
Population and Enrollment Study



Overview

Projecting the type and amount of future enrollment will be important for the success of the Long Range Comprehensive Plan (CEFP) for the Union Local School District (ULSD). The Community Data indicated that Belmont County historically has seen a slight decline in general population over the past 10 years. The CEFP process has reviewed the Belmont County, ULSD and regional population data in order to formulate a reasonable prediction of the trends for the student population in the future. The Community Analysis data also provided historic and projected population factors that will affect the general population and the ULSD population in the future. A number of resources have been used to find predictors for projected school age population in the district such as historic enrollment, current enrollment, resident live births, cohort survival, non-public school enrollment, in/out migration in Belmont County and student drop-out rate within the district. Due to the virtual certainty of the jobs and population growth in Belmont County and the region related to the oil and gas industry expansion, we have also considered general population and student population growth that could occur in the future.

The Community Analysis study indicated that the ULSD student population has in the past tracked the general population of Belmont County very closely. Given the potential for growth due to incoming business and industry, we are compelled to consider non-traditional data within our projections. Some are known while some are somewhat speculative but all are predictors of future growth (i.e., the job market increases that are in the advanced planning stages at this time and academic improvements that could attract new families and students to the school district). The enrollment projections will consider all of these scenarios and factor in contingencies where possible.

Given the close proximity of several hospitals in the region, child birth for Belmont County residents could occur in area hospitals, hospitals within the county, the northeastern Ohio area or close by in the northern West Virginia hospitals. These factors require the enrollment projection process to consider a combination of recent birth rate data and the historic trends to estimate future student enrollment in an individual school district within this region.

Other factors must also be considered such as the open enrollment policies of the county and State of Ohio. The caption area for the ULSD school boundary line extends across several Belmont County townships as well as from the extreme northwestern corner of Belmont County to very near the extreme southeastern corner of the county. In the FY 2018 school year, the student population of the ULSD made up 17% of the total student population of Belmont County.

The proposed ethane cracker plant that is planned for the Shadyside area of Belmont County could change the landscape of the school district's student population if and when the facility is completed. The predicted number of workers once the facility is on line is 350 – 1200 permanent workers. It is also predicted that a number of other businesses, industries and service employment opportunities will also increase as related business and industry companies locate near the cracker facility. If new residents move into the community, the ULSD enrollment will likely increase. Fortunately the current schools within the District have some available capacity for additional students should the enrollment begin to increase in the near future.

A building program utilization study was performed for the ULSD to determine building capacity available for all schools. This study considered the capacity of each building based on the program

capacity for the subject being taught in each space. This study also considered the type of program being offered in the classroom in the window of time that the study was performed. The actual building capacity would be greater if each available classroom were to be calculated for the maximum number of students that could be placed in the room regardless of the program of study being taught in the space. However, factoring in the program of study being taught in each space provides the true building utilization and program capacity.

We have considered the capacity of each school in the ULSD as well as each schools ability to house additional students and/or additional programs. The District has determined that their desirable program capacity would be 85% of the maximum number of students each space could possibly house. The following charts provided the FY 2018 building program utilization and program capacity for all schools in the ULSD based on the programs offered during this time period:

BUILDING PROGRAM UTILIZATION WORKSHEET 2017-2018

District: ULSD, Ohio **School:** ULSD Elementary School **Current Enrollment:** 719

Classroom Type	Not Rated	Number of Classroom Types	×	Maximum Pupils/ Class Type	=	Total Program Capacity
Pre-K		4		25		100
Kindergarten		6		25		150
First Grade		6		25		150
Second Grade		6		25		150
Third Grade		5		25		125
Fourth Grade		5		25		125
Fifth Grade		5		25		125
PE/Gym	X	1		0		0
Computer	X	1		0		0
Art	X	1		0		0
Music	X	1		0		0
Intervention Specialist	X	6		0		0
Tutor		3		0		0
Speech		2		0		0
Media		1		0		0
21 Century		1		25		25
Behavior Therapy		1		0		0
Totals		55		200		950

Program Utilization = 719 divided by 950 = 75.68%
Current Enrollment **Total Program Capacity**

PROGRAM UTILIZATION = 75.68% **Desirable Program Capacity** = 85%

2017-2018

District: ULSD, Ohio **School:** ULSD Middle School **Current Enrollment:** 333

Classroom Type	Not Rated	Number of Classroom Types	×	Maximum Pupils/ Class Type	=	Total Program Capacity
Language Arts		4		25		100
Social Studies		3		25		75
Math		4		25		100
Science		3		25		75
Reading		2		25		50
Art		1		25		25
Career/Vo-Ag		1		25		25
Shop (with High School)		1		0		0
Technology		1		25		25
PE/Gym		1		50		50
Media		1		0		0
RTI Math		1		0		0
Music		1		0		0
Intervention		4		0		0
Totals		28		250		525

$$\text{Program Utilization} = \frac{333}{\text{Current Enrollment}} \text{ divided by } \frac{525}{\text{Total Program Capacity}} = \underline{63.43\%}$$

PROGRAM UTILIZATION = 63.43% **Desirable Program Capacity = 85%**

(Ohio Department of Education, 2018); (Union Local School District, 2018)

BUILDING PROGRAM UTILIZATION WORKSHEET
2017-2018

District: ULSD, Ohio School: ULSD High School Current Enrollment: 399

Classroom Type	Not Rated	Number of Classroom Types	×	Maximum Pupils/ Class Type	=	Total Program Capacity
Information Technology		1		25		25
English		4		25		100
Math		4		25		100
Science		1		25		25
Chemistry		1		25		25
Biology		1		25		25
Government/Psychology		1		25		25
American History/Health		1		25		25
Success Skills		2		25		50
World Studies		1		25		25
MH		1		25		25
Spanish		2		25		50
Animal/Plant Science		1		25		25
Mechanical Principals		1		25		25
Vo-Ag Shop		1		25		25
Media Production		1		25		25
PE/Gym		1		50		50
Art		1		25		25
Resource		1		11		11
Chorus/Music		1		0		0
Band		1		0		0
Auditorium		1		0		0
Visual Impaired		1		0		0
Totals		31		486		686

Program Utilization = $\frac{399}{\text{Current Enrollment}}$ divided by $\frac{686}{\text{Total Program Capacity}}$ = 58.16%

PROGRAM UTILIZATION = 58.16% Desirable Program Capacity = 85%

(Ohio Department of Education, 2018); (Union Local School District, 2018)

Given the district would like to maintain a maximum building program capacity of 85%, there would currently be some capacity for new students in the near future. Additionally, the district desires to also continue with a low student teacher ratio to allow greater opportunity for individualized teaching when possible. As the building program utilization study indicates, there is minimum additional building capacity at the elementary school (approx. 109 students). There is some available capacity in the middle school (approx. 113 students) and high school (approx. 184 students). However, if business and industry expands as predicted and the general population expands within the ULSD attendance area, the district may need to consider expansion for additional building capacity in reaction to enrollment increases should they occur. Also, if at the conclusion of this comprehensive educational planning process the district decides to change the educational programming delivery model at any or all levels, these changes could affect the building capacity and/or attract new students and also require building renovations and expansions at all schools.

As indicated in the Community Analysis, partnerships with current and future business and industry leaders is being considered by the district. Should these partnerships develop beyond the traditional community school financial support model and into actual career preparation pathways for students, this holistic approach may also require building renovations or expansion.

Historic Enrollment

The historic public school enrollment in the ULSD has been declining at a consistent rate for many years. Since 2010, the enrollment has declined by 53 students. A number of factors were likely involved including decline in birth rates, a graduation rate of 84% (Great Schools Organization, 2018), out migration, students attending non-public schools and a fluctuation in job markets during this time period. The Union Local School District student population has also fluctuated up and down during the first 5 years of this decade. However, there has been a downward trend since 2014 and a loss of 104 students since 2014 which had a nine year peak of 1,555 students. The following chart illustrates the ULSD historic PreK-12 enrollment data including students with special needs since 2010:

ULSD Historic Enrollment by Year		
	Total Enrollment	Disabilities
2009 - 2010	1500	218
2010 - 2011	1552	224
2011 - 2012	1527	221
2012 - 2013	1527	224
2013 - 2014	1555	219
2014 - 2015	1532	185
2015 - 2016	1509	200
2016 - 2017	1472	211
2017 - 2018	1451	212
2018 - 2019	1450	222

(Ohio Department of Education, 2018)

A comparison was made of the population within Belmont County and the Union Local School District student enrollment to look for trends within these two groups of populations. The general population between 2010 and 2014 declined by 1052 residents. The population between 2014 and 2017 declined an additional 1319 residents. However, the general population experienced a major upswing in 2018 with an annual increase of 1,069 residents. These trends were likely related to economic factors and not birth rates within the area.

Estimated Belmont County Population vs. ULSD Student Enrollment		
	Belmont County	ULSD
2009-2010	70,400	1500
2010-2011	70,117	1552
2011-2012	69,700	1527
2012-2013	69,555	1527
2013-2014	69,348	1555
2014-2015	68,943	1532
2015-2016	68,568	1509
2016-2017	68,029	1472
2017-2018	69,098	1451

(Ohio Development Services Agency, Office of Research, 2018); (Home Town Locator, Incorporated, 2018); (Ohio Department of Education, 2018)

The following chart provides a 10 year ULSD Historic Enrollment by grade level with JVS and exceptionality included:

Union Local School District Historic Enrollment by Grade										
Grade	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Pre-K	46	46	46	46	59	58	55	60	56	71
K	102	113	107	110	117	113	118	124	101	103
1	113	106	115	112	106	116	116	122	123	99
2	99	127	100	109	106	109	113	100	118	124
3	97	96	120	107	111	105	104	112	98	119
4	104	107	103	121	115	121	112	102	114	98
5	120	113	102	113	129	121	120	111	109	109
6	110	123	109	105	113	130	115	111	104	115
7	111	119	125	104	101	114	127	114	118	104
8	103	119	124	132	116	103	112	130	111	128
9	132	104	115	126	134	117	97	98	123	109
10	131	135	102	118	126	124	115	91	95	112
11	117	131	138	102	120	99	104	95	80	80
12	115	113	121	122	102	102	101	102	101	79
Total	1500	1552	1527	1527	1555	1532	1509	1472	1451	1450

(Ohio Department of Education, 2018); (Union Local School District, 2018)

The following chart provides resident live births data for Belmont County for the past 10 years:

Belmont County Live Birth Rates	
Year	Birth Rate
2009	680
2010	731
2011	742
2012	702
2013	714
2014	705
2015	692
2016	605
2017	607
2018**	244
Total	6,422

(Ohio Department of Education, 2018)

Excludes 138 Birth Count Records with unknown or missing data.

Births occurring in Ohio to non-Ohio residents are not included in this table.

** - Indicates preliminary data that may change.

These data were provided by the Ohio Department of Health. The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

For perspective, the following illustrates the general demographic data for the townships in Belmont County and their % relationship to the total general population:

Estimated General Demographic Data for Townships						
Belmont Townships	Population Estimates			Relationship % to Population Estimates		
	2010	2017	2018	2010	2017	2018
Richland Township	14,973	14,569	14,996	21%	21%	22%
Pease Township	14,309	13,758	13,423	20%	19%	19%
Pultney Township	8,795	8,454	8,353	13%	12%	12%
Warren Township	5,974	5,816	5,884	9%	9%	9%
Mead Township	5,967	5,763	5,771	9%	9%	8%
Colerain Township	4,276	4,122	4,509	6%	6%	7%
Goshen Township	3,147	3,044	3,104	5%	5%	5%
York Township	2,538	2,462	2,368	4%	4%	3%
Union Township	2,295	2,213	2,322	3%	3%	3%
Flushing Township	2,021	1,938	2,066	3%	3%	3%
Wheeling Township	1,691	1,636	1,816	2%	2%	3%
Smith Township	1,543	1,489	1,577	2%	2%	2%
Somerset Township	1,245	1,202	1,221	2%	2%	2%
Wayne Township	709	684	719	1%	1%	1%
Washington Township	517	498	529	.7%	.7%	.8%
Kirkwood Township	400	381	441	.6%	.6%	.6%

(Ohio Development Services Agency, Office of Research, 2018); (Ohio Townships Organization); (Home Town Locator, Incorporated, 2018)

The following chart illustrates the approximate percentage of land area by township in relation to the ULSD caption area as well as the percentage of population within the county each area represents:

Land Area and Population by Township within the ULSD Caption Area		
Township	Land Area	Population
Richland Township	3%	21%
Goshen Township	98%	5%
Union Township	95%	3%
Flushing Township	85%	3%
Wheeling Township	33%	2%
Smith Township	80%	2%
Wayne Township	33%	1%
Washington Township	18%	1%
Kirkwood Township	3%	<1%

(Ohio Development Services Agency, Office of Research, 2018); (Ohio Townships Organization); (Home Town Locator, Incorporated, 2018)

Enrollment Projections Data

Enrollment projections should not be considered an exact science. However, if sufficient data sets are considered, the projections can give the District reasonable projections of student populations that could occur within a small geographic area of the county. As previously noted, exact historic data has been factored in the projections. Similarly, various assumptions must also be used in the prediction of future enrollment. The following data was considered to provide future enrollment projections:

- District enrollment has been declining approximately 14 students per year since the 2010/2011 school year.
- The greatest declines in the 8 year period occurred in the 2015/2016 - 2016/2017 school years.
- Belmont County's general population has declined 4.1% since 2010.
- ULSD student population has declined 3.3% since 2010.
- Resident live births have increased 3.7% in Belmont County from 2010 - 2014.
- Since 2014, birth rates have fallen 14%.
- Children born in 2014 entered preschool in 2018.
- The decline continued but the increases in birth in Belmont County in May 2013 - 2014 may have slowed the decline of the students in ULSD in later years.
- Given the virtual certainty of the ethane cracker plant facility coming to Belmont County, we have considered the direct effects of the ethane cracker plant and jobs available in the area.
- The effects for the current employable individuals already living within the area have also been factored in the future enrollment.
- The likelihood of child bearing age new residents related to the increased job opportunities choosing to live in Belmont County and/or the caption area of ULSD.
- The distribution of these individuals within the county and region and those choosing to reside in the ULSD attendance area or choosing to attend ULSD living outside the ULSD.

- Private, parochial and home school student populations were not considered significant factors affecting future enrollment given the current number of students being educated in these venues.
- The ethane cracker facility will affect the job market in the entire eastern region of Ohio and Northern West Virginia. As a result, new jobs and existing population seeking permanent and higher paying jobs will be affected at first in Belmont County and in the ULSD.
- The expansion of new and current business and industry with a construction start date for the anchor facility (ethane cracker plant) in 2020, a 5 year planning and construction time frame and the ethane cracker facility coming on line in 2025
- The enrollment projections do not anticipate additional business and industry expansion beyond the ethane cracker plant and any effect these additional business expansions might have on the ULSD student population.

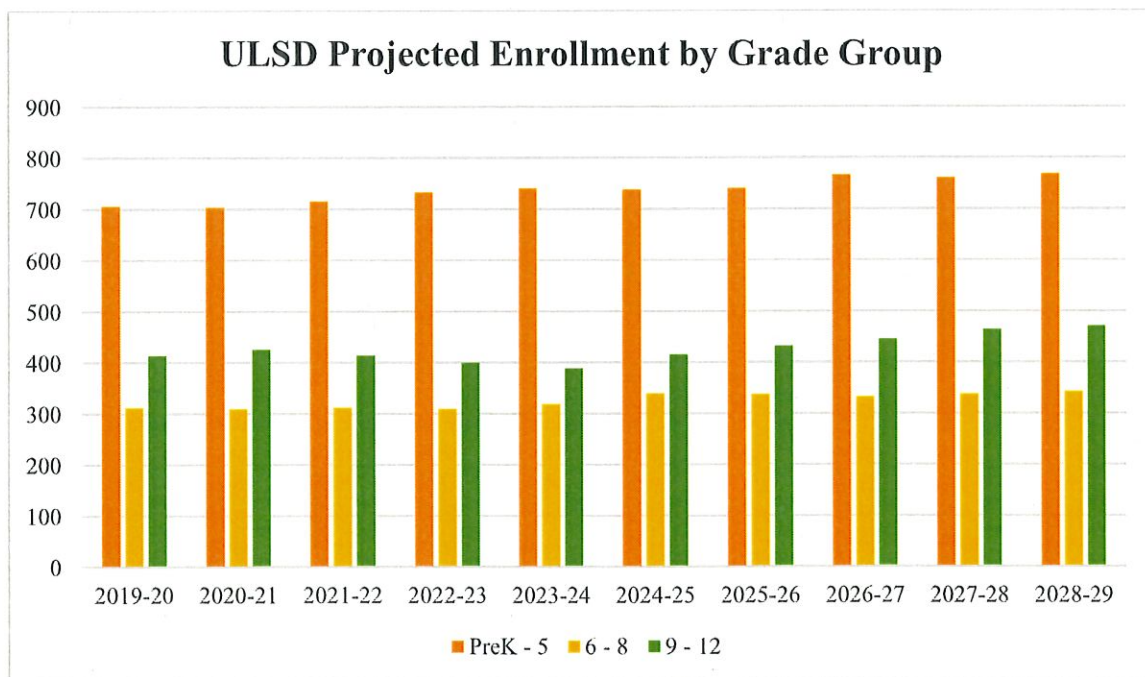
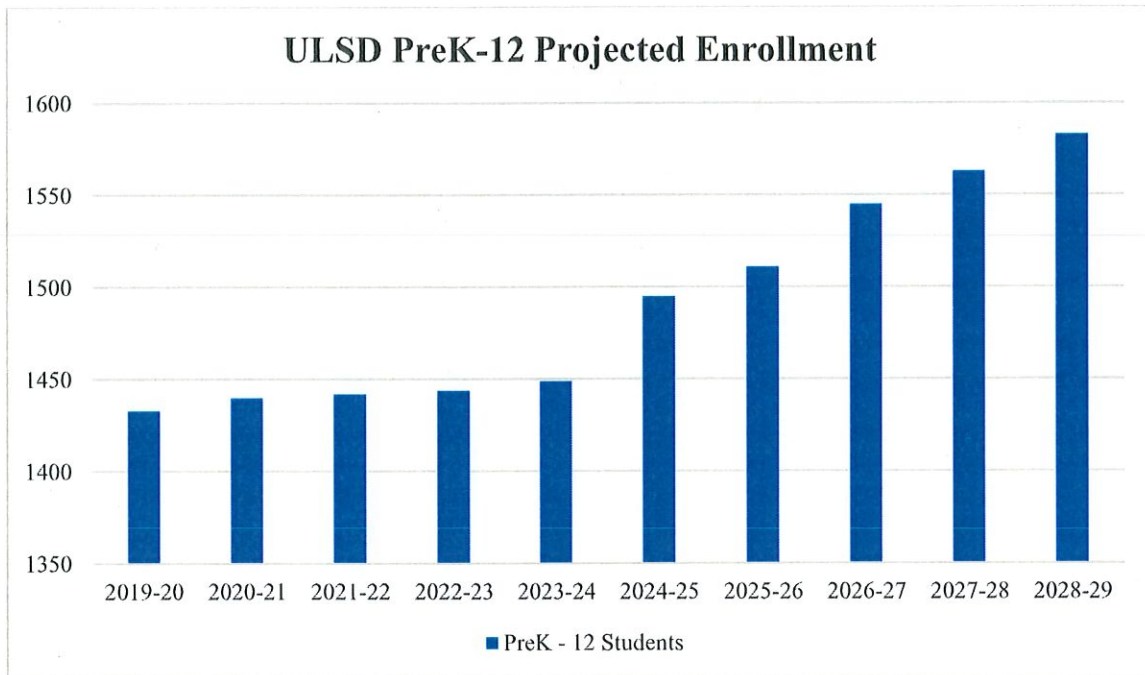
The following chart provides a breakdown of student population distribution within the school districts in Belmont County:

Student Population Distribution in Belmont County for 2018				
School District	Female	Male	Total Students	Total Student Population
Bellaire Local	538	620	1158	13%
Martins Ferry City	727	716	1443	16%
Barnesville Exempt	695	691	1386	16%
Bridgeport Exempt	389	388	777	9%
St. Clairsville/Richland	844	903	1747	20%
Shadyside Local	408	430	838	9%
Union Local	714	737	1451	17%

(Ohio Department of Education, 2018)

The following chart and graphs provide a projection of future student enrollment for ULSD based on all the data collected above:

Union Local School District Enrollment Projections										
Grade	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
PreK	55	57	60	62	61	67	68	72	69	62
K	106	103	104	119	121	118	120	121	125	119
1	113	104	105	112	120	119	115	118	123	126
2	105	114	107	113	113	117	109	117	113	117
3	121	107	115	109	109	102	113	112	107	119
4	112	118	106	114	106	107	104	114	111	109
5	95	101	119	105	111	109	112	113	113	117
6	108	99	103	113	106	113	114	109	116	119
7	103	107	101	101	114	111	109	117	110	115
8	101	104	108	96	99	116	115	107	112	109
9	109	98	109	103	95	105	117	113	117	114
10	101	111	96	95	101	103	107	116	115	119
11	115	104	108	97	98	108	106	112	119	118
12	89	113	101	105	95	100	102	104	113	120
Grand Total	1433	1440	1442	1444	1449	1495	1511	1545	1563	1583



Enrollment Projection Logics and Summary

The enrollment projections considered current factors affecting student enrollment within the district. Additionally, it was felt, it would be prudent to consider peripheral factors that will most likely affect future enrollments. These non-traditional factors were also given some consideration due to the virtual certainty of these factors becoming a reality and their likelihood of affecting future enrollment (i.e. business and industry growth). Traditional demographic factors such as resident live births, cohort survival, historic enrollments, dropout rates and in/out migration were also considered.

For example, historic enrollment trends were considered in the early years (2019-20 and portions of 2020-21). Given the decision to offer expanded early childhood intervention programs at the elementary level is a priority by the ULSD and the District Board of Education's current level of support for this program, the proposed expanded "Early Learning Program" has been included in the 10 year Comprehensive Educational Facilities Plan process (ULSD Preliminary Goal #1, Objective 1.5). However, the enrollment projections reflect current enrollment trends through FY 2019-20. Considering the "Early Learning Program" will require time and perhaps space for implementation, the effects of these additional students has not been accounted for until FY 2020-21. The projected increased number of early intervention students was factored into the enrollment projections for all future years after 2020.

Additional peripheral factors were considered for FY 2023-24 and continue through the remainder of the 10 year planning cycle. Consideration was given to improved academic programming and the possibility of increased student population due to decreased dropout rates and possible increase in in-migration of students as a result of improvements in the district academic offerings and student centered education (ULSD Preliminary Goal #1, Objective 1.8). Should the current trends of decreased birth rates, out-migration and current dropout rates continue for the near future, the possibility that any increases in student population due to the expanded "Early Learning Programs" and districtwide academic program improvements may be offset by these continued trends in the near future and any significant increases in student population may be delayed until FY 2024-25. This possibility was also considered within the enrollment projection study.

The other non-traditional factors previously noted were also considered in the enrollment projection process and did affect the future enrollment for the District. The business and industry expansion probability appears to be inevitable given the commitment already in place by the economic development agencies and the oil and gas industry expansion being planned in Belmont County. Based on this, it was felt that even with some uncertainty surrounding the major expansion of this already thriving industry, it would be prudent to also factor in limited increases in student population due to in-migration of population working in this new industry. Factoring in this data within the enrollment projections was also affected by the ULSD Board of Education's decision to have the CEFPP committee, specifically the educational plan subcommittee, develop a curriculum planning model that will provide students career opportunities in vocational offerings aligned with region and state job markets (ULSD Preliminary Goal #1, Objective 1.7). This strategy was applied to the enrollment project process beginning in FY 2024-25 and continued through the remainder of the 10 year enrollment projection process.

Expansion of other business and industry related to the oil and gas industry expansion were not given consideration at this time. While the business development agencies are currently planning for

major business expansion of related industry, manufacturing and service industry business expansions related to the oil and gas industry, it was felt that there would be a delayed impact on future general population and therefore student population increases. The enrollment projections factored in minimal enrollment increases during construction of the proposed ethane cracker plant and allowed for a 5 year construction period before permanent jobs and permanent residents move to the area. Also, based on data from the Ohio Jobs and Family Service Agency, qualified individuals living in Belmont County now unemployed but seeking employment were also considered in the general population and thus would not add to the in-migration accepting permanent jobs. This factor would not affect the student population projections as a result.

Enrollment by grade groups have been projected to provide data necessary to predict the need for future building expansion based solely on increased student enrollment. With a possible exception of the current ULSD elementary school, the middle school and high school facilities currently have available capacity to accommodate additional student population. This would be conditioned upon the possibility that curriculum revisions or expansions could require use of existing space to accommodate new programmatic delivery models. Consideration of expanding existing facilities to accommodate curricular improvements or additional student populations will only be considered after all available building space is exhausted.

Finally, enrollment projections for small demographic areas is never an exact science. There are significant unknown factors affecting the traditional indicators used for projecting enrollment in a portion of the demographic area of Belmont County. Additionally, the possible increase in the general population relating to the proposed new jobs coming to the area will be distributed over the other 6 school districts in the county as well as the region. The enrollment projections have considered this possibility and have proportioned the increased population based on ULSD's anticipated share of this population increase.

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