhouse rental units with 26 1-BR, 14 2-BR, and 6 3-BR
<b>Total</b>	<b>55 Detached Single-Family</b> <b>46 Multi-Family (Market-rate)</b> <b>46 Multi-family (Affordable)</b>		

**Source:** Ms. Ciorsdan Conran, Lewisboro Planning Board Secretary

With respect to historical new construction in Lewisboro, the number of COs issued for new homes is shown in Table 8. A total of 34 COs were issued from 2012-2017.

**Table 8**  
**Number of Residential Certificates of Occupancy by Year**  
**in the Town of Lewisboro**

<b>Year</b>	<b>COs</b>
<b>2012</b>	2
<b>2013</b>	2
<b>2014</b>	2
<b>2015</b>	11
<b>2016</b>	10
<b>2017 (thru October)</b>	7
<b>Total</b>	<b>34</b>

**Source:** Ms. Aimee Hodges, Lewisboro Building Department

### **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.

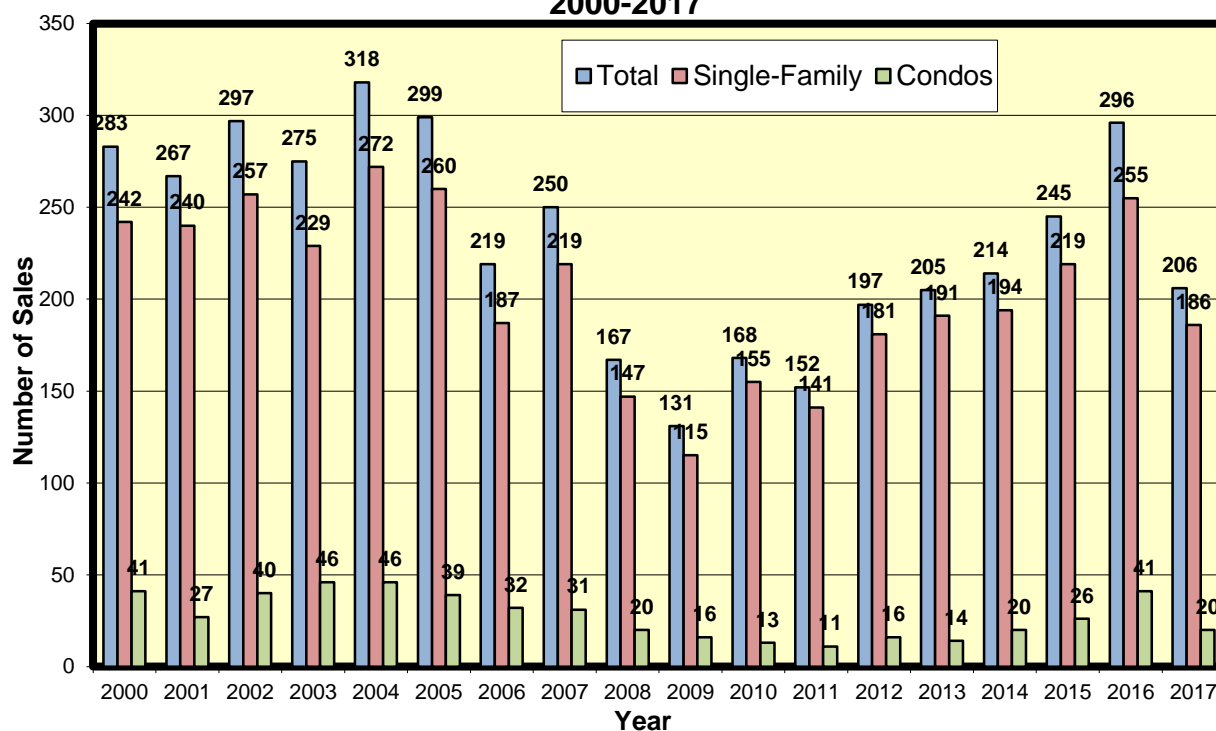
## Home Sales

In Figure 8 following, the number of annual home sales is shown from 2000-2017 for the area served by Katonah-Lewisboro. Total home sales are broken down for detached single-family homes and condos. The majority of home sales are for detached single-family homes. In the last five years, 90% of the sales were for detached single-family homes.

Home sales peaked at 318 in 2004 before declining through 2009 due to the banking and financial crises. After reaching a low of 131 home sales in 2009, the number of sales has been steadily increasing, as there were nearly 300 home sales in 2016. As of October 2017, there were 206 home sales with an additional 36 sales pending. If all homes under contract close by the end of the year, there would be 232 home sales in 2017. While the value would be lower than 2016, it would be comparable to the value in 2015.

It appears that the increase in home sales is having an effect on enrollment in the district. As discussed previously in the report, 12 of 13 survival ratios in 2017-18 are above 1.000, indicating net inward migration. While not known for certain, it is likely that the increase in home sales has resulted in an inward migration of parents with school age children and an increase in the survival ratios.

**Figure 8**  
**Home Sales in Katonah-Lewisboro Sending Area**  
**2000-2017**



## Enrollment Projections

Enrollments were calculated using cohort-survival ratios in two separate projections 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, particularly in the lower elementary grades. 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 2018-19 through 2022-23, a five-year period.

Since full-day kindergarten was instituted for the first time in September 2014, there are only four historical birth-to-kindergarten survival ratios that reflect the program change. The average birth-to-full-day kindergarten survival ratio from the last three years (1.536) and four years (1.470) were used in their respective projections.

Projected K-12 enrollments using cohort-survival ratios based on historical data from the last three years follows in Table 9 and Figure 9. Total enrollment is projected to slowly decline throughout the projection period and be 2,866 in 2022-23, which would be a loss of 173 students from the 2017-18 enrollment of 3,039 students.

**Table 9**  
**Projected Grade K-12 Enrollments Using Cohort-Survival Ratios**  
**and 3 Years of Historical Data**  
**2018-19 to 2022-23**

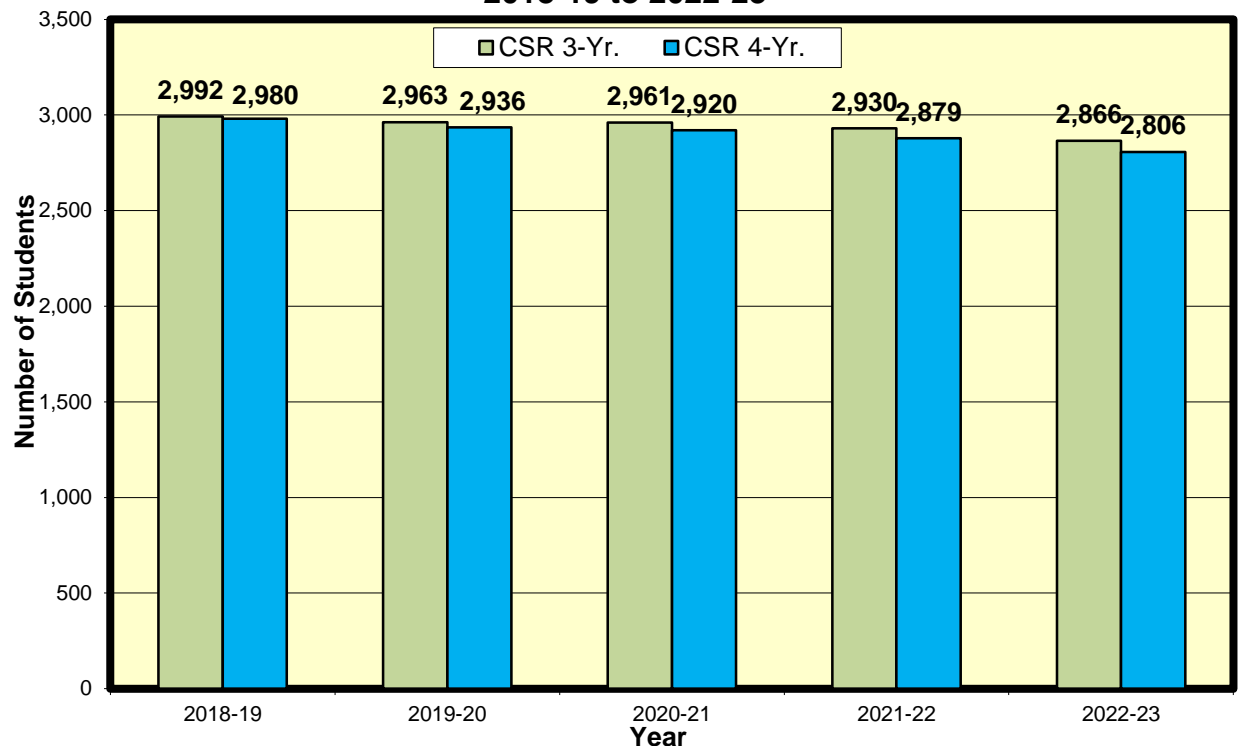
Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Sp. Ed	K-12 Total
<b>2018-19</b>	190	191	181	251	189	223	238	212	246	293	269	241	262	6	<b>2,992</b>
<b>2019-20</b>	172	207	197	194	260	195	224	242	213	242	298	270	243	6	<b>2,963</b>
<b>2020-21</b>	181	187	213	212	201	268	196	228	243	209	246	299	272	6	<b>2,961</b>
<b>2021-22</b>	181	197	193	229	219	207	270	199	229	239	212	247	302	6	<b>2,930</b>
<b>2022-23</b>	178	197	203	207	237	226	208	275	200	225	243	212	249	6	<b>2,866</b>

Projected K-12 enrollments using cohort-survival ratios based on historical data from the last four years follows in Table 10 and Figure 9. Using this method, total enrollment is projected to decline at a slightly faster rate and be 2,806 in 2022-23, which would be a loss of 233 students from the 2017-18 enrollment.

**Table 10**  
**Projected Grade K-12 Enrollments Using Cohort-Survival Ratios**  
**and 4 Years of Historical Data**  
**2018-19 to 2022-23**

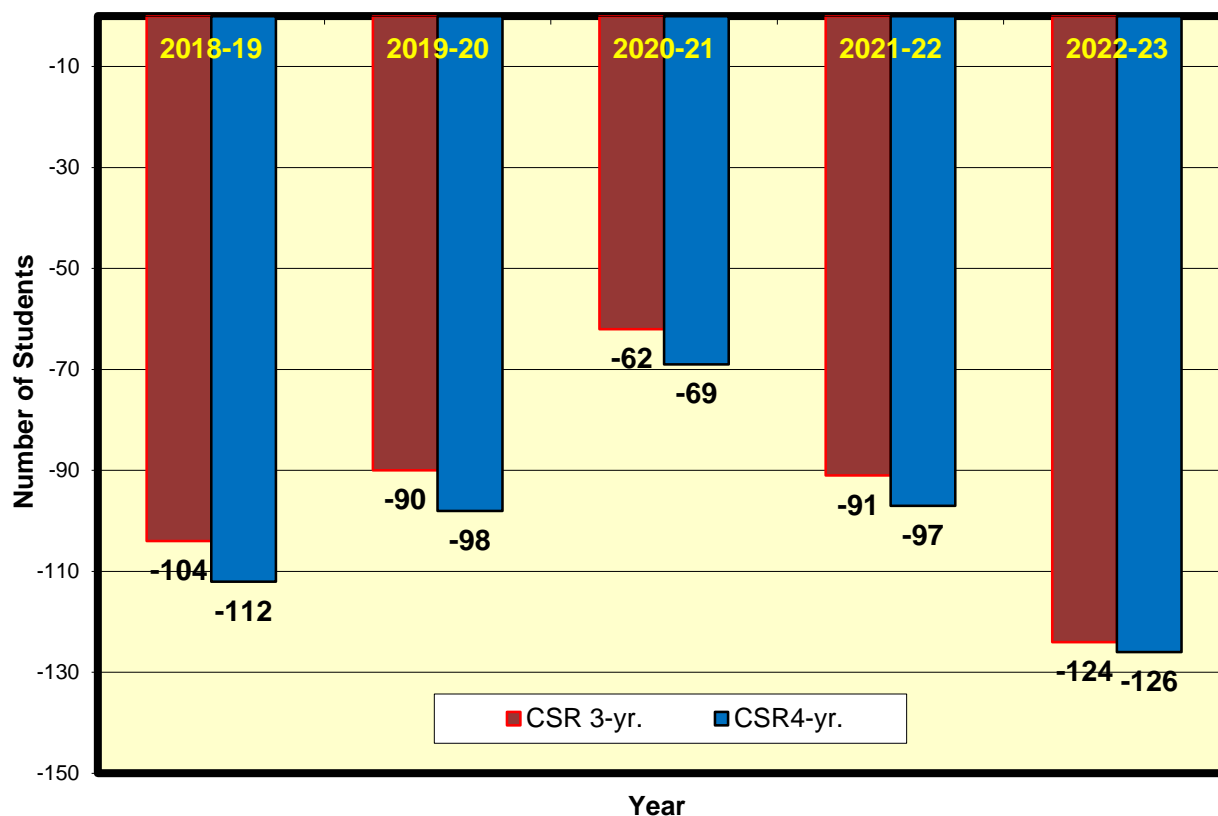
Year	K	1	2	3	4	5	6	7	8	9	10	11	12	Sp. Ed	K-12 Total
<b>2018-19</b>	182	196	180	249	188	220	240	210	247	291	269	239	263	6	<b>2,980</b>
<b>2019-20</b>	165	203	200	192	256	192	222	243	212	241	295	267	242	6	<b>2,936</b>
<b>2020-21</b>	173	184	208	213	197	261	194	225	245	207	244	293	270	6	<b>2,920</b>
<b>2021-22</b>	173	193	188	222	219	201	264	196	227	240	210	243	297	6	<b>2,879</b>
<b>2022-23</b>	171	193	197	200	228	223	203	267	198	222	243	209	246	6	<b>2,806</b>

**Figure 9**  
**Katonah-Lewisboro School District**  
**Enrollment Projections**  
**2018-19 to 2022-23**



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 62-126 students per year as shown in Figure 10. However, the magnitude of negative kindergarten replacement is projected to increase near the end of the projection period due to the graduation of larger 12<sup>th</sup> grade cohorts.

**Figure 10**  
**Katonah-Lewisboro School District**  
**Projected Kindergarten Replacement**



## Projected Enrollments by Grade Configuration

In Table 11 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 11**  
**Projected Enrollments for Grades K-5, 6-8,**  
**and 9-12 for Each Projection Method**

<b>HISTORICAL</b>	<b>K-5</b>		<b>6-8</b>		<b>9-12</b>	
<b>2017-18</b>	<b>1,229</b>		<b>751</b>		<b>1,059</b>	
<b>PROJECTED</b>	<b>K-5 CSR 3-YR</b>	<b>K-5 CSR 4-YR</b>	<b>6-8 CSR 3-YR</b>	<b>6-8 CSR 4-YR</b>	<b>9-12 CSR 3-YR</b>	<b>9-12 CSR 4-YR</b>
<b>2018-19</b>	1,231	1,221	696	697	1,065	1,062
<b>2019-20</b>	1,231	1,214	679	677	1,053	1,045
<b>2020-21</b>	1,268	1,242	667	664	1,026	1,014
<b>2021-22</b>	1,232	1,202	698	687	1,000	990
<b>2022-23</b>	1,254	1,218	683	668	929	920
<b>5-year Change</b>	<b>+25</b>	<b>-11</b>	<b>-68</b>	<b>-83</b>	<b>-130</b>	<b>-139</b>

At the elementary level containing grades K-5, enrollment is projected to be fairly stable throughout the projection period. The CSR method based on three years of historical data is projecting enrollment to be 1,254 in 2022-23, which would represent a gain of 25 students from the 2017-18 enrollment of 1,229. Enrollment is projected to range from 1,231-1,268. Using CSR and four years of historical data, enrollment is projected to be slightly lower, ranging from 1,202-1,242 over the five-year projection period. In 2022-23, enrollment is projected to be 1,218, which would be a loss of eleven (11) students from the 2017-18 enrollment.

For John Jay Middle School (grades 6-8), enrollment is projected to slowly decline through 2020-21 before reversing trend. The CSR method based on three years of historical data is projecting enrollment to be 683 in 2022-23, which would represent a loss of 68 students from the 2017-18 enrollment of 751. Using CSR and four years of historical data, enrollment is projected to decline at a faster rate and be 668 in 2022-23, which would be a loss of 83 students from the 2017-18 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 929 in 2022-23, which would represent a loss of 130 students from the 2017-18 enrollment of 1,059. Using CSR and four years of historical data, enrollment is projected to be 920 in 2022-23, which would be a loss of 139 students from the 2017-18 enrollment.

## **Elementary School Projections**

In Tables 12-14 following, historical and projected enrollments are shown for each of the three elementary schools in the district. Only the last four 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 four years.

Two sets of elementary school projections were completed using data from the last three and four historical years. Like the district-wide analysis, grades one through five were 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 9 and 10.

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 four years.

Due to the different methodology in projecting the elementary enrollments, the totals shown previously in Table 11, which was based on computing enrollments districtwide, and the aggregated projected grade counts by school in the forthcoming tables, are not exactly equal, but are within a reasonable tolerance.



## 1. Increase Miller Elementary School

In Table 12, historical enrollments for Increase Miller Elementary School are shown, along with projected enrollments from 2018-19 to 2022-23 using the CSR method with three and four years of historical data. In the last four years, enrollment has been fairly stable, ranging from 445-479 students per year. In 2017-18, enrollment is 462. In the projections using CSR and three years of historical data, enrollment is projected to be fairly stable, ranging from 453-469 students per year. In the projections using CSR and four years of historical data, enrollment is projected to decline, in general, and be 431 in 2022-23, which would be a loss of 31 students from the 2017-18 enrollment of 462.

**Table 12**  
**Historical and Projected Enrollments of Increase Miller Elementary School**

Historical <sup>1</sup>								
Year	K	1	2	3	4	5	SE	K-5 Total
<b>2014-15</b>	51	80	81	66	85	106	10	<b>479</b>
<b>2015-16</b>	68	58	77	82	67	83	10	<b>445</b>
<b>2016-17</b>	61	83	65	89	87	70	6	<b>461</b>
<b>2017-18</b>	58	59	86	70	92	90	7	<b>462</b>
<b>CSR 3-Yr. Ratios</b>	0.3474 <sup>2</sup>	1.0939	1.0784	1.1164	1.0473	1.0396	0.0143 <sup>3</sup>	
<b>CSR 4-Yr. Ratios</b>	0.3474 <sup>2</sup>	1.1084	1.0398	1.0817	1.0366	1.0186	0.0143 <sup>3</sup>	
Projected (CSR 3-Yr.)								
<b>2018-19</b>	66	63	64	96	73	96	7	<b>465</b>
<b>2019-20</b>	60	72	68	71	101	76	6	<b>454</b>
<b>2020-21</b>	63	66	78	76	74	105	7	<b>469</b>
<b>2021-22</b>	63	69	71	87	80	77	6	<b>453</b>
<b>2022-23</b>	62	69	74	79	91	83	7	<b>465</b>
Projected (CSR 4-Yr.)								
<b>2018-19</b>	63	64	61	93	73	94	6	<b>454</b>
<b>2019-20</b>	57	70	67	66	96	74	6	<b>436</b>
<b>2020-21</b>	60	63	73	72	68	98	6	<b>440</b>
<b>2021-22</b>	60	67	66	79	75	69	6	<b>422</b>
<b>2022-23</b>	59	67	70	71	82	76	6	<b>431</b>

**Notes:** <sup>1</sup>Data provided by the Katonah-Lewisboro Union Free School District

<sup>2</sup>Two-year average proportion of kindergarten students with respect to district totals

<sup>3</sup>Average proportion of self-contained special education students with respect to K-5 subtotals based on last two years of historical data.

## 2. Katonah Elementary School

In Table 13, historical enrollments for Katonah Elementary School are shown, along with projected enrollments from 2018-19 to 2022-23 using the CSR method with three and four years of historical data. In the last four years, enrollment has been fairly stable, ranging from 415-432 students per year. In the projection using CSR and three historical years, enrollment is projected to be fairly stable, ranging from 415-426 students per year. In the projection using CSR and four years of historical data, enrollment is also projected to be fairly stable and nearly identical to the previous projection, ranging from 415-429 students per year.

**Table 13**  
**Historical and Projected Enrollments of Katonah Elementary School**

Historical <sup>1</sup>								
Year	K	1	2	3	4	5	SE	K-5 Total
<b>2014-15</b>	61	59	69	75	72	79	0	<b>415</b>
<b>2015-16</b>	73	71	60	76	78	72	0	<b>430</b>
<b>2016-17</b>	55	79	70	66	80	82	0	<b>432</b>
<b>2017-18</b>	67	59	80	69	64	80	0	<b>419</b>
<b>CSR 3-Yr. Ratios</b>	0.3550 <sup>2</sup>	1.0775	0.9993	1.0429	1.0112	1.0256	0.0000 <sup>3</sup>	
<b>CSR 4-Yr. Ratios</b>	0.3550 <sup>2</sup>	1.1063	1.0052	1.0624	1.0208	1.0171	0.0000 <sup>3</sup>	
Projected (CSR 3-Yr.)								
<b>2018-19</b>	67	72	59	83	70	66	0	<b>417</b>
<b>2019-20</b>	61	72	72	62	84	72	0	<b>423</b>
<b>2020-21</b>	64	66	72	75	63	86	0	<b>426</b>
<b>2021-22</b>	64	69	66	75	76	65	0	<b>415</b>
<b>2022-23</b>	63	69	69	69	76	78	0	<b>424</b>
Projected (CSR 4-Yr.)								
<b>2018-19</b>	65	74	59	85	70	65	0	<b>418</b>
<b>2019-20</b>	59	72	74	63	87	71	0	<b>426</b>
<b>2020-21</b>	61	65	72	79	64	88	0	<b>429</b>
<b>2021-22</b>	61	67	65	76	81	65	0	<b>415</b>
<b>2022-23</b>	61	67	67	69	78	82	0	<b>424</b>

**Notes:** <sup>1</sup>Data provided by the Katonah-Lewisboro Union Free School District

<sup>2</sup>Two-year average proportion of kindergarten students with respect to district totals

<sup>3</sup>Average proportion of self-contained special education students with respect to K-5 subtotals based on last two years of historical data.

### 3. Meadow Pond Elementary School

In Table 14, historical enrollments for Meadow Pond Elementary School are shown, along with projected enrollments from 2018-19 to 2022-23 using the CSR method with three and four years of historical data. Enrollment has been declining in the school. In 2017-18, enrollment is 348, which is a loss of 36 students from 2014-15. In the projections using CSR and three years of historical data, enrollment is projected to slowly increase before stabilizing. Enrollment is projected to be 365 in 2022-23, which would be a gain of 17 students from the 2017-18 enrollment of 348. In the projection using CSR and four years of historical data, enrollment is projected to increase to 363, which would be a gain of 15 students from the 2017-18 enrollment.

**Table 14**  
**Historical and Projected Enrollments of Meadow Pond Elementary School**

Historical <sup>1</sup>								
Year	K	1	2	3	4	5	SE	K-5 Total
<b>2014-15</b>	37	51	61	63	71	101	0	<b>384</b>
<b>2015-16</b>	59	45	54	63	62	73	0	<b>356</b>
<b>2016-17</b>	51	62	42	58	66	64	0	<b>343</b>
<b>2017-18</b>	51	58	68	44	60	67	0	<b>348</b>
<b>CSR 3-Yr. Ratios</b>	0.2976 <sup>2</sup>	1.0941	1.0151	1.0608	1.0411	1.0237	0.0000 <sup>3</sup>	
<b>CSR 4-Yr. Ratios</b>	0.2976 <sup>2</sup>	1.1348	1.0296	1.0515	1.0221	1.0252	0.0000 <sup>3</sup>	
Projected (CSR 3-Yr.)								
<b>2018-19</b>	57	56	59	72	46	61	0	<b>351</b>
<b>2019-20</b>	51	62	57	63	75	47	0	<b>355</b>
<b>2020-21</b>	54	56	63	60	66	77	0	<b>376</b>
<b>2021-22</b>	54	59	57	67	62	68	0	<b>367</b>
<b>2022-23</b>	53	59	60	60	70	63	0	<b>365</b>
Projected (CSR 4-Yr.)								
<b>2018-19</b>	54	58	60	72	45	62	0	<b>351</b>
<b>2019-20</b>	49	61	60	63	74	46	0	<b>353</b>
<b>2020-21</b>	51	56	63	63	64	76	0	<b>373</b>
<b>2021-22</b>	51	58	58	66	64	66	0	<b>363</b>
<b>2022-23</b>	51	58	60	61	67	66	0	<b>363</b>

**Notes:** <sup>1</sup>Data provided by the Katonah-Lewisboro Union Free School District

<sup>2</sup>Two-year average proportion of kindergarten students with respect to district totals

<sup>3</sup>Average proportion of self-contained special education students with respect to K-5 subtotals based on last two years of historical data.