

# **ONTEORA CENTRAL SCHOOL DISTRICT**

## ***ENROLLMENT PROJECTION 2014-2023***

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Live Births vs Kindergarten Enrollment - Live Births Base Projection  
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## **INTRODUCTION**

The following enrollment projection has been prepared by FACTS at the request of the Onteora 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 2009 divided by Grade 4 in 2008). 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.; 2004 live births to 2009 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.; 2009-2013 live births to project 2014-2018 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 Hurley, Olive, Shandaken and Woodstock 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 future residential construction programs are not included in the annual update pricing fee.

# 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 Towns of Hurley and Woodstock experienced a minimal decline in population between 1990 and 2000 and continued to lose population between 2000 and 2010. The Towns of Olive and Shandaken experienced moderate increases in population between 1990 and 2000 and both lost population between 2000 and 2010. Ulster County experienced moderate growth between 1990 and 2000 and a minimal gain between 2000 and 2010. Since these trends are already reflected in the District's historical enrollments, no adjustments to the projection formulas are necessary.

<b>TABLE I POPULATION TRENDS</b>						
Town/Village	1990	2000	1990-00 % Change	2010	2000-10 % Change	1990-10 % Change
Hurley	6,741	6,564	-2.63	6,314	-3.81	-6.34
Olive	4,086	4,579	12.07	4,419	-3.50	8.15
Shandaken	3,013	3,235	7.37	3,085	-4.64	2.39
Woodstock	6,290	6,241	-0.78	5,884	-5.72	-6.46
Ulster County	165,304	177,749	7.53	182,493	2.67	10.40

Source: U.S. Census Bureau

## RESIDENT LIVE BIRTHS:

Table II shows the actual number of resident live births for the nine-year period 2004-12. For 2013 the total of 79 is estimated at the average for 2010 through 2012. The decline in resident live births since 2010 will result in lower kindergarten projections through 2023.

<b>TABLE II RESIDENT LIVE BIRTHS</b>										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*
District	101	90	98	113	96	94	84	78	75	79

\* Estimated  
Source: New York State Department of Health

**RESIDENTIAL HOUSING UNITS:**

Table III reflects the number of building permits issued for new single family home residential construction by town for the past five years. The level of new home construction since 2007 has declined every year through 2010. In 2011 the Town of Woodstock had an apartment complex started consisting of fifty-two low income apartments.

The results of discussions with the building inspectors are as follows:

Town of Hurly - They expect the level of new residential construction to continue at minimal levels for the next twelve to twenty four months.

Town of Olive - They also expect the level of new residential construction to continue in the single digit level for the next twelve to twenty four months.

Town of Shandaken - They also expect the level of new residential to continue at minimal levels for the next twelve to twenty four months.

Town of Woodstock - With the exception of the fifty-two rental apartments in 2011, they also expect new residential construction of single family homes to continue in the eight to twelve permit level for the next two years. In 2012 they had a total of seven permits issued.

TABLE III RESIDENTIAL HOUSING UNITS						
Town/ Village	2008	2009	2010	2011	2012	Average
Hurly	15	2	0	6	4	5
Olive	7	3	8	0	0	4
Shandaken	7	5	N/R	0	N/R	4*
Woodstock	3	13	8	63**	7	20
TOTAL	32	23	16	63	10	35

\* Three year average

\*\*Eleven single family homes and fifty-two apartments.

**NONPUBLIC SCHOOL ENROLLMENT:**

Table IV reflects this District's non-public school enrollment for a five-year period and has averaged 162 students per year. Any major change in this pattern may require a recalculation of the projection.

TABLE IV NONPUBLIC SCHOOL ENROLLMENT					
2009	2010	2011	2012	2013	5 Year Average
159	158	170	170	157	162

**NON-PUBLIC SCHOOL ENROLLMENT:**

Table IV reflects this District's non-public school enrollment for a five-year period and has averaged 162 students per year. Any major change in this pattern may require a recalculation of the projection.

<b>TABLE IV NONPUBLIC SCHOOL ENROLLMENT</b>					
<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>5 Year Average</b>
159	158	170	170	157	162



# ENROLLMENT PROJECTIONS

## HISTORICAL ENROLLMENT:

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

TABLE V HISTORICAL ENROLLMENT						
Grade	2008	2009	2010	2011	2012	2013
Pre-Kindergarten	28	29	26	36	22	23
Kindergarten	113	108	77	86	116	98
First	108	120	114	86	81	128
Second	106	103	108	112	85	93
Third	111	105	94	115	106	96
Fourth	111	106	107	91	121	105
Total Pre K-4	577	571	526	526	531	543
% Change	8.46	-1.04	-7.88	0.00	0.95	2.26
Fifth	108	118	98	109	86	120
Sixth	124	112	111	101	102	100
Seventh	156	118	114	105	105	106
Eighth	152	155	123	110	106	106
Total 5-8	540	503	446	425	399	432
% Change	-8.32	-5.45	-11.33	-4.71	-6.12	8.27
Ninth	144	150	154	125	114	118
Tenth	172	148	139	138	114	109
Eleventh	154	158	147	136	132	120
Twelfth	179	143	145	141	129	136
Total 9-12	649	599	585	540	489	483
% Change	-10.73	-11.52	-2.34	-7.69	-9.44	-1.23
Total Pre K-12	1,766	1,673	1,557	1,491	1,419	1,458
% Change	-5.00	-5.27	-6.94	-4.24	-4.83	2.75
Ungraded Elem	0	2	0	0	0	0
Ungraded Sec	0	5	2	0	0	0
Grand Total	1,766	1,680	1,559	1,491	1,419	1,458
% Change	-4.44	-5.94	-7.20	-4.36	-4.83	2.75

## SURVIVAL RATIOS:

The district's historical loss or gain of students from one grade level to the next grade level is reflected in Table VI. 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 VI SURVIVAL RATIOS						
Grade	2009	2010	2011	2012	2013	5-Year Average
K-1	1.0619	1.0556	1.1169	0.9419	1.1034	1.0559
1-2	0.9537	0.9000	0.9825	0.9884	1.1481	0.9945
2-3	0.9906	0.9126	1.0648	0.9464	1.1294	1.0088
3-4	0.9550	1.0190	0.9681	1.0522	0.9906	0.9970
4-5	1.0631	0.9245	1.0187	0.9451	0.9917	0.9886
5-6	1.0370	0.9407	1.0306	0.9358	1.1628	1.0214
6-7	0.9516	1.0179	0.9459	1.0396	1.0392	0.9988
7-8	0.9936	1.0424	0.9649	1.0095	1.0095	1.0040
8-9	1.0417	0.9935	1.0163	1.0364	1.1132	1.0292
9-10	0.8605	0.9267	0.8961	0.9120	0.9561	0.9437
10-11	1.0260	0.9932	0.9784	0.9565	1.0526	0.9799
11-12	0.7989	0.9177	0.9592	0.9485	1.0303	0.9569

**PROJECTED KINDERGARTEN ENROLLMENT:**

The annual ratios were calculated for a five-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.; 2009 actual kindergarten enrollment to 2004 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 VII PROJECTED KINDERGARTEN ENROLLMENT - LIVE BIRTHS						
Year	Live Births	Year	K-Enroll	Birth/K Ratio	Year	Projected K-En
2004	101	2009	108	1.0693		
2005	90	2010	77	0.8556		
2006	98	2011	86	0.8776		
2007	113	2012	116	1.0265		
2008	96	2013	98	1.0208		
FIVE-YEAR AVERAGE SURVIVAL				0.9700		
2009	94				2014	91
2010	84				2015	81
2011	78				2016	76
2012	75				2017	73
2013	79*				2018	77
					2019	77
					2020	77
					2021	77
					2022	77
					2023	77

\* Estimated

**TEN-YEAR ENROLLMENT PROJECTION:**

Table VIII provides a summary by grade groupings of the projections shown in Table IX comparing the projected fifth and tenth years to the base year of 2013.

Since there is no methodology for projecting pre-kindergarten and attendance is not mandatory and is often dictated by staff, space and /or financial resources, we have projected a constant at the 2012-2013 average of students of twenty-three. Pre-kindergarten are included in the Pre-K - 4, Pre-K- 12 and the Grand Total.

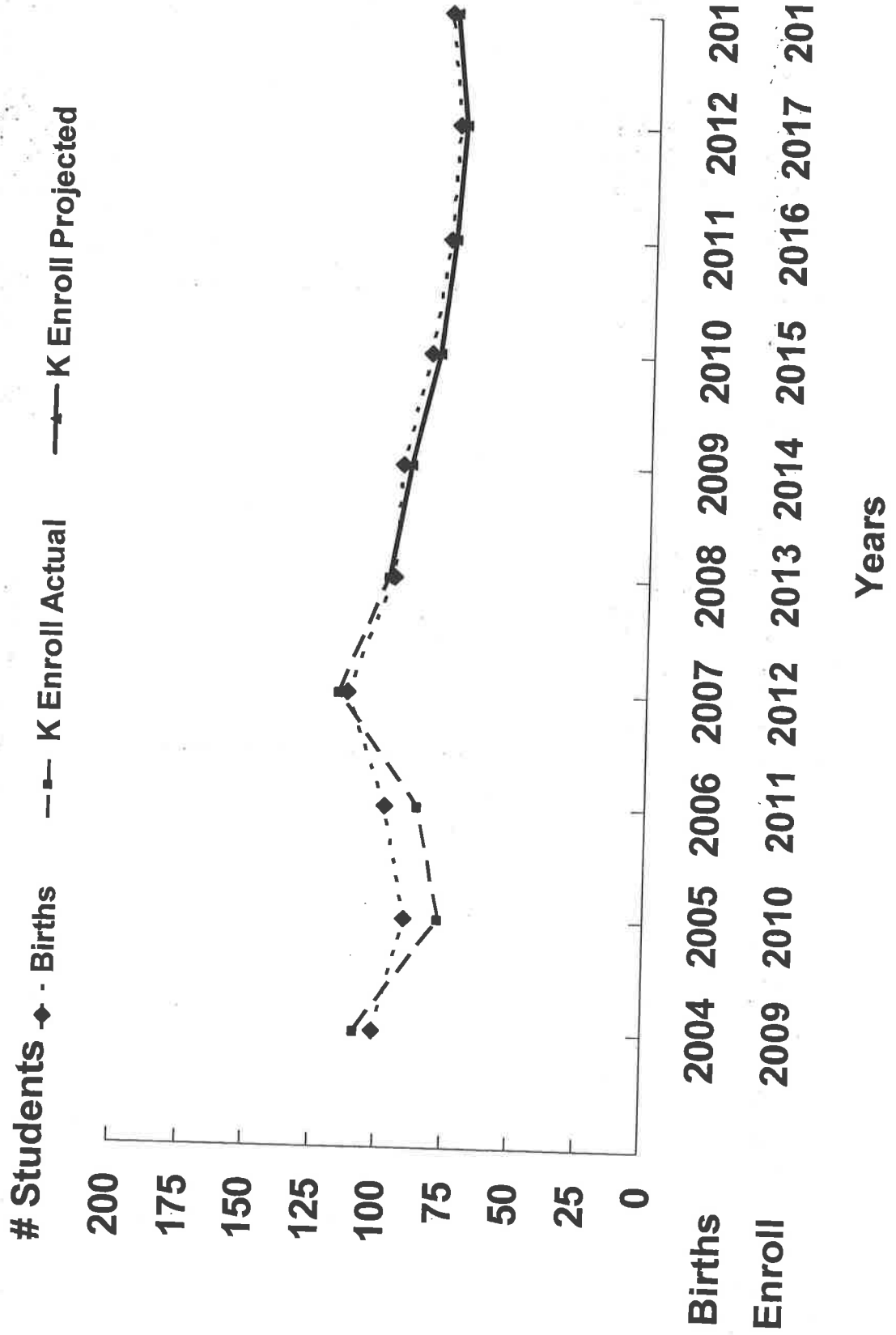
TABLE VIII ENROLLMENT PROJECTION SUMMARY					
	2013	2018	% Change	2023	% Change
Pre-K-4					
Live Birth	543	440	-18.97	426	-21.55
5-8					
Live Birth	432	424	-1.86	330	-23.62
9-12					
Live Birth	483	421	-12.84	411	-14.91
Pre-K-12					
Live Birth	1,458	1,285	-11.87	1,167	-19.96

**TABLE IX  
TEN-YEAR ENROLLMENT PROJECTION - LIVE BIRTHS**

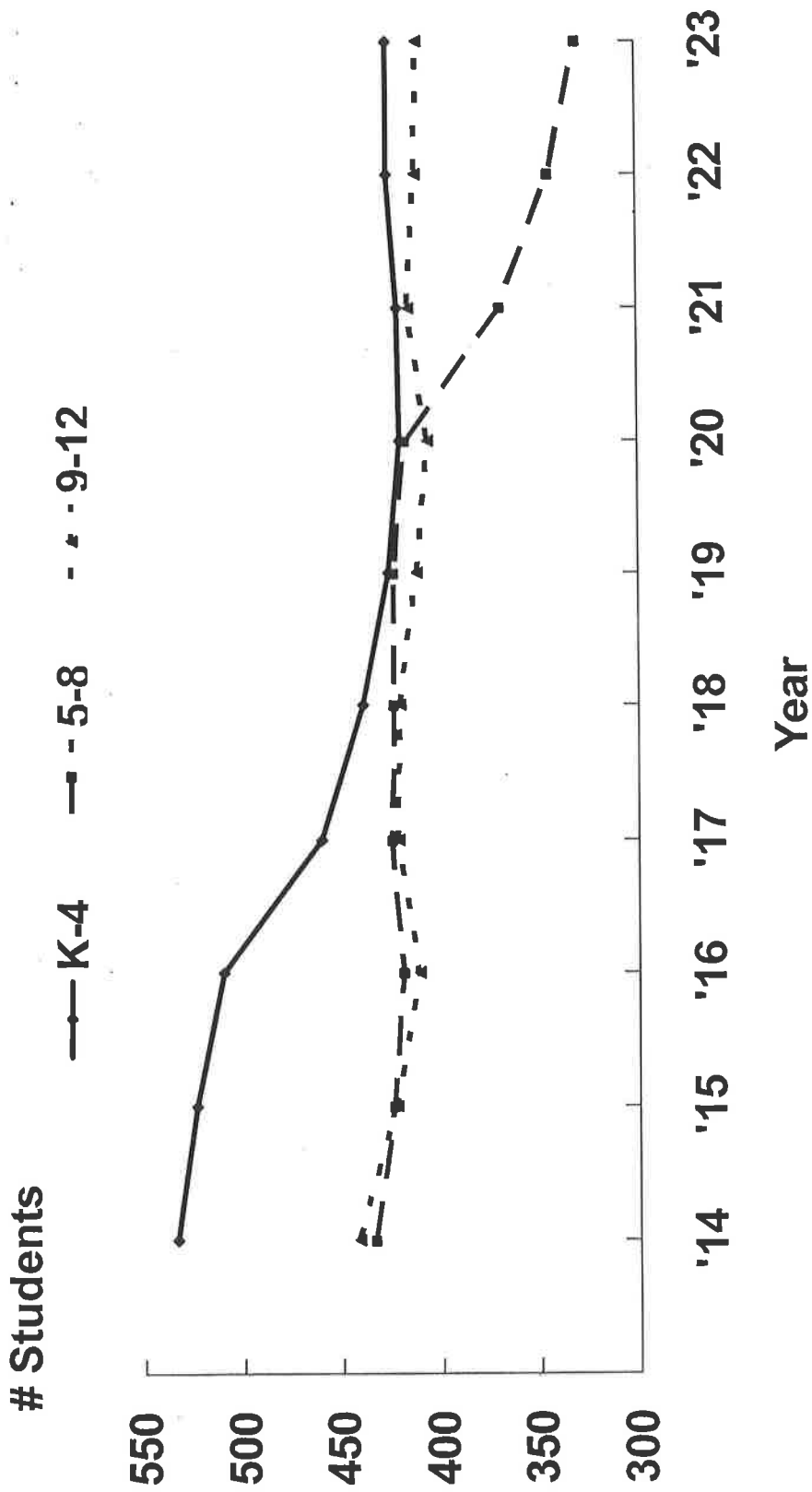
Grade	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Pre- Kindergarten	23	23	23	23	23	23	23	23	23	23
Kindergarten	91	81	76	73	77	77	77	77	77	77
First	103	96	86	80	77	81	81	81	81	81
Second	127	102	95	86	80	77	81	81	81	81
Third	94	128	103	96	87	81	78	82	82	82
Fourth	96	94	128	103	96	87	81	78	82	82
Total Pre K-4	534	524	511	461	440	426	421	422	426	426
% Change	-1.66	-1.87	-2.48	-9.78	-4.56	-3.18	-1.17	0.24	0.95	0.00
Fifth	104	95	93	127	102	95	86	80	77	81
Sixth	123	106	97	95	130	104	97	88	82	79
Seventh	100	123	106	97	95	130	104	97	88	82
Eighth	106	100	123	106	97	95	131	104	97	88
Total 5-8	433	424	419	425	424	424	418	369	344	330
% Change	0.23	-2.08	-1.18	1.43	-0.24	0.00	-1.42	-11.73	-6.78	-4.07
Ninth	109	109	103	127	109	100	98	135	107	100
Tenth	111	103	103	97	120	103	94	92	127	101
Eleventh	107	109	101	101	95	118	101	92	90	124
Twelfth	115	102	104	97	97	91	113	97	88	86
Total 9-12	442	423	411	422	421	412	406	416	412	411
% Change	-8.49	-4.30	-2.84	2.68	-0.24	-2.14	-1.46	2.46	-0.96	-0.24
Total Pre K-12	1,409	1,371	1,341	1,308	1,285	1,262	1,245	1,207	1,182	1,167
% Change	-3.36	-2.70	-2.19	-2.46	-1.76	-1.79	-1.35	-3.05	-2.07	-1.27

# Live Births vs Kindergarten Enrollment Comparison

## Baseline Projection



# Enrollment Projection Breakdown Based on Live Births



# K-12 Enrollment Projection

## Based on Live Births

