

WAPPINGERS CENTRAL SCHOOL DISTRICT

ENROLLMENT PROJECTION 2017-2026

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INTRODUCTION

The following enrollment projection has been prepared by FACTS at the request of the Wappingers Central School District.

Data and information from the following sources were utilized in compiling this report:

- School District
- United States Census Bureau
- New York State Department of Health
- Local Building Inspector(s)

FACTS has utilized diligent research and generally accepted formulas and procedures in preparing these projections. It must be recognized, however, that given the many variables comprising such projections, that caution must be exercised in the interpretation and application of these projections. A thorough review for accuracy of the data contained in this report should be conducted by the school district and prompt notification of any discrepancies provided to FACTS for correction.

PROJECTION METHODOLOGY

The Cohort Survival Method has been used in preparing these projections. This formula has proven to be highly reliable and is used extensively for enrollment projections for school districts in New York State.

The calculation of enrollment projections is based on the following data and procedures:

- Six years of actual district enrollment by grade
- Calculation of the survival ratios by grade level
- Projection of Kindergarten enrollment based on resident live births

The survival ratio expresses a quantitative relationship between the numerical size of a grade in a given year in comparison to the size of the next lower grade in the previous year. The number of students in a grade in a given year is divided by the number of students in the next lower grade in the previous year (i.e.; Grade 5 in 2013 divided by Grade 4 in 2012). If the quotient is greater than 1.0, the number of students has increased; conversely, if the quotient is less than 1.0, the number of students has decreased. Five years of actual survival ratios are calculated for each grade 1-12 and the five-year average is determined. This average is then applied by grade to determine the ten-year projected enrollment for each grade 1-12.

The calculation of projected kindergarten enrollment is based on the analysis of resident live birth data. A ten-year history of live birth data is collected. Each of the first five years of live birth data is compared to the actual kindergarten enrollment five years hence and the survival ratio is calculated (i.e.; 2007 live births to 2012 kindergarten enrollment, etc.). The five annual survival ratios are averaged and that average is applied to the next five years of live birth data to obtain the first five years of annual projected kindergarten enrollment (i.e.; 2012 -2016 live births to project 2017-2021 kindergarten enrollments). For purposes of providing a ten-year enrollment projection, the kindergarten enrollment is projected for the last five years of the projection at the same number appearing in the fifth year.

In addition, the following factors which could potentially impact these projections are also researched and analyzed:

- Significant changes in residential construction
- Major changes in the local employment base
- Shifts in the non-public school population

The reliability of any enrollment projection must clearly be understood. Projections based on current and historical actual enrollments are the most reliable. Those based on historical live birth data are somewhat less reliable. In addition, the time frame and subset of the projections also play an important part in the reliability. Projections for the immediate future will be more reliable than those in later years, for example. Projections for the total K-12 district enrollment will also be more reliable than those for any particular grade in any given year. Therefore, these projections should be updated annually to reflect the latest live birth and actual enrollment data.

For the purposes of this study, data for the Towns of East Fishkill, Fishkill, Poughkeepsie and Wappinger and the Villages of Fishkill and Wappingers Falls have been researched.

Annual Updates: Annual updates of original projections prepared by FACTS are limited to the collection and research of the following information:

- Live births
- District enrollment
- District non-public school enrollment

The collection of information regarding historical residential housing permits and future residential construction programs are not included in the annual update pricing fee.

SUMMARY

The table below shows the comparison between our projections in January 2014 (the last update ordered) to the actual October 2014 enrollment..

Grade Grouping	January 2014 Projection	October 2014 Actual	Actual to Projection Difference	Percent Difference
K-5	4,714	4,662	-52	-1.12
6-8	2,751	2,706	-35	-1.30
9-12	4,003	4,043	+40	+0.99
K-12	11,468	11,411	-57	-0.50

DEMOGRAPHIC DATA

POPULATION TRENDS:

Table I reflects the population data from the 1990, 2000 and 2010 census as provided by the U.S. Census Bureau. The Town of East Fishkill continues to show substantial growth during the twenty year period. The Town of Fishkill experienced significant growth between 1990 and 2000 and reduced growth between 2000 and 2010. The Village of Fishkill experienced substantial decline between 1990 and 2000 and a substantial increase in population between 2000 and 2010. The Town of Poughkeepsie shows moderate growth between 1990 and 2000 and a minimal decline between 2000 and 2010. The Town of Wappinger lost population between 1990 and 2000 and experienced minimal increase between 2000 and 2010. The Village of Wappingers Falls had a moderate gain in population between 1990 and 2000 and significant increase between 2000 and 2010. Dutchess County experienced moderate growth during the entire period. Since these trends are already reflected in the historical enrollments, no adjustments to the projection formulas are necessary.

TABLE I POPULATION TRENDS						
Town/Village	1990	2000	1990-00% Change	2010	2000-10 % Change	1990-10 % Change
East Fishkill (T)	22,101	25,589	15.78	29,029	13.45	31.35
Fishkill (T)	15,698	18,523	18.00	19,936	7.63	27.00
Fishkill (V)	1,957	1,735	-11.34	2,171	25.13	10.94
Poughkeepsie (T)	39,254	42,777	8.97	42,237	-1.27	7.60
Wappinger (T)	22,292	21,345	-4.25	22,630	6.02	1.52
Wappingers Falls (V)	4,605	4,929	7.04	5,522	12.03	19.92
Dutchess County	259,462	280,150	7.97	297,488	6.19	14.66
Source: U.S. Census Bureau						

RESIDENT LIVE BIRTHS:

Table II shows the actual number of resident live births for the nine-year period 2007-15. The births for 2016 have been estimated at the average for 2013 through 2015 of 652. Resident live births have continued to decline which will result in lower kindergarten enrollments in this updated study.

TABLE II RESIDENT LIVE BIRTHS BY DISTRICT BOUNDARIES										
District Boundaries	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
District	733	720	709	662	680	676	623	675	626	652
* Estimated Source: New York State Department of Health										

ENROLLMENT PROJECTIONS

HISTORICAL ENROLLMENT:

Table III depicts the district's actual enrollment by grade level for a six-year period. The grade by grade survival ratios shown in Table IV were calculated from this information.

TABLE III HISTORICAL ENROLLMENT						
Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Kindergarten	655	766	730	736	676	707
First	812	747	777	758	745	690
Second	829	811	756	791	758	772
Third	888	840	813	749	797	762
Fourth	887	908	841	801	769	812
Total K-4	4,071	4,072	3,917	3,835	3,745	3,743
Fifth	916	883	907	827	781	791
Total K-5	4,987	4,995	4,824	4,662	4,526	4,534
Sixth	920	921	898	877	832	814
Seventh	925	922	921	908	882	852
Eighth	969	935	933	921	914	908
Total 5-8	3,730	3,661	3,659	3,533	3,409	3,365
Total 6-8	2,814	2,778	2,752	2,706	2,628	2,574
Ninth	1,070	1,009	976	993	931	928
Tenth	1,022	1,062	1,007	947	966	929
Eleventh	1,063	983	1,057	1,020	951	962
Twelfth	1,008	1,069	1,034	1,083	1,045	1,007
Total 9-12	4,163	4,123	4,074	4,043	3,983	3,826
Total K-12	11,964	11,856	11,650	11,411	11,047	10,934
% Change	-3.13	-0.90	-1.74	-2.06	-3.91	-1.03
Ungraded	0	0	0	44	44	0
Grand Total	11,964	11,856	11,650	11,411	11,047	10,934
% Change	-3.13	-0.90	-1.74	-2.06	-3.91	-1.42

SURVIVAL RATIOS:

The district's historical loss or gain of students from one grade level to the next grade level is reflected in Table IV. These ratios reflect the number of students in a particular grade in one year as compared to the number of students in the next higher grade in the following year. A ratio higher than 1.0 indicates a gain in students and conversely a ratio of less than 1.0 reflects a loss of students. These ratios, by grade level, were calculated individually for a five-year period and the five-year average for each grade level determined. The five-year average was then used to project future enrollments for each grade level.

TABLE IV SURVIVAL RATIOS						
Grade	2012-13	2013-14	2014-15	2015-16	2016-17	5 Year Average
K-1	1.1405	1.0144	1.0384	1.0122	1.0207	1.0452
1-2	0.9988	1.0120	1.0180	1.0000	1.0362	1.0130
2-3	1.0133	1.0025	0.9907	1.0076	1.0053	1.0039
3-4	1.0225	1.0012	0.9852	1.0267	1.0188	1.0109
4-5	0.9955	0.9989	0.9834	0.9750	1.0286	0.9963
5-6	1.0055	1.0170	0.9669	1.0060	1.0423	1.0075
6-7	1.0022	1.0000	1.0111	1.0057	1.0240	1.0086
7-8	1.0108	1.0119	1.0000	1.0066	1.0295	1.0118
8-9	1.0413	1.0439	1.0643	1.0109	1.0153	1.0351
9-10	0.9925	0.9980	0.9703	0.9728	0.9979	0.9863
10-11	0.9618	0.9953	1.0129	1.0042	0.9959	0.9940
11-12	1.0056	1.0519	1.0346	1.0245	1.0589	1.0331

PROJECTED KINDERGARTEN ENROLLMENT:

The annual ratio was calculated for a four-year period reflecting the ratio between the actual kindergarten enrollment in each year and the number of live births in each of the preceding five years (i.e.; 2012 actual kindergarten enrollment to 2007 live births, etc.). The five-year average was calculated and applied to the most recent five years of live births to project the subsequent five years of kindergarten enrollment for each projection. Years six through ten of kindergarten enrollment were projected at the same number as the fifth projected year.

TABLE V						
PROJECTED KINDERGARTEN ENROLLMENT - LIVE BIRTHS						
Year	Live Births	Year	K-Enroll	Birth/K Ratio	Year	Projected K-Enroll
2007	733	2012	766	1.0450		
2008	720	2013	730	1.0139		
2009	709	2014	736	1.0381		
2010	662	2015	676	1.0211		
2011	680	2016	707	1.0397		
FIVE-YEAR AVERAGE SURVIVAL				1.0316		
2012	676				2017	697
2013	623				2018	643
2014	675				2019	696
2015	626				2020	646
2016	652*				2021	673
*Estimated					2022	673
					2023	673
					2024	673
					2025	673
					2026	673

TEN-YEAR ENROLLMENT PROJECTIONS:

Table VI provides a summary by grade groupings of the projections shown in Table VII comparing the projected fifth and tenth years to the base year of 2016-17.

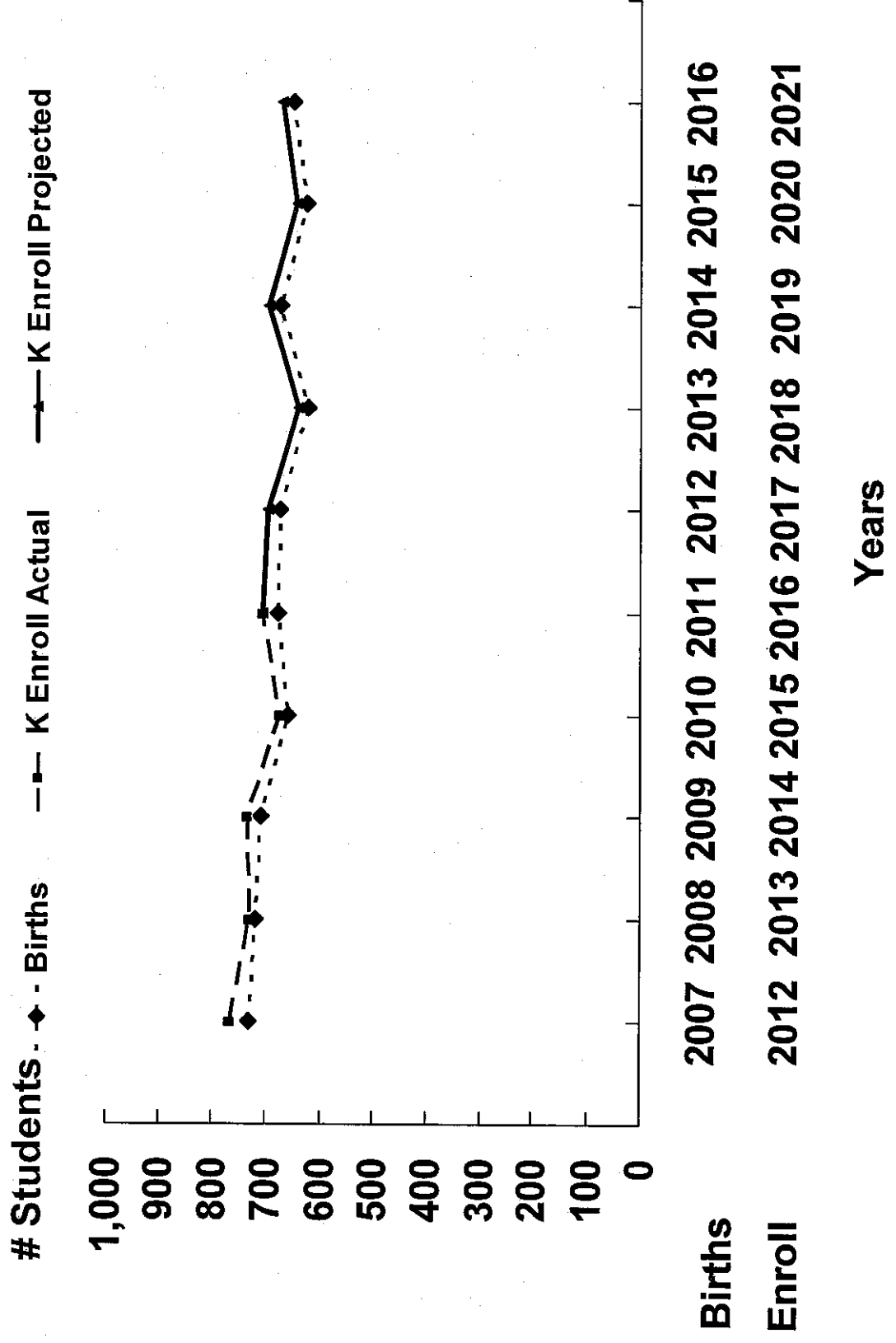
TABLE VI ENROLLMENT PROJECTION SUMMARY					
Grade Range	2016-17	2021-22	% Change	2026-27	% Change
K-4					
	3,743	3,517	-6.04	3,526	-5.80
K-5					
	4,534	4,274	-5.74	4,246	-6.36
5-8					
	3,365	3,051	-6.36	2,879	-14.45
6-8					
	2,574	2,294	-10.88	2,159	-16.13
9-12					
	3,826	3,438	-10.15	3,167	-17.23
K-12					
	10,934	10,006	-8.49	9,572	-12.46

**TABLE VII
TEN-YEAR ENROLLMENT PROJECTION - DISTRICT BOUNDARIES**

Grade	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Kindergarten	697	643	696	646	673	673	673	673	673	673
First	739	729	672	727	675	703	703	703	703	703
Second	699	749	738	681	736	684	712	712	712	712
Third	775	702	752	741	684	739	687	715	715	715
Fourth	770	783	710	760	749	691	747	694	723	723
Total K-4	3,680	3,606	3,568	3,555	3,517	3,490	3,522	3,497	3,526	3,526
Fifth	809	767	780	707	757	746	688	744	691	720
Total K-5	4,489	4,373	4,348	4,262	4,274	4,236	4,210	4,241	4,217	4,246
Sixth	797	815	773	786	712	763	752	693	750	696
Seventh	821	804	822	780	793	718	770	758	699	756
Eighth	862	831	813	832	789	802	726	779	767	707
Total 5-8	3,289	3,217	3,188	3,105	3,051	3,029	2,936	2,974	2,907	2,879
Total 6-8	2,480	2,450	2,408	2,398	2,294	2,283	2,248	2,230	2,216	2,159
Ninth	940	892	860	842	861	817	830	751	806	794
Tenth	915	927	880	848	830	849	806	819	741	795
Eleventh	923	910	921	875	843	825	844	801	814	737
Twelfth	994	954	940	951	904	871	852	872	828	841
Total 9-12	3,772	3,683	3,601	3,516	3,438	3,362	3,332	3,243	3,189	3,167
Total K-12	10,741	10,506	10,357	10,176	10,006	9,881	9,790	9,714	9,622	9,572
% Change	-1.77	-2.19	-1.42	-1.75	-1.67	-1.25	-0.92	-0.78	-0.95	-0.52

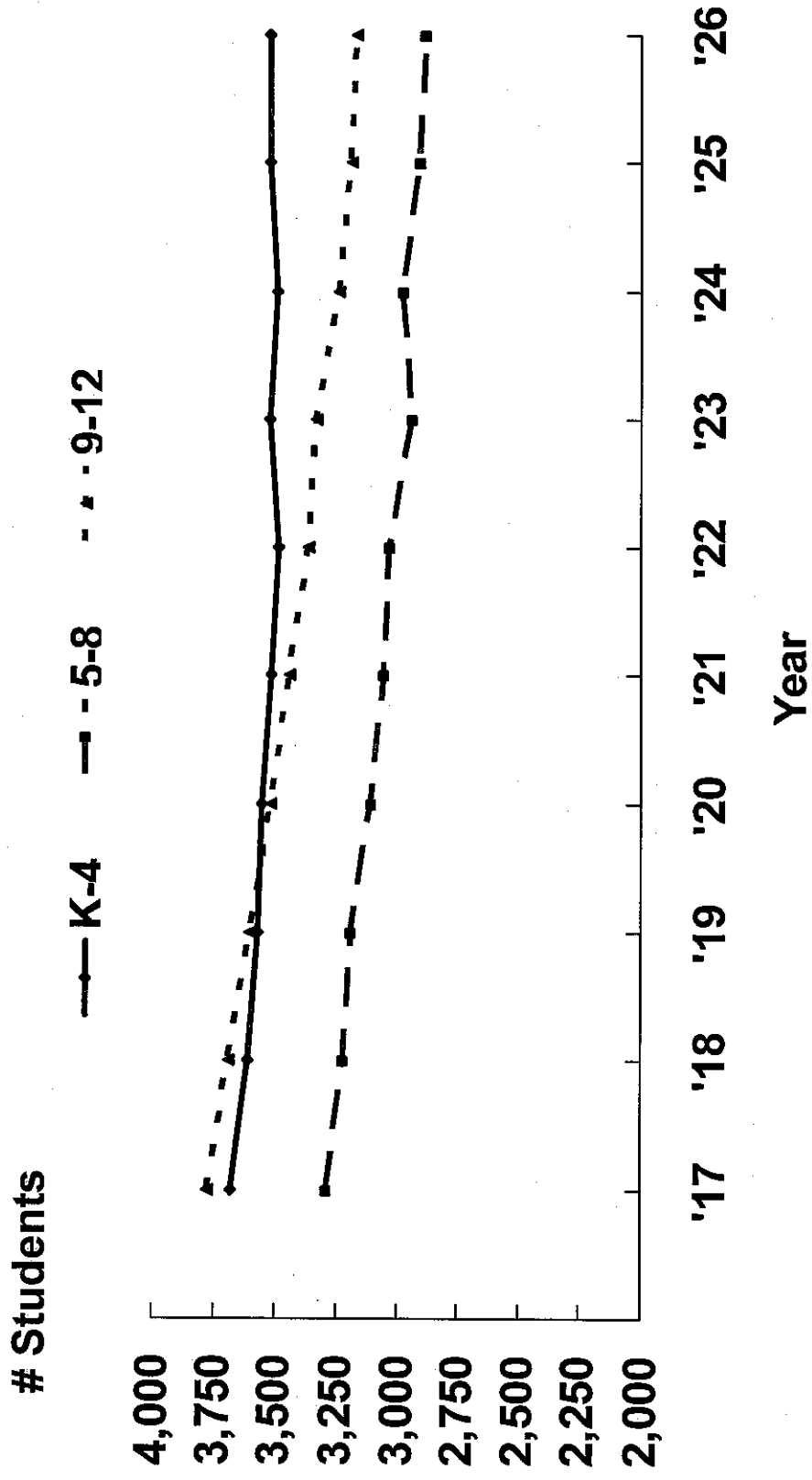
Live Births vs Kindergarten Enrollment Comparison

Baseline Projection



Enrollment Projection Breakdown

Based on Live Births



Grand Total K-12 Enrollment Projection

Based on Live Births

