FutureThink
PLAN TO EMPOWER | Formerly DeJONG-HEALY

FINAL REPORT

BIG WALNUT LOCAL SCHOOLS | INSPIRE & GUIDE

Enrollment Projection Study
June 10, 2019

Big Walnut Local School District

INTRODUCTION

FutureThink was contracted to develop enrollment projections for the Big Walnut Local School District.

This report contains ten-year enrollment projections, which were developed for the Big Walnut Local School District by analyzing the following data:
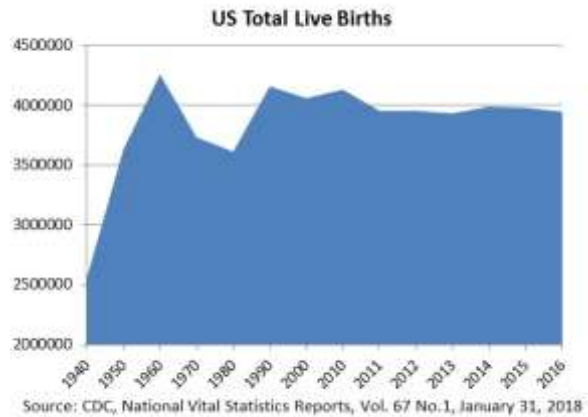
▸ Live birth data
▸ Historical enrollment
▸ Community school enrollment
▸ Open enrollment
▸ Community demographics
▸ Housing information

The projections presented in this report are meant to serve as a planning tool for the future and represent the most likely direction of the District.

NATIONAL & OHIO TRENDS IN ENROLLMENT

Tracing the landscape of the country's public school enrollment back over the past 70+ years reveals demographic, economic, and social changes. The United States as a whole continues to undergo major shifts in public student enrollment. The baby boom of the late 1940s and 50s was followed by the baby bust of the 1960s and 70s. An "echo" baby boom occurred in the 1980s, which then was followed by the echo baby bust from 1990 to 2000. There was a slight uptick from 2000 to 2010. Since 2011, the total number of births has been relatively flat.

US Total Live Births

Source: CDC, National Vital Statistics Reports, Vol. 67 No. 1, January 31, 2018

US Population - Live Birth Rate per 1,000 Population
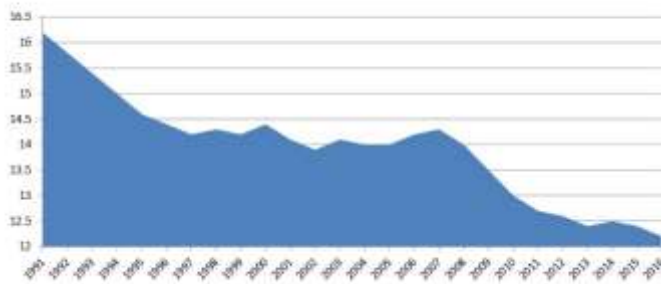
Source: CDC, National Vital Statistics Reports, Vol. 67 No. 1, January 31, 2018

With the live birth rate, there was an increase for the first time in several years in 1998. Other increases occurred in 2000, 2006, and 2007. Since 2007, the birth rate has resumed a descending pattern, reaching an all-time low in 2013. In 2014, there was a slight uptick, but declined again in 2015 and 2016.

Ohio has experienced a similar trend in live births as seen around the country. Live birth counts increased in 2000. A descending pattern resumed in 2001 with a slight stabilization from 2002 to 2005. Births increased slightly again in 2006 and 2007 but then declined to an all-time low of 138,024 in 2011. In 2012, 2013, and 2014, there were slight increases, but counts for 2015, 2016, and 2017 show additional decline.


Ohio Birth Counts
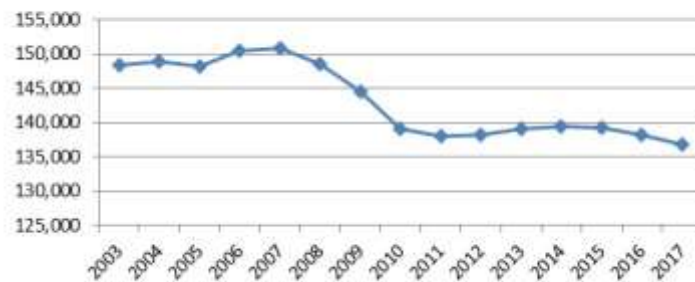
Big Walnut Local School District

In addition, to births dropping in Ohio, the state is also aging. The median age in 2017 was 39.9 years of age while the national median age is 37.9 years. In 2010, the median age in Ohio was 38.3 years.

In 2014-15, approximately 56 million students were enrolled in grades Pre-K-12 in the United States, an increase of 3% since the 2011-12 school year. Overall, enrollment is projected to increase by approximately 3% by the 2026-27 school year.

The figure below illustrates the projected change in Pre-K-12 public school enrollment from the 2014-15 to the 2026-27 school year. Growth is expected to continue primarily in the southeast and west. Washington, D.C.; North Dakota; and Utah are projected to experience the most growth. Ohio is projected to experience a decrease of 6 percent.
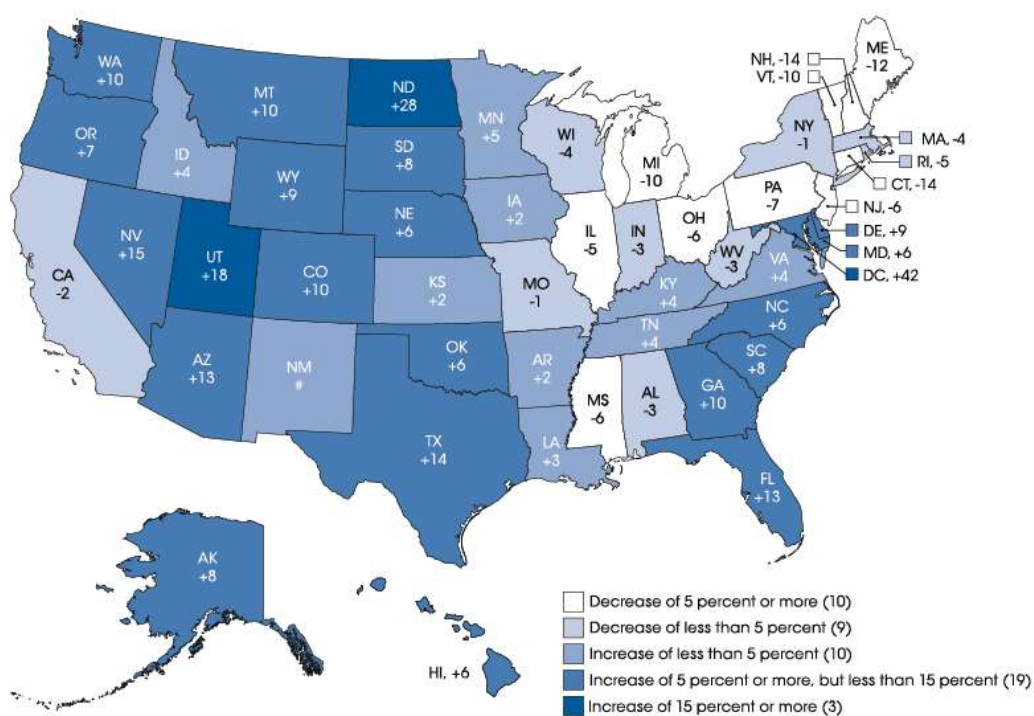
SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data CCD),"State Nonfiscal Survey of Public Elementary/Secondary Education," 2014-15; and Public State Elementary and Secondary Enrollment Model: 1980–2026. See *Digest of Education Statistics 2016*, table 203.20.

Big Walnut Local School District

In Ohio, enrollment has declined steadily for both public and non-public school enrollment. From 2008-09 to 2017-18, public school enrollment declined by 140,602 students or approximately 7% statewide.

Ohio Public School Enrollment
2008-09 - 2017-18

Year	October Headcount*
2008-09	1,852,542
2009-10	1,844,447
2010-11	1,832,832
2011-12	1,820,312
2012-13	1,811,532
2013-14	1,806,267
2014-15	1,810,577
2015-16	1,795,339
2016-17	1,755,552
2017-18	1,751,888

Source: Ohio Department of Education

*includes grades K-12 and ungraded
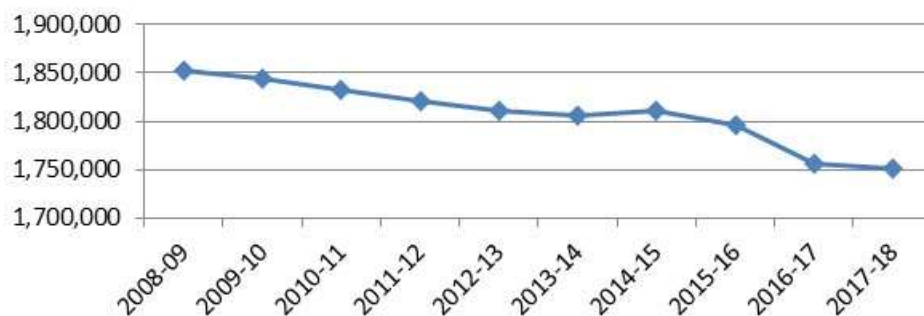
Big Walnut Local School District

From 2008-09 – 2017-18, private school enrollment has declined by 26,486 students or 14 percent.

Ohio Chartered Non-Public School Enrollment
2008-09 - 2017-18

Year	October ADM*
2008-09	195,343
2009-10	187,994
2010-11	181,420
2011-12	178,702
2012-13	176,166
2013-14	173,966
2014-15	173,030
2015-16	172,990
2016-17	171,426
2017-18	168,857

Source: Ohio Department of Education

*includes grades K-12

Ohio Non-Public School Enrollment
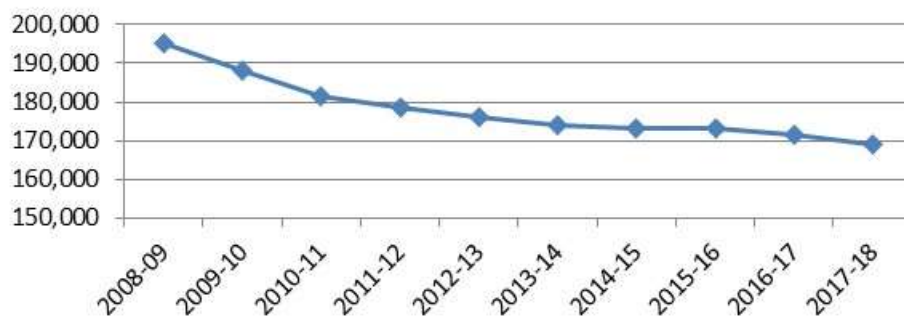
Big Walnut Local School District

Out of 610 school districts, only 89 (or approximately 15%) gained enrollment in grades K - 12 from the 2008-09 to the 2017-18 school year. Of the 521 school districts who lost enrollment, only 72 (or 14%) lost less than 5 percent, and 108 districts (or 21%) lost between 5 and 10 percent. Approximately 46% (or 240 districts) lost between 10 and 20 percent.

For those districts that gained enrollment, 54% increased by less than 5 percent. Of the 10 districts with the greatest increase in students, one is located in Delaware County and seven in Franklin County.

Analyzing enrollment from a county perspective, only 3 of the 88 counties in Ohio gained K – 12 enrollment from the 2008-09 to the 2017-18 school year: Delaware, Franklin and Warren.

County	Percentage Gain
Delaware	30.97%
Franklin	3.98%
Warren	2.41%

Lake County had the highest percentage loss of students at 37.54 percent. Fifty-nine percent of the counties (52 total) experienced a decline of greater than 10 percent. The map on the following page illustrates the gain/loss for each county from the 2008-09 to the 2017-18 school year.

Big Walnut Local School District

**Student Enrollment Growth/Loss
From School Years 2008-09 to 2017-18**

Percent Change
- -37.51% - -20%
- -19.99% - -15%
- -14.99% - -10%
- -9.99% - -5%
- -4.99% - 0%
- +2.41%
- +3.98%
- +30.97%
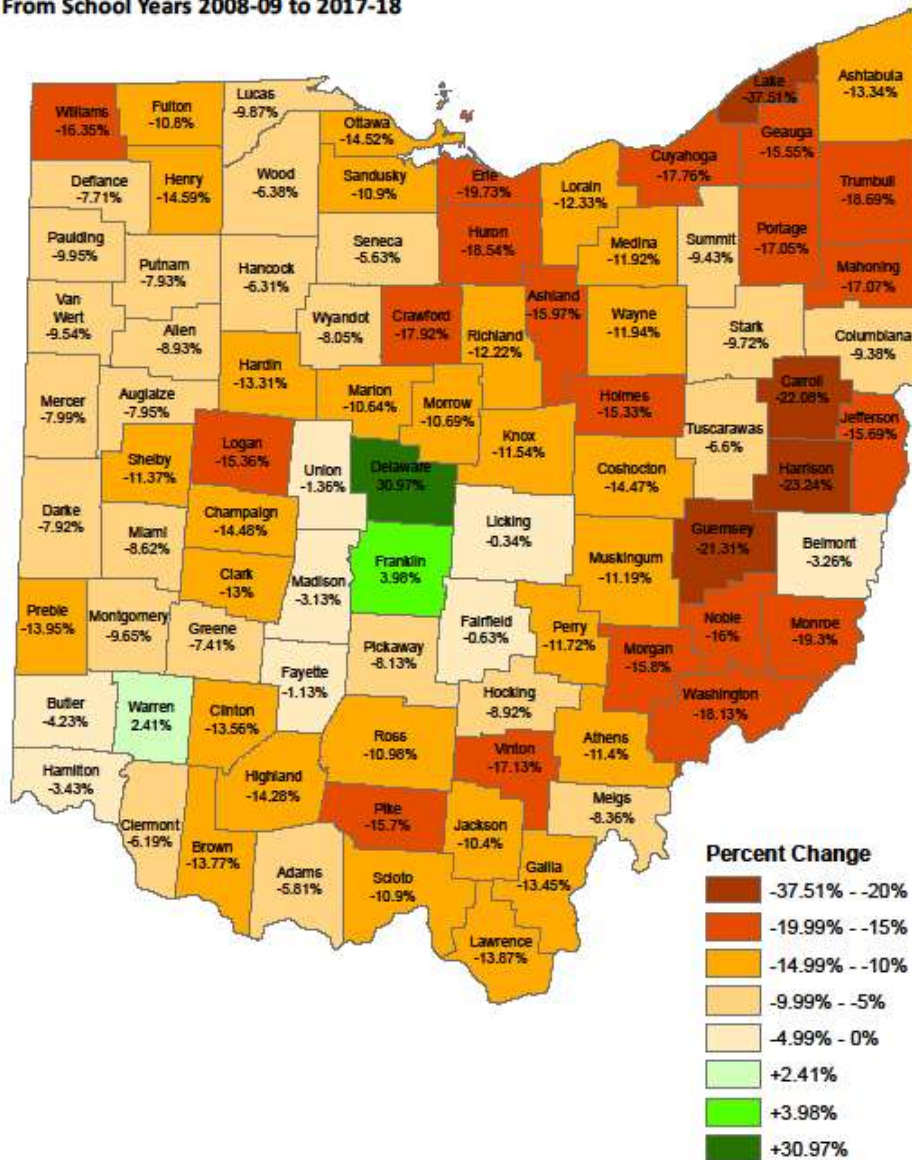
ENROLLMENT PROJECTION METHODOLOGIES

When projecting future enrollments, it is vital to track the number of births, the patterns of enrollment, the amount of new housing activity, and the change in household composition.

In addition, any of the following factors could cause a significant change in projected student enrollments:
- Boundary adjustments
- New school openings
- Changes/additions in program offerings
- Preschool programs
- Change in grade configuration
- Interest rates/unemployment shifts
- Magnet/charter/private school opening or closure
- Zoning changes
- Unplanned new housing activity
- Planned, but not built, housing

Obviously, certain factors can be gauged and planned for far better than others. For instance, it may be relatively straightforward to gather housing data from local builders regarding the total number of lots in a planned subdivision and calculate the potential student yield. However, planning for changes in the unemployment rate, and how these may either boost or reduce public school enrollment, proves more difficult. In any case, it is essential to gather a wide variety of information in preparation for producing enrollment projections.

When looking ahead at a school district's enrollment over the next two, five, or ten years, it is helpful to approach the process from a global perspective. For example: How many new homes have been constructed each year? How many births have occurred each year in relation to the resident population? Is housing experiencing a turnover – if so, what is the composition of families moving in/out? Are more or less students attending private school or being home-schooled? What new educational policies are in place now that could affect student enrollment figures?

The data sets generated from questions such as these have led to the development of general methodologies to project future student enrollments. They are as follows:

Big Walnut Local School District

Cohort Survival Method

A cohort is a group of persons [in this case, students]. The cohort survival projection methodology uses previous live birth data and historical student enrollments to "age" a known population or cohort throughout the school grades. For instance, a cohort begins when a group of kindergarteners enrolls in grade K and moves to first grade the following year, second grade the next year, and so on.

TIME

```
┌─────────────────┐
│       100       │
│  Kindergarteners│
└─────────────────┘
         ⟶   ┌─────────────────┐
             │       105       │
             │   1st Graders   │
             └─────────────────┘
                      ⟶   ┌─────────────────┐
                          │       110       │
                          │   2nd Graders   │
                          └─────────────────┘
```
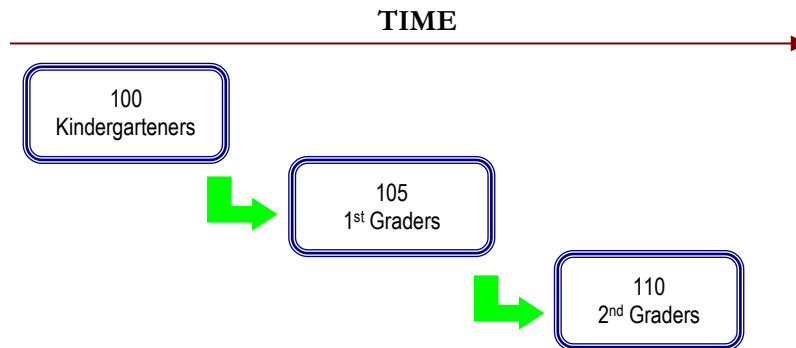
A "survival ratio" is developed to track how this group of students grew or shrunk in number as they moved through the grade levels. By determining survival ratios for each grade transition [i.e., 1st to 2nd grade] over a ten-year period of time, patterns emerge and projection ratios can be developed to be used as a multiplier.

For example, if student enrollment has consistently increased from the 8th to the 9th grade over the past ten years, the survival ratios for each year would be greater than 100 percent. Through analysis of the survival ratios, the projection ratio is determined and is multiplied by the current 8th grade to develop a projection for next year's 9th grade.

This methodology can be carried through to develop ten years of projection figures. Because there is not a grade cohort to follow for students coming into kindergarten, live birth counts are used to develop a survival ratio. Babies born five years previous to the kindergarten class are compared in number, and a ratio can be developed to project future kindergarten enrollments.

The cohort survival method is useful in areas where population is stable [relatively flat, growing steadily, or declining steadily], and where there have been no significant fluctuations in enrollment, births, and housing patterns from year to year.

Big Walnut Local School District

Housing

Enrollment projections can also be determined by analyzing the housing data for the areas that make up a school district. Yield factors can be established by comparing the historic change in enrollment from year to year divided by the total number of building or occupancy permits issued. For example, if student enrollment has increased by approximately 100 students each year and approximately 200 building permits have been issued each year for the past ten years, then the yield factor would be approximately .5 students per building permit.
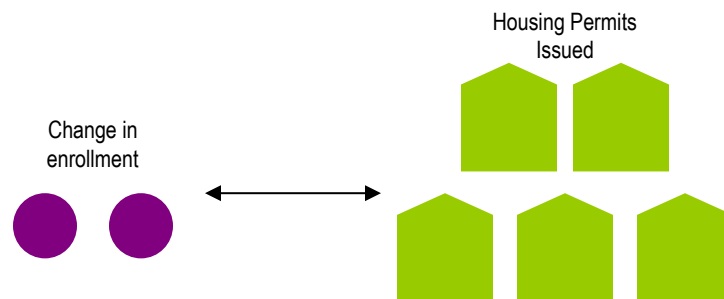
Once yield factors are established, the number of new students per year can be estimated by multiplying the yield factor by the number of projected new housing units. This method is effective when the rate of kindergarten enrollment far exceeds the live birth counts.

If housing demolitions are occurring in a district, these must also be taken into account. For instance, if housing demolitions/withdrawals have increased rapidly over recent years while new housing starts have remained relatively constant over many years, the conclusion may be that some of the new housing starts will simply be replacements for the families displaced by the demolitions. Of course, housing value and household composition would need to be further analyzed to confirm that this is indeed the case. It is possible that enrollment may remain flat or decline even though there is new housing occurring in the area.

Big Walnut Local School District

Land-Saturation Analysis

Housing data also drives the land-saturation analysis enrollment methodology. In areas where there is a high rate of development and the future development patterns in the area are clear, a "build-out" scenario can be developed. The scenario takes into consideration the remaining acreage to be developed, planned rate of completion, zoning policies, density per acre, type of housing, and ratios of school-age children per household type. This method is particularly useful in areas experiencing rapid growth.
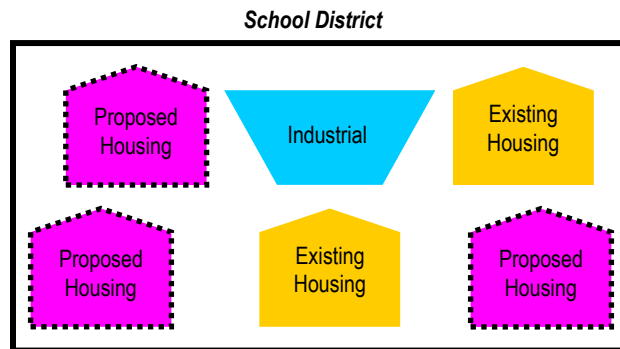
School District

Geographic Information Systems

While not a methodology, the need for better tools and easier manipulation of data has led to a new industry standard in planning – GIS [Geographic Information Systems]. GIS technology allows school districts to quickly analyze countless data sets including birth data, housing information, and enrollment statistics.

When paired with enrollment projections, GIS becomes an invaluable information-management and decision-making tool. Often, county or city offices are already implementing GIS technology and data can be shared and expanded among these organizations in the district. GIS tables and maps are included within this report illustrating population, age, and income estimates and projections.

A combination of the cohort survival and housing methods were used in the development of the enrollment projections for the Big Walnut Local School District.

Big Walnut Local School District

ENROLLMENT COMPARISON

In 2015, four sets of enrollment projections were developed: most likely, low, moderate, and high. The actual enrollment for 2018-19 is between the low and the moderate projections. The low projections were based on 150 new homes being developed each year while the moderate projections were based on 250 new homes per year. The actual number of new homes developed each year has ranged between 153 and 251 homes.

The tables below illustrate the differences by grade between the low and moderate projections and the actual enrollment. The low projection is within 49 students, and the moderate is within 73 students.

Big Walnut Local School District
Actual vs. Projected Enrollment - Low

Grade	2018-19 Actual	2018-19 EP	Difference	Percentage
Pre-K	165	89	76	46.06%
K	283	247	36	12.72%
1	291	245	46	15.81%
2	295	270	25	8.47%
3	296	309	-13	-4.39%
4	292	323	-31	-10.62%
5	308	307	1	0.32%
6	274	304	-30	-10.95%
7	309	331	-22	-7.12%
8	288	288	0	0.00%
9	308	322	-14	-4.55%
10	275	282	-7	-2.55%
11	269	286	-17	-6.32%
12	227	223	4	1.76%
Pre- K - 12 Total	3,880	3,826	54	1.39%
Other	1	6	-5	-500.00%
Grand Total	3,881	3,832	49	1.26%

Source: Big Walnut Local School District, FutureThink

Big Walnut Local School District
Actual vs. Projected Enrollment - Moderate

Grade	2018-19 Actual	2018-19 EP	Difference	Percentage
Pre-K	165	96	69	41.82%
K	283	267	16	5.65%
1	291	264	27	9.28%
2	295	291	4	1.36%
3	296	328	-32	-10.81%
4	292	321	-29	-9.93%
5	308	306	2	0.65%
6	274	305	-31	-11.31%
7	309	340	-31	-10.03%
8	288	293	-5	-1.74%
9	308	329	-21	-6.82%
10	275	287	-12	-4.36%
11	269	292	-23	-8.55%
12	227	229	-2	-0.88%
Pre-K - 12 Total	3,880	3,948	-68	-1.75%
Other	1	6	-5	-500.00%
Grand Total	3,881	3,954	-73	-1.88%

Source: Big Walnut Local School District, FutureThink

June 10, 2019

Big Walnut Local School District

HISTORICAL ENROLLMENT

Over the past ten years, student enrollment in the Big Walnut Local School District has increased by 849 students in grades Pre-K – 12, including other students. Total enrollment for the 2018-19 school year is 3,881 students.

The following tables and graph illustrate the District's Pre-K – 12 enrollment history from 2009-10 through 2018-19.

Big Walnut Local School District
Historical Enrollment

Grade	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Pre-K	53	46	46	60	64	87	106	128	157	165
K	229	215	238	205	217	243	244	272	271	283
1	237	241	228	276	233	255	280	276	278	291
2	228	228	244	241	266	257	274	280	281	295
3	206	229	227	260	260	292	271	294	285	296
4	222	210	230	238	265	253	298	271	294	292
5	233	223	210	236	251	281	254	307	276	308
6	214	226	228	215	249	247	292	262	303	274
7	216	217	240	240	215	263	264	297	261	309
8	231	215	218	245	244	222	264	269	308	288
9	263	241	244	231	258	253	236	266	268	308
10	245	239	237	238	235	266	254	229	269	275
11	240	248	235	237	232	224	257	254	234	269
12	214	212	234	214	221	227	201	253	250	227
Pre-K - 12 Total	3,031	2,990	3,059	3,136	3,210	3,370	3,495	3,658	3,735	3,880
Other	1	4	4	2	4	5	5	5	2	1
Grand Total	3,032	2,994	3,063	3,138	3,214	3,375	3,500	3,663	3,737	3,881

Source: Ohio Department of Education, EMIS; Big Walnut Local School District

Big Walnut Local School District
Historical Enrollment by Grade Group

Grade	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Pre-K - 4	1,175	1,169	1,213	1,280	1,305	1,387	1,473	1,521	1,566	1,622
5 - 6	447	449	438	451	500	528	546	569	579	582
7 - 8	447	432	458	485	459	485	528	566	569	597
9 - 12	962	940	950	920	946	970	948	1,002	1,021	1,079
Pre-K - 12 Total	3,031	2,990	3,059	3,136	3,210	3,370	3,495	3,658	3,735	3,880
Other	1	4	4	2	4	5	5	5	2	1
Grand Total	3,032	2,994	3,063	3,138	3,214	3,375	3,500	3,663	3,737	3,881

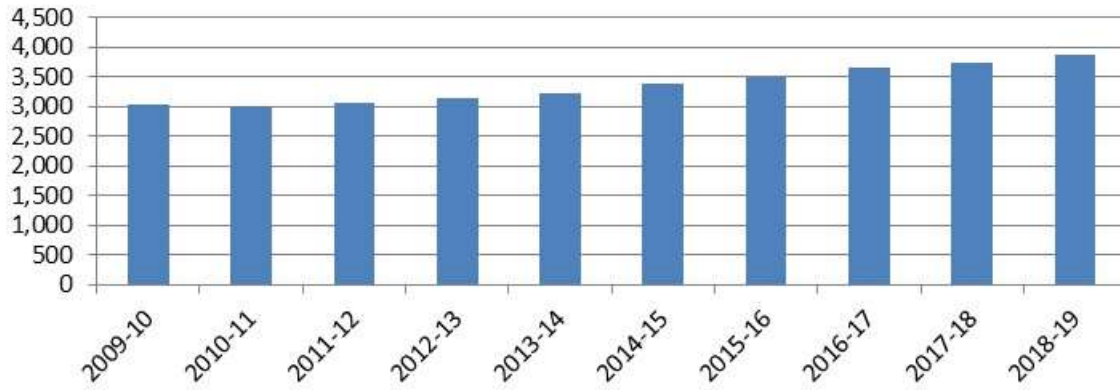Source: Ohio Department of Education, EMIS; Big Walnut Local School District
2018-19 data as of 4/30/19

June 10, 2019

Big Walnut Local School District
Historical Enrollment

Big Walnut Local School District

COMMUNITY SCHOOL ENROLLMENT

In Ohio, community school enrollment has increased dramatically over the last decade. From 2008-09 to 2017-18, enrollment has increased by approximately 18% from 88,536 students in 327 community schools to 104,380 students in 340 community schools. However, there has been a decrease of approximately 14% in both the enrollment and number of schools since the 2013-14 school year. Please note the following data is subject to adjustment based on final reconciliation.

Ohio
Community School Enrollment (Pre-K - 12)

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Grand Total	88,536	93,623	99,658	108,124	115,225	120,893	120,200	117,282	110,961	104,380

Source: Ohio Department of Education, Ohio Community Schools Annual Report 2017-18
FTE students
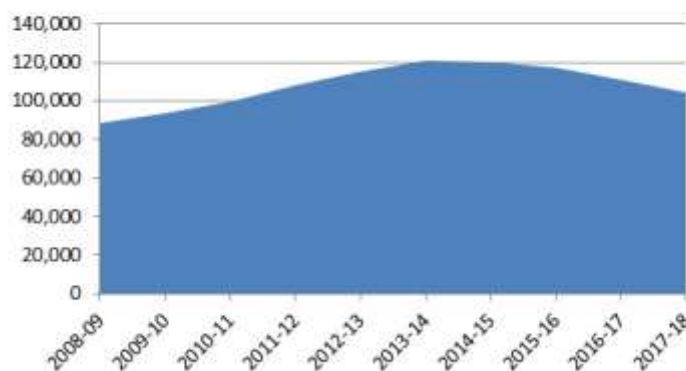
Ohio
Number of Community Schools

Grade	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Grand Total	327	323	341	355	367	395	381	373	362	340

Source: Ohio Department of Education, Ohio Community Schools Annual Report 2017-18

June 10, 2019
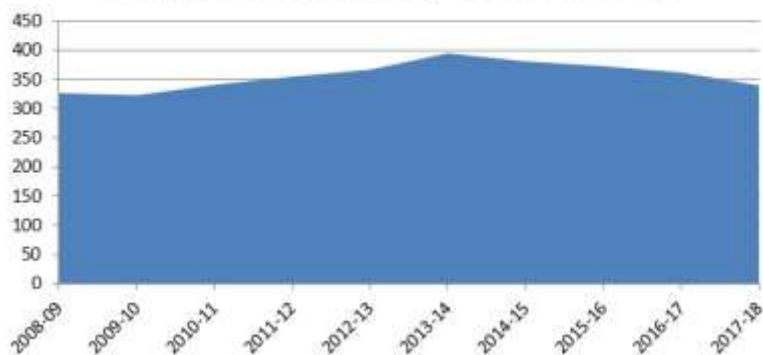
Big Walnut Local School District

Since 2009-10, the number of Big Walnut Local School District students attending community schools has fluctuated between 49 and 100 students. Enrollment of Big Walnut Local School District students attending community schools should be closely monitored as it may have a significant impact on District enrollment in the future.

Big Walnut Local School District
Students Attending Community Schools
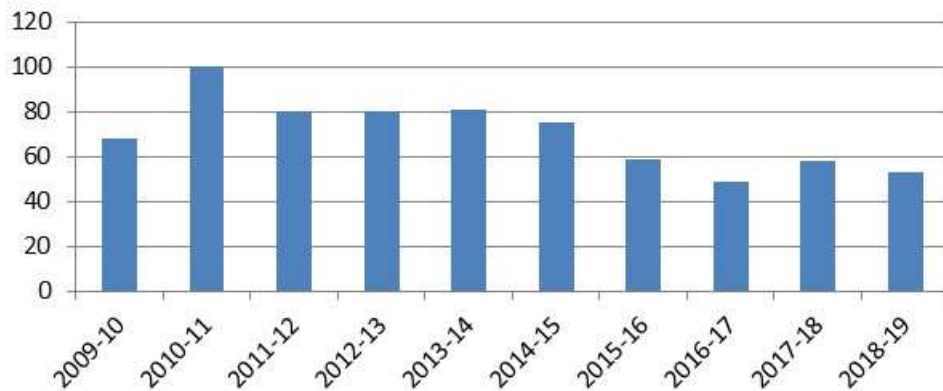
Big Walnut Local School District

OPEN ENROLLMENT

The number of Big Walnut Local School District students "open enrolling" into the District has fluctuated between 50 and 73 students. The number of students "open enrolling" out of the District has fluctuated between 4 and 22 students. Significant changes in the number of students "open enrolling" into or out of the District from year to year can impact enrollment projections and should be monitored.

Big Walnut Local School District
Open Enrollment
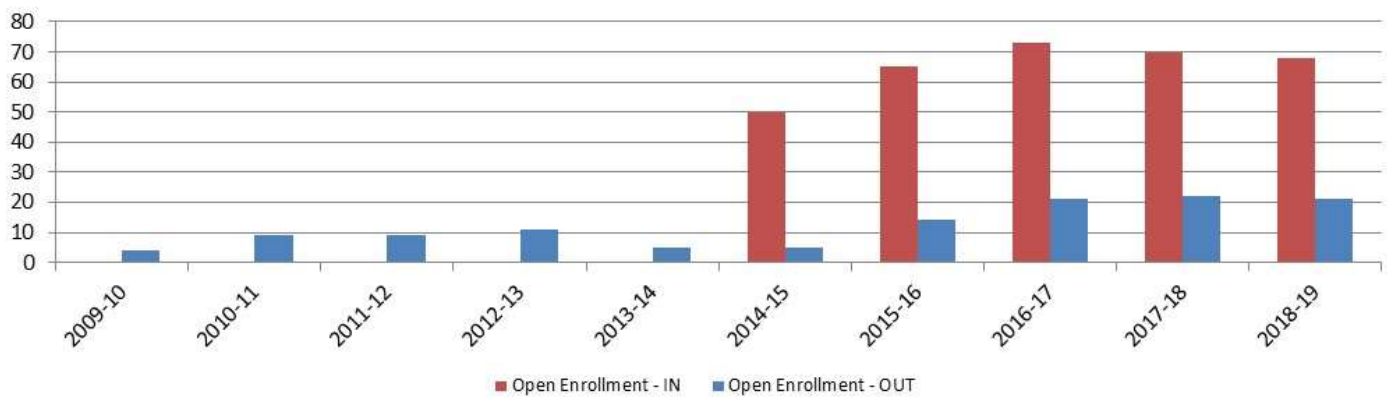
Big Walnut Local School District

LIVE BIRTH DATA

Utilization of live birth data is recommended when projecting future kindergarten enrollments as it provides a helpful overall trend. The live birth counts are used in determining a birth-to-kindergarten survival ratio. This ratio identifies the percentage of children born in a representative area who attend kindergarten in the District five years later. The survival ratios for birth-to-kindergarten as well as grades 1-12 can be found later in this report.

The Ohio Department of Health [ODH] data warehouse provides information about live birth events for Ohio residents. Information about events occurring outside of Ohio to Ohio residents is included. Information about events occurring inside Ohio to non-Ohio residents is not included.

Data is arranged by the residence of the mother. For example, if a mother lives in Powell, Delaware County but delivers her baby in Columbus, Franklin County, the birth is counted in Powell, Delaware County.

The number of live births is recorded by:
▶ State
▶ County
▶ City/Town
▶ Census Tract
▶ Zip Code
▶ Address [not available to the public]

Live birth counts are different from live birth rates. The live birth count is the actual number of live births. A birth rate is the number of births per 1,000 women in a specified population group. Birth rates are provided for counties only and for 9 age groups from 10-14 years to 45+ years.
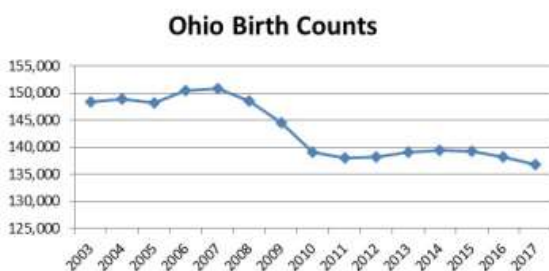
Ohio has experienced a similar trend in live births as seen around the country. Live birth counts increased in 2000. A descending pattern resumed in 2001 with a slight stabilization from 2002 to 2005. Births increased slightly again in 2006 and 2007 but then declined to an all-time low of 138,024 in 2011. In 2012, 2013, and 2014, there were slight increases, but counts for 2015, 2016, and 2017 show additional decline.

FutureThink
Formerly DeJONG-HEALY

Big Walnut Local School District

The following table and graph include the live birth counts for zip codes 43011, 43021, 43031, 43032, 43074, 43081, 43082, and 43334. However, upon analysis of the map on page 20, only zip codes 43021, 43074, and 43082 were used for projection purposes. Please note, since completing the 2015 Enrollment Projection Report, we received an update from the Ohio Department of Health. There are some slight changes in the birth data reflected in the table below from what was previously included in the 2015 Enrollment Projection Report.

Big Walnut Local School District
Live Birth Count by Zip Code
2003-2017

Year	43011	43021	43031	43032	43074	43081	43082	43334	Total # of Live Births	Total # of Live Births Used
2003	83	82	120	2	153	654	406	71	1,571	641
2004	97	94	128	0	154	650	413	65	1,601	661
2005	72	89	131	2	151	620	372	81	1,518	612
2006	91	103	127	3	137	664	366	72	1,563	606
2007	103	129	155	3	149	698	325	63	1,625	603
2008	81	122	126	1	150	710	312	80	1,582	584
2009	76	116	136	2	129	692	288	77	1,516	533
2010	89	113	113	2	139	711	312	69	1,548	564
2011	83	118	134	0	123	769	291	63	1,581	532
2012	90	112	117	2	129	733	260	67	1,510	501
2013	71	109	144	1	138	803	338	62	1,666	585
2014	68	129	148	1	156	803	300	73	1,678	585
2015	93	144	114	1	148	825	321	65	1,711	613
2016	83	111	153	2	139	834	294	81	1,697	544
2017*	78	95	141	1	139	805	286	61	1,606	520

Source: Ohio Department of Health, Statistical Analysis Unit
*preliminary

June 10, 2019
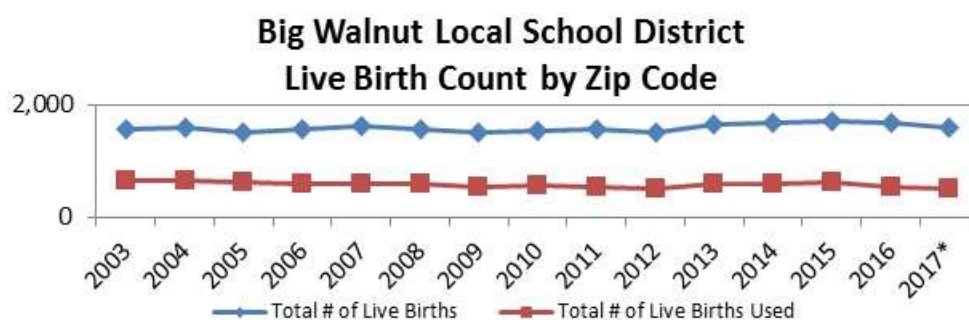
Big Walnut Local School District
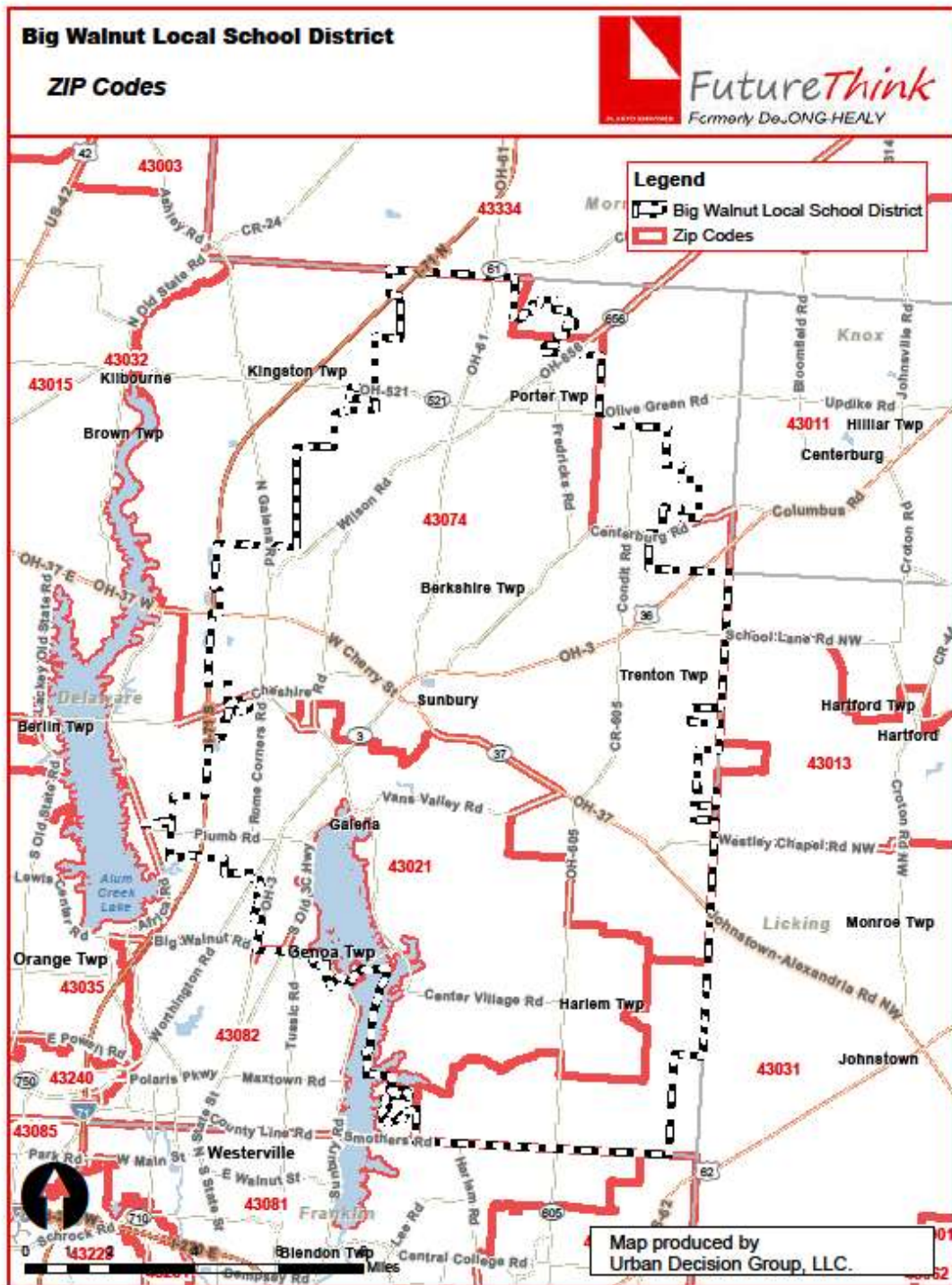
Big Walnut Local School District

DEMOGRAPHICS

The Big Walnut Local School District is comprised of Berkshire, Genoa, Harlem, Kingston, Porter, and Trenton townships and Galena and Sunbury villages in Delaware County. General demographic data is included in the following tables for the areas located completely or partially in the District.

General Demographic Information

	Delaware County	State of Ohio
Per Capita Income	$45,116	$29,011
Median Household Income	$100,229	$52,407
Persons Below Poverty	5.1%	14.9%

Source: US Census, American Community Survey, 2017 5-Year Estimates

Total Population

	2000 Census	2010 Census
Delaware County	109,989	174,214
Berkshire Township	225	3,085
Galena Village	305	653
Genoa Township	11,293	23,093
Harlem Township	3,762	3,953
Kingston Township	1,603	2,156
Porter Township	1,696	1,923
Sunbury Village	2,630	4,389
Trenton Township	2,137	2,190

Source: ODOD Policy Research & Strategic Planning Office, August 2011

Also included are block group estimates and projections provided by ESRI. ESRI uses a time series of estimates from the U.S. Census Bureau that includes the latest estimates and inter-censual estimates adjusted for error of closure. The Census Bureau's time series is consistent, but testing has revealed improved accuracy by using a variety of sources to track county population trends.

ESRI also employs a time series of building permits and housing starts plus residential deliveries. Data sources are integrated and then analyzed by Census Block Groups.

Sources of data include:
▶ Supplementary Surveys of the Census Bureau
▶ Bureau of Labor Statistics' (BLS) Local Area Unemployment Statistics
▶ BLS Occupational Employment Statistics
▶ *Info*USA
▶ U.S. Bureau of the Census' Current Population Survey
▶ National Planning Association Data Service

FutureThink
Formerly DeJONG-HEALY

Big Walnut Local School District

Below is a list of definitions as they appear on the U.S. Census Bureau website, to aid in interpretation of the following tables and maps.

Household:
A household includes all the people who occupy a housing unit as their usual place of residence.

Average family size:
A measure obtained by dividing the number of members of families by the total number of families (or family householders).

Family household (Family):
A family includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in census tabulations. Thus, the number of family households is equal to the number of families, but family households may include more members than do families. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may comprise a group of unrelated people or one person living alone.

Householder:
The person, or one of the people, in whose name the home is owned, being bought, or rented. If there is no such person present, any household member 15 years old and over can serve as the householder for the purposes of the census. Two types of householders are distinguished: a family householder and a nonfamily householder. A family householder is a householder living with one or more people related to him or her by birth, marriage, or adoption. The householder and all people in the household related to him are family members. A nonfamily householder is a householder living alone or with nonrelatives only.

Big Walnut Local School District

The following tables illustrate the current estimates and 5-year population projections based on block groups that comprise the state and school district, indicating areas of current and projected growth. The tables have been developed to determine selected age group projections and projections for household income, family size, and total households.

The total population in the State of Ohio is 11,772,676. This population is projected to increase by 146,828 people, or approximately 1% over a 5-year period.

The 0-18 year-old population in the State currently totals 2,687,291. This population is projected to decrease by 4,559 children, or less than 1 percent.

The median age is projected to increase by approximately 2% from 40.0 to 40.7 years of age.

State of Ohio	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Total Population	11,772,676	11,919,504	146,828	1.2%
Age 0-4	678,107	678,004	-103	0.0%
Age 5-9	702,177	693,853	-8,324	-1.2%
Age 10-14	727,557	726,814	-743	-0.1%
Age 15-18	579,450	584,061	4,611	0.8%
Total Age 0-18	2,687,291	2,682,732	-4,559	-0.2%
Median Age	40.0	40.7	0.7	1.8%

Source: ESRI

State of Ohio Population Estimates & Projections by Age Group
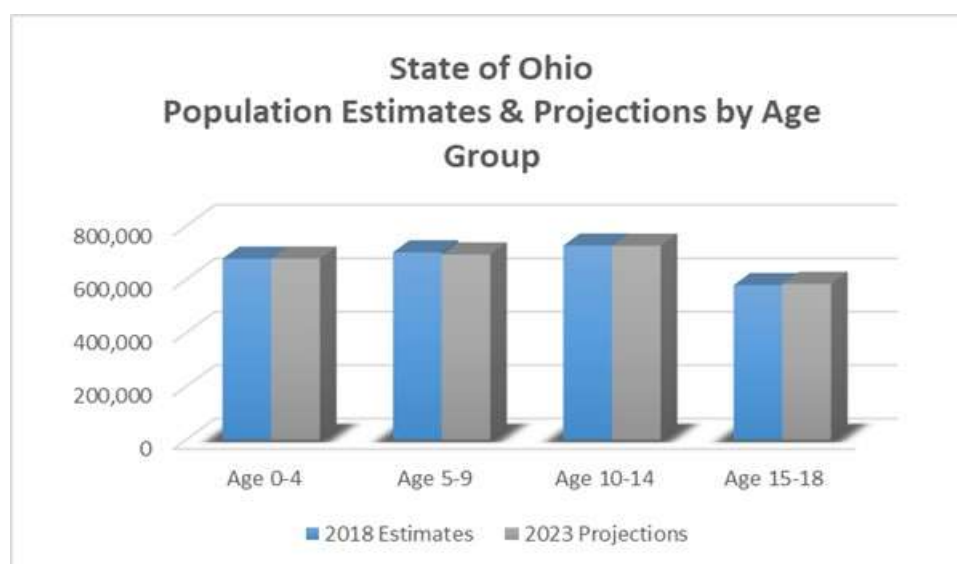
Big Walnut Local School District

The total population in the District is 20,401. This population is projected to increase by 1,951 people, or approximately 10% over a 5-year period. The 0-18 year-old population in the District currently totals 5,112. This population is projected to increase by 308 people, or 6 percent. The median age is projected to increase by approximately 2%, from 42.6 to 43.6 years of age.

Big Walnut Local School District	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Total Population	20,401	22,352	1,951	9.6%
Age 0-4	1,199	1,265	66	5.5%
Age 5-9	1,380	1,416	36	2.6%
Age 10-14	1,473	1,552	79	5.4%
Age 15-18	1,060	1,187	127	12.0%
Total Age 0-18	5,112	5,420	308	6.0%
Median Age	42.6	43.6	1.0	2.3%

Source: ESRI

Big Walnut Local School District Population Estimates & Projections by Age Group
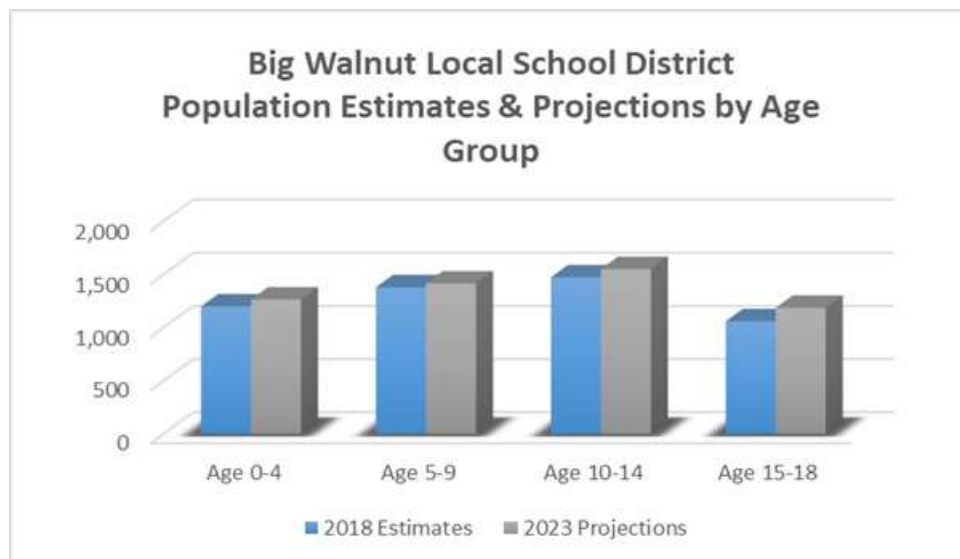
Big Walnut Local School District

Median and average household incomes in the State are projected to increase by approximately 11% and 15%, respectively over a 5-year period. The average family size and total number of family households are both expected to increase slightly.

State of Ohio	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Median Household Income	$53,378	$59,356	$5,978	11.2%
Average Household Income	$72,517	$83,630	$11,113	15.3%
Average Family Size	3.04	3.05	0.01	0.3%
Total Family Households	3,005,668	3,025,590	19,922	0.7%

Source: ESRI

Median and average household incomes in the District are projected to increase by approximately 12% and 14%, respectively over a 5-year period. The average family size is projected to increase slightly, and the number of family households is projected to increase by approximately 9 percent.

Big Walnut Local School District	2018 Estimates	2023 Projections	Change 2018-23	Change 2018-23 (%)
Median Household Income	$88,960	$99,481	$10,521	11.8%
Average Household Income	$109,035	$123,975	$14,940	13.7%
Average Family Size	3.05	3.06	0.01	0.3%
Total Family Households	5,961	6,508	547	9.2%

Source: ESRI

The maps on the following pages illustrate the data identified in the tables. The color coding identifies areas within the District that may be increasing or decreasing at different rates than others.

Big Walnut Local School District
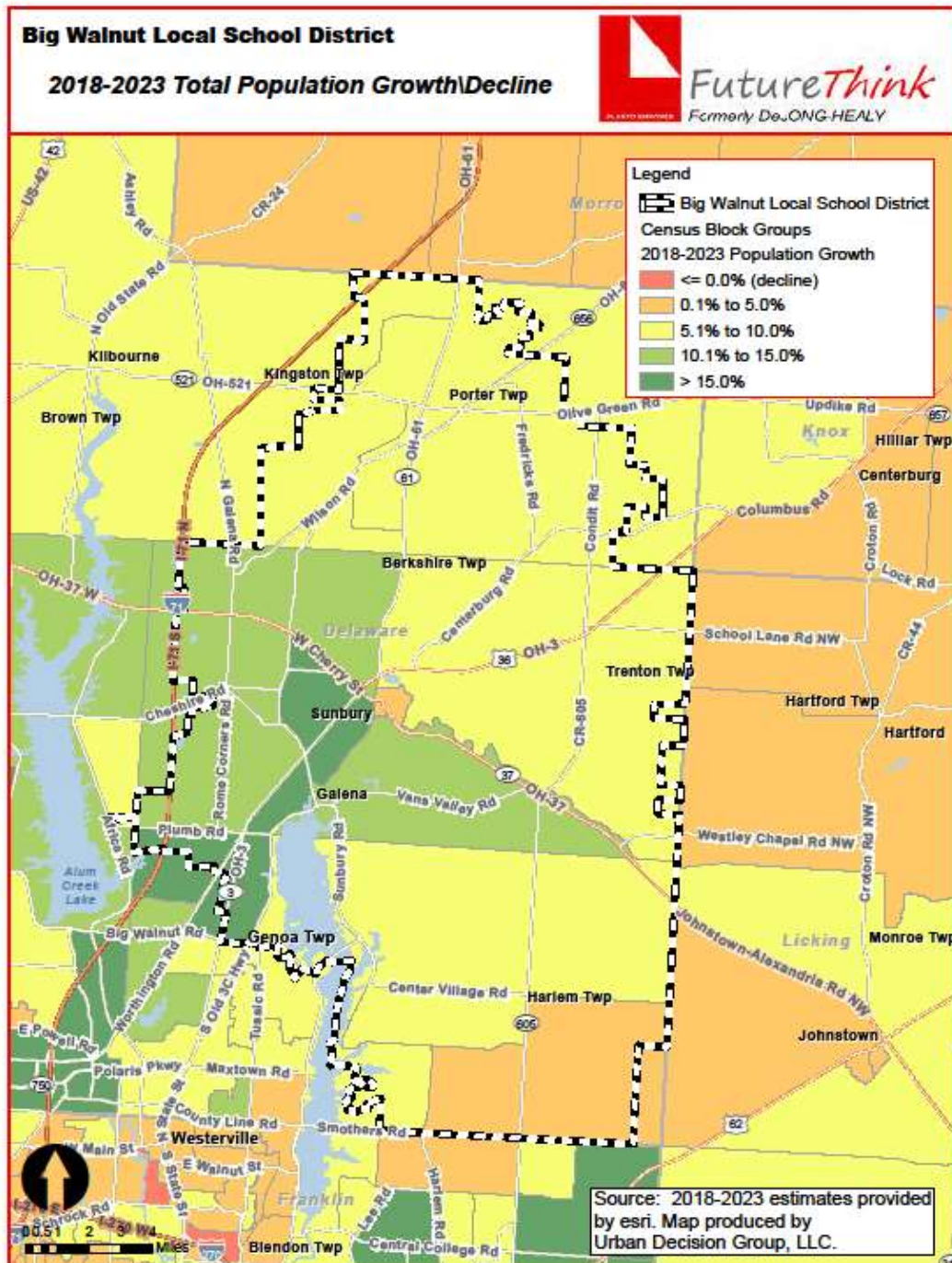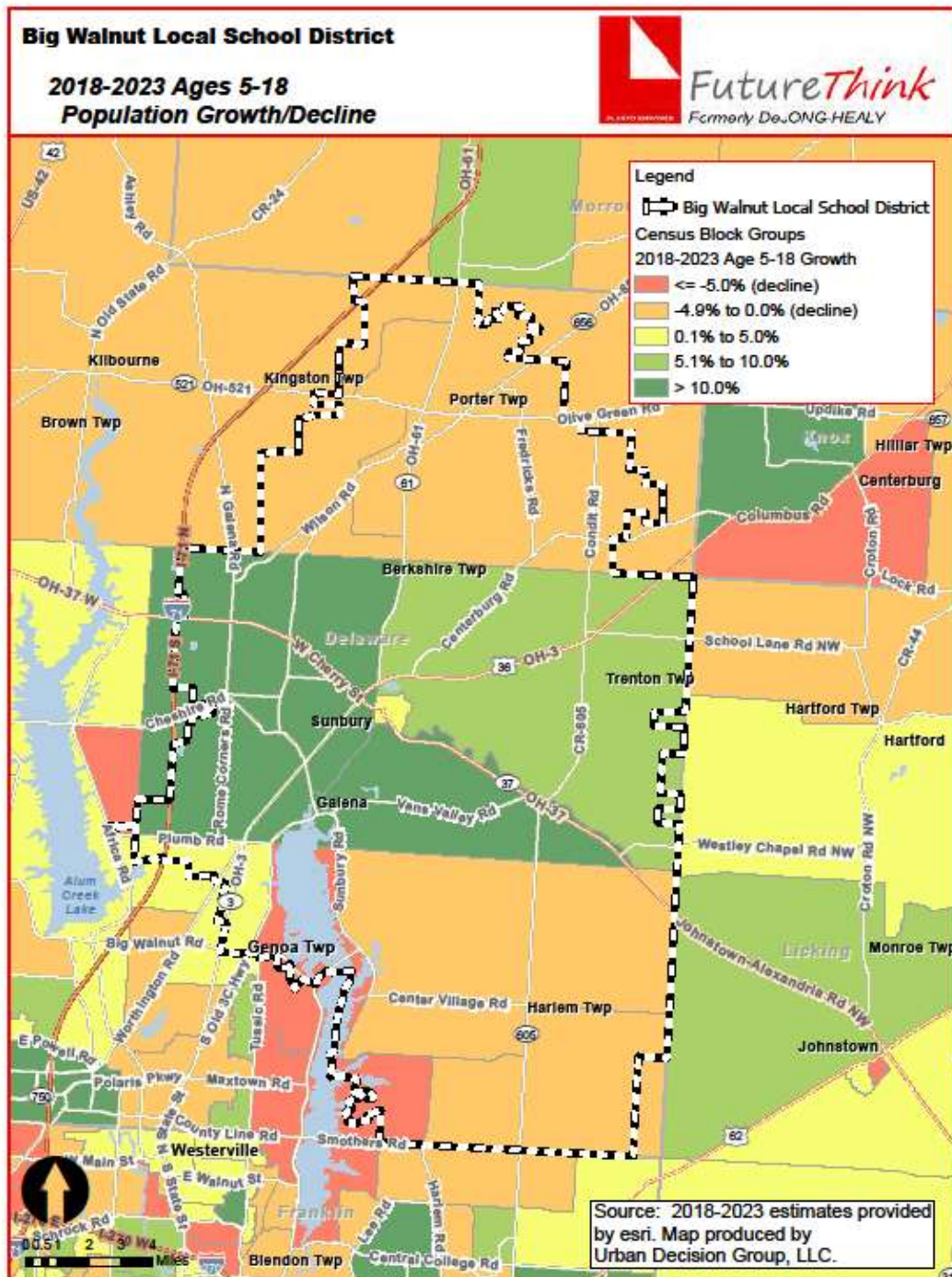
Big Walnut Local School District

Big Walnut Local School District

Big Walnut Local School District

Big Walnut Local School District

Big Walnut Local School District

Big Walnut Local School District

2023 Estimated Median Household Income

FutureThink
Formerly DeJONG-HEALY

Legend

Big Walnut Local School District

Census Block Groups

2023 Median Household Income
- <= $60,000
- $60,001 - $80,000
- $80,001 - $100,000
- > $100,000

Source: 2023 estimates provided by esri. Map produced by Urban Decision Group, LLC.
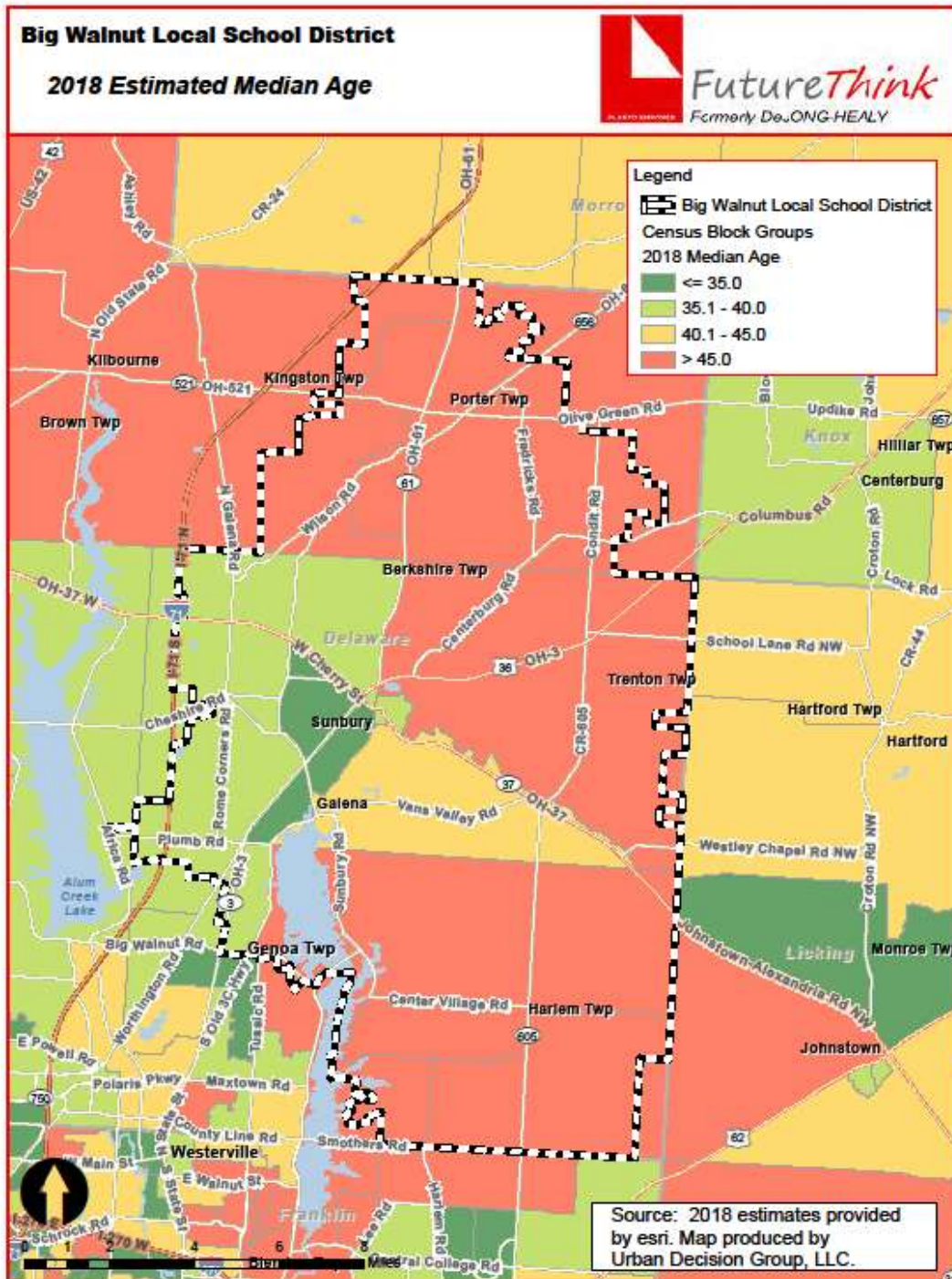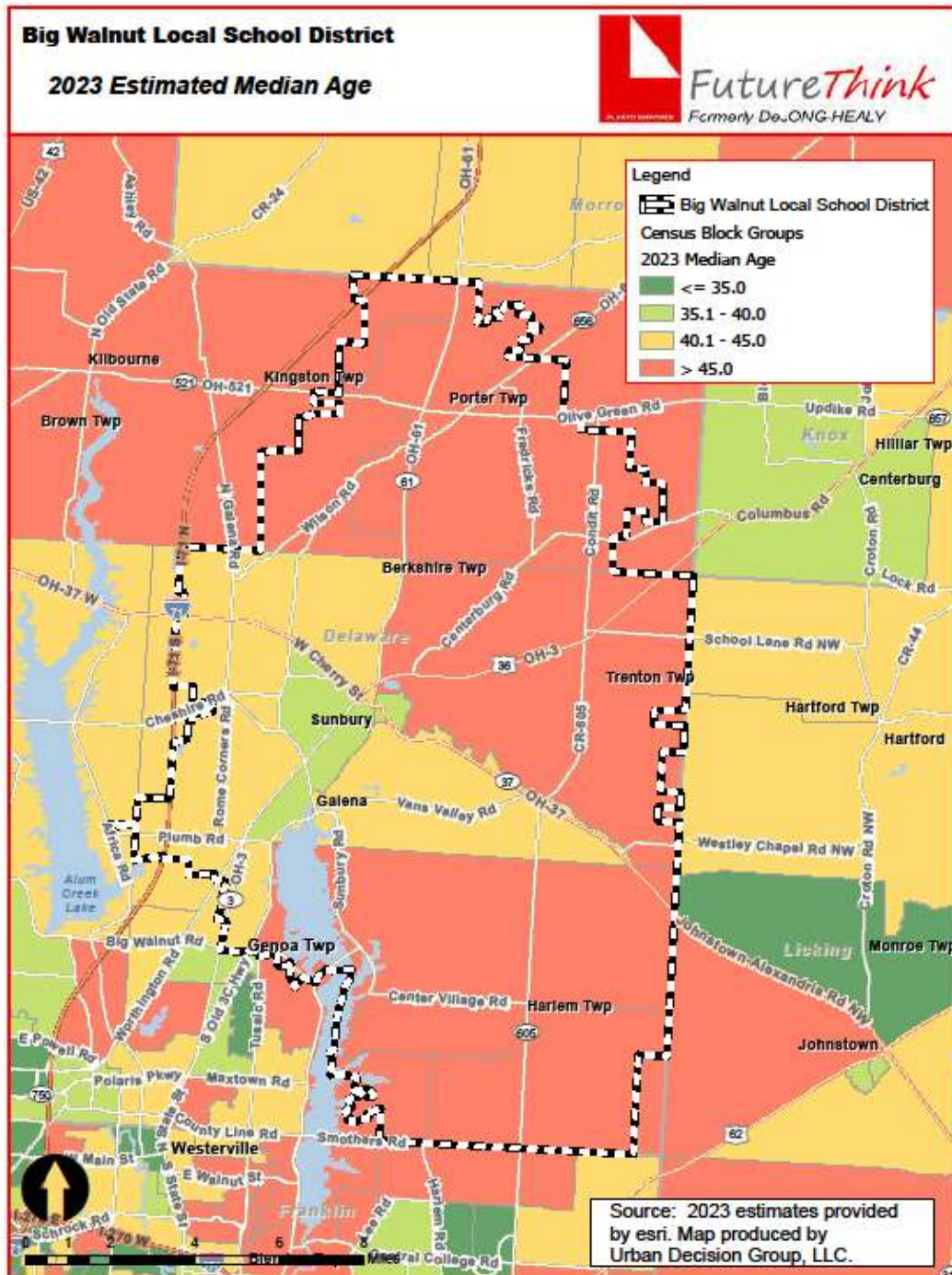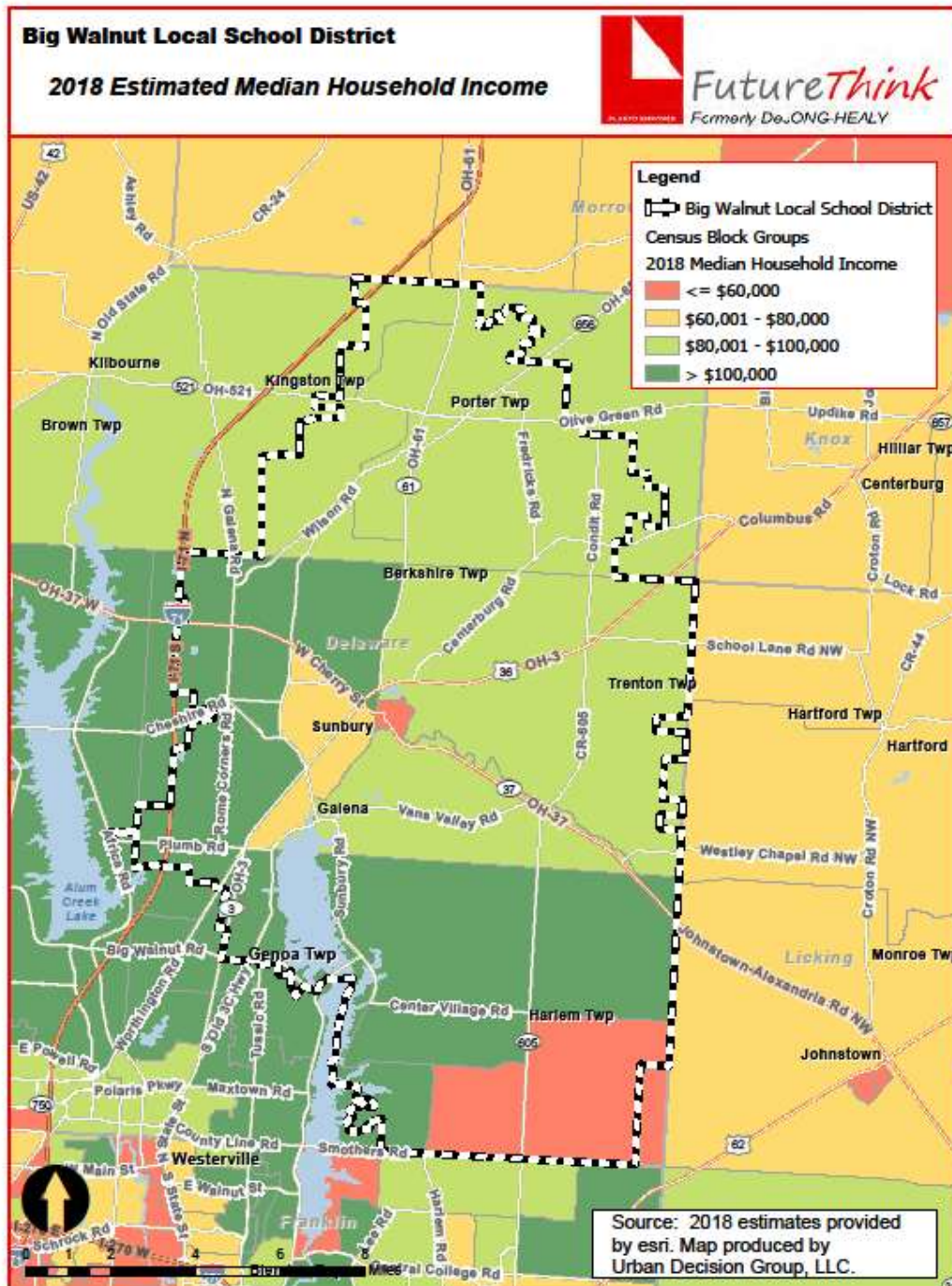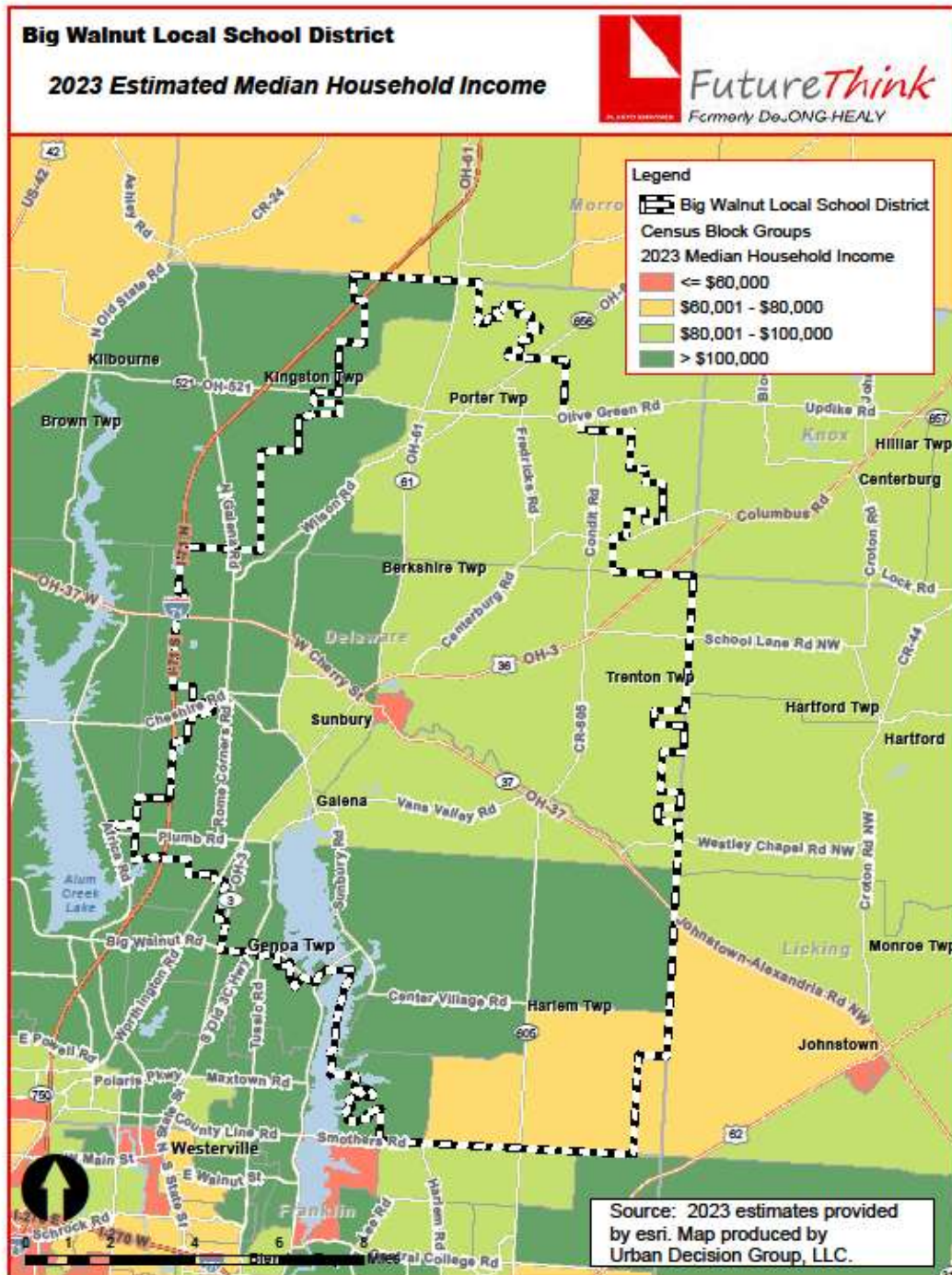
Big Walnut Local School District

HOUSING INFORMATION & STUDENT YIELD FACTORS

The Delaware County Regional Planning Commission compiles new housing permits (including both single and multi-family homes) by school district. The chart below illustrates the number issued since 2016.

# of Single Family and Multi Family
Building Permits Issued
in Big Walnut Local School District

Year	Total
2016	153
2017	251
2018	230
2019*	51

Source: Delaware County Regional Planning Commission
* through March 2019

To develop a student yield factor, the number of new building permits issued is compared to the gain in student enrollment the following year. For example, in 2016, 153 new building permits were issued and the gain in K-12 enrollment from the 2016-17 to the 2017-18 school year was 42 students. Based on this data, the student yield is .2745 or approximately 27 students for every 100 new homes. For this past year, the student yield increased to .5179 or approximately 52 students for every 100 new homes.

Student Yield Factors

Years	Gain in K-12 Enrollment	# of New Building Permits Issued	Yield Factor
2016-17 to 2017-18	42	153	0.2745
2017-18 to 2018-19	130	251	0.5179
2-Year Average			**0.3962**

Source: FutureThink

For comparison purposes, the national average student yield is approximately 30 students for every 100 new single family homes and approximately 22 students for every 100 new multi-family homes. This information was developed by the National Association of Home Builders based on the US Census Bureau's 2015 American Community Survey.

Big Walnut Local School District

Since the Delaware County Regional Planning Commission has only been compiling new housing starts by school district since 2016, it was important to look at the number of building permits issued for single family dwellings for previous years as well. The following tables illustrate the number of single-family dwelling building permits issued each year in Sunbury Village, Galena Village and Berkshire, Genoa, Harlem, Kingston, Porter and Trenton townships.

of Building Permits Issued for Single Family Dwellings

Year	Sunbury Village	Galena Village	Berkshire Township	Genoa Township
2009	32	0	34	69
2010	34	0	19	74
2011	18	0	21	69
2012	31	0	26	94
2013	65	0	37	63
2014	62	0	45	38
2015	36	0	91	64
2016	31	5	55	62
2017	95	10	84	66
2018	91	4	49	74
2019*	18	4	19	16

Source: Delaware County Regional Planning Commission; SOCDS Building Permit Database for Sunbury & Galena for years 2009-2015

* through March 2019

of Building Permits Issued for Single Family Dwellings

Year	Harlem Township	Kingston Township	Porter Township	Trenton Township	Total
2009	5	4	1	2	147
2010	5	3	5	3	143
2011	13	2	6	3	132
2012	9	1	5	3	169
2013	21	9	13	4	212
2014	13	5	10	4	177
2015	22	7	13	5	238
2016	29	10	11	9	212
2017	44	9	13	5	326
2018	38	33	15	11	315
2019*	7	7	3	4	78

Source: Delaware County Regional Planning Commission; SOCDS Building Permit Database for Sunbury & Galena for years 2009-2015

* through March 2019

FutureThink
Formerly DeJONG-HEALY

June 10, 2019

Big Walnut Local School District

SURVIVAL RATIOS

The chart below demonstrates the changes in enrollment as students move through the system. Percentages greater than 100 indicate that there are more students than there were in the previous grade the previous year. In other words, there was growth and new students entered the system. Percentages less than 100 indicate that there was decline with students leaving the system.

▶ Birth to Kindergarten: This ratio indicates the number of children born in the area who attend kindergarten in the District 5 years later. Percentages less than 100% result from movement out of the district, attendance at a non-public or charter school, or residence in another district within the same area.

The following table illustrates the survival ratios for the Big Walnut Local School District.

from	to	birth -> 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
2009	2010	35.1%	105.2%	96.2%	100.4%	101.9%	100.5%	97.0%	101.4%	99.5%	104.3%	90.9%	101.2%	88.3%
2010	2011	39.3%	106.0%	101.2%	99.6%	100.4%	100.0%	102.2%	106.2%	100.5%	113.5%	98.3%	98.3%	94.4%
2011	2012	34.0%	116.0%	105.7%	106.6%	104.8%	102.6%	102.4%	105.3%	102.1%	106.0%	97.5%	100.0%	91.1%
2012	2013	37.2%	113.7%	96.4%	107.9%	101.9%	105.5%	105.5%	100.0%	101.7%	105.3%	101.7%	97.5%	93.2%
2013	2014	45.6%	117.5%	110.3%	109.8%	97.3%	106.0%	98.4%	105.6%	103.3%	103.7%	103.1%	95.3%	97.8%
2014	2015	43.3%	115.2%	107.5%	105.4%	102.1%	100.4%	103.9%	106.9%	100.4%	106.3%	100.4%	96.6%	89.7%
2015	2016	51.1%	113.1%	100.0%	107.3%	100.0%	103.0%	103.1%	101.7%	101.9%	100.8%	97.0%	100.0%	98.4%
2016	2017	54.1%	102.2%	101.8%	101.8%	100.0%	101.8%	98.7%	99.6%	103.7%	99.6%	101.1%	102.2%	98.4%
2017	2018	48.4%	107.4%	106.1%	105.3%	102.5%	104.8%	99.3%	102.0%	110.3%	100.0%	102.6%	100.0%	97.0%
	average	43.11%	110.706%	102.80%	104.9%	101.22%	102.7%	101.2%	103.2%	102.6%	104.385%	99.195%	99.017%	94.273%
	standard deviation	6.796%	5.205%	4.635%	3.329%	1.980%	2.148%	2.742%	2.639%	3.021%	4.019%	3.589%	2.110%	3.684%

Big Walnut Local School District

ENROLLMENT PROJECTIONS

Four sets of enrollment projections were developed after analyzing the data collected in this report and were based the following number of new single-family homes developed each year:

- 150 New Homes Per Year
- 250 New Homes Per Year
- 350 New Homes Per Year
- 450 New Homes Per Year

150 New Homes Projection

The 150 New Homes projection indicates an increase by 792 students or approximately 20% from the 2018-19 to the 2028-29 school year. The following tables illustrate projected enrollment by grade and by grade group through the 2028-29 school year.

Big Walnut Local School District
Projected Enrollment - 150 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K	165	174	182	161	155	166	167	168	170	171	173
K	283	298	313	277	265	285	286	288	291	293	296
1	291	311	328	344	305	292	313	314	317	320	323
2	295	300	321	338	355	315	301	323	324	327	330
3	296	311	317	339	357	374	332	317	341	342	345
4	292	300	315	321	343	362	379	336	322	345	346
5	308	296	304	320	325	348	367	384	341	326	350
6	274	313	300	308	324	330	353	372	390	346	331
7	309	279	318	306	314	330	336	359	379	397	352
8	288	313	283	322	310	318	335	340	364	384	402
9	308	288	314	283	323	310	318	335	341	364	384
10	275	310	290	316	285	325	312	320	337	343	367
11	269	275	310	290	316	285	325	312	320	337	343
12	227	261	267	301	281	306	276	315	303	311	327
Pre-K - 12 Total	3,880	4,029	4,162	4,226	4,258	4,346	4,400	4,483	4,540	4,606	4,669
Other	1	3	3	4	4	4	4	4	4	4	4
Grand Total	3,881	4,032	4,165	4,230	4,262	4,350	4,404	4,487	4,544	4,610	4,673

Source: FutureThink

Big Walnut Local School District

Big Walnut Local School District
Projected Enrollment by Grade Group - 150 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K - 4	1,622	1,694	1,776	1,780	1,780	1,794	1,778	1,746	1,765	1,798	1,813
5 - 6	582	609	604	628	649	678	720	756	731	672	681
7 - 8	597	592	601	628	624	648	671	699	743	781	754
9 - 12	1,079	1,134	1,181	1,190	1,205	1,226	1,231	1,282	1,301	1,355	1,421
Pre-K - 12 Total	3,880	4,029	4,162	4,226	4,258	4,346	4,400	4,483	4,540	4,606	4,669
Other	1	3	3	4	4	4	4	4	4	4	4
Grand Total	3,881	4,032	4,165	4,230	4,262	4,350	4,404	4,487	4,544	4,610	4,673

Source: FutureThink

250 New Homes Projection

The 250 New Homes projection indicates an increase of 1,155 students (or approximately 30%) over the next ten years.

Big Walnut Local School District
Projected Enrollment - 250 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K	165	178	186	165	158	170	170	171	173	174	176
K	283	305	319	283	271	291	292	294	297	299	302
1	291	317	341	358	317	303	325	327	330	332	335
2	295	305	332	357	374	332	317	340	341	344	347
3	296	313	323	352	378	396	351	336	360	362	365
4	292	302	319	329	359	385	404	358	343	368	369
5	308	299	309	326	336	366	394	412	366	350	375
6	274	313	304	314	331	342	372	400	419	372	356
7	309	283	323	313	324	342	353	384	413	432	384
8	288	315	289	330	319	330	349	359	391	421	441
9	308	297	325	297	339	329	340	359	370	403	433
10	275	314	302	330	302	345	334	346	365	377	410
11	269	277	316	304	333	305	348	337	348	368	379
12	227	264	272	310	298	326	299	341	330	341	360
Pre-K - 12 Total	3,880	4,082	4,260	4,368	4,439	4,562	4,648	4,764	4,846	4,943	5,032
Other	1	3	4	4	4	4	4	4	4	4	4
Grand Total	3,881	4,085	4,264	4,372	4,443	4,566	4,652	4,768	4,850	4,947	5,036

Source: FutureThink

Big Walnut Local School District
Projected Enrollment by Grade Group - 250 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K - 4	1,622	1,720	1,820	1,844	1,857	1,877	1,859	1,826	1,844	1,879	1,894
5 - 6	582	612	613	640	667	708	766	812	785	722	731
7 - 8	597	598	612	643	643	672	702	743	804	853	825
9 - 12	1,079	1,152	1,215	1,241	1,272	1,305	1,321	1,383	1,413	1,489	1,582
Pre-K - 12 Total	3,880	4,082	4,260	4,368	4,439	4,562	4,648	4,764	4,846	4,943	5,032
Other	1	3	4	4	4	4	4	4	4	4	4
Grand Total	3,881	4,085	4,264	4,372	4,443	4,566	4,652	4,768	4,850	4,947	5,036

Source: FutureThink

Big Walnut Local School District

350 New Homes Projection

The 350 New Homes projection indicates an increase by 1,427 students or approximately 37% over the next ten years.

Big Walnut Local School District
Projected Enrollment - 350 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K	165	181	189	168	161	173	173	174	176	178	179
K	283	310	325	288	276	296	297	299	302	305	307
1	291	320	351	368	326	312	335	336	339	342	345
2	295	305	336	368	386	342	327	351	352	355	359
3	296	314	325	357	392	410	364	348	374	375	378
4	292	303	321	333	366	401	420	373	357	383	384
5	308	301	313	332	343	378	414	434	385	368	395
6	274	317	310	322	341	353	389	426	446	396	378
7	309	286	331	324	336	356	369	406	444	466	413
8	288	316	293	338	331	344	364	377	415	455	476
9	308	298	327	303	350	343	356	377	390	430	471
10	275	314	304	334	309	357	349	363	385	398	438
11	269	277	316	306	336	311	360	352	365	387	401
12	227	264	272	311	301	330	305	353	346	359	380
Pre-K - 12 Total	3,880	4,106	4,313	4,452	4,554	4,706	4,822	4,969	5,076	5,197	5,304
Other	1	3	4	4	4	4	4	4	4	4	4
Grand Total	3,881	4,109	4,317	4,456	4,558	4,710	4,826	4,973	5,080	5,201	5,308

Source: FutureThink

Big Walnut Local School District
Projected Enrollment by Grade Group - 350 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K - 4	1,622	1,733	1,847	1,882	1,907	1,934	1,916	1,881	1,900	1,938	1,952
5 - 6	582	618	623	654	684	731	803	860	831	764	773
7 - 8	597	602	624	662	667	700	733	783	859	921	889
9 - 12	1,079	1,153	1,219	1,254	1,296	1,341	1,370	1,445	1,486	1,574	1,690
Pre-K - 12 Total	3,880	4,106	4,313	4,452	4,554	4,706	4,822	4,969	5,076	5,197	5,304
Other	1	3	4	4	4	4	4	4	4	4	4
Grand Total	3,881	4,109	4,317	4,456	4,558	4,710	4,826	4,973	5,080	5,201	5,308

Source: FutureThink

FutureThink
Formerly DeJONG-HEALY
PLAN TO EMPOWER

Big Walnut Local School District

450 New Homes Projection

The 450 New Homes projection indicates an increase by 1,738 students or approximately 45% over the next ten years.

Big Walnut Local School District
Projected Enrollment - 450 New Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K	165	184	192	171	163	175	176	178	179	181	182
K	283	315	330	293	280	301	302	305	307	310	313
1	291	323	359	377	334	320	343	344	347	350	353
2	295	308	342	381	399	354	338	363	364	368	371
3	296	315	329	365	407	426	378	362	388	390	393
4	292	303	323	338	374	417	437	388	371	398	399
5	308	306	318	339	354	392	437	458	407	389	417
6	274	319	317	329	351	366	406	452	474	421	402
7	309	289	336	334	347	370	386	428	477	500	444
8	288	319	298	347	345	358	382	399	442	493	516
9	308	301	333	312	362	360	374	399	416	462	514
10	275	315	308	341	319	371	369	383	408	426	473
11	269	278	319	311	345	323	375	373	387	413	431
12	227	265	274	314	306	339	317	369	367	381	406
Pre-K - 12 Total	3,880	4,140	4,378	4,552	4,686	4,872	5,020	5,201	5,334	5,482	5,614
Other	1	3	4	4	4	4	4	4	4	4	5
Grand Total	3,881	4,143	4,382	4,556	4,690	4,876	5,024	5,205	5,338	5,486	5,619

Source: FutureThink

Big Walnut Local School District
Projected Enrollment by Grade Group - 450 Homes Per Year

Grade	2018-19 Actual	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Pre-K - 4	1,622	1,748	1,875	1,925	1,957	1,993	1,974	1,940	1,956	1,997	2,011
5 - 6	582	625	635	668	705	758	843	910	881	810	819
7 - 8	597	608	634	681	692	728	768	827	919	993	960
9 - 12	1,079	1,159	1,234	1,278	1,332	1,393	1,435	1,524	1,578	1,682	1,824
Pre-K - 12 Total	3,880	4,140	4,378	4,552	4,686	4,872	5,020	5,201	5,334	5,482	5,614
Other	1	3	4	4	4	4	4	4	4	4	5
Grand Total	3,881	4,143	4,382	4,556	4,690	4,876	5,024	5,205	5,338	5,486	5,619

Source: FutureThink

June 10, 2019

CONCLUSION

As with any projection, the District should pay close attention to live birth counts, enrollment in elementary schools, new housing, and changes in community school enrollment and open enrollment. Each of these factors will have an impact on future student enrollment.

FutureThink is pleased to have had the opportunity to provide the District with enrollment projection services. We hope this document will provide the necessary information to make informed decisions about the future of the Big Walnut Local School District.