

Marcellus Central School District



Study of Student Enrollments June 2021

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Executive Summary

Enrollment Study for the Marcellus Central School District

This enrollment study for the Marcellus Central School District generates several observations and conclusions:

- In the six-year period from 2015-16 to 2020-21, the K-12 enrollment declined from 1,655 students to 1,432 students, a decrease of 223 students or -13.5%.
 - K-3 enrollment decreased from 428 to 375, a decrease of 53 students (-12.4%)
 - 4-8 enrollment decreased from 652 to 544, a decrease of 108 students (-16.6%)
 - 9-12 enrollment decreased from 575 to 513 a decrease of 62 students (-10.8%)
- No significant economic or population growth for the Marcellus Central School District catchment area is expected for the foreseeable future.
- No significant economic or population decline for the Marcellus Central School District catchment area is expected for the foreseeable future.
- In the next seven years, K-12 enrollment is projected to decline from 1,432 students to between 1,304 and 1,342 students depending on the model used to estimate future live births; a decrease of 90 to 128 students or -6.3% to -8.9%.
- Home schooling, private school attendance, and the enrollment of non-resident students were all studied and none of these factors had a significant impact on the enrollment projections made for Marcellus.
- Enrollment in the Elementary and Middle Schools is projected to increase over the next seven years.
- District leaders should continue to update enrollment projections on a regular basis and monitor this early indication of possible future enrollment growth in the Elementary and Middle Schools.

Overview

The Marcellus Central School District is located on a connected campus in the Village of Marcellus. The district office is located in C. S. Driver Middle School at 2 Reed Parkway. K.C. Heffernan Elementary School is located at 2 Learners Landing and Marcellus Senior High School is at 1 Mustang Hill. The district is approximately twenty-five minutes west of Syracuse, New York and consists of properties in the Towns of Marcellus, Onondaga, Otisco, Spafford, Skaneateles, and Camillus. Contribution from properties in the Town of Marcellus accounts for approximately 52% of the district's tax levy. Properties in the Town of Onondaga account for approximately 22% of the district's tax levy with the other towns within the district's boundaries comprising the balance of tax levy dollars. Marcellus is considered a suburban district but has many rural areas within its boundaries. Marcellus educates students in grades K – 12 with students in grades K-3 attending K . C. Heffernan Elementary School, students in grades 4-8 attending C. S. Driver Middle School, and students in grades 9-12 attending Marcellus Senior High School.

The purpose of this study is to project enrollments for the Marcellus Central School District for the next seven years in grades kindergarten through twelve. The enrollment projection is based upon data provided by the district and the New York State Education Department along with discussions with key district personnel and real estate professionals to discern possible significant shifts in population that might impact enrollment.

Methodology

The procedure for projecting student enrollments is referred to as the Cohort Survival Methodology. This methodology is highly reliable and is the most frequently used projective technique for making short-term school district

enrollment projections. To calculate enrollment projections, the following data and procedures are used:

- Six-year history of district enrollment by grade level
- Calculation of survival ratios by grade level
- Kindergarten enrollment projections based on resident births

A survival ratio is obtained by dividing a given grade's enrollment into the enrollment of the following grade a year later. For example, the number of students in grade 3 in any year is divided by the number of students in grade 2 of the previous year. The ratios indicate the proportion of the cohort "surviving" to the following year. Cohort refers to the enrollment in a grade for a given year.

Using grade-to-grade survival ratios, an average of these ratios for each cohort progression is obtained. This average is referred to as an average projection survival ratio. This ratio is then multiplied by each current grade enrollment to obtain the projected enrollment for the next successive year. The multiplicative process is continued for each successive year.

Survival ratios usually have values close to one but may be less than or greater than one. Where the survival ratio is less than one, fewer students "survived" to the next grade. Where the survival ratio is greater than one, more students "survived" to the next grade. Grade-to-grade survival ratios reflect the net effects of the number of students who are home schooled, promotion/retention policies, deaths, dropouts, transfers to and from non-public schools, and migration patterns in and out of the school district.

Since estimating births introduces a possible source of error into the model, it is advisable to limit enrollment projections to a period for which existing data on residential births can be used. This means that enrollment projections are possible for five years into the future for the elementary grades, which is usually sufficient for most planning purposes. Beyond that point, the number of births must be estimated and the projective reliability is greatly reduced.

Data

The methodology considered for this study was to extrapolate kindergarten enrollment cohorts from birth data. Birth data are provided for school districts by the New York State Department of Health and is based upon the address of the mother at the time of the birth. Birth data for the Marcellus Central Schools from 2004 to 2018 are shown in the Table 1 below.

Table 1 Number of Births	
Calendar Year	Live Births
2004	88
2005	105
2006	74
2007	91
2008	75
2009	80
2010	75
2011	78
2012	64
2013	76
2014	73
2015	71
2016	82
2017	78
2018	91

Table 1 provides a 15-year history of the births in the Marcellus Central School District. 2018 is the most recent year for which the birth data are available. The live birth data for Marcellus have fluctuated since 2004. The average annual number of births for the first ten years (2004-2013) is 80.6 births while the average annual number of births for the last five years (2014-2018) is 79 births. There may be reason to project that the birth rate in the district could be trending upward since the average annual number of births from 2016-2018 is 83.7. Over the 15-year period studied, the average annual number of births is 80.1.

Births are then used to project the kindergarten enrollment five years into the future. For example, babies born in 2014 were in kindergarten in 2019-20 and babies born in 2015 were in kindergarten in 2020-21. An average ratio of births to kindergarten enrollment five years later is then calculated. This ratio is used to project future kindergarten enrollments from a combination of actual and estimated births. 2018 is the last year for which actual live birth data are available. To complete the enrollment projection analysis, it is necessary to estimate the live births for 2019 – 2022. This estimate is usually created by averaging the live birth data for the preceding five years. However, the 15-year history of live birth data for Marcellus CSD suggests that it may not be that simple. Are the live birth data for 2016-2018 an upward trend that will continue or are they an anomaly? Is it more likely that the future live birth data will return to the levels earlier in the 2010s? These live birth data are a key factor in the projection of future school enrollments. Rather than develop only one projection model, Tables 2A, 2B, and 2C are provided below using differing live birth data assumptions.

Table 2A reflects the most conservative approach using an average of the nine years of actual live birth data from 2010 – 2018 to project live births for 2019-2022. The typical model of averaging the actual live birth data for the most recent five years (2014 – 2018) has been used in Table 2B which results in a mid-range enrollment projection. Lastly, the enrollment projections in Table 2C are based on the assumption that the trend of increasing live births seen in the most recent three years (2016 – 2018) will continue.



Table 2A													
K-12 Enrollment History and Projections													
School Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Birth Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Births	75	78	64	76	73	71	82	78	91	76	76	76	76
K	83	102	100	97	82	89	104	99	115	97	97	97	97
1	118	81	104	102	102	85	91	106	101	118	99	99	99
2	103	118	84	104	107	95	85	91	106	101	118	99	99
3	124	106	122	87	105	106	97	87	93	109	103	121	101
4	116	119	106	120	95	101	106	97	87	93	109	103	120
5	134	122	123	104	122	90	102	107	97	87	93	109	104
6	137	132	123	120	104	120	89	101	106	96	87	93	108
7	128	136	131	126	119	109	121	90	102	107	97	87	94
8	137	131	136	137	125	124	111	124	92	104	109	99	89
9	133	139	127	137	137	122	123	111	123	91	103	108	99
10	151	131	136	128	136	134	121	122	109	121	90	102	107
11	144	152	128	132	127	131	132	118	120	107	119	89	100
12	147	140	144	132	128	126	129	129	116	117	105	117	87
K-12	1655	1609	1564	1526	1489	1432	1410	1381	1367	1349	1330	1323	1304

Table 2B													
K-12 Enrollment History and Projections													
School Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Birth Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Births	75	78	64	76	73	71	82	78	91	79	79	79	79
K	83	102	100	97	82	89	104	99	115	100	100	100	100
1	118	81	104	102	102	85	91	106	101	118	102	102	102
2	103	118	84	104	107	95	85	91	106	101	118	103	103
3	124	106	122	87	105	106	97	87	93	109	103	121	105
4	116	119	106	120	95	101	106	97	87	93	109	103	120
5	134	122	123	104	122	90	102	107	97	87	93	109	104
6	137	132	123	120	104	120	89	101	106	96	87	93	108
7	128	136	131	126	119	109	121	90	102	107	97	87	94
8	137	131	136	137	125	124	111	124	92	104	109	99	89
9	133	139	127	137	137	122	123	111	123	91	103	108	99
10	151	131	136	128	136	134	121	122	109	121	90	102	107
11	144	152	128	132	127	131	132	118	120	107	119	89	100
12	147	140	144	132	128	126	129	129	116	117	105	117	87
K-12	1655	1609	1564	1526	1489	1432	1410	1381	1367	1353	1337	1333	1318

Table 2C K-12 Enrollment History and Projections													
School Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Birth Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Births	75	78	64	76	73	71	82	78	91	84	84	84	84
K	83	102	100	97	82	89	104	99	115	106	106	106	106
1	118	81	104	102	102	85	91	106	101	118	108	108	108
2	103	118	84	104	107	95	85	91	106	101	118	109	109
3	124	106	122	87	105	106	97	87	93	109	103	121	111
4	116	119	106	120	95	101	106	97	87	93	109	103	120
5	134	122	123	104	122	90	102	107	97	87	93	109	104
6	137	132	123	120	104	120	89	101	106	96	87	93	108
7	128	136	131	126	119	109	121	90	102	107	97	87	94
8	137	131	136	137	125	124	111	124	92	104	109	99	89
9	133	139	127	137	137	122	123	111	123	91	103	108	99
10	151	131	136	128	136	134	121	122	109	121	90	102	107
11	144	152	128	132	127	131	132	118	120	107	119	89	100
12	147	140	144	132	128	126	129	129	116	117	105	117	87
K-12	1655	1609	1564	1526	1489	1432	1410	1381	1367	1358	1349	1351	1342

As is apparent from Tables 2A – 2C, the K-12 enrollment in Marcellus has declined over the past six years (1,655 in 2015-16 to 1,432 in 2020-21) by 223 students or 13.5%. All enrollment projection models indicate that the decline in student enrollment will continue over the next seven years.

Table 3 that follows looks at the enrollment history and projections for each school building. Some interesting trends begin to emerge. The enrollment in the Heffernan Elementary School has steadily declined since 2015-16. However, beginning in 2021-22, the enrollment is projected to increase. Similarly, there has been a significant decline in the student enrollment at Driver Middle School since 2015-16. This decline is projected to continue for the next several years but then begin to increase as the larger elementary classes progress into the middle school. The enrollment projections indicate that the High School enrollment will continue to steadily decline into the foreseeable future.

While all enrollment projection models indicate a continued decline in K-12 enrollment, the possible increases in future elementary and middle school enrollments are important to note. The district should continue to update its

enrollment projections on a regular basis and consider this early indication of possible future enrollment growth during its decision-making processes.

Table 3 Enrollment History and Projections by School Building													
School Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
K-3 Heffernan Total	428	407	410	390	396	375	377	383	416	428	424	425	410
4-8 Driver Total	652	640	619	607	565	544	529	518	483	487	495	492	515
9-12 Senior High Total	575	562	535	529	528	513	504	480	468	437	418	416	393

While the enrollment in Marcellus since 2015-16 has been decreasing, the longer-term enrollment history of the district has shown an even greater decline. Even though the enrollment in Marcellus has declined since 2005-06, the same trend has been seen in nearly every school district in upstate New York. Table 4 below tracks the enrollment for school districts in Onondaga County over the past fifteen years. Every school district has experienced declining enrollment with the percentage decrease in Marcellus being greater than most.

Table 4 Enrollment History for Onondaga County School Districts in Grades K-12*				
District	2005-06	2015-16	2020-21	Change
Baldwinsville	6030	5544	5342	-688 / -11.4%
East Syracuse Minoa	3756	3455	3354	-402 / -10.7%
Fabius-Pompey	935	666	596	-339 / -36.3%
Fayetteville-Manlius	4771	4175	4051	-720 / -15.1%
Jamesville-Dewitt	2845	2936	2602	-243 / -8.5%
Jordan-Elbridge	1679	1304	1183	-496 / -29.5%
Lafayette	968	893	798	-170 / -17.6%
Liverpool	8285	7178	6971	-1314 / -15.9%
Marcellus	2118	1670	1444	-674 / -31.8%
North Syracuse	10271	9067	8227	-2044 / -19.9%
Onondaga	1044	848	817	-227 / -21.7%
Skaneateles	1739	1394	1269	-470 / -27.0%
Solvay	1704	1469	1399	-305 / -17.9%
Tully	1220	859	736	-484 / -39.7%
West Genesee	5144	4651	4353	-791 / -15.9%
Westhill	2016	1756	1694	-322 / -16.0%

*Does not include Syracuse City SD

In studying school district enrollment histories and projections, it is important to see if there are outside factors that might be impacting the number of students attending the school district. The first factor that is examined is the number of students in Marcellus who are home schooled. Table 5 that follows presents these data.

Table 5						
Home Schooled Students (Not Including Homebound/Tutored)						
Grade	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	2	1	0	1	1	2
1	3	3	1	2	4	1
2	3	3	3	1	2	8
3	3	3	3	3	4	3
4	4	3	3	3	5	7
5	5	4	3	3	2	4
6	3	5	5	4	3	3
7	1	3	3	4	4	2
8	3	2	3	2	6	0
9	3	5	2	3	3	3
10	4	4	6	3	4	1
11	4	4	5	6	2	4
12	0	4	3	3	3	2
Total	38	44	40	38	43	40

It is apparent from Table 5 that home schooling does not significantly impact the enrollment at Marcellus. The number of students in the district who are home schooled has remained relatively constant over the past six years and represents approximately 2.8% of the district’s 2020-21 enrollment. This is very similar to the average number of students who are home schooled across upstate New York that represents 2-3% of the student population.

The next group of students to be considered is the group that attends non-public and charter schools in the area. The non-public schools that educate Marcellus students in the Syracuse area include Bishop Ludden, a 7-12 school in Syracuse, Christian Brothers Academy, a 7-12 school in Syracuse, Holy Family, a Pre-K-6 school in Syracuse, and Manlius Pebble Hill School, a Pre-K-12 school in Syracuse. Charter schools attended by Marcellus residents are Syracuse Academy of Science and Southside Academy in Syracuse. Table 6 that follows shows the number of Marcellus students who attended non-public and charter schools over the past six years.

Table 6 Resident Students Attending Private or Charter Schools*							
		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Bishop Grimes	K-3						
	4-8						
	9-12	1	1				1
Bishop Ludden	K-3						
	4-8	1	1	1	1	1	1
	9-12	2	3	4	4	6	4
CBA	K-3						
	4-8	4	4	5	2	3	5
	9-12	13	8	8	9	8	8
Creative Minds Montessori	K-3		1		1	1	
	4-8			1			
	9-12						
Faith Heritage	K-3	1				1	4
	4-8	2	1	1			
	9-12	4	4	2	1	1	1
Holy Cross	K-3					1	
	4-8						
	9-12						
Holy Family	K-3	3	4	5	3	5	6
	4-8	4	3	3	3	1	3
	9-12						
Ihsan School of Excellence	K-3						
	4-8	1	1	1	1	1	
	9-12						
Immaculate Conception	K-3	1					
	4-8	1	2	2			
	9-12						
John Paul II Academy	K-3	1					
	4-8	1					
	9-12						
Living Word Academy	K-3						
	4-8						
	9-12		1		1		
Manlius Pebble Hill School	K-3	4					
	4-8	1	1	1			
	9-12	6	8	7	5	1	1
Mater Dei	K-3		1	1	2	1	3
	4-8					1	1
	9-12	5	5	2	2		
Montessori of Syracuse	K-3						
	4-8	1	1				
	9-12						

Table 6 Resident Students Attending Private or Charter Schools*							
		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Most Holy Rosary	K-3	1					1
	4-8	1	1	1	1		
	9-12						
Parkview Academy	K-3						
	4-8						
	9-12	1					
St. Albert the Great	K-3						2
	4-8						1
	9-12						
Tyburn Academy	K-3						
	4-8	1	1	2			
	9-12	1	1	2	4	2	1
Union Springs Academy	K-3						
	4-8						
	9-12			1			
Word of Life Academy	K-3	1					
	4-8						
	9-12						
Southside Charter School		1	2	2	1		
Syracuse Academy of Science					1		
Total		64	55	52	42	34	43

As can be seen from Table 6, non-public and charter school enrollment does not have a significant impact on the enrollment in Marcellus. The total enrollment has been relatively stable in the past three years having declined from the highest enrollment in 2015-16 for the study period.

Student enrollment can also be impacted by policies that school districts have regarding non-resident students. District enrollment can be increased if there are a large number of non-resident students who attend a district and district enrollment can be decreased if a large number of resident students choose to attend school in another school district. Marcellus does not accept non-resident students. There are, however, limited exceptions as articulated in district policy #7131. Table 7 shows the number of non-resident students who have attended Marcellus over the past six years. It is clear that non-resident student attendance at Marcellus has been

very stable at both the building and district level and does not have a significant impact on enrollment.

Table 7 Non-Resident Students By School Building						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K-3	11	6	8	5	6	9
4-8	10	11	11	11	10	7
9-12	3	3	4	5	8	9
TOTAL	24	20	23	21	24	25

Data on the number of Marcellus students who have been attending school in other public school districts are not available but it is not believed to be a material number. As a result, another factor has been identified that does not have a significant impact on the overall enrollment projections for Marcellus.

Another factor to be considered when projecting public school enrollment is whether or not there will be any dramatic change to the overall population of the district. Are large housing developments being planned for the district? Is a major employer developing a large business in the area that will create numerous new jobs? Are there any major employers who are planning to move out of the area? The only major housing development currently under consideration in the Marcellus district is Baltimore Ridge. This would be a relatively small development of 23 single family homes and would, therefore, likely have little impact on overall student enrollment but ongoing development plans should be monitored by the district.

The cohort survival methodology for predicting school enrollments is most effective when the future is reflective of the past. For all of the factors that have been considered to this point, there do not appear to be any major impending issues in the district that would impact future enrollments other than what has been shown in the enrollment projections. However, it is important to examine recent real estate trends to determine if there are any indicators which could alter this conclusion. The real estate market across the country has been very active and Central New York is no different. Table 8 documents the real estate sales in the past two years compared to sales in the year prior in the Marcellus district. Thirteen more homes, approximately 12%, have been sold in 2020-21 as compared to 2019-20. These data do not consider the family size of either the sellers or buyers. While

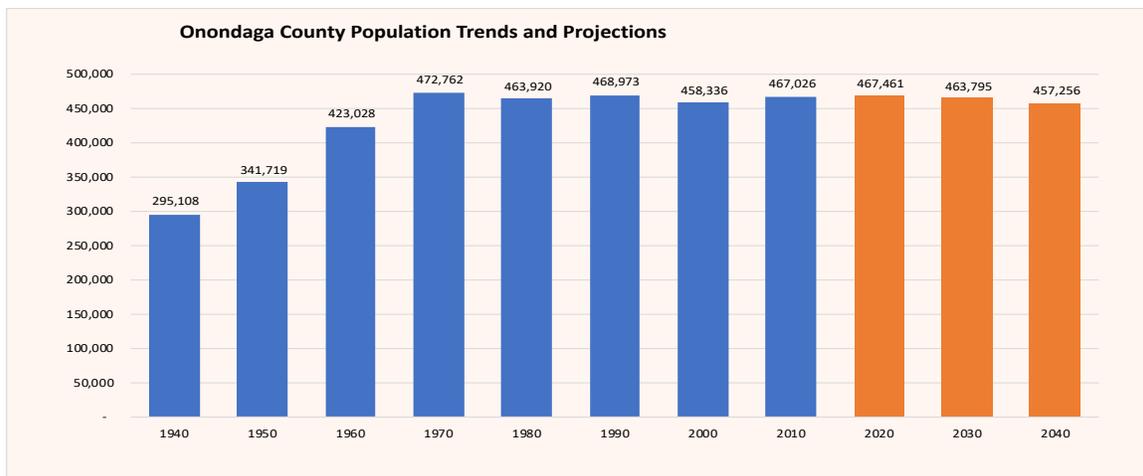
there have been more homes sold in the past year, the difference is not as significant as one might have predicted given the current market activity.

Table 8 Real Estate Sales Overview for Marcellus CSD	
Number of home sales 6.3.2020 - 6.3.2021	107
Number of home sales 6.3.2019 - 6.3.2020	94
Number of home sales pending on 6.3.2021	22
Number of homes active on 6.3.2021	15

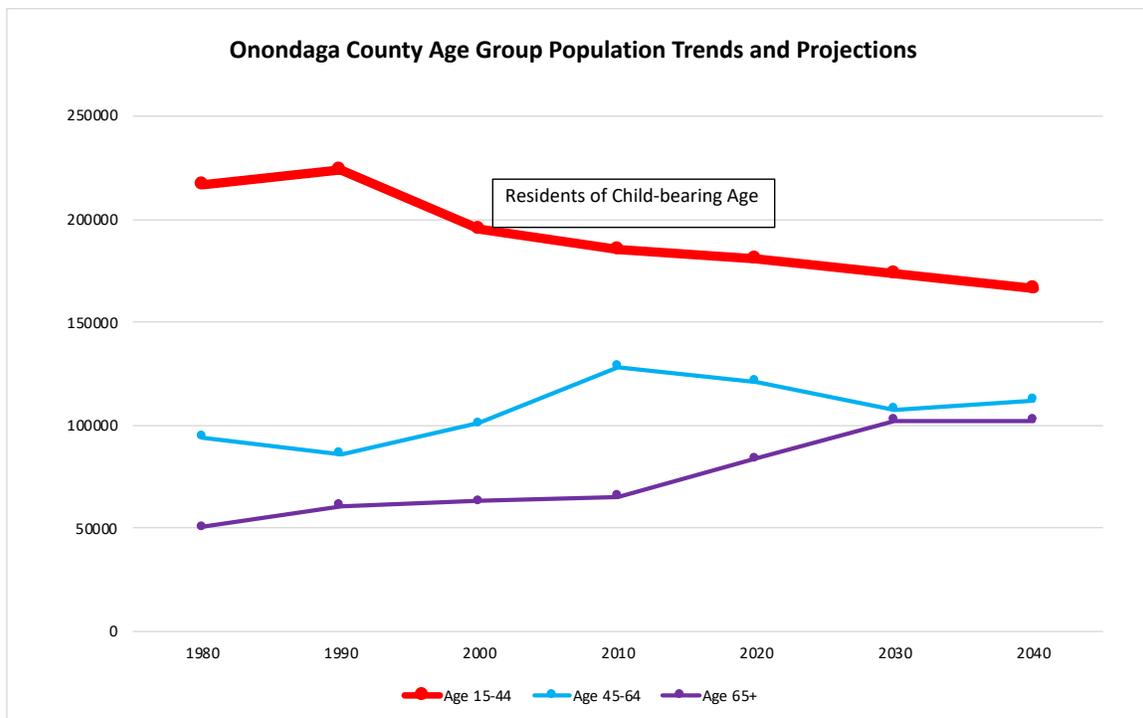
To summarize the enrollment section of this report, it is anticipated that the enrollment for the district will continue to decline, given the projection based on past enrollments. However, the district should continue to monitor the future enrollment in the elementary and middle school to determine if the projection trend of increasing enrollment at those levels actually occurs.

Finally, it is important to take at least a cursory look at the population history and future trends of the region in order to determine whether or not major change is upcoming for the greater Syracuse region that might impact the student enrollment in Marcellus.

The graph below illustrates the historical (blue) and projected (orange) U.S. Census population data for Onondaga County as compiled by Cornell University. The 2020 Census data have not been finalized and released at the time of this study so the 2020 data presented are still projections. The population in Onondaga County increased significantly from 1940 to 1970. From that point forward, the population has been relatively stable with a slight decrease projected over the next several decades.

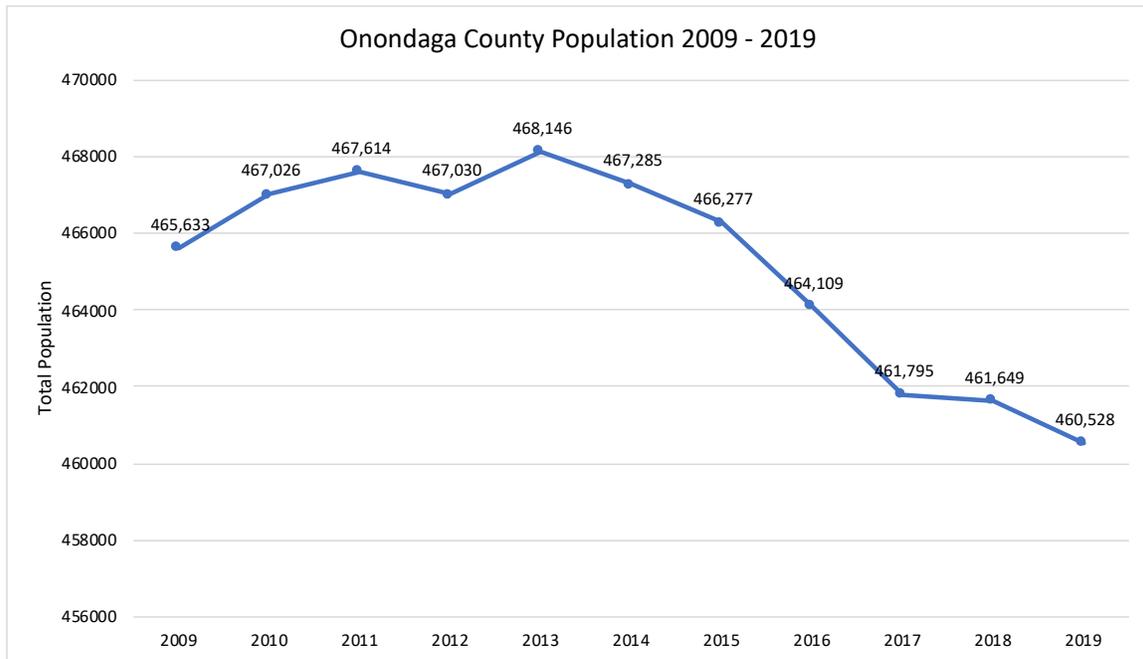


It is interesting to further break down the Census data. The graph that follows shows the population trends and projections by age group beginning in 1980. The age group of 15 – 44 is considered to be the group of child-bearing age. After an increase from 1980 to 1990, the population of this group in Onondaga County has steadily declined. This is in contrast to the 45 – 64 age group which has fluctuated over the analysis period and the 65+ age group which has been increasing since 1980 and is projected to continue this trend. Given this data, there is no reason to expect a significant increase in the future school age population of Onondaga County or Marcellus CSD.

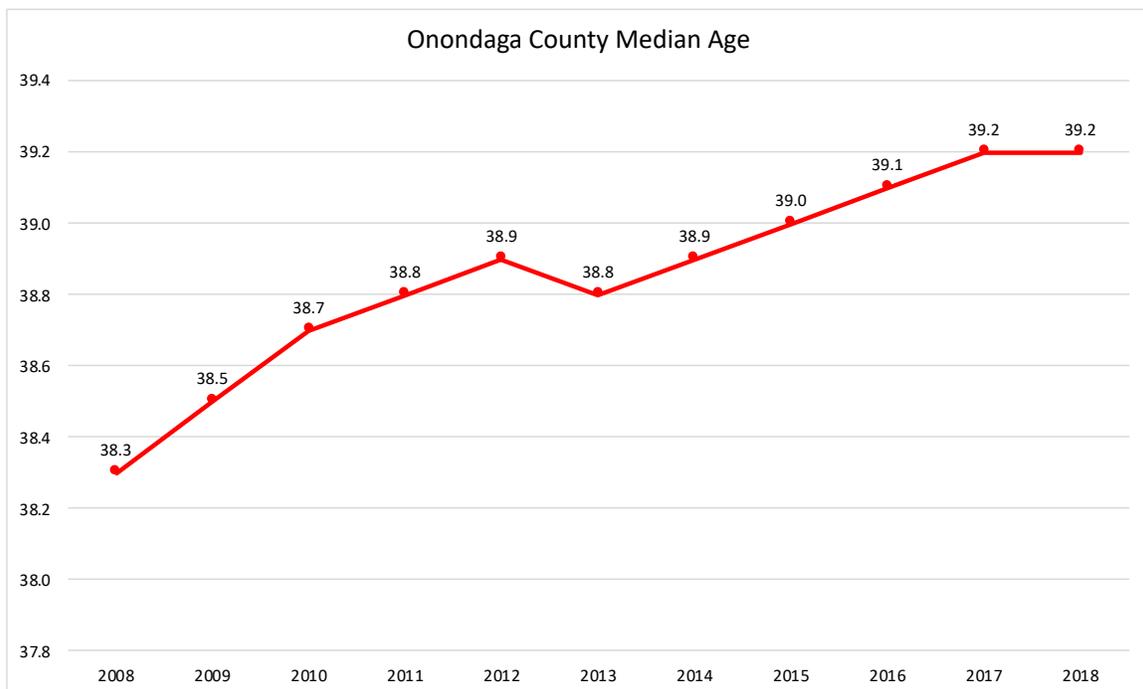


The graph below provides a year-by-year look at the actual Onondaga County population over the past decade. When compared to the first graph, an interesting story begins to unfold. The Census projection for 2020 is 467,461; a very slight increase over the actual 2010 population of 467,026. In the annual reported data below, the County population has declined since 2013 to 460,528 in 2019. This is much less than the 2020 projection. It would lead one to conclude that the actual 2020 Census data for Onondaga County will be less than projected. Regardless of

the exact number, these data further reinforces the conclusion that Onondaga County will not experience significant future population growth.



Lastly, the median age of the Onondaga County population from 2008 to 2018 as shown in the following graph has been increasing slightly throughout the past decade.



There is nothing in this county data to indicate that dramatic population shifts will be occurring in the future. The population of Onondaga County is projected to be stable at best (and possibly decline), the number of residents of child-bearing age will continue to decline, and the region will get older. It does not appear that any of these data will influence the student population in Marcellus in a dramatic way that would be inconsistent with what has been projected.

Summary

As documented in Table 9 below, the student enrollment in Marcellus has declined since the 2000-2001 school year as has the enrollment of nearly every other school district in upstate New York.

Table 9 Marcellus CSD Enrollment	
Year	Enrollment
2000-01	2181
2001-02	2177
2002-03	2164
2003-04	2146
2004-05	2129
2005-06	2118
2006-07	2082
2007-08	2066
2008-09	2020
2009-10	1982
2010-11	1947
2011-12	1878
2012-13	1832
2013-14	1740
2014-15	1736
2015-16	1655
2016-17	1609
2017-18	1564
2018-19	1526
2019-20	1489
2020-21	1432

Regardless of the assumptions used above (Tables 2A, 2B, and 2C), the enrollment of the Marcellus district is projected to continue to decline over the next seven years. The regional population projections support the conclusion that, absent any other local mitigating factors, the district's enrollment will likely decline.

The sole piece of data that contradicts this projection can be found in Table 3 where the enrollment for the elementary school and middle school are projected to increase over the next seven years. As noted above, it is important for the district to regularly update its enrollment projections and carefully monitor the trends in these buildings.