



## MEETING AGENDA

April 15, 2019

6:30 PM

Elementary School Library

---

- 1 | Review Applied Population Lab Enrollment Projections
- 2 | Review Elementary School Needs
- 3 | Tour Elementary School
- 4 | Small Group Discussion | Elementary Needs & Priorities
- 5 | Adjournment



# **APPLIED POPULATION LAB ENROLLMENT PROJECTIONS**

**TAB 11**



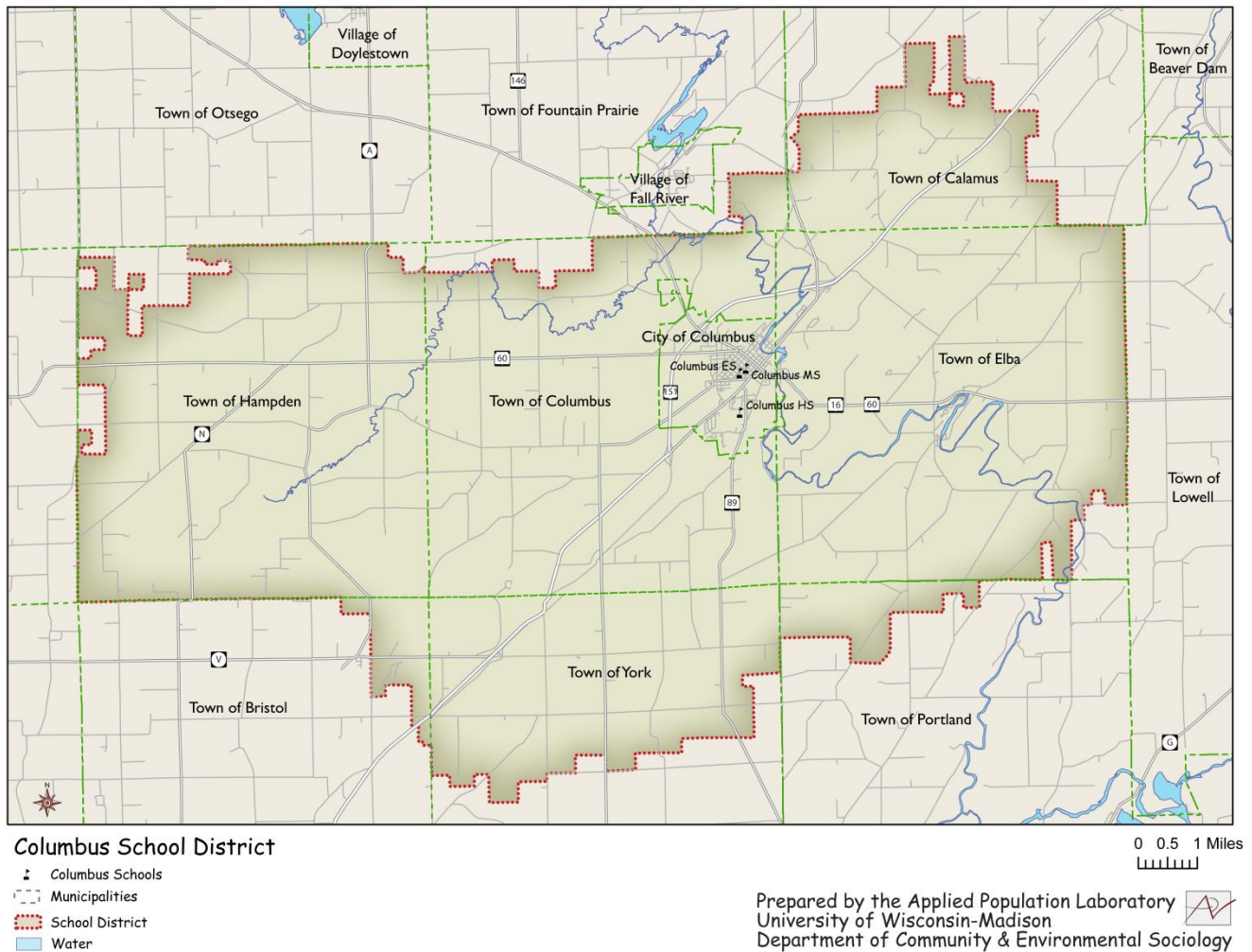
ENROLLMENT HISTORY AND PROJECTIONS

Grade	Actual Enrollments											Projected Enrollments		
	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
4 Year Old Kindergarten		99	83	100	88	92	107	90	93	96	85	101	103	105
Kindergarten	75	78	104	83	93	90	93	103	86	93	100	96	97	99
1st	72	81	90	102	90	88	89	91	110	82	83	98	100	102
2nd	67	76	91	89	99	88	89	95	93	107	81	96	97	99
3rd	82	67	85	84	92	100	88	93	96	93	100	95	96	98
4th	126	84	75	84	84	87	104	87	96	88	91	95	97	98
5th	78	69	82	72	80	91	95	107	90	94	91	97	99	101
6th	69	82	75	78	68	79	86	99	107	89	95	96	98	99
7th	74	74	87	67	77	71	78	95	98	105	90	92	94	96
8th	84	73	77	82	67	80	74	82	100	96	98	90	92	94
9th	95	92	99	85	104	89	109	88	107	118	115	130	114	116
10th	96	95	92	97	94	102	91	105	87	102	108	112	130	114
11th	94	97	89	89	94	90	107	90	100	82	98	107	109	127
12th	123	106	105	101	97	106	94	105	91	99	79	109	114	116
Total District Enrollment	1,135	1,173	1,234	1,213	1,227	1,253	1,304	1,330	1,354	1,344	1,314	1,414	1,440	1,464
Change Over Prior Period	-	38	61	-21	14	26	51	26	24	-10	-30	100	26	24
4K Community Partners	0	99	83	100	88	92	107	90	78	81	57	81	83	85
4K or K - 3rd Grades	296	302	370	358	374	366	359	382	400	390	n/a	n/a	n/a	n/a
4K - 2nd Grades	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	292	310	314	320
4th - 8th Grades	431	382	396	383	376	408	437	470	491	472	n/a	n/a	n/a	n/a
3rd - 8th Grades	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	565	565	576	586
9th - 12th Grades	408	390	385	372	389	387	401	388	385	401	400	458	467	473

Notes

- 1. Actual enrollments as provided by the District. 4K started at Columbus Elementary School in 2016-17 school year. 4K community partner sites are Columbus Preschool, Headstart, Red Bud, and St. Jerome's.
- 2. Projected enrollments per the Kindergarten Trend Projection Model in the University of Wisconsin-Madison December 2011 School Enrollment Projections Report. 4K projected enrollment assumes 20 students at Columbus Elementary and the remainder at Community Partner sites.

# Planning for the Schools of Tomorrow



## School Enrollment Projections Series Columbus School District

December 2011



Page Intentionally Left Blank



# Table of Contents

Introduction .....	1
District Enrollment History .....	1
Kindergarten Enrollment Trends .....	5
Birth Trends and Projections .....	7
Population Estimates and Projections .....	8
Residential Development.....	14
Methods.....	19
School Enrollment Projections for Facility Planning, 2012-2021.....	21
4K Enrollment and Projections.....	21
Baseline Projection.....	22
5 Year Trend Projection.....	23
2 Year “Trend” Projection .....	24
Kindergarten Trend Projection.....	24
Comparison of Projection Models .....	26
School Enrollment Projections for Financial Planning, 2012-2021.....	30
District Enrollment History.....	30
Baseline Projection.....	31
5 Year Trend Projection.....	32
2 Year “Trend” Projection .....	33
Kindergarten Trend Projection.....	34
Comparison of Projection Models .....	35
Conclusions .....	39



## Introduction

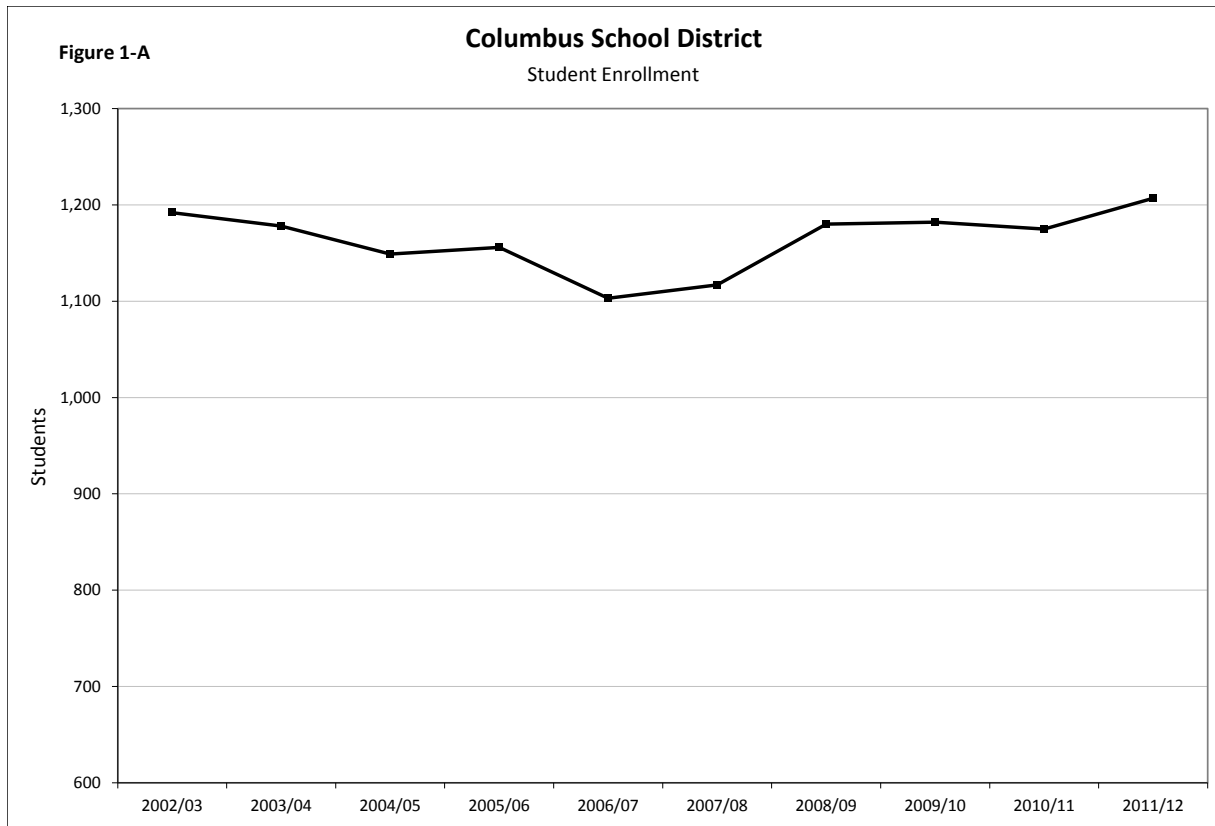
---

This report offers a summary of the Enrollment Projection Analysis completed for the Columbus School District by the Applied Population Laboratory, University of Wisconsin – Madison. Projections (2012-2021) are provided for the district as a whole, and individually for each grade and grade grouping. The projection process uses a combination of historical enrollment data, birth trends and projections, housing starts data, and population trends and projections to create reasonable assumptions about future growth scenarios and the likely impact on the Columbus School District.

## District Enrollment History

---

Figures 1-A, 1-B, and 1-C and Tables 1 and 2 display data on the last ten years of enrollment history in the Columbus School District. District enrollment has grown overall since 2002, from 1,192 students in the 2002/03 school year to 1,207 students in 2011/12. This is a growth of 15 students, or a 1.3% increase in the numbers of students enrolled. The district saw declines in enrollment in the middle of the past decade but has recovered since, in large part from the start of the 4K program.



**TABLE 1**  
**Student Enrollment**  
**Columbus School District**

	SCHOOL YEAR									
	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12
4K	0	0	0	0	0	0	79	98	84	99
K	72	79	67	81	69	72	84	77	93	83
1	69	66	79	69	80	77	75	80	81	99
2	74	72	69	78	72	80	72	73	79	84
3	81	73	73	73	72	69	81	69	77	83
4	73	88	71	81	73	76	67	84	69	81
5	80	78	85	73	75	77	81	70	83	72
6	96	83	81	83	67	78	74	87	70	79
7	96	93	87	84	78	68	78	73	81	68
8	92	95	97	83	84	79	68	76	73	82
9	102	111	112	125	101	104	99	89	95	90
10	130	100	106	120	122	102	101	99	90	97
11	119	122	95	106	107	118	100	100	94	89
12	108	118	127	100	103	117	121	107	106	101
<b>TOTAL</b>	<b>1,192</b>	<b>1,178</b>	<b>1,149</b>	<b>1,156</b>	<b>1,103</b>	<b>1,117</b>	<b>1,180</b>	<b>1,182</b>	<b>1,175</b>	<b>1,207</b>
K-12	1,192	1,178	1,149	1,156	1,103	1,117	1,101	1,084	1,091	1,108
K-3	296	290	288	301	293	298	312	299	330	349
4-8	437	437	421	404	377	378	368	390	376	382
9-12	459	451	440	451	433	441	421	395	385	377

**TABLE 2**  
**Student Enrollment Changes**  
**Columbus School District**

GRADE	ABSOLUTE CHANGE			PERCENT CHANGE			AVERAGE ANNUAL PERCENT CHANGE		
	'02 to '11	'02 to '06	'07 to '11	'02 to '11	'02 to '06	'07 to '11	'02 to '11	'02 to '06	'07 to '11
K	11	-3	11	15.3	-4.2	15.3	1.7	-1.0	3.8
1	30	11	22	43.5	15.9	28.6	4.8	4.0	7.1
2	10	-2	4	13.5	-2.7	5.0	1.5	-0.7	1.3
3	2	-9	14	2.5	-11.1	20.3	0.3	-2.8	5.1
4	8	0	5	11.0	0.0	6.6	1.2	0.0	1.6
5	-8	-5	-5	-10.0	-6.3	-6.5	-1.1	-1.6	-1.6
6	-17	-29	1	-17.7	-30.2	1.3	-2.0	-7.6	0.3
7	-28	-18	0	-29.2	-18.8	0.0	-3.2	-4.7	0.0
8	-10	-8	3	-10.9	-8.7	3.8	-1.2	-2.2	0.9
9	-12	-1	-14	-11.8	-1.0	-13.5	-1.3	-0.2	-3.4
10	-33	-8	-5	-25.4	-6.2	-4.9	-2.8	-1.5	-1.2
11	-30	-12	-29	-25.2	-10.1	-24.6	-2.8	-2.5	-6.1
12	-7	-5	-16	-6.5	-4.6	-13.7	-0.7	-1.2	-3.4
<b>TOTAL</b>	<b>15</b>	<b>-89</b>	<b>90</b>	<b>1.3</b>	<b>-7.5</b>	<b>8.1</b>	<b>0.1</b>	<b>-1.9</b>	<b>2.0</b>
K-12	-84	-89	-9	-7.0	-7.5	-0.8	-0.8	-1.9	-0.2
K-3	53	-3	51	17.9	-1.0	17.1	2.0	-0.3	4.3
4-8	-55	-60	4	-12.6	-13.7	1.1	-1.4	-3.4	0.3
9-12	-82	-26	-64	-17.9	-5.7	-14.5	-2.0	-1.4	-3.6



Figure 1-B shows enrollment history broken down by grade groupings (4K, K-3, 4-8, and 9-12). Elementary school enrollment has increased rapidly over the last several years, growing by 17% since Fall 2007. The 4K program began in the 2008 school year and has contributed to the district growth as well. Middle school and high school enrollment have decreased over the last decade, particularly high school in the past five years (14.5% decline).

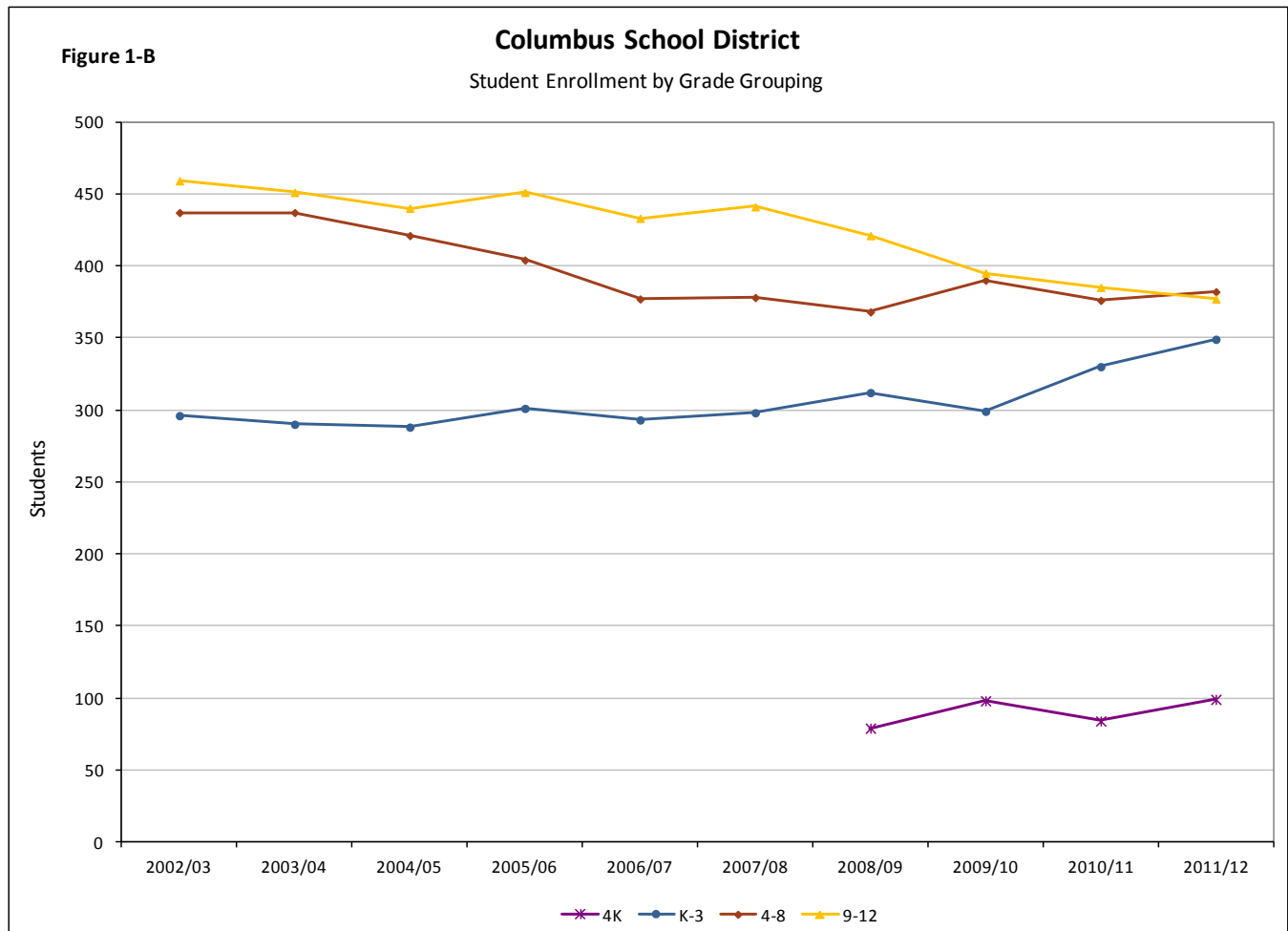
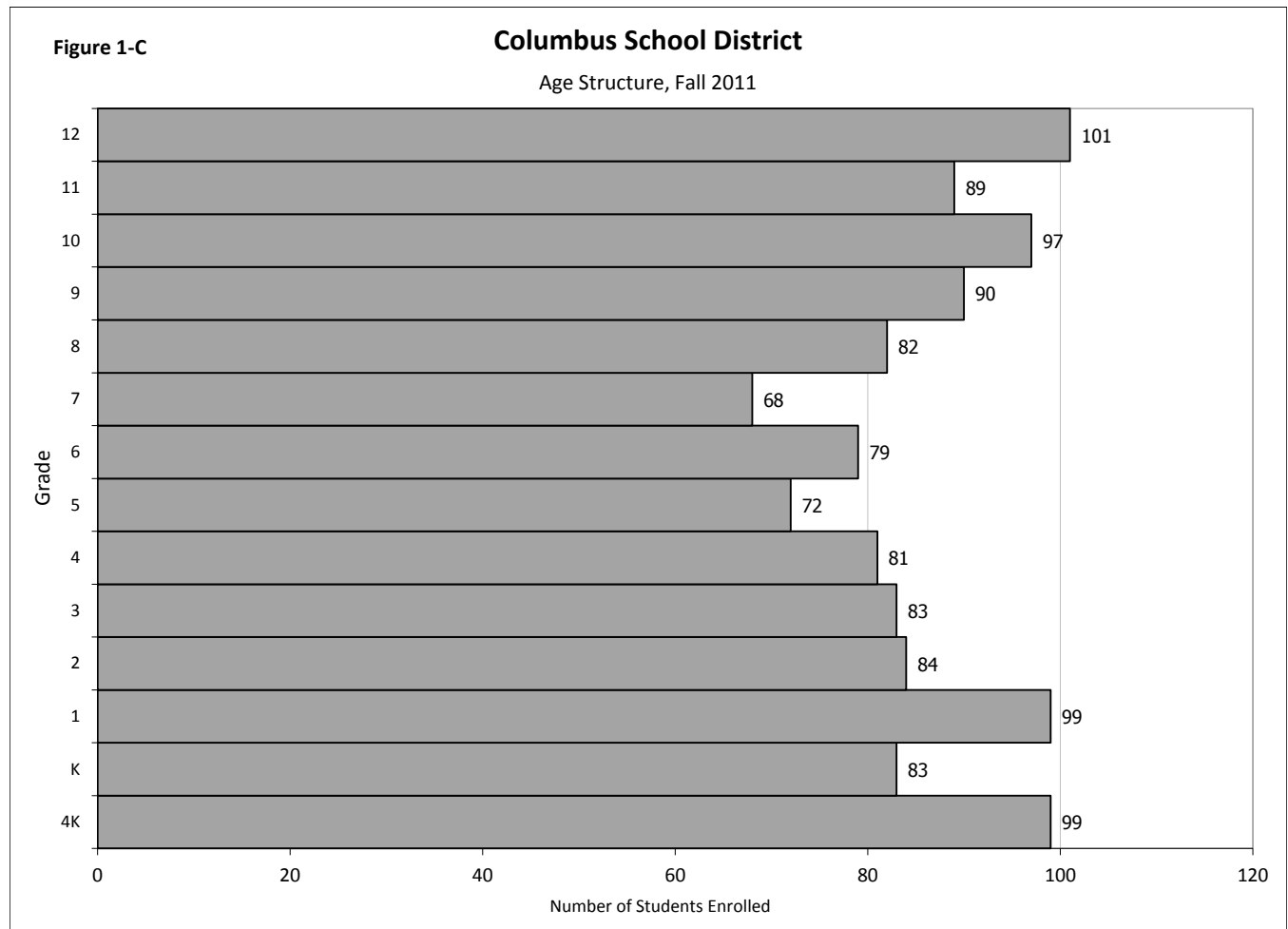
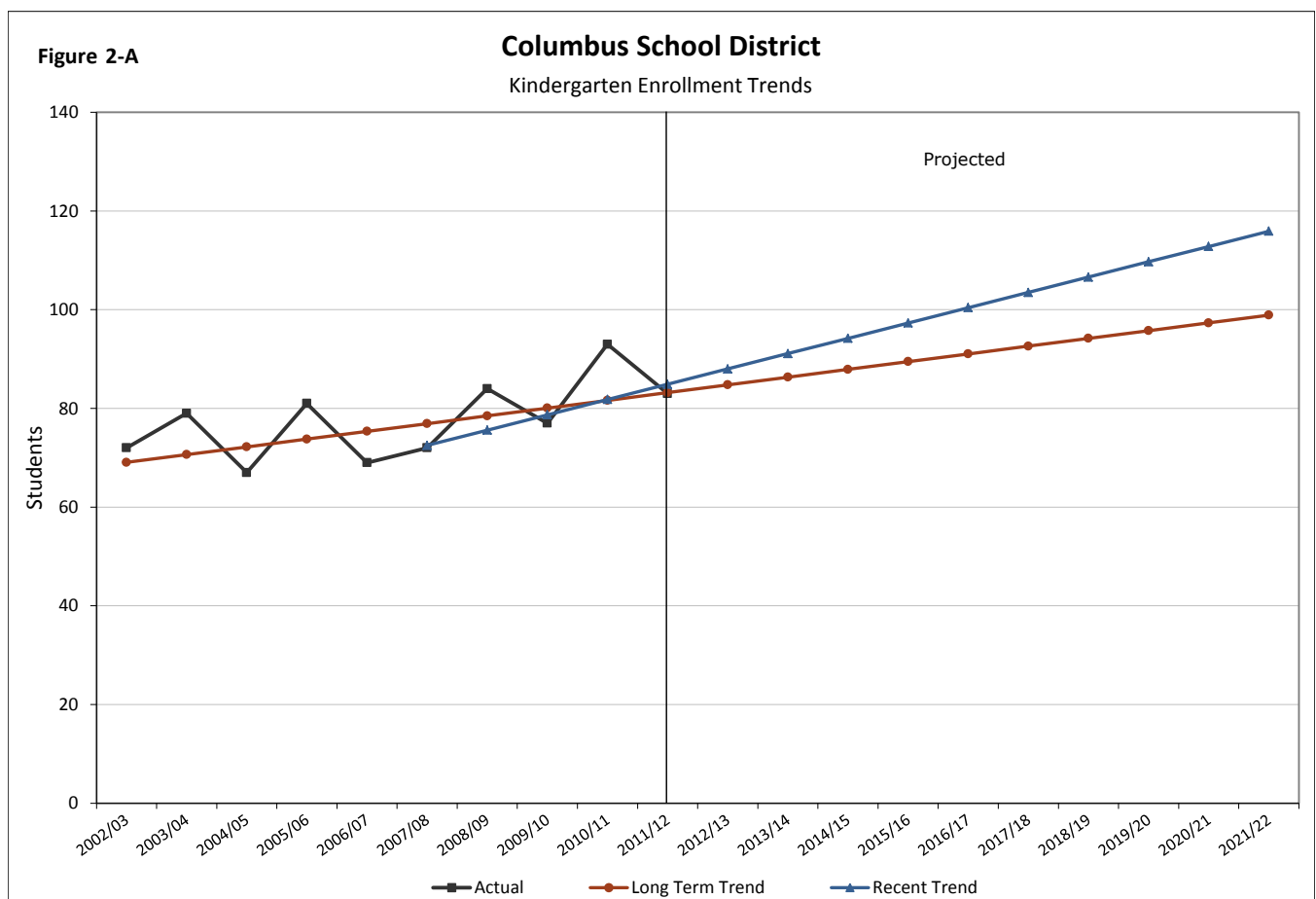


Figure 1-C shows the age structure in Fall 2011 of the student population with the number of 4 year old kindergarteners at the bottom and the number of 12<sup>th</sup> graders at the top. High school cohorts are relatively large, in comparison to other age groups. Middle school and elementary school cohorts are small in 2011, with 1<sup>st</sup> graders being an exception. The 4K class is the largest it's been since it started in 2008.

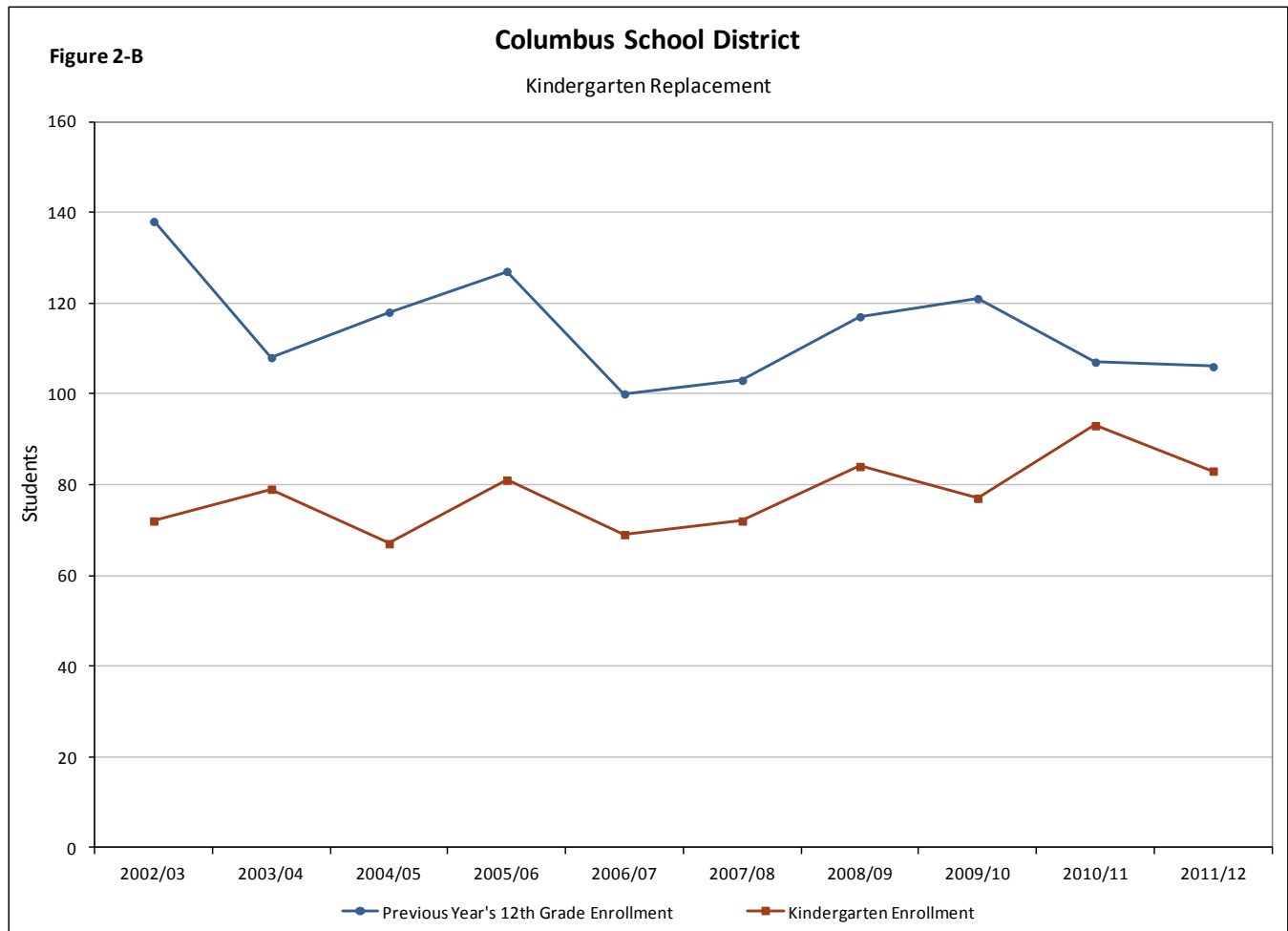


## Kindergarten Enrollment Trends

Examining trends in kindergarten enrollment is particularly informative for gaining perspective on future district enrollment, as today's kindergarteners will gradually make up tomorrow's students at the higher grade levels as they age and move through the school system. When kindergarten enrollment is increasing, elementary and middle school enrollment might be expected to increase in the near future, while high school enrollment may increase further in the future. Figure 2-A shows kindergarten enrollment history in black, and trend lines depicting kindergarten enrollment in red and blue. The "Long Term Trend" line (shown in red) averages kindergarten enrollment changes between 2002 and 2011. The "Recent Trend" line emphasizes kindergarten enrollment changes over the last five years. In Columbus School District, kindergarten enrollment has been up and down over the last ten years, but has increased overall leading to growing recent and long term trends.



In addition to examining kindergarten enrollment on its own, comparing kindergarten enrollment to outgoing 12<sup>th</sup> graders offers a snapshot of how the age structure of district enrollment is shifting either from older to younger, or younger to older. Districts tend to experience overall growth when kindergarten enrollment outpaces outgoing students, and they tend to experience decline when kindergarteners do not fully replace the number of graduates. In Columbus School District, kindergartener classes have consistently been smaller than 12<sup>th</sup> grade classes in the past ten years. However, the overall trend shows that kindergarten classes are growing in size while 12<sup>th</sup> graders are declining.

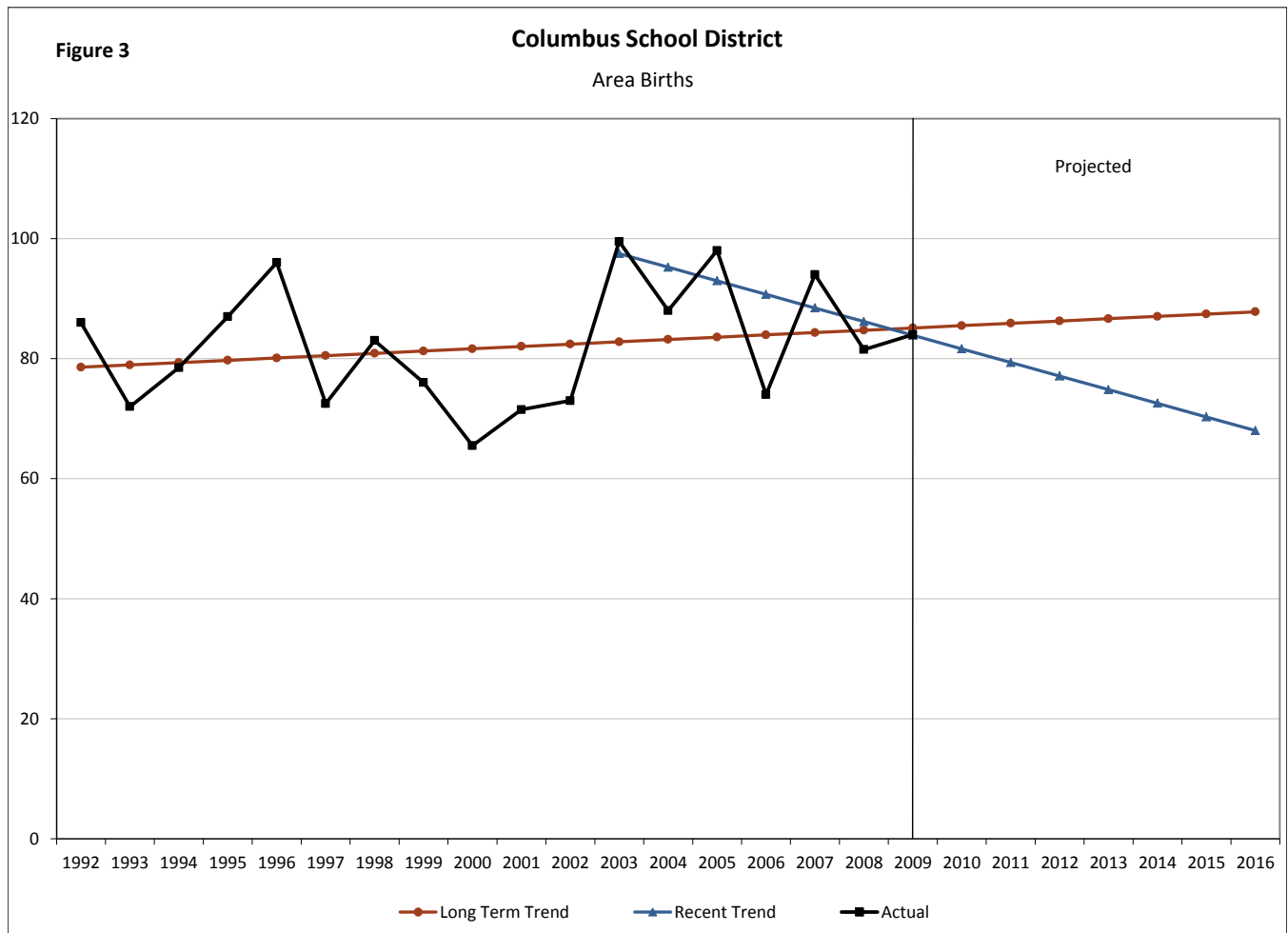




## Birth Trends and Projections

We use historical and projected birth data to forecast the number of kindergarten students who will enroll in the Columbus School District in the future years. Figure 3 shows (in black) the number of births to mothers living in municipalities that fall within Columbus School District boundaries, by year, from 1992-2009, as collected from the Wisconsin Department of Health Services. Numbers of births decreased moderately in the early 2000s but have since jumped back up in the following years. Births have been low the past couple years most likely due to the economic recession.

We extrapolate these birth trends into the future to correspond with our Baseline and Recent Trend projection models, using the B:K grade progression ratios to transform births into future kindergarteners. The red line represents birth trends over the longer term (between 1992 and 2009). The blue line examines birth patterns for the last seven years corresponds to the Recent Trend projection models shown later in this report.



## Population Estimates and Projections

This section examines population trends for municipalities that fall within the Columbus School District area. Changes in the total population of the district area, particularly when examined by age, provide clues into how the school age population may be changing. Table 3-A and Figures 4-A and 4-B provide U.S. Census population counts and Wisconsin Department of Administration (DOA) estimates for district area municipalities from 1980 to 2010.

**TABLE 3-A**  
**Total Population by Municipality: 1980-2010**  
**Columbus School District**

Municipality	POPULATION						
	Census 1980	est. 1985	Census 1990	est. 1995	Census 2000	est. 2005	Census 2010
<b>C. Columbus</b>	4,049	4,114	4,083	4,244	4,443	4,748	4,991
<b>T. Bristol</b>	1,723	1,930	1,835	2,108	2,698	3,255	3,765
<b>T. Calamus</b>	1,077	1,060	1,009	1,010	1,005	1,044	1,048
<b>T. Columbus</b>	704	696	838	828	711	702	646
<b>T. Elba</b>	1,028	1,060	964	1,009	1,086	1,116	996
<b>T. Fountain Prairie</b>	771	721	743	737	810	841	887
<b>T. Hampden</b>	650	619	566	543	563	564	574
<b>T. Lowell</b>	1,205	1,161	1,134	1,145	1,169	1,182	1,190
<b>T. Otsego</b>	767	688	647	658	757	761	693
<b>T. Portland</b>	976	978	994	1,038	1,106	1,154	1,079
<b>T. York</b>	714	665	649	666	703	712	652
<b>District Area</b>	<b>13,664</b>	<b>13,692</b>	<b>13,462</b>	<b>13,986</b>	<b>15,051</b>	<b>16,079</b>	<b>16,521</b>
<b>Columbia County</b>	43,222	43,675	45,088	47,217	52,468	54,940	56,833
<b>State of Wisconsin</b>	4,705,642	4,779,021	4,891,769	5,101,581	5,363,715	5,580,757	5,686,986

Municipality	PERCENT CHANGE						AVG. ANNUAL 2000-2010
	1980 to 1985	1985 to 1990	1990 to 1995	1995 to 2000	2000 to 2005	2005 to 2010	
<b>C. Columbus</b>	1.6%	-0.8%	3.9%	4.7%	6.9%	5.1%	1.4%
<b>T. Bristol</b>	12.0%	-4.9%	14.9%	28.0%	20.6%	15.7%	4.4%
<b>T. Calamus</b>	-1.6%	-4.8%	0.1%	-0.5%	3.9%	0.4%	0.5%
<b>T. Columbus</b>	-1.1%	20.4%	-1.2%	-14.1%	-1.3%	-8.0%	-1.0%
<b>T. Elba</b>	3.1%	-9.1%	4.7%	7.6%	2.8%	-10.8%	-0.9%
<b>T. Fountain Prairie</b>	-6.5%	3.1%	-0.8%	9.9%	3.8%	5.5%	1.1%
<b>T. Hampden</b>	-4.8%	-8.6%	-4.1%	3.7%	0.2%	1.8%	0.2%
<b>T. Lowell</b>	-3.7%	-2.3%	1.0%	2.1%	1.1%	0.7%	0.2%
<b>T. Otsego</b>	-10.3%	-6.0%	1.7%	15.0%	0.5%	-8.9%	-0.9%
<b>T. Portland</b>	0.2%	1.6%	4.4%	6.6%	4.3%	-6.5%	-0.3%
<b>T. York</b>	-6.9%	-2.4%	2.6%	5.6%	1.3%	-8.4%	-0.8%
<b>District Area</b>	<b>0.2%</b>	<b>-1.7%</b>	<b>3.9%</b>	<b>7.6%</b>	<b>6.8%</b>	<b>2.7%</b>	<b>1.1%</b>
<b>Columbia County</b>	1.0%	3.2%	4.7%	11.1%	4.7%	3.4%	0.9%
<b>State of Wisconsin</b>	1.6%	2.4%	4.3%	5.1%	4.0%	1.9%	0.7%

Source: U. S. Census Bureau & Demographic Services Center, WIDOA



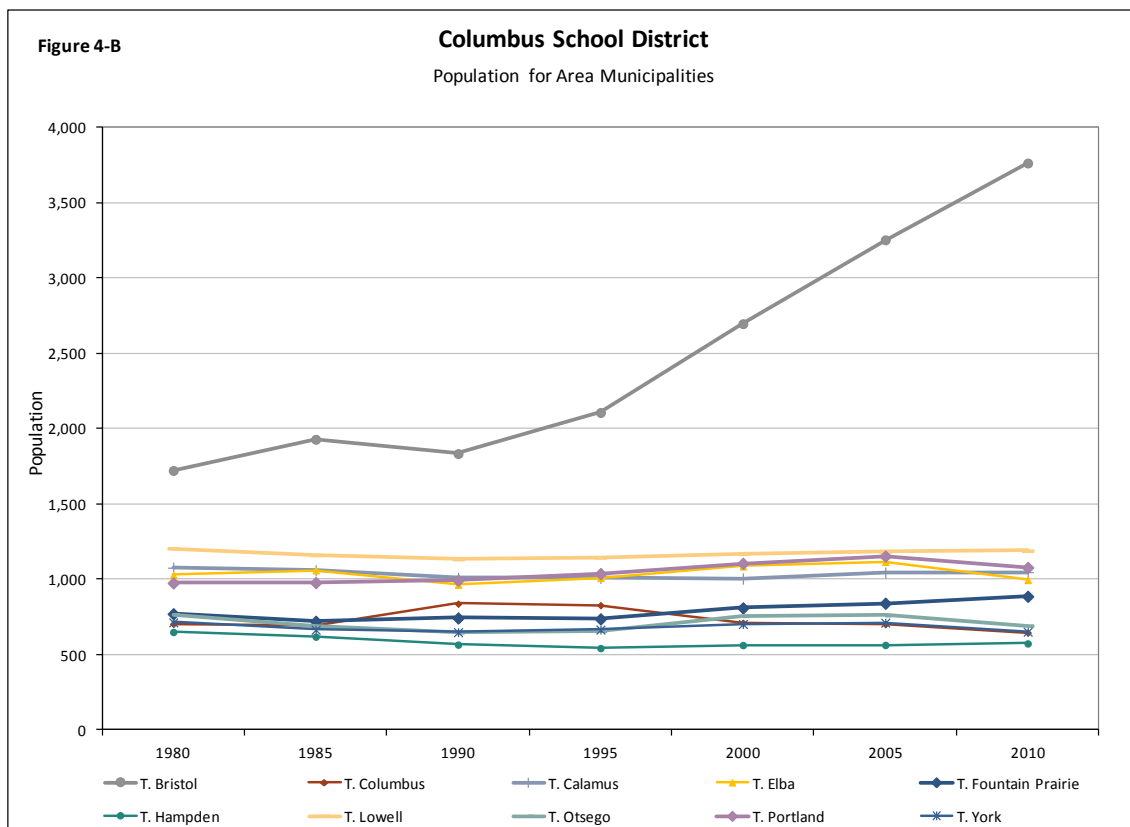
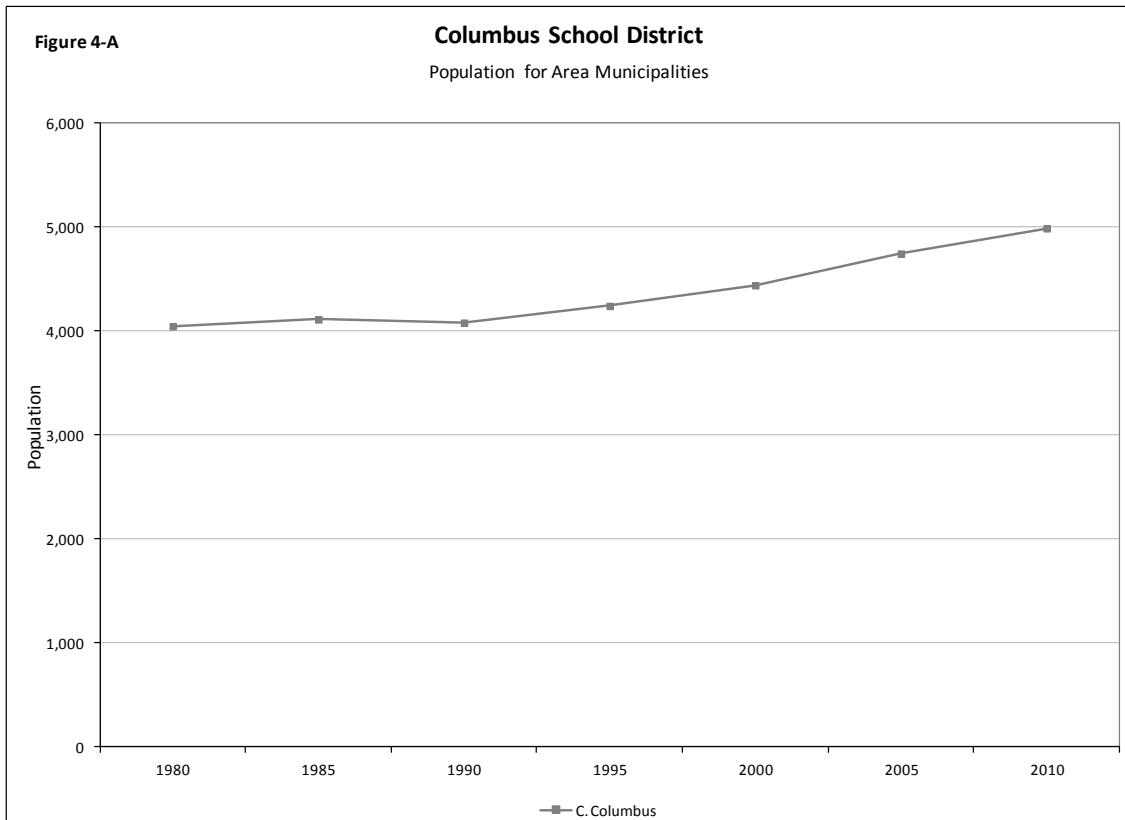


Table 3-B provides the population that lives below the poverty level by age for Columbia County. The largest group in poverty is aged 18-24 years. Table 3-C provides the educational attainment for the population of the county. The highest percentage of the population is high school graduates with the next largest population with some college education.

**Table 3-B**  
**Population below poverty level**  
**Columbia County**

Total	4,132
Under 5 years	419
6 to 11 years	307
12 to 17 years	458
18 to 24 years	769
25 to 34 years	366
35 to 44 years	380
45 to 54 years	447
55 to 64 years	400
65 to 74 years	121
75 years and over	465

Source: American Community Survey, 2005-2009

**Table 3-C**  
**Educational Attainment**  
**Columbia County**

Education	Population	Education
High School Graduate	16,512	38.9%
Some College	9,622	22.7%
Associate's Degree	3,813	9.0%
Bachelor's Degree	5,355	12.6%
Master's/Doctorate Degree	2,341	5.5%

Source: American Community Survey, 2005-2009



Population breakdown by race and ethnicity in 2010 for Columbus School District municipalities are provided in Table 4-A. These numbers show that though all municipalities are a majority non-Hispanic white, there are significant Hispanic and Asian populations in some communities.

**TABLE 4-A**  
**Race/Ethnicity Population by Municipality: 2010**  
**Columbus School District**

Municipality	Total	White	African American	Hispanic	Asian	American Indian
<b>C. Columbus</b>	4,991	4,684	65	164	39	27
<b>T. Bristol</b>	3,765	3,546	37	91	55	13
<b>T. Calamus</b>	1,048	917	4	105	11	7
<b>T. Columbus</b>	646	602	7	27	4	2
<b>T. Elba</b>	996	968	1	14	3	10
<b>T. Fountain Prairie</b>	887	870	2	10	1	4
<b>T. Hampden</b>	574	543	2	18	10	1
<b>T. Lowell</b>	1,190	1,165	3	16	0	4
<b>T. Otsego</b>	693	679	0	11	1	2
<b>T. Portland</b>	1,079	1,002	15	51	5	4
<b>T. York</b>	652	623	6	11	10	2
<b>District Area</b>	<b>16,521</b>	<b>15,599</b>	<b>142</b>	<b>518</b>	<b>139</b>	<b>76</b>
<b>Columbia County</b>	56,833	53,628	851	1,444	406	405
<b>State of Wisconsin</b>	5,686,986	4,738,411	380,660	336,056	143,931	68,593

**Percent of Total Population**

Municipality	White	African American	Hispanic	Asian	American Indian
<b>C. Columbus</b>	93.85%	1.30%	3.29%	0.78%	0.54%
<b>T. Bristol</b>	94.18%	0.98%	2.42%	1.46%	0.35%
<b>T. Calamus</b>	87.50%	0.38%	10.02%	1.05%	0.67%
<b>T. Columbus</b>	93.19%	1.08%	4.18%	0.62%	0.31%
<b>T. Elba</b>	97.19%	0.10%	1.41%	0.30%	1.00%
<b>T. Fountain Prairie</b>	98.08%	0.23%	1.13%	0.11%	0.45%
<b>T. Hampden</b>	94.60%	0.35%	3.14%	1.74%	0.17%
<b>T. Lowell</b>	97.90%	0.25%	1.34%	0.00%	0.34%
<b>T. Otsego</b>	97.98%	0.00%	1.59%	0.14%	0.29%
<b>T. Portland</b>	92.86%	1.39%	4.73%	0.46%	0.37%
<b>T. York</b>	95.55%	0.92%	1.69%	1.53%	0.31%
<b>District Area</b>	<b>94.42%</b>	<b>0.86%</b>	<b>3.14%</b>	<b>0.84%</b>	<b>0.46%</b>
<b>Columbia County</b>	94.36%	1.50%	2.54%	0.71%	0.71%
<b>State of Wisconsin</b>	83.32%	6.69%	5.91%	2.53%	1.21%

Source: U. S. Census Bureau



Table 4-B shows the change in the race and ethnicity population for the overall population and the population under 18 years of age for the City of Columbus. While non-Hispanic white population under 18 years of age has declined, the minority population has increased in this ten year period.

**Table 4-B**  
**Race and Ethnicity Characteristics, 2000-2010**  
**City of Columbus**

Race/Ethnicity	Total Population				Population under 18			
	2000	2010	Increase	% Change	2000	2010	Change	% Change
White	4,336	4,684	348	8.0%	1,104	1,064	-40	-3.6%
African American	16	45	29	181.3%	6	13	7	116.7%
Hispanic	44	164	120	272.7%	18	69	51	283.3%
Asian	14	31	17	121.4%	9	15	6	66.7%
American Indian	10	10	0	0.0%	3	3	0	0.0%
Multi/Other	23	57	34	147.8%	12	37	25	208.3%

Source: U.S. Census, 2000 & 2010

Figure 4-C shows population counts by age for 2010 in Columbia County from the U.S. Census Bureau. At the present time, there are larger numbers of children aged 5-9 and 10-14 than children under 5 years of age.

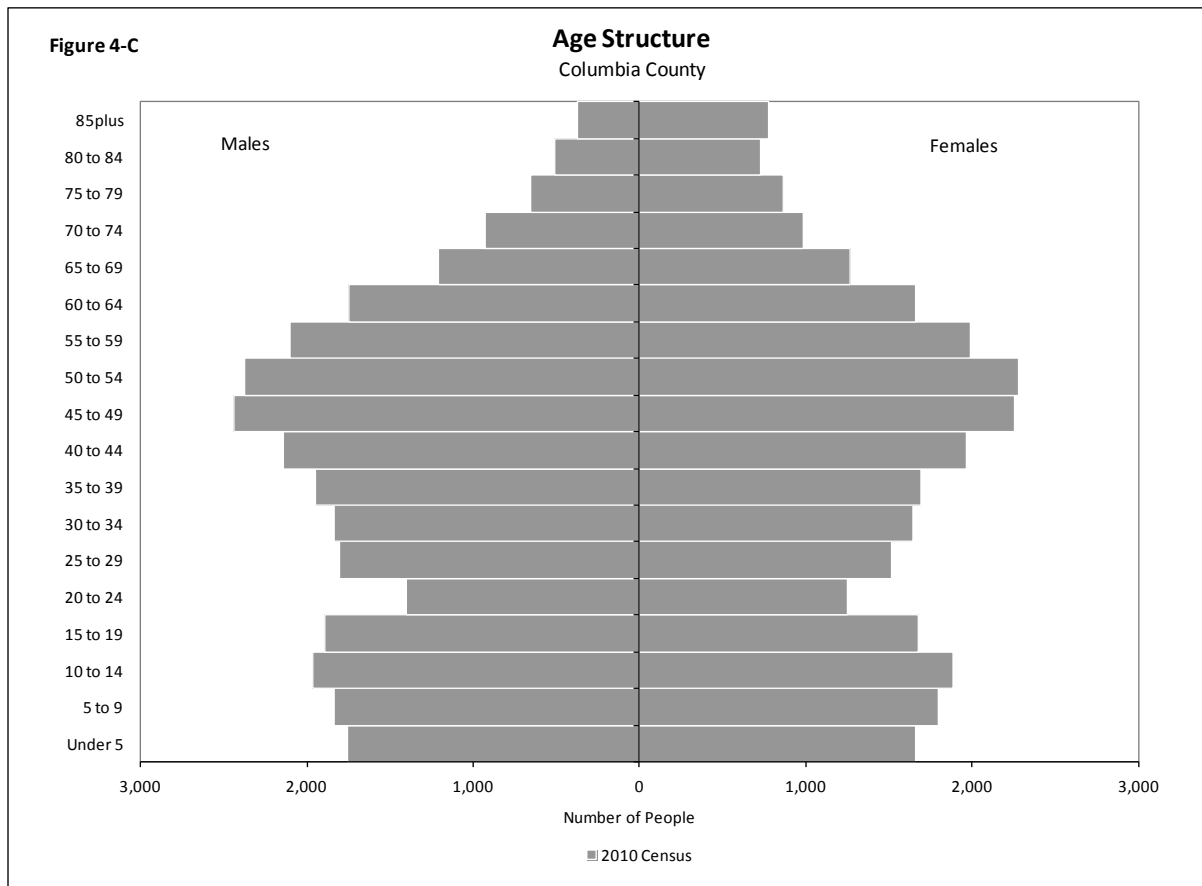


Table 5 shows population projections by age for Columbia County. In the county as a whole, the number of children aged 5-9, 10-15, and 15-19 is expected to increase over the next several years. Because these projections are for the entirety of Columbia County, they may or may not resemble the future age structure of the population within the Columbus School District.

**TABLE 5**  
**Population Projections by Age: 2015-2035**  
**Columbus School District**

<b>Columbia County</b>					
<b>Age Group</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>
0-4	3,503	3,634	3,668	3,639	3,599
5-9	3,435	3,628	3,753	3,780	3,742
10-14	3,429	3,561	3,752	3,875	3,895
15-19	3,393	3,340	3,469	3,655	3,772
20-24	3,097	2,872	2,826	2,936	3,092
25-29	3,902	3,686	3,421	3,362	3,490
30-34	4,186	4,375	4,126	3,806	3,738
35-39	3,811	4,567	4,746	4,473	4,104
40-44	3,975	3,989	4,752	4,928	4,641
45-49	4,293	4,064	4,074	4,838	5,009
50-54	4,869	4,363	4,135	4,154	4,919
55-59	4,635	4,832	4,343	4,127	4,155
60-64	3,904	4,546	4,751	4,285	4,080
65-69	3,213	3,670	4,285	4,490	4,056
70-74	2,113	2,820	3,231	3,788	3,982
75-79	1,512	1,792	2,402	2,767	3,262
80-84	1,114	1,186	1,421	1,911	2,216
85-89	799	763	822	999	1,356
90-94	411	436	428	469	582
95-99	140	155	171	175	194
100 & Over	28	35	41	47	51
<b>Totals</b>	<b>59,762</b>	<b>62,314</b>	<b>64,617</b>	<b>66,504</b>	<b>67,935</b>



## Residential Development

Table 6-A shows the number of housing starts in the Columbus School District over the past ten years. Area housing starts have fluctuated from a high of 86 units in 2003, to a low of 18 new housing starts in 2008. The number of new single family homes has declined in the last three years.

**TABLE 6-A**  
**School District Area Housing Starts**  
**Columbus School District**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>District Area</b>										
<b>TOTAL</b>	<b>74</b>	<b>54</b>	<b>86</b>	<b>59</b>	<b>45</b>	<b>34</b>	<b>41</b>	<b>18</b>	<b>19</b>	<b>38</b>
<b>Single Family</b>	<b>26</b>	<b>34</b>	<b>24</b>	<b>21</b>	<b>29</b>	<b>32</b>	<b>31</b>	<b>18</b>	<b>17</b>	<b>14</b>
<b>Two Family</b>	<b>20</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>24</b>
<b>Multi-family</b>	<b>28</b>	<b>20</b>	<b>60</b>	<b>36</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>C. Columbus</b>										
<b>TOTAL</b>	<b>66</b>	<b>39</b>	<b>77</b>	<b>51</b>	<b>39</b>	<b>23</b>	<b>30</b>	<b>12</b>	<b>14</b>	<b>35</b>
Single Family	18	19	15	13	23	21	20	12	12	11
Two Family	20	0	2	2	8	2	6	0	2	24
Multi-family	28	20	60	36	8	0	4	0	0	0
<b>T. Columbus</b>										
<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>0</b>
Single Family	0	1	2	1	2	4	6	2	1	0
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
<b>T. Elba</b>										
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>
Single Family	4	5	4	5	0	3	3	1	0	1
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
<b>T. Hampden</b>										
<b>TOTAL</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>
Single Family	1	4	1	1	2	3	2	2	2	0
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
<b>T. York</b>										
<b>TOTAL</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>
Single Family	3	5	2	1	2	1	0	1	2	2
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0

Source: Demographic Services Center, WIDOA

Examining trends in recent housing development can help to explain how in-migration into the Columbus School District area might be affecting school enrollment. If the number of housing starts in the district area is expected to be reasonably consistent for the next several years, then we assume that in-migration of school-age children will also remain relatively consistent. If the number of housing starts is expected to increase significantly above and beyond recent levels, in-migration may play an increasing role in Columbus School District enrollment. However, it is important to recognize that the number of housing starts in any given year is dependent upon a large number of confounding variables

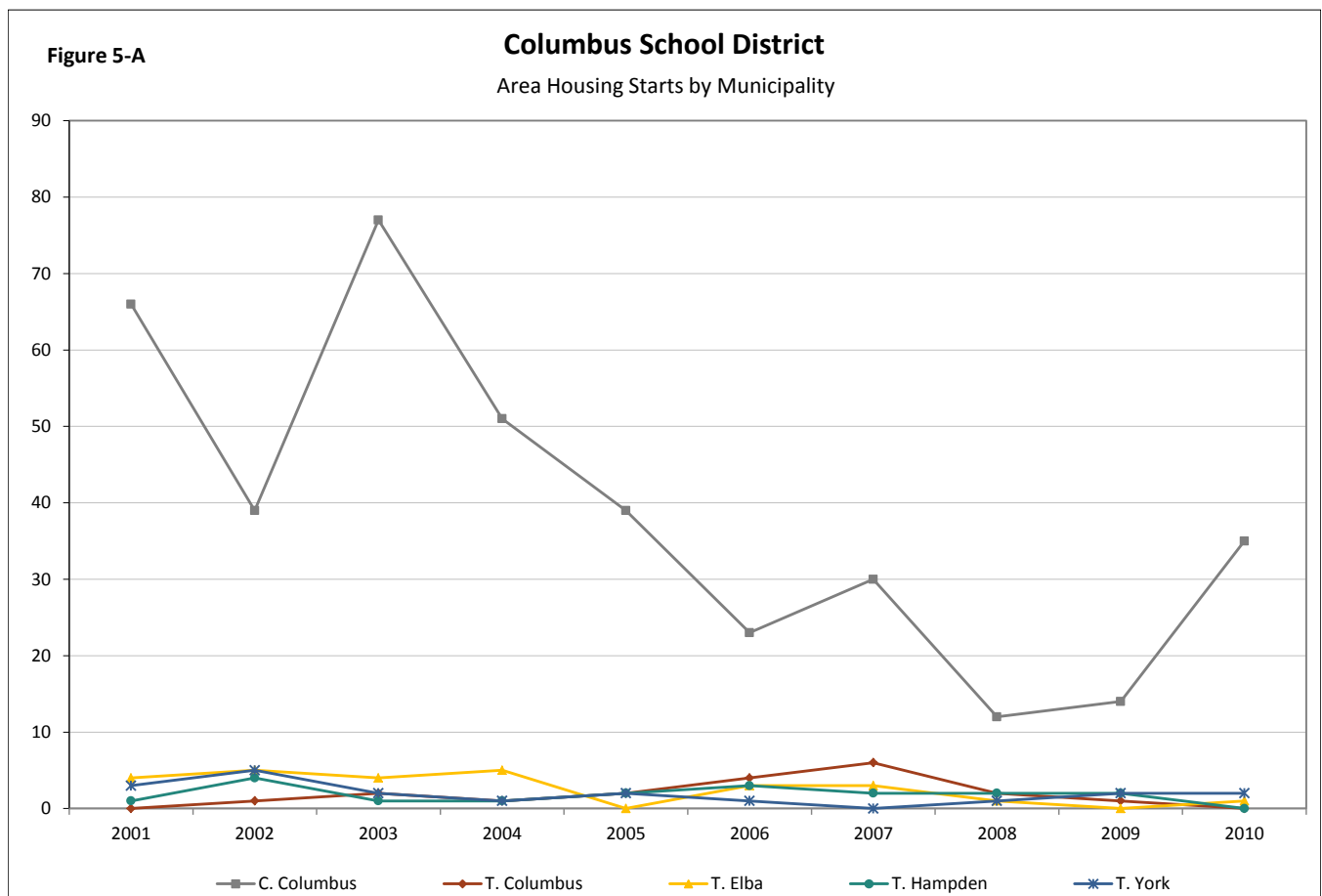




(decisions of local, county, and state policy makers, residential developers, interest rates, demand for housing, etc.), making future growth patterns difficult to predict.

The majority of housing development over the last several years has occurred in the City of Columbus. All other municipalities have had minimal building growth. Most of the development in the area has consisted of single-family homes; however there was a spike in multi-family households from 2001 to 2004. Last year a significant number of two family homes (duplexes) were built. Households in two-family and multi-family complexes, on average, contain fewer school-aged children than single family homes.

The entire district area has experienced a decline in development over the past three years. This is consistent with housing and economic trends in Columbia County, Wisconsin, and the United States as a whole. Despite these challenges, the Columbus School District still saw 38 new housing starts in 2010, indicating that development is still occurring within the district area. Figure 5-A shows the number of residential building permits issued by municipality for communities that fall within the Columbus School District area. Figure 5-B shows housing starts in the area by type of housing unit—single family home, two family home, or multi-family housing unit.



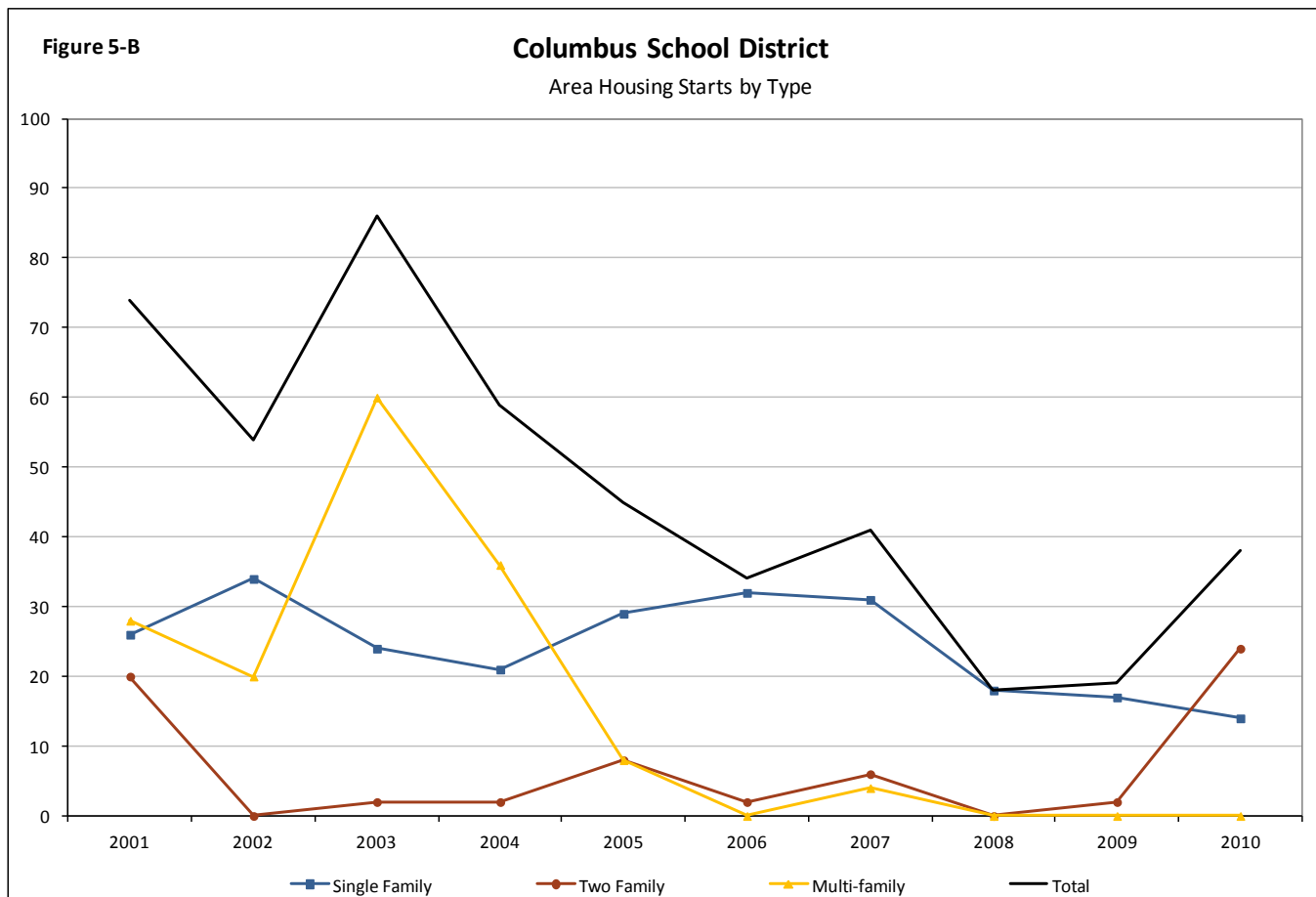


Table 6-B provides household characteristics and Table 6-C shows the age of non-family householder. There are significantly more family households than non-family households in the City of Columbus. The majority of non-family households are headed by middle aged people; the largest group is aged 45 to 54. The second largest group of non-family households is 25 to 34 year olds.

**Table 6-B**  
**Household Characteristics**  
**City of Columbus**

<b>Total households</b>	<b>2,123</b>
Family households	1,336
Non-family households	787
Ave household size	2.33

Source: U. S. Census, 2010

**Table 6-C**  
**Age of Householder of Non-Family Households**  
**City of Columbus**

	<b>Total</b>	<b>Percent</b>
Householder 15 to 24 years	55	7%
Householder 25 to 34 years	114	14%
Householder 35 to 44 years	97	12%
Householder 45 to 54 years	142	18%
Householder 55 to 59 years	77	10%
Householder 60 to 64 years	61	8%
Householder 65 to 74 years	84	11%
Householder 75 to 84 years	100	13%
Householder 85 years and over	57	7%

Source: U. S. Census, 2010



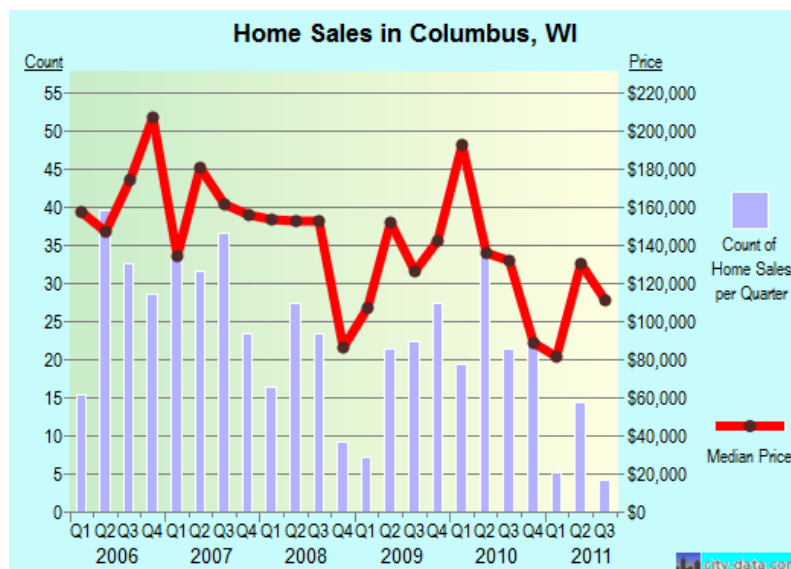
It is also important to consider that turnover in ownership of existing housing stock also contributes to changes in enrollment. A district can maintain or even increase enrollment depending upon the cycle of resident homeowners, regardless of housing starts. For instance, a younger community will have a higher child-per-household ratio, whereas an older community will have a lower child-per-household ration. However, within a few years a turnover in ownership in an older community may result in an increase in the child-per-household number. As younger families move into the area, the Columbus School District will tend to see new students enrolling into the district's schools. Absent new housing development or housing turnover, families will age in place and the number of school-aged children eventually declines. Turnover in ownership does not happen overnight, however, and slow turnover may happen for several years at varying rates. Table 6-D provides the in-migration for the City of Columbus. It shows that 84% of the population was living in their current home one year ago (from when the data was published in 2009).

**Table 6-D**  
**In-Migration , one year ago**  
**City of Columbus**

<b>Population</b>	<b>4,782</b>
% Living in the Same House	84.2
% Moved in from Same County	6.6
% Moved in from Different County	8.8
% Moved in from Elsewhere	0.4

Source: American Community Survey, 2005-2009

This chart shows home sales (blue bars) and the median price (red line) from 2006 to 2011.



Source: [www.city-data.com](http://www.city-data.com)



Table 6-E shows the assessed value of homes in the City of Columbus over the last five years. The table includes only the middle range of home values and does not show the very low or the very high end of range of assessed values.

**Table 6-E**  
**Home Values in the City of Columbus**

Assessed Value	Occupied Homes
\$80,000 to \$89,999	32
\$90,000 to \$99,999	53
\$100,000 to \$124,999	170
\$125,000 to \$149,999	193
\$150,000 to \$174,999	243
\$175,000 to \$199,999	156
\$200,000 to \$249,999	216
\$250,000 to \$299,999	53
\$300,000 to \$399,999	58

Source: 2005-2009 American Community Survey

This report identifies residential developments planned in the district's growth areas within the Columbus School District. In an effort to predict the most reasonable future development patterns in the district, interviews with officials from the municipalities and counties provided an understanding of specific development plans. Table 6-F shows the approved housing development in the district showing the total number of lots and the remaining number of buildable lots for each subdivision. With the exception of the Town of Bristol there is very little housing development in the towns surrounding the City of Columbus. Current economic conditions have lead to a slow down of housing development.

**Table 6-F**  
**Approved Housing Developments**  
**Columbus School District**

Name	Total lots	# lots available	Municipality
Community Trails			C. Columbus
<i>Single Family</i>	354 SF	354	
<i>Senior Housing</i>	168 units	168	
Cardinal Estates	35 SF	33	C. Columbus
Highland Commons	70 2F	36	C. Columbus
Highland Ridge	168 SF	123	C. Columbus
Kestrel Ridge	350 SF	221	C. Columbus
Drumlin Creek	90 SF	70	T. Bristol

SF = Single Family

2F = Duplexes



## Methods

In order to generate school enrollment projections, we rely on a commonly used demographic technique called the “cohort survival method.” This method advances current students through the school system over time and applies rates of transfer (or “survival”) as the students who are now in school age from year to year and grade to grade. It is through these rates of transfer that we make assumptions about how migration into and out of the district and transfers to and from different schools or home schooling will impact future enrollment. The APL customizes projections to best fit an individual district’s needs by adjusting the basic model based on information about birth trends, recent housing development, economic changes, and population projections.

### Grade Progression Ratios

Grade progression ratios are used to measure district enrollment changes, year to year and grade to grade that have occurred within the Columbus School District in the recent past. By examining these, we can better understand recent changes in enrollment, and we use these ratios as the rates of transfer mentioned above to inform projections of future students.

Table 7 shows the grade progression ratios for the Columbus School District. The ratios measure the effects of in- and out-migration and the transfer of students between private and public schools. The ratios are calculated for several pairs of years and then averages of these based on different time frames are calculated for each grade.

**TABLE 7**  
Grade Progression Ratios  
Columbus School District

YEAR CHANGES	B: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
02-03/03-04	0.983	0.917	1.043	0.986	1.086	1.068	1.038	0.969	0.990	1.207	0.980	0.938	0.992
03-04/04-05	0.843	1.000	1.045	1.014	0.973	0.966	1.038	1.048	1.043	1.179	0.955	0.950	1.041
04-05/05-06	1.034	1.030	0.987	1.058	1.110	1.028	0.976	1.037	0.954	1.289	1.071	1.000	1.053
05-06/06-07	1.000	0.988	1.043	0.923	1.000	0.926	0.918	0.940	1.000	1.217	0.976	0.892	0.972
06-07/07-08	1.036	1.116	1.000	0.958	1.056	1.055	1.040	1.015	1.013	1.238	1.010	0.967	1.093
07-08/08-09	1.159	1.042	0.935	1.013	0.971	1.066	0.961	1.000	1.000	1.253	0.971	0.980	1.025
08-09/09-10	0.850	0.952	0.973	0.958	1.037	1.045	1.074	0.986	0.974	1.309	1.000	0.990	1.070
09-10/10-11	1.013	1.052	0.988	1.055	1.000	0.988	1.000	0.931	1.000	1.250	1.011	0.949	1.060
10-11/11-12	0.877	1.065	1.037	1.051	1.052	1.043	0.952	0.971	1.012	1.233	1.021	0.989	1.074
Baseline	0.990	1.029	1.010	0.997	1.029	1.027	1.001	0.988	0.998	1.233	0.996	0.966	1.054
5 Year Trend	0.987	1.045	0.987	1.007	1.023	1.039	1.005	0.981	1.000	1.257	1.003	0.975	1.065
2 Year "Trend"	0.945	1.058	1.012	1.053	1.026	1.016	0.976	0.951	1.006	1.241	1.016	0.969	1.067

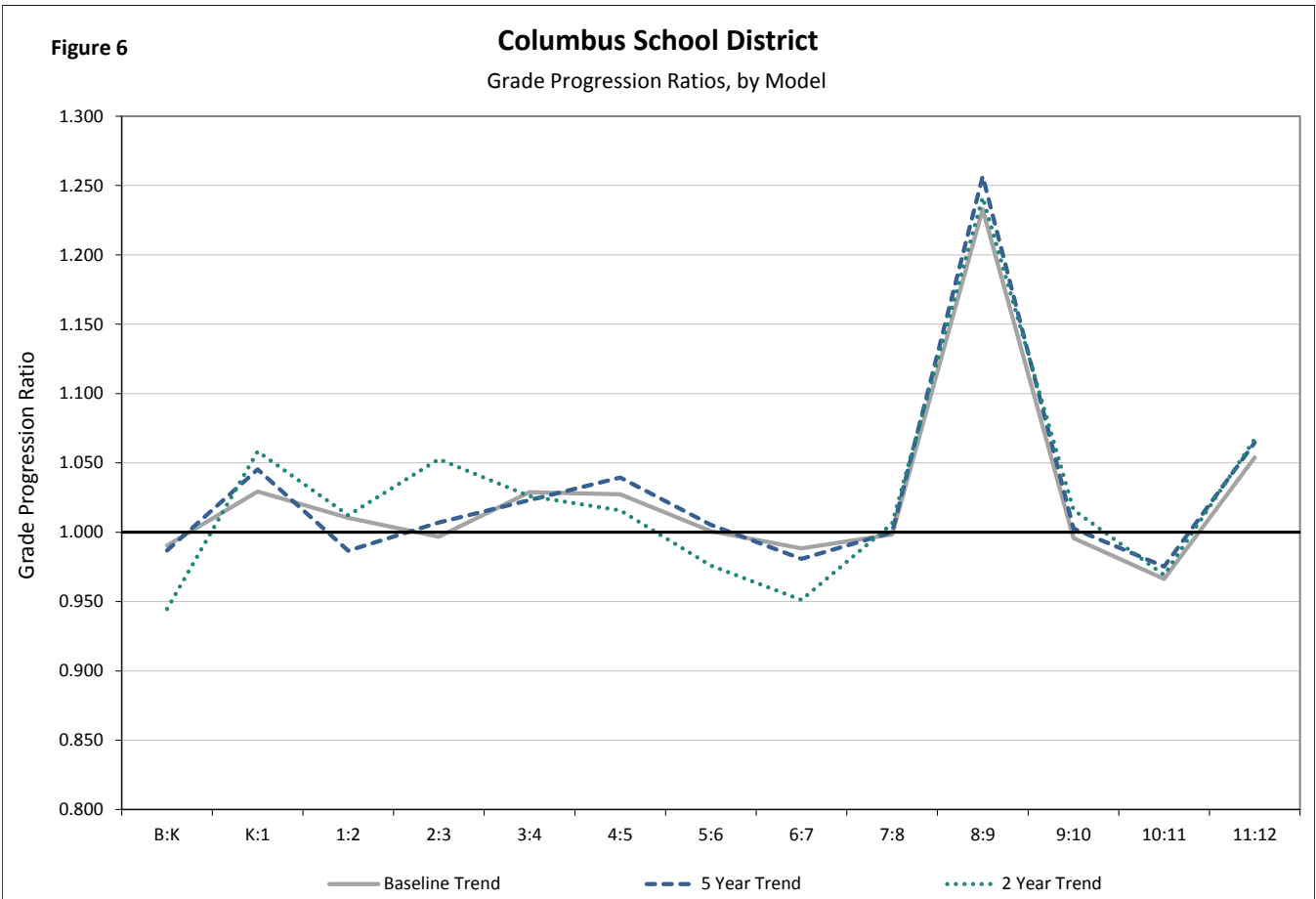
\*Shaded progression ratios are excluded from the Baseline Average

The grade progression ratios can be interpreted in the following manner. The Baseline ratio for K:1 is 1.029. This means that in the Columbus School District, the first grade is on average 2.9% larger each year than the kindergarten class was the previous year (the result of transfers from other schools and



in-migration into the district). The B:K (birth to kindergarten) Baseline ratio of 0.990 indicates that on average, approximately 99% of the births from five years previously enroll in kindergarten in Columbus School District. Outliers (ratios outside of one standard deviation of the mean) are not included in the calculation of the Baseline average ratios.

In order to examine future enrollment under different growth assumptions, we generate three sets of grade progression ratios that correspond to the different projection models shown later in this report. In addition to the Baseline ratios (averages 10 years), we examine rates of transfer in the last 5 years and the last 2 years, effectively weighing enrollment change patterns from different time periods more heavily than the Baseline. Any significant deviations from the rates of in- and out-migration in the district area will have a corresponding effect on enrollment. These additional models allow us to examine alternative outcomes compared to the overall trends of the Baseline model. Figure 6 shows the differences between these three sets of grade progression ratios.



## School Enrollment Projections for Facility Planning, 2012-2021

---

When considering all of the projections provided in this report for decision-making, it is important to recognize that population projections of all types, including school enrollment projections, are more accurate in the immediate future than they are farther into the future. This is especially true for grades K-3, because the students who will enter kindergarten after 2015 have not yet been born. Overall, our projections are more reliable over the next five years (up to the 2016/17 school year) than they are in the latter half of the next decade. The first set of projections will serve as a guide for facility planning.

### 4K Enrollment and Projections

---

To generate 4K enrollment projections, we assume that the number of children born in the district area who will enter the 4K program will increase over the next ten years. An average of the last four years of grade progression ratios (1.033) is used to project future 4K students. Table A shows observed transfer ratios between birth and 4K for the last four school years, future transfer ratio between birth and 4K (average ratio from the last four years), observed enrollment in the 4K program, and projected enrollment in the 4K program from 2012/13 to 2021/22. These 4K projections will be used for all four projection models.

**TABLE A**  
**4K Enrollment and Projections**  
**Columbus School District**

Birth/4K Year	B:4K	Enrollment
03-04/08-09	1.090	79
04-05/09-10	1.081	98
05-06/10-11	0.915	84
06-07/11-12	1.046	99
07-08/12-13	1.033	89
08-09/13-14	1.033	91
09-10/14-15	1.033	93
10-11/15-16	1.033	95
11-12/16-17	1.033	96
12-13/17-18	1.033	98
13-14/18-19	1.033	100
14-15/19-20	1.033	101
15-16/20-21	1.033	103
16-17/21-22	1.033	105



The Baseline model (Table 8) projects enrollments using the assumption that average trends year to year, grade to grade, will continue into the future. This model assumes that long term (past ten years) trends in enrollment, migration, and births will be representative of future trends in the district.

This model projects that all grade groupings will grow in the next ten years. Total enrollment will increase from 1,207 students in 2011/12 to 1,375 in 2021/22. More specifically, middle and high school enrollment is projected to grow the most in the school district. Grades 4-8 will grow 60% in the next five years, while grades 9-12 will then increase when the middle school students enter high school in the second half of the decade.

**TABLE 8**  
**Baseline Projection Model**  
**Columbus School District**

	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	89	91	93	95	96	98	100	101	103	105
K	86	85	82	84	85	85	86	86	86	87
1	85	89	87	85	87	87	88	88	89	89
2	100	86	90	88	86	88	88	89	89	90
3	84	100	86	90	88	85	87	88	88	89
4	85	86	103	89	92	90	88	90	91	91
5	83	88	88	105	91	95	93	90	92	93
6	72	83	88	89	105	91	95	93	90	92
7	78	71	82	87	88	104	90	94	92	89
8	68	78	71	82	87	87	104	90	94	92
9	101	84	96	88	101	107	108	128	111	115
10	90	101	83	96	87	101	106	107	128	110
11	94	87	97	81	92	84	97	103	104	123
12	94	99	91	103	85	97	89	103	108	109
<b>TOTAL</b>	<b>1,210</b>	<b>1,227</b>	<b>1,239</b>	<b>1,259</b>	<b>1,270</b>	<b>1,301</b>	<b>1,319</b>	<b>1,350</b>	<b>1,365</b>	<b>1,375</b>
K-12	1,121	1,136	1,146	1,165	1,174	1,203	1,219	1,249	1,262	1,270
K-3	356	360	346	347	345	346	349	351	353	354
4-8	387	406	432	451	463	468	470	457	459	457
9-12	378	370	368	366	366	390	400	441	450	458





## 5 Year Trend Projection

The 5 Year Trend model (Table 9) uses the grade progression ratios from the last five years and recent trends in the number of births in the Columbus School District area to project what future enrollments would look like if more recent patterns were representative of future trends. With recent migration rates and birth trends weighted more heavily, 4K-12 enrollment in the Columbus School District is projected to grow steadily over the next decade, increasing by 106 students in the next ten years.

Between 2011/12 and 2016/17, the model projects that K-3 enrollment will lose 116 students and grades 9-12 enrollment will remain the same. Middle school enrollment (grades 4-8) will increase, growing by 235 students in the next five years.

**TABLE 9**  
**5 Year Trend Projection Model**  
**Columbus School District**

GRADE	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	89	91	93	95	96	98	100	101	103	105
K	86	85	82	81	79	77	75	72	70	68
1	87	90	88	86	85	83	80	78	76	73
2	98	86	89	87	85	84	82	79	77	75
3	85	98	86	89	88	85	84	82	80	77
4	85	87	101	88	92	90	87	86	84	82
5	84	88	90	105	92	95	93	91	90	87
6	72	85	89	90	105	92	96	94	91	90
7	77	71	83	87	89	103	90	94	92	89
8	68	77	71	83	87	89	103	90	94	92
9	103	85	97	89	104	109	111	130	114	118
10	90	103	86	98	89	105	110	112	130	114
11	95	88	101	84	95	87	102	107	109	127
12	95	101	94	107	89	101	93	109	114	116
<b>TOTAL</b>	<b>1,214</b>	<b>1,235</b>	<b>1,249</b>	<b>1,269</b>	<b>1,275</b>	<b>1,298</b>	<b>1,306</b>	<b>1,325</b>	<b>1,323</b>	<b>1,313</b>
K-12	1,125	1,144	1,156	1,175	1,178	1,200	1,206	1,223	1,219	1,208
K-3	355	359	345	344	336	329	321	312	302	293
4-8	387	408	433	453	464	469	470	455	451	441
9-12	383	377	377	378	378	403	416	457	466	474



## 2 Year "Trend" Projection

The 2 Year "Trend" model (Table 10) uses the progression ratios from the last two years to project what future enrollments would look like if even more recent patterns were representative of future trends. For the Last 2 Year "Trend," 4K-12 enrollment is projected to increase from 1,207 students in 2011/12 to 1,258 students in 2016/17. This is an increase of 51 students (4.3%) over the next decade.

**TABLE 10**  
**2 Year "Trend" Projection Model**  
**Columbus School District**

GRADE	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	89	91	93	95	96	98	100	101	103	105
K	82	81	79	78	76	74	71	69	67	65
1	88	87	86	83	82	80	78	76	73	71
2	100	89	88	87	84	83	81	79	76	74
3	88	105	94	93	91	89	88	85	83	81
4	85	91	108	96	95	94	91	90	88	85
5	82	87	92	110	98	97	95	92	92	89
6	70	80	84	90	107	95	95	93	90	89
7	75	67	76	80	86	102	91	90	88	86
8	68	76	67	77	81	86	103	91	91	89
9	102	85	94	83	95	100	107	127	113	112
10	91	103	86	95	85	97	102	109	130	115
11	94	89	100	84	92	82	94	99	105	126
12	95	100	95	107	89	99	88	100	105	112
<b>TOTAL</b>	<b>1,212</b>	<b>1,231</b>	<b>1,242</b>	<b>1,258</b>	<b>1,258</b>	<b>1,276</b>	<b>1,282</b>	<b>1,302</b>	<b>1,304</b>	<b>1,299</b>
K-12	1,122	1,140	1,150	1,163	1,162	1,178	1,182	1,200	1,201	1,194
K-3	359	363	346	341	334	326	318	309	300	291
4-8	381	400	428	453	467	474	474	456	448	438
9-12	382	377	375	370	362	378	390	435	453	465

## Kindergarten Trend Projection



For this method we perform a trend analysis to project the number of future kindergarten students, rather than relying upon the traditional birth to kindergarten (B:K) progression ratio. Then, the 5 Year Trend progression ratios are used for projecting the other grades (1-12) in the district. In other words, this model assumes that the number of new kindergarteners each year over the next decade will continue to follow a trend similar to the trend in kindergarten enrollment change over the last ten years, regardless of the number of observed births in the Columbus School District area. According to this hybrid projection method (Table 11), 4K-12 enrollment would significantly increase over the next decade. In five years, the model projects an increase from 1,207 students in 2011/12 to 1,302 students in 2016/17.

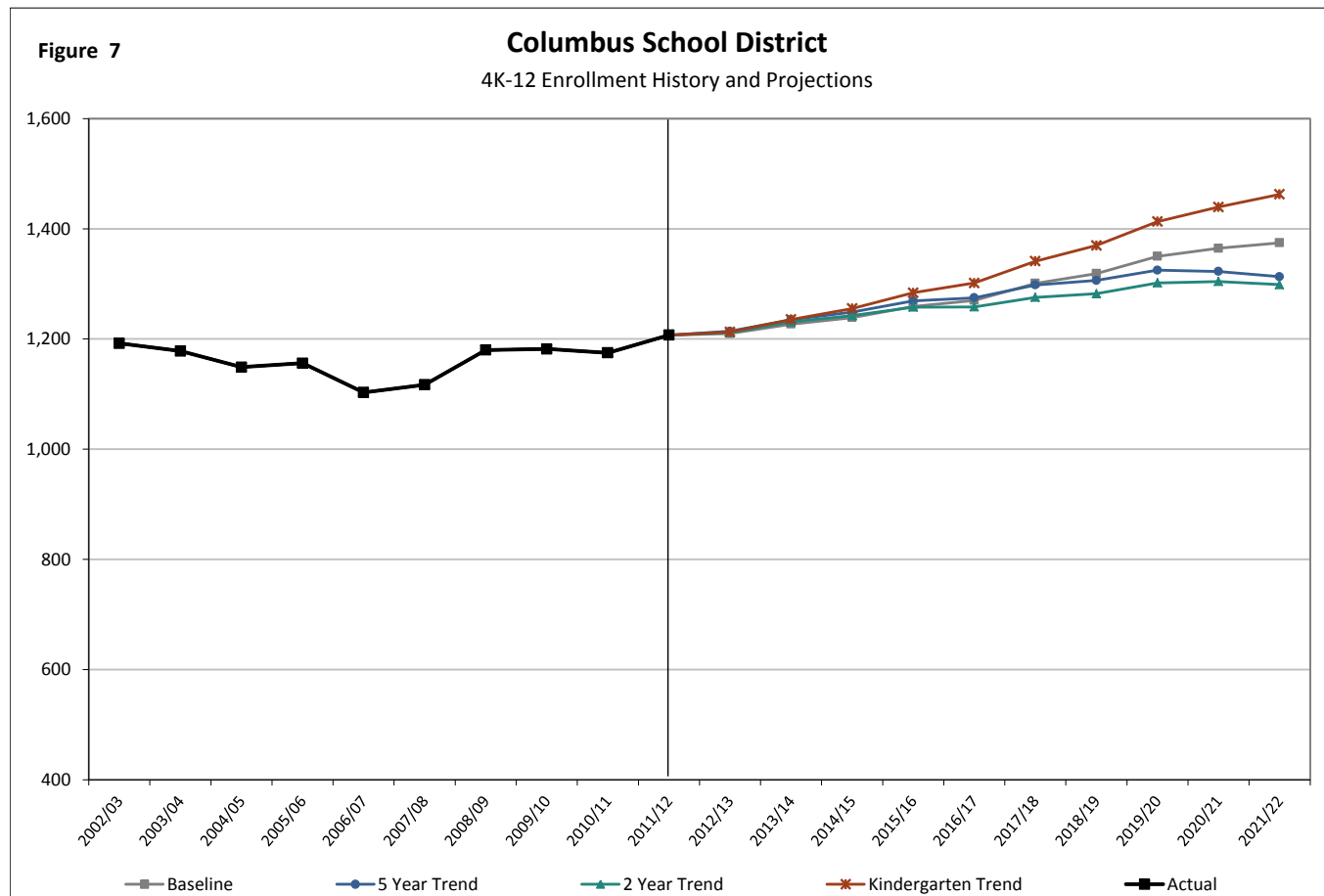
**TABLE 11**  
**Kindergarten Trend Projection Model**  
**Columbus School District**

<b>GRADE</b>	<b>12-13</b>	<b>13-14</b>	<b>14-15</b>	<b>15-16</b>	<b>16-17</b>	<b>17-18</b>	<b>18-19</b>	<b>19-20</b>	<b>20-21</b>	<b>21-22</b>
4K	89	91	93	95	96	98	100	101	103	105
K	85	86	88	89	91	93	94	96	97	99
1	87	89	90	92	94	95	97	98	100	102
2	98	86	87	89	91	92	94	96	97	99
3	85	98	86	88	90	91	93	95	96	98
4	85	87	101	88	90	92	93	95	97	98
5	84	88	90	105	92	94	95	97	99	101
6	72	85	89	90	105	92	94	96	98	99
7	77	71	83	87	89	103	90	92	94	96
8	68	77	71	83	87	89	103	90	92	94
9	103	85	97	89	104	109	111	130	114	116
10	90	103	86	98	89	105	110	112	130	114
11	95	88	101	84	95	87	102	107	109	127
12	95	101	94	107	89	101	93	109	114	116
<b>TOTAL</b>	<b>1,213</b>	<b>1,235</b>	<b>1,255</b>	<b>1,284</b>	<b>1,302</b>	<b>1,341</b>	<b>1,370</b>	<b>1,413</b>	<b>1,440</b>	<b>1,463</b>
K-12	1,123	1,144	1,163	1,189	1,205	1,243	1,270	1,312	1,336	1,358
K-3	354	359	352	358	365	371	378	384	391	397
4-8	387	408	433	453	463	469	476	471	479	488
9-12	383	377	377	378	378	403	416	457	466	473



## Comparison of Projection Models

Figures 7-10 and Tables 12-15 compare the four enrollment projection models broken down by total 4K-12 district enrollment and by grade groupings.

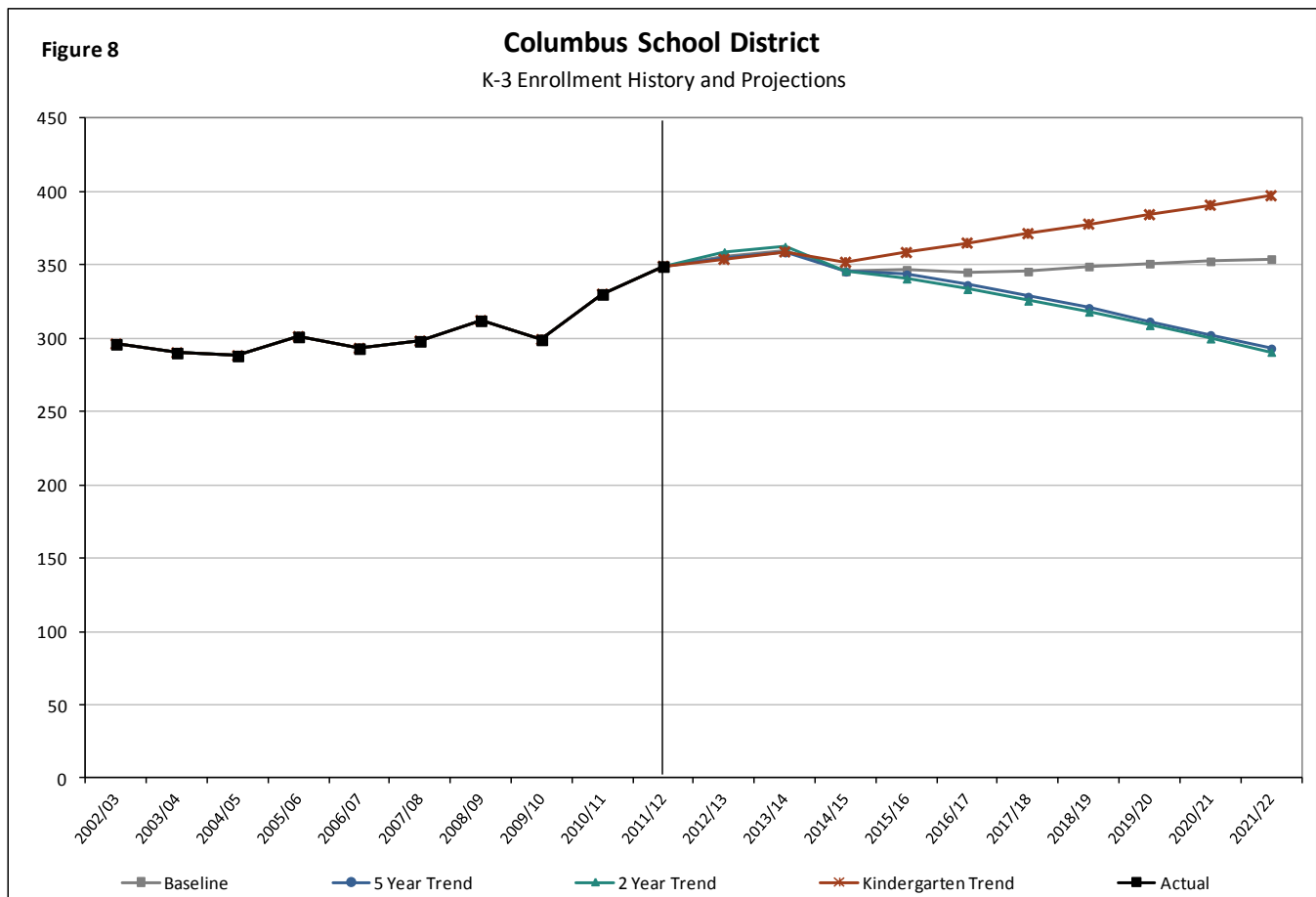


**TABLE 12**  
**Summary of 4K-12 Enrollment Projections**  
**Columbus School District**

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	1,210	1,227	1,239	1,259	1,270	1,301	1,319	1,350	1,365	1,375
5 Year Trend	1,214	1,235	1,249	1,269	1,275	1,298	1,306	1,325	1,323	1,313
2 Year "Trend"	1,212	1,231	1,242	1,258	1,258	1,276	1,282	1,302	1,304	1,299
Kindergarten Trend	1,213	1,235	1,255	1,284	1,302	1,341	1,370	1,413	1,440	1,463

All models project a steady increase in enrollment in the district over the next five years. The Baseline, 5 Year, and 2 Year trends show steady growth, while the Kindergarten trends projects a large enrollment increase. District-wide enrollment projections five years from now (2016/17) predict a range of enrollment from 1,258 to 1,302 students.



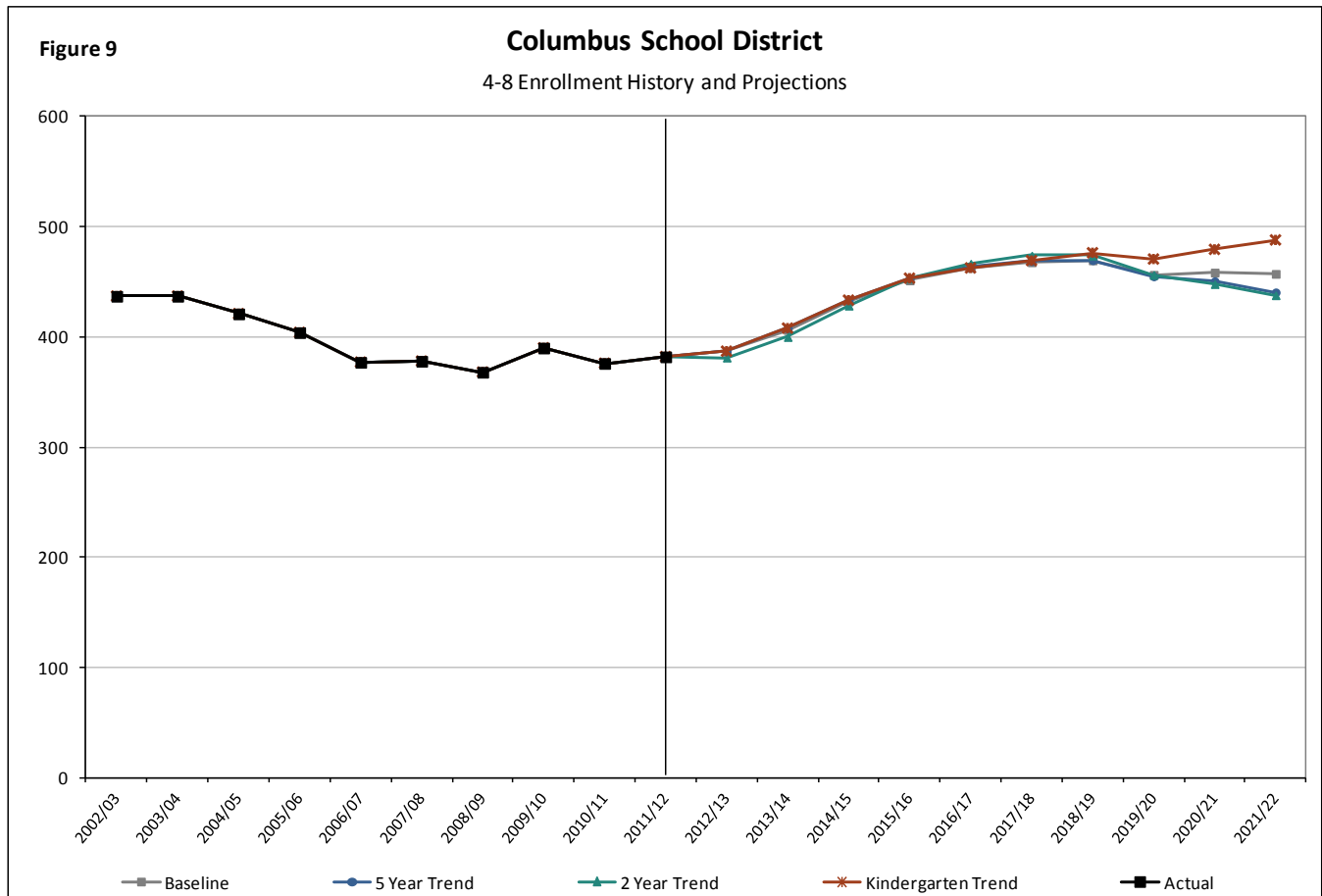


**TABLE 13**  
**Summary of K-3 Enrollment Projections**  
**Columbus School District**

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	356	360	346	347	345	346	349	351	353	354
5 Year Trend	355	359	345	344	336	329	321	312	302	293
2 Year "Trend"	359	363	346	341	334	326	318	309	300	291
Kindergarten Trend	354	359	352	358	365	371	378	384	391	397

All projection models expect an increase in enrollment for grades K-3 in the next two years. After two years, the Kindergarten trend projects increasing enrollment while the Five Year and Two Year trends project decreasing enrollment. The Baseline model projects steady enrollment in the long term. Projected enrollment in the 2016/17 school year ranges from 334 to 365 students.



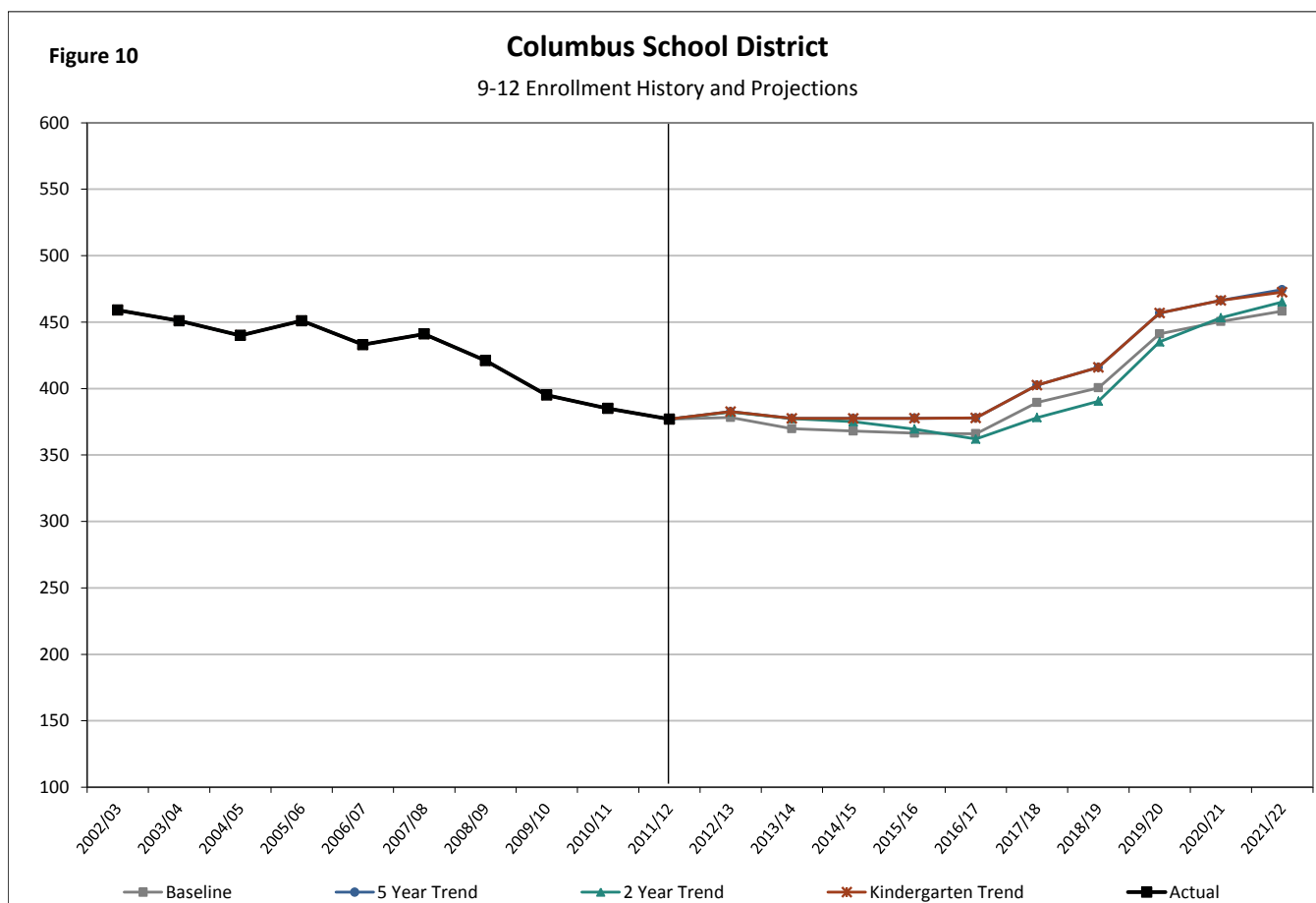


**TABLE 14**  
**Summary of 4-8 Enrollment Projections**  
**Columbus School District**

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	387	406	432	451	463	468	470	457	459	457
5 Year Trend	387	408	433	453	464	469	470	455	451	441
2 Year "Trend"	381	400	428	453	467	474	474	456	448	438
Kindergarten Trend	387	408	433	453	463	469	476	471	479	488

All of the models project increasing enrollment over the next several years for grades 4-8. Although middle school enrollment has been declining in the past, large cohorts of elementary students are growing older and will increase middle school enrollment. Projected enrollment in the 2016/17 school year ranges from 463 to 467 students.





**TABLE 15**  
**Summary of 9-12 Enrollment Projections**  
**Columbus School District**

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	378	370	368	366	366	390	400	441	450	458
5 Year Trend	383	377	377	378	378	403	416	457	466	474
2 Year "Trend"	382	377	375	370	362	378	390	435	453	465
Kindergarten Trend	383	377	377	378	378	403	416	457	466	473

All of the models project stable or slightly declining high school enrollment over the next several years. High school cohorts have been decreasing over the past couple years and this trend looks to continue. Models do project enrollment increases after the 2016/17 school year. This is most likely due to middle school enrollment increasing in the next couple years leading to higher enrollment in high school further in the future.



## School Enrollment Projections for Financial Planning, 2012-2021

Here we present the same four projection models, but this set of projections will serve as a guide for financial planning.

### District Enrollment History

Table 16 displays data on the last ten years of financial enrollment history in the Columbus School District. District enrollment has declined overall since 2002, from 1,177 students in the 2002/03 school year to 1,162 students in 2011/12. This is a loss of 15 students, or a 1.3% decrease in the numbers of students enrolled. The district saw declines in enrollment in the middle of the past decade but has recovered, in large part from the start of the 4K program.

**TABLE 16**  
**Student Enrollment**  
**Columbus School District**

	SCHOOL YEAR									
	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12
4K	0	0	0	0	0	0	81	96	74	90
K	71	80	71	79	69	69	83	79	86	74
1	69	66	80	73	76	76	73	80	81	92
2	69	69	68	78	74	76	72	72	77	86
3	80	73	73	72	71	67	75	69	71	81
4	73	85	68	78	71	76	66	79	69	77
5	80	79	83	69	72	76	80	71	78	74
6	95	82	80	81	64	76	73	87	69	73
7	95	93	87	83	77	65	77	70	82	66
8	90	95	95	85	83	80	66	75	70	84
9	99	109	109	118	101	106	99	89	91	86
10	130	95	102	112	114	102	105	97	90	93
11	119	117	92	103	101	113	101	106	92	87
12	107	119	121	96	103	113	118	107	111	99
<b>TOTAL</b>	<b>1,177</b>	<b>1,162</b>	<b>1,129</b>	<b>1,127</b>	<b>1,076</b>	<b>1,095</b>	<b>1,169</b>	<b>1,177</b>	<b>1,141</b>	<b>1,162</b>
K-12	1,177	1,162	1,129	1,127	1,076	1,095	1,088	1,081	1,067	1,072
K-3	289	288	292	302	290	288	303	300	315	333
4-8	433	434	413	396	367	373	362	382	368	374
9-12	455	440	424	429	419	434	423	399	384	365





The Baseline model (Table 17) projects that district enrollment will grow in the next five years, from 1,162 students in 2011/12 to 1,209 in 2016/17, or 4%.

**TABLE 17**  
**Baseline Projection Model**  
**Columbus School District**

	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	85	87	88	90	92	93	95	97	98	100
K	84	82	80	81	82	82	83	83	84	84
1	75	85	83	81	83	83	84	84	84	85
2	91	74	84	82	80	82	82	83	83	84
3	87	92	75	85	83	81	82	83	83	84
4	84	90	95	77	87	86	83	85	86	86
5	80	87	93	98	80	90	89	86	88	89
6	73	79	86	92	97	79	89	88	85	87
7	71	72	77	84	90	95	78	88	86	83
8	67	72	72	78	85	91	96	78	89	87
9	103	82	89	89	96	104	111	118	96	109
10	85	102	81	87	88	95	103	110	116	95
11	90	83	99	79	85	85	92	100	107	113
12	91	95	87	104	83	89	90	97	105	112
<b>TOTAL</b>	<b>1,166</b>	<b>1,180</b>	<b>1,188</b>	<b>1,207</b>	<b>1,209</b>	<b>1,236</b>	<b>1,257</b>	<b>1,279</b>	<b>1,291</b>	<b>1,298</b>
K-12	1,081	1,093	1,100	1,117	1,118	1,143	1,162	1,182	1,193	1,198
K-3	336	333	322	329	328	328	331	333	335	336
4-8	375	399	423	429	439	441	435	425	434	432
9-12	370	361	355	359	351	373	396	424	424	429



## 5 Year Trend Projection

The 5 Year Trend model (Table 18) projects that between 2011 and 2016, total district enrollment will increase by 65 students, or a 5.6% increase.

**TABLE 18**  
**5 Year Trend Projection Model**  
**Columbus School District**

GRADE	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	85	87	88	90	92	93	95	97	98	100
K	83	81	79	78	76	74	71	69	67	65
1	77	86	85	82	81	79	77	75	72	70
2	91	77	85	84	81	81	78	76	74	72
3	84	89	75	84	82	80	79	77	74	72
4	84	87	93	78	87	85	83	82	80	77
5	81	88	92	97	82	91	90	87	86	84
6	74	81	89	92	98	82	91	90	87	86
7	71	72	79	87	90	95	80	89	88	85
8	67	72	73	80	88	91	96	81	90	89
9	106	84	91	92	101	110	115	122	102	114
10	86	106	84	91	93	101	111	115	122	102
11	91	85	104	83	89	91	99	109	113	120
12	93	98	90	111	88	96	97	106	116	121
<b>TOTAL</b>	<b>1,174</b>	<b>1,194</b>	<b>1,208</b>	<b>1,229</b>	<b>1,227</b>	<b>1,249</b>	<b>1,263</b>	<b>1,274</b>	<b>1,270</b>	<b>1,257</b>
K-12	1,089	1,107	1,119	1,139	1,136	1,156	1,168	1,177	1,172	1,157
K-3	335	333	323	327	320	313	306	297	288	279
4-8	377	402	426	434	444	445	440	429	431	421
9-12	376	372	370	378	372	398	422	452	453	457



## 2 Year "Trend" Projection

For the Last 2 Year "Trend" (Table 19), 4K-12 enrollment is projected to remain the same from 1,162 students in 2011/12 to 1,163 students in 2016/17.

This model projects minimal enrollment increase, unlike the previous two models. The Baseline and 5 Year Trend models project larger enrollment increases because of the relatively high grade progression ratios (rates of migration and transfers into the district) that the district has experienced in earlier years. Enrollment numbers in the district have been relatively low the past two years. This model should be interpreted with some caution—if future migration into the Columbus School District continues at the relatively low rate experienced in the last two to three years, then this model should be appropriate. Still, it is important to note that ratios can be variable year to year and very short term trends (2 years) do not often continue into the future, unless there has been a substantive change in the district that has impacted migration levels *and* this change is expected to continue to affect migration into the future.

**TABLE 19**  
**2 Year "Trend" Projection Model**  
**Columbus School District**

GRADE	SCHOOL YEAR									
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	85	87	88	90	92	93	95	97	98	100
K	75	74	71	71	69	67	65	63	61	59
1	78	79	77	75	74	72	70	68	66	64
2	93	78	80	78	76	75	73	71	69	67
3	88	95	80	81	80	77	76	74	72	70
4	84	91	99	83	84	83	80	80	78	75
5	79	87	94	102	86	87	85	83	82	80
6	71	76	83	90	97	82	83	81	79	78
7	69	67	72	79	85	92	78	79	77	75
8	67	70	68	73	80	86	93	79	80	78
9	103	82	86	83	89	97	105	114	96	97
10	87	104	83	87	84	90	99	107	116	98
11	89	84	100	79	83	81	86	95	103	111
12	92	95	89	106	84	89	86	92	101	109
<b>TOTAL</b>	<b>1,160</b>	<b>1,167</b>	<b>1,169</b>	<b>1,176</b>	<b>1,163</b>	<b>1,171</b>	<b>1,175</b>	<b>1,182</b>	<b>1,177</b>	<b>1,161</b>
K-12	1,075	1,081	1,081	1,086	1,071	1,078	1,081	1,085	1,079	1,062
K-3	333	326	308	305	298	291	284	276	268	260
4-8	370	391	416	426	432	430	420	401	396	387
9-12	371	364	357	355	341	357	376	408	415	415



## Kindergarten Trend Projection

According to this projection method (Table 20), 4K-12 enrollment would increase over the next five years from 1,162 students in 2011/12 to 1,236 students in 2016/17. A good way to think about the projections provided by this model is that if the number of new kindergarteners continues to remain high (as they have over the last several years) *and* if patterns of transfers in and out of the district continue as they have over the past five years, then the Kindergarten Regression model should provide a good prediction of future enrollment.

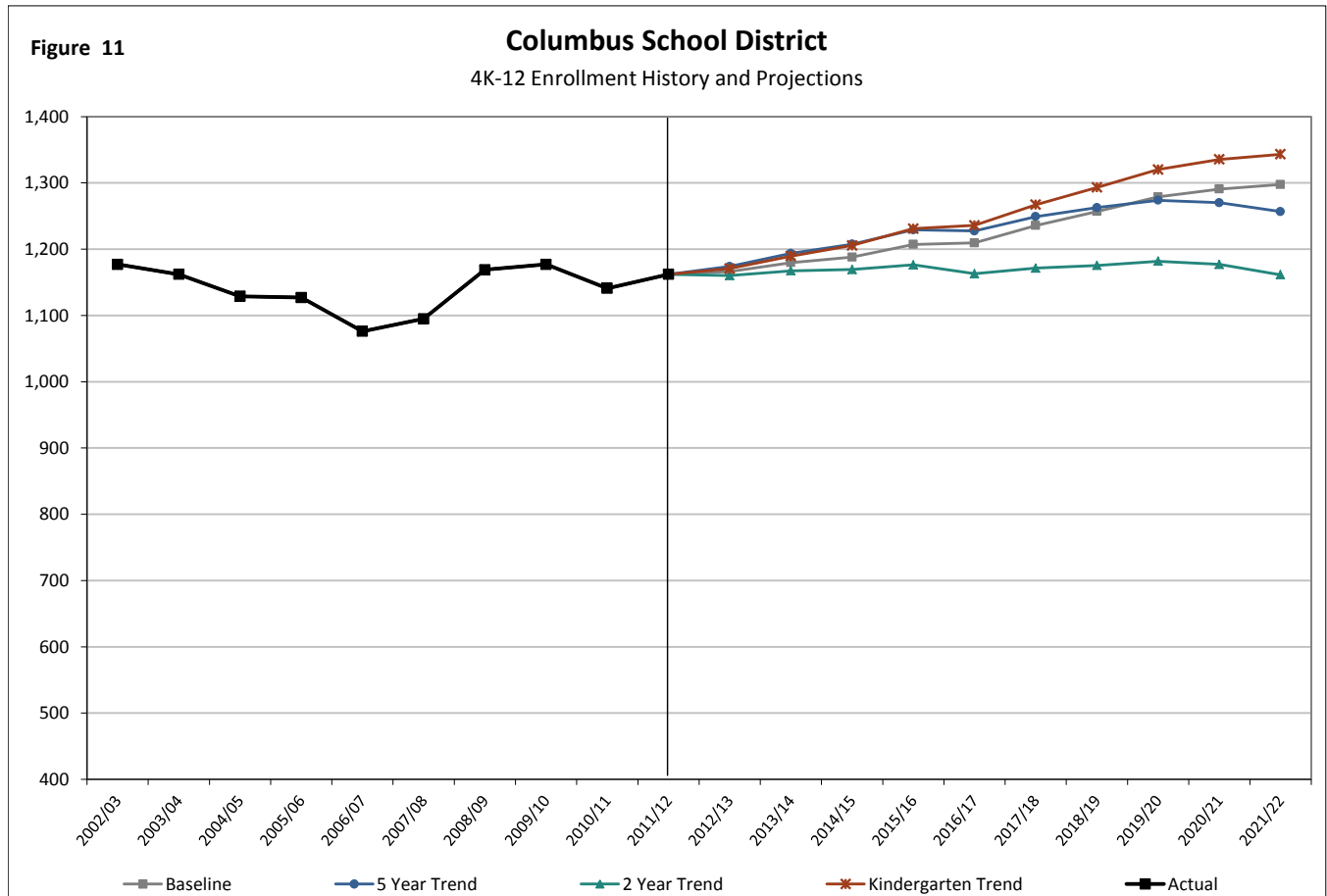
**TABLE 20**  
**Kindergarten Trend Projection Model**  
**Columbus School District**

GRADE	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
4K	85	87	88	90	92	93	95	97	98	100
K	79	80	81	82	82	83	84	85	85	86
1	77	83	84	84	85	86	87	87	88	89
2	91	77	82	83	84	84	85	86	87	87
3	84	89	75	80	81	82	83	83	84	85
4	84	87	93	78	83	84	85	86	87	87
5	81	88	92	97	82	88	89	89	90	91
6	74	81	89	92	98	82	88	89	90	90
7	71	72	79	87	90	95	80	86	87	88
8	67	72	73	80	88	91	96	81	87	88
9	106	84	91	92	101	110	115	122	102	110
10	86	106	84	91	93	101	111	115	122	102
11	91	85	104	83	89	91	99	109	113	120
12	93	98	90	111	88	96	97	106	116	121
<b>TOTAL</b>	<b>1,171</b>	<b>1,190</b>	<b>1,206</b>	<b>1,231</b>	<b>1,236</b>	<b>1,267</b>	<b>1,293</b>	<b>1,320</b>	<b>1,335</b>	<b>1,343</b>
K-12	1,086	1,103	1,117	1,141	1,144	1,174	1,198	1,224	1,237	1,243
K-3	332	329	322	329	332	335	338	341	344	347
4-8	377	402	426	434	440	440	438	431	440	444
9-12	376	372	370	378	372	398	422	452	453	452



## Comparison of Projection Models

Figures 11-14 and Tables 20-23 compare the four enrollment projection models broken down by total K-12 district enrollment and by grade groupings.



**TABLE 21**  
**Summary of 4K-12 Enrollment Projections**  
**Columbus School District**

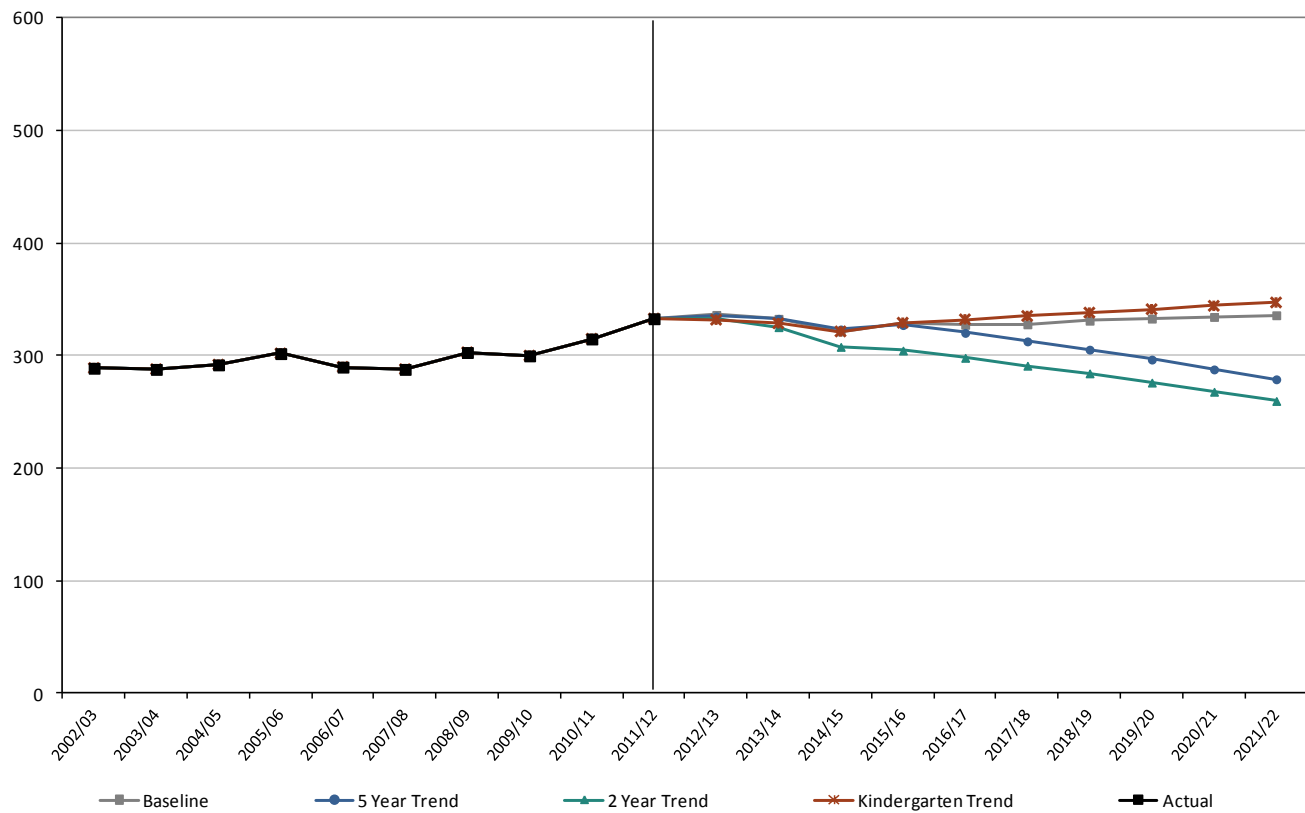
	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	1,166	1,180	1,188	1,207	1,209	1,236	1,257	1,279	1,291	1,298
5 Year Trend	1,174	1,194	1,208	1,229	1,227	1,249	1,263	1,274	1,270	1,257
2 Year "Trend"	1,160	1,167	1,169	1,176	1,163	1,171	1,175	1,182	1,177	1,161
Kindergarten Trend	1,171	1,190	1,206	1,231	1,236	1,267	1,293	1,320	1,335	1,343

The Baseline, 5 Year, and Kindergarten Trend models project large enrollment increases over the next five years, while the 2 Year "Trend" shows a stable enrollment. District-wide enrollment projections five years from now (2016) predict a range of enrollment from 1,163 to 1,236 students.



**Figure 12**

**Columbus School District**  
K-3 Enrollment History and Projections



**TABLE 22**  
**Summary of K-3 Enrollment Projections**  
**Columbus School District**

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	336	333	322	329	328	328	331	333	335	336
5 Year Trend	335	333	323	327	320	313	306	297	288	279
2 Year "Trend"	333	326	308	305	298	291	284	276	268	260
Kindergarten Trend	332	329	322	329	332	335	338	341	344	347

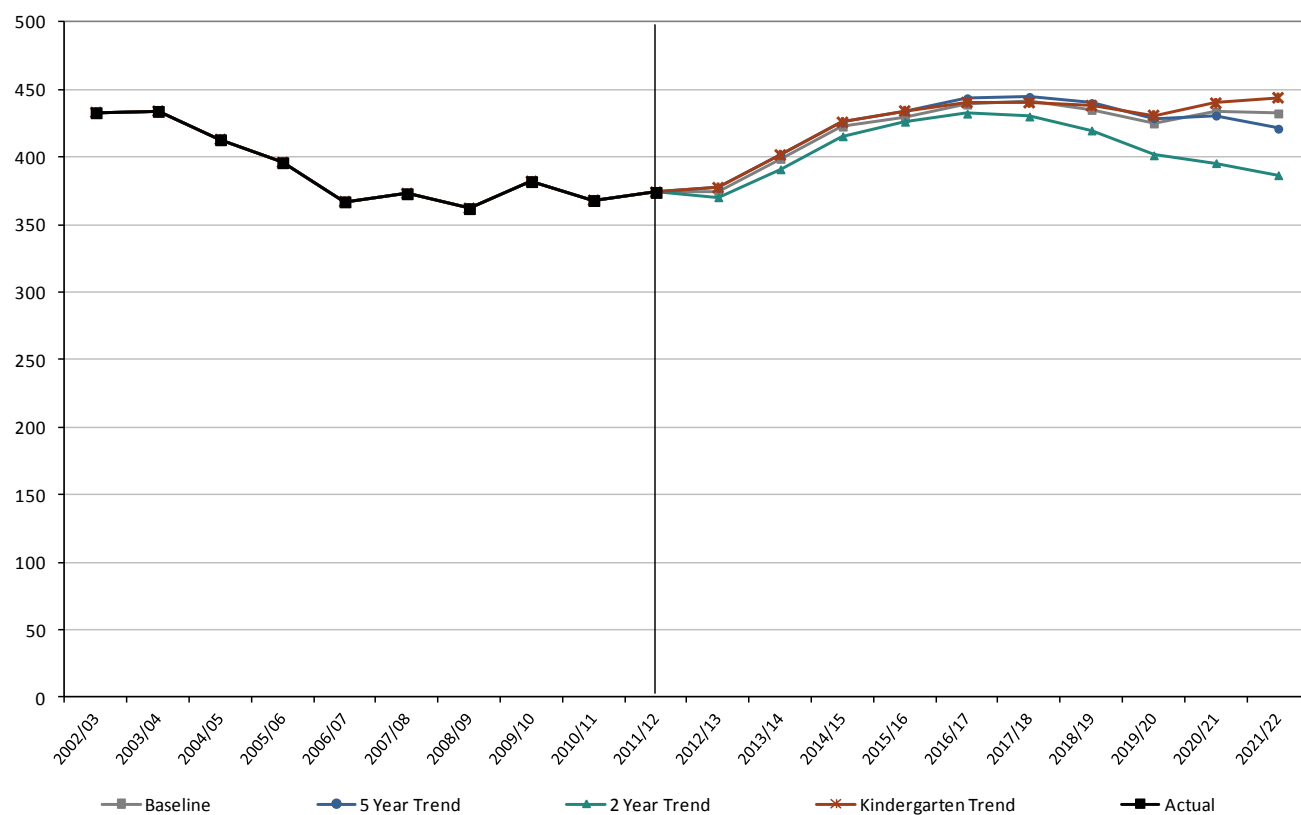
For grades K-3, all of the projection models except for the 2 Year "Trend" model project an increase in enrollment from 2011/12 to the 2016/17 school year. The Five and Two Year Trends show decreasing enrollment due to a decrease in births in recent years. Elementary enrollment projections five years from now (2016/17) predict a range of enrollment from 298 to 332 students.



**Figure 13**

### Columbus School District

#### 4-8 Enrollment History and Projections



**TABLE 23**  
Summary of 4-8 Enrollment Projections  
Columbus School District

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	375	399	423	429	439	441	435	425	434	432
5 Year Trend	377	402	426	434	444	445	440	429	431	421
2 Year "Trend"	370	391	416	426	432	430	420	401	396	387
Kindergarten Trend	377	402	426	434	440	440	438	431	440	444

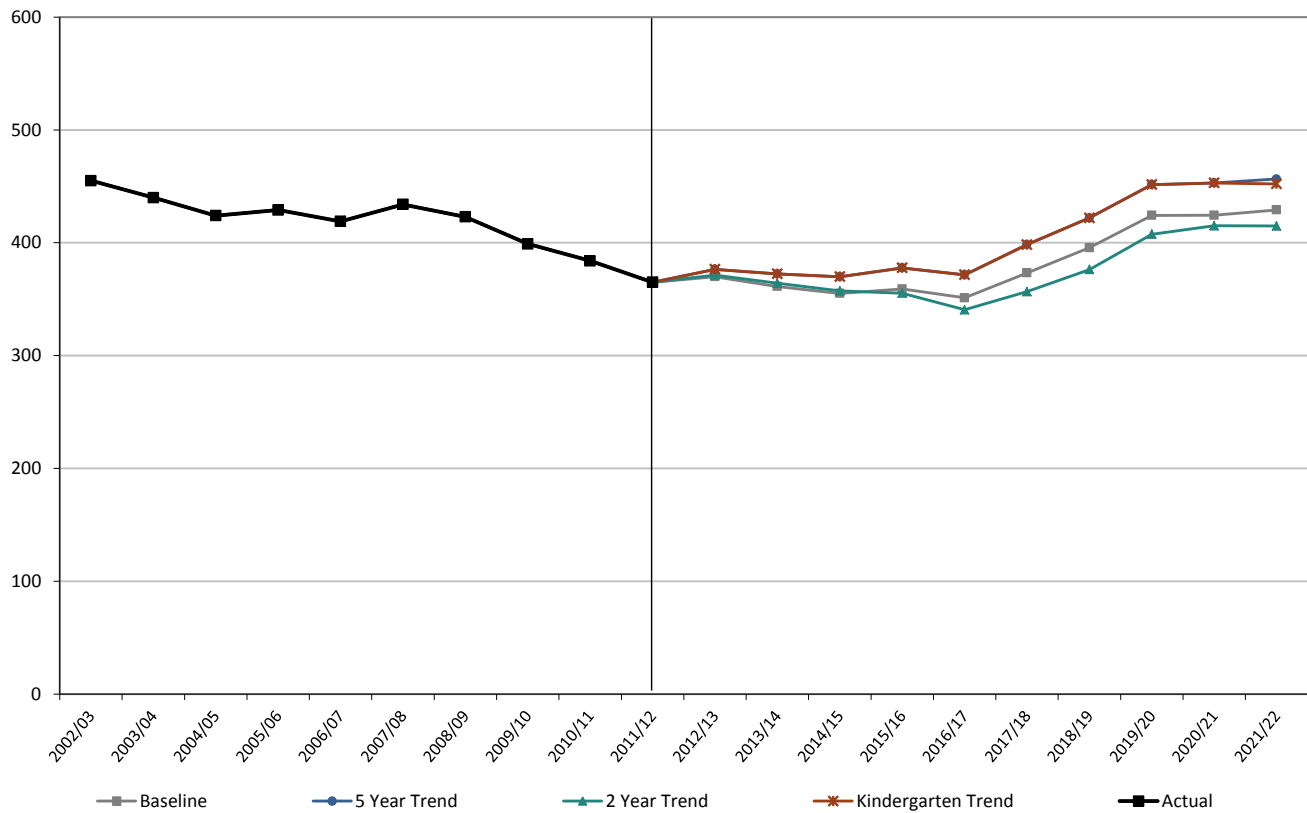
At grade levels 4-8, all of the models project increasing enrollment over the next several years. After the 2016/17 school year, all projection models show some decrease but there will still be overall gains in the next ten years of enrollment. In five years, the enrollment is projected to range from 432 to 444 students.



Figure 14

### Columbus School District

#### 9-12 Enrollment History and Projections



**TABLE 24**  
Summary of 9-12 Enrollment Projections  
Columbus School District

	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Baseline	370	361	355	359	351	373	396	424	424	429
5 Year Trend	376	372	370	378	372	398	422	452	453	457
2 Year "Trend"	371	364	357	355	341	357	376	408	415	415
Kindergarten Trend	376	372	370	378	372	398	422	452	453	452

Over the next five years, the Five Year and Kindergarten Trend models project high school enrollment will see a moderate increase. The Baseline and Two Year “Trend” on the other hand estimate enrollment decreases. All models expect high school enrollment to start increasing after the 2016/17 school year, as younger, larger grades from the middle school progress to the high school.





## Conclusions

---

These district-level enrollment projections are based on models that incorporate recent past and current demographic information as well as the district's own enrollment data and assumptions about future housing development in the Columbus School District area. Because most of the students in the district's schools over the next few years have already been born or are already in school, and because their grade progression from one year to another is highly predictable, the total district-level projections should be viewed as having high accuracy over the next few years. After a few years, and increasingly for the lower elementary grades, actual enrollment figures will likely deviate from these projections by ever increasing amounts. The reason for this is that birth trends, in-migration of pre-school age children, and transfers into the district are more difficult to predict and therefore this makes meaningful incorporation into enrollment projections a challenge. As with nearly all types of forecasts, accuracy in these enrollment projections decreases over time.

In sum, the information provided in this school enrollment projection report points to increasing enrollment for facilities planning in the Columbus School District over the next decade. The Kindergarten Trend model projects substantially higher enrollment than the other models. This is because it is based upon the increasing number of enrolled kindergartners in the past couple years. The 2 Year "Trend" model on the other hand projects slower enrollment growth. If these lower levels of in-migration and transfers into the district that have occurred in the past two years are continued into the future, then this model would be valid. The Baseline and 5 Year models project more steady enrollment increases and take into consideration longer term trends.

Considering the financial planning process, projections point to moderately increasing enrollment in the Columbus School District over the next decade. The Kindergarten Trend model projects substantially higher enrollment than the other models. The 2 Year "Trend" model on the other hand projects a stable enrollment due to declining district enrollment in the past couple years. The Baseline and 5 Year models project more steady enrollment increases.

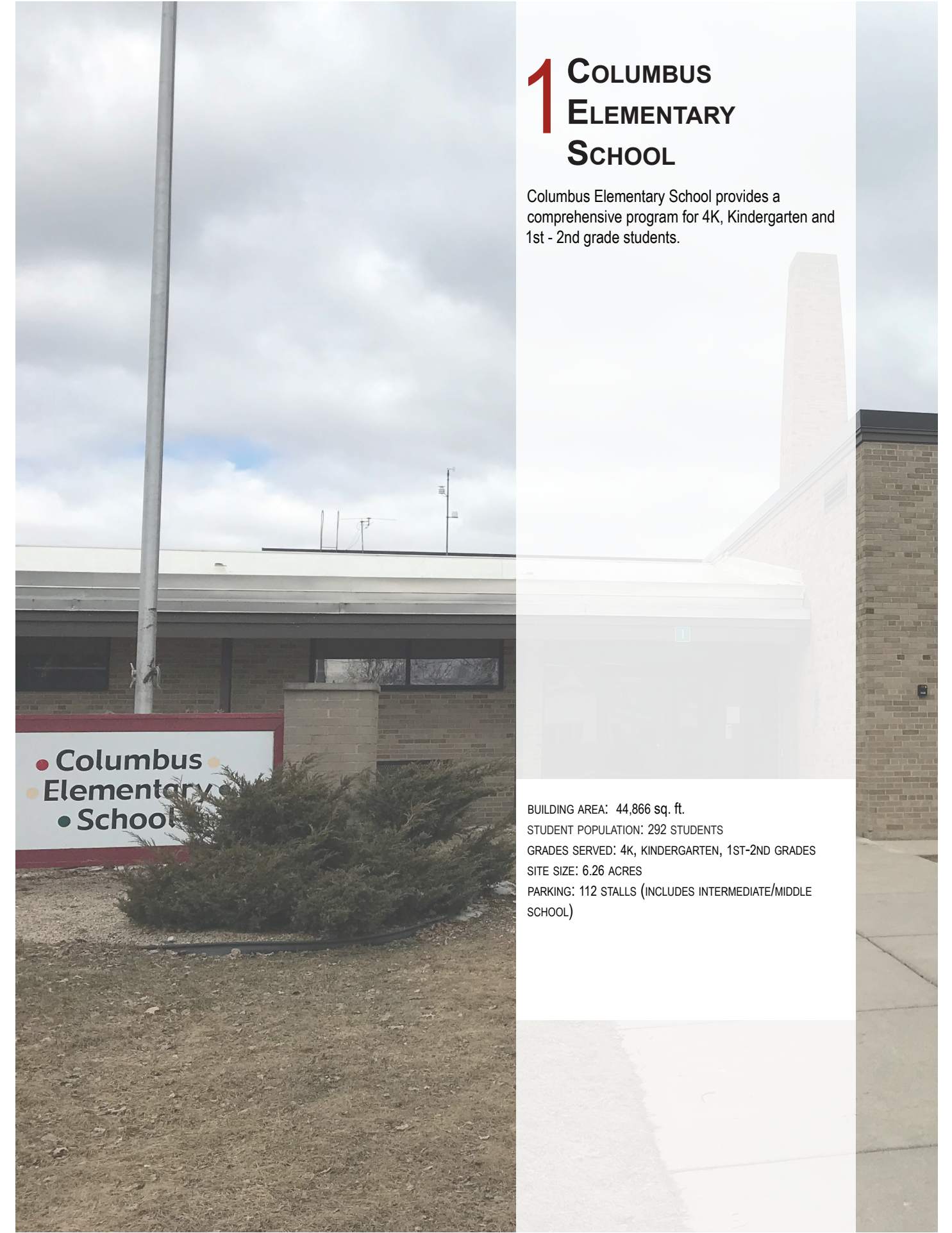
Because the projections found in this report incorporate the consequences of migration to and from the district, any significant and sustained interruption of current or recent past migration patterns will erode these models' accuracy from the initiation point of the new pattern. The various projection models provide a realistic range of migration and transfer effects on the Columbus School District. Enrollment growth should be closely monitored for the next few years, and compared with these projections, to determine the trajectory of future growth. This type of monitoring program might help the district to determine which of the models seems to be the most realistic to use for planning purposes.





# **ELEMENTARY SCHOOL NEEDS**

## **TAB 5&6**



# 1 COLUMBUS ELEMENTARY SCHOOL

Columbus Elementary School provides a comprehensive program for 4K, Kindergarten and 1st - 2nd grade students.

● Columbus ●  
● Elementary ●  
● School

BUILDING AREA: 44,866 sq. ft.

STUDENT POPULATION: 292 STUDENTS

GRADES SERVED: 4K, KINDERGARTEN, 1ST-2ND GRADES

SITE SIZE: 6.26 ACRES

PARKING: 112 STALLS (INCLUDES INTERMEDIATE/MIDDLE SCHOOL)



## COLUMBUS ELEMENTARY SCHOOL: BUILDING EVOLUTION

Columbus Elementary School was originally constructed in 1950. There have been a few additions in 1954, 1994, and 2000. The largest of these was in 1994 when a Gym, Library and multiple classrooms were added.

The following building evolution diagram outlines the building's development over time.



Columbus Elementary School Main Office



Columbus Elementary School Classroom



Columbus Elementary School Corridor





COLUMBUS ELEMENTARY SCHOOL: EXISTING SITE PLAN



SITE PLAN  
not to scale





# COLUMBUS ELEMENTARY SCHOOL: BUILDING SYSTEMS SUMMARY

The following is summary of Plumbing, HVAC and Electrical needs. This is not intended to be a comprehensive list, but a summary of existing building system needs and possible recommendations as identified by the engineering team. Full engineers' reports are located later in this document.

Elementary School	Analysis	Recommendations
<b>Building Systems</b>		
<b>Plumbing</b>		
<b>Domestic Water</b>		
Water Service	Supplied by a 2" water service that connects to the Municipal water main. There is a 2" water meter and by-pass installed.	A new 6" min. size water service would be required for a sprinkler system.
Water Distribution Piping	1952 building is mostly galvanized water piping, problem with hot water reaching fixtures quickly	For major addition, replace existing galvanized piping.
Fire Sprinkler System	No system is present. A larger service would be needed.	Not required unless major addition and/or remodel occurs
<b>Sanitary and Storm Piping</b>		
Sanitary Waste and Vent Piping	Is mostly cast iron. Vent piping in the 1952 building is mostly galvanized. Pipping is in good condition.	Continued maintenance of existing sewer and drainage systems. Replace when problems arise.
Kitchen Equipment	There is no interior grease trap.	Provide grease interceptor.
Art Room Equipment	Slow and clogged drains reported.	Provide solid waster interceptor.
Storm System	Storm drains on the roof are in good condition.	
Sanitary Ejector Pump	2000 addition appears to be original	
<b>Plumbing Equipment</b>		
Hot Water System	System has corrosion on it.	Replace system pump and resize to improve hot water. Piping upgrades may be required.
Water Heater	Multiple water heaters; electric and gas, which appear to be past their warranty and are not energy efficient	Replace with new efficient modulating heaters. Domestic hot water to be integrated to utilize one source.
<b>Plumbing Fixtures</b>		
Plumbing Fixtures	In the two oldest portions of the building, fixtures are not efficient. Newest additions comply with the minimum code standards. Fixtures appear to be in good to poor condition.	Upgraded faucets to be low flow water efficient fixtures. Handles should be lever style for ADA Compliance.
Water Closets	Mixture of floor outlet and wall mounted fixtures, flush valves.	Replace 1952 building fixtures with ADA compliant water efficient fixtures.
Urinals	Primarily floor outlet fixtures, flush valves.	Replace 1952 building fixtures with ADA compliant water efficient fixtures.
Classroom Sinks	In fair condition, do not need to be replaced.	Replace old with new water conserving and ADA compliant fixtures.

# COLUMBUS ELEMENTARY SCHOOL: BUILDING SYSTEMS SUMMARY

Elementary School	Analysis	Recommendations
<b>HVAC</b>		
<b>Heating System</b>		
Boiler Plant	Served by one plant that consists of (3) hot water boilers. These are DeDiertrich boilers installed in 2016, are in good condition.	Continue preventative maintenance on the system. Future additions may require the addition of boiler capacity.
Piping and Pumping	Consists of a single circuit system with stand-by pump. Each boiler has an inline pump to circulate water.	
<b>Ventilation and Air Conditioning Systems</b>		
Air Handling Units	(2) systems provide ventilation for the facility. Unit ventilators and constant volume air handling systems. Unit ventilators are original to their portion of the building. Rooftop units were installed in 2002 and have exceeded their life expectancy. Air handling unit was installed in 1995 is in fair condition, life expectancy 25 years.	Plans should be made to replace aging rooftop units and unit ventilators.
	Constant volume air handling unit serves the gym.	
	Hot water unit ventilators and constant volume units serve the classrooms.	
Door Transfer Grilles	Door transfer grilles are currently utilized to transfer relief air from the classrooms to the corridor.	Plans should be made to replace the door transfer grille relief system with a code approved system.
<b>Control Systems</b>		
System	Automated Logic digital control system serves the entire building and is in good condition.	Continue to maintain and operate the control system.



# COLUMBUS ELEMENTARY SCHOOL: BUILDING SYSTEMS SUMMARY

Elementary School	Analysis	Recommendations
<b>Electrical</b>		
<b>Electric Service</b>		60% capacity remaining, if large addition is added, an in-depth look would be needed
Utility Service	Service is fed underground from utility pad mounted transformers on the north side; is in good condition	
Distribution Panel	Square D type with an 800 amp breaker. Contains smaller distribution breakers feeding panels and other loads.	Small loads can be added, new loads should be evaluated prior to adding service panel.
<b>Panelboards</b>		
	Panels are in reasonable condition; space is available for small additions if required.	Upgrades on panels can be done if additional circuits are required.
<b>Generator</b>		
	No generator is present.	Possibly add an emergency generator to power life safety loads and eliminate the battery backup.
<b>Light Fixtures &amp; Controls</b>		
Interior Lighting	Majority of the lighting is fluorescent troffer fixtures with T8 fluorescent lamping. Exit lights have been replaced with LED.	Replace with LED when fluorescents fixtures begin to fail.
Exterior Lighting	New LED lighting replaced the existing HP3 fixtures.	
Emergency Lighting	Very little egress lighting in corridors.	Upgrade entire building with proper egress lighting. More complete building evaluation is needed.
<b>Data, Telephone</b>		
	Phone system is Mitel IP based and is linked to the Middle and High Schools; wireless connection; classrooms and offices have Cat 5 data drops; Data racks are full, no additional cabling can be added. IDF rack is wall mounted.	
<b>Access Control System</b>		
	A new "Tri Ad" IP Keyless entry system was recently added.	Add to existing system as required.
<b>Intercom System</b>		
	A Simplex 5100 intercom system. Noted: failing and needs replacement	Replace with new intercom system.
<b>Clock System</b>		
	New American Time battery clocks are present.	Add additional clocks as required.
<b>CCTV System</b>		
	IP CCTV system which was recently upgraded.	Add to existing system as required.
<b>Fire Alarm System</b>		
	A Simplex zoned 4002 panel fire alarm system is currently installed. Areas of the facility do not meet code requirements. Cubby areas do not contain smoke detection which is required by code.	Horn and strobe devices can be added to all occupied locations to complete code. More complete study to determine additional equipment needed.



THIS PAGE IS INTENTIONALLY LEFT BLANK.



# COLUMBUS ELEMENTARY SCHOOL: NEEDS ASSESSMENT

The following is a summary of potential improvements at Columbus Elementary School. This is not intended to be a comprehensive list. The following information was obtained through notations made by Bray Architects at extensive tours of the building and grounds, as well as needs identified by District staff.

No.	Elementary School	Type / Material	Area / Location	Analysis	Identified in Plans
<b>Infrastructure Improvement</b>					
<b>Building Interior</b>					
<b>1</b>	<b>Walls</b>				
a	Walls	CMU block	health/boiler	majority in good condition; some water damage, cracks	x
b	Walls	tile	building	majority in good condition	
<b>2</b>	<b>Window Interior &amp; Openings</b>				
a	Interior Window Sills	solid surface	building	majority in good condition	
<b>3</b>	<b>Interior Doors</b>				
a	Interior Doors	wood	building	majority in good conditions; some instances where wood is chipped and / or peeling off; most have door transfer grilles	
b	Interior Doors	wood w/ hollow metal frame	building	overall in good conditions	
<b>4</b>	<b>Ceilings</b>				
a	Ceilings / Soffits	acoustical tile/gyp. Board	classrooms	overall in good condition	
b	Ceilings	acoustical tile	building/kitchen	water damage, chipped/broken, loose channels	x
<b>5</b>	<b>Flooring</b>				
a	Flooring	carpet	corridor	majority in good condition; minimal dated and worn, rippled	x
b	Flooring	VCT	building	majority in good condition; minimal cracking, chipping and separation	
c	Flooring	concrete	kitchen/mechanical	majority in good condition	
d	Flooring	tile	bathrooms	overall in good condition	
e	Base	tile	bathrooms	visibly dated, worn, scratched, and / or peeling off / missing in some areas	x
f	Base	rubber	building	visibly dated, worn, scratched, and / or peeling off / missing in some areas	
<b>6</b>	<b>Miscellaneous</b>				
a	Casework	laminate & wood / veneer	building	majority in good condition; some visibly worn, scratched and / or wood / laminate chipping / peeling off	
b	Toilets	vitreous china	bathrooms	caulking around fixtures are cracking and worn	
c	Bathroom Stall Partitions	metal	building	somewhat visibly worn, scratched and rusting	
d	Drinking Fountains	metal/plastic/rubber	corridor	majority in good condition; some dated/damaged	x

# COLUMBUS ELEMENTARY SCHOOL: NEEDS ASSESSMENT

No.	Elementary School	Type / Material	Area / Location	Analysis	Identified in Plans
<b>Building Exterior / Envelope</b>					
<b>7</b>	<b>Walls</b>				
a	Exterior Foundation Walls	concrete	building	overall in good condition; some areas where visibly worn and / or cracking / chipping off	x
b	Exterior Walls	brick	building	overall in fair condition; some instances where visibly stained, cracking / chipping, and / or grout is cracking / missing, especially at the base of the wall	
<b>8</b>	<b>Windows</b>				
a	Windows	-	building	majority in good condition; some are visibly dated and worn, one broken pane	x
<b>9</b>	<b>Doors</b>				
a	Exterior Doors - Hollow Metal	hollow metal	building	rusting, visible scratching and poor painting	see door analysis
b	Exterior Doors - Aluminum	aluminum	building	good condition	
<b>10</b>	<b>Roof</b>				
a	Roof	-	building	see roof report	
b	Roof - Soffits	metal	building	overall in good condition; one location has a missing panel	x
<b>11</b>	<b>Miscellaneous</b>				
a	Façade	brick	building	overall in good condition; in need of some tuck pointing	
b	Columns	steel	main entry	columns bases breaking away	x
<b>Site Development</b>					
<b>12</b>	<b>Asphalt / Paving</b>				
a	Parking Lots	asphalt	site	overall in good condition; some sinking/cracking	
b	Hard Surface Play Areas	asphalt	site	overall in good condition; some sinking/cracking/breakage	
c	Walkways	asphalt	site (building perimeter)	overall in good condition; some sinking/cracking/breakage	
<b>13</b>	<b>Site Concrete</b>				
a	Walkways	concrete	site	overall in good condition; some sinking/cracking/breakage	
b	Stoops	concrete	doors	overall in good condition	
<b>14</b>	<b>Greenspace</b>				
a	No improvements needed	-	site	good condition	
<b>15</b>	<b>Playground</b>				
a	Playground Equipment	metal, plastic and wood	site	appears to be in good condition	
b	Playground Surface	rubber surface & woodchips	site	good condition	



THIS PAGE IS INTENTIONALLY LEFT BLANK.

# COLUMBUS ELEMENTARY SCHOOL: ADA ACCESSIBILITY ASSESSMENT

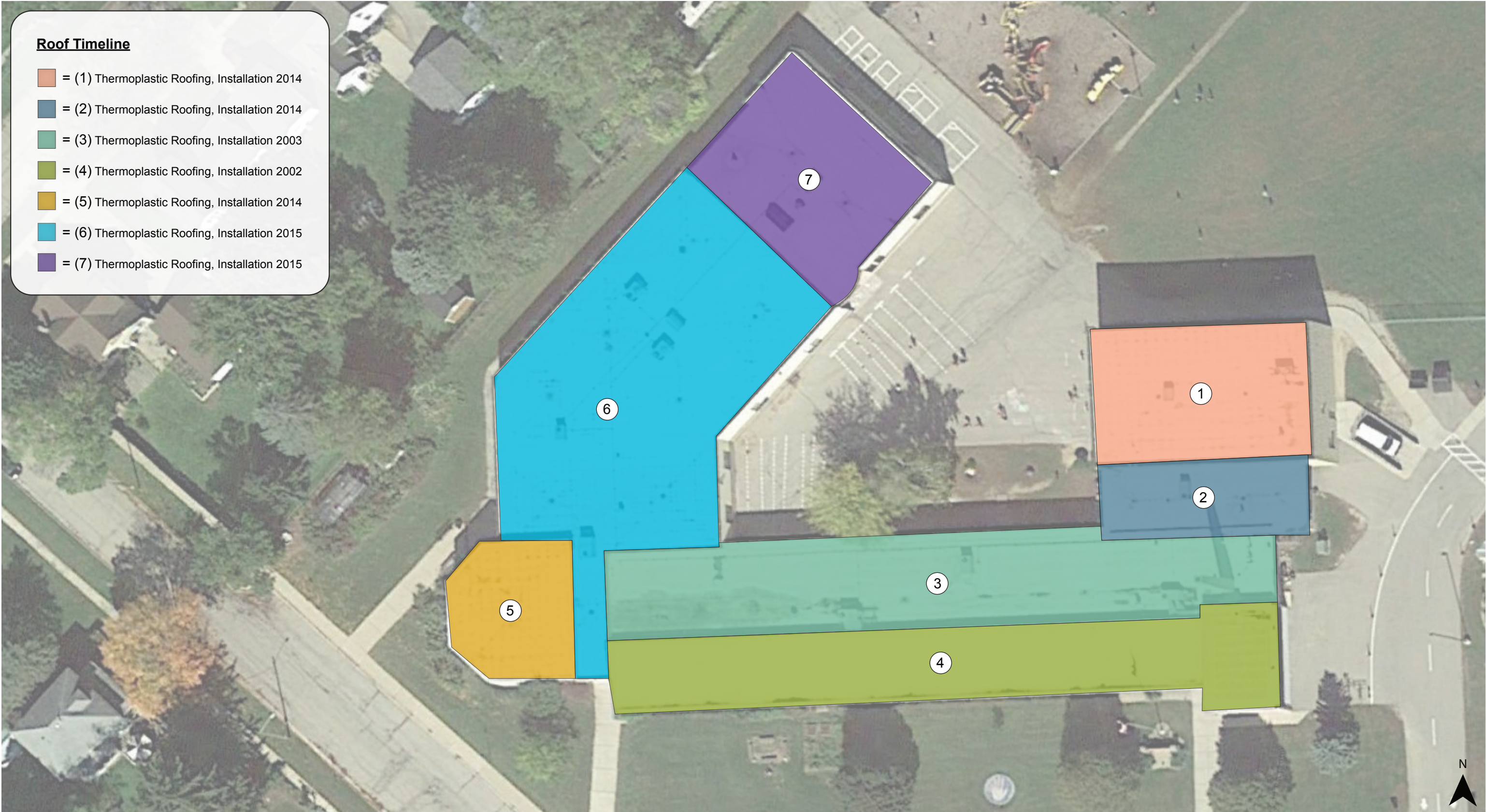
The following is an analysis of Columbus Elementary School in regards to meeting building code requirements under the Americans with Disability Act (ADA) and regulated by the American National Standard (ANSI) Accessible and Usable Buildings and Facilities. This is not intended to be a comprehensive list, but an analysis as identified by Bray Architects and engineers gathered through extensive tours and assessment of the existing building facility.

No.	Elementary School	Area / Location	Analysis	Potential Solution	Identified in Plans
<b>ADA Accessibility</b>					
<b>1</b>	<b>Building Entrance</b>				
a	Accessible Route of Travel	building	there are ADA compliant accessible routes of travel into the building	none	-
<b>2</b>	<b>Parking</b>				
a	ADA Parking Stalls	parking lots	there are designated ADA compliant stalls	none	-
<b>3</b>	<b>Ramps &amp; Lifts</b>				
a	Accessible Routes of Travel Between Floor Levels - Ramps	-	-	-	-
b	Accessible Routes of Travel Between Floor Levels - Lifts	-	-	-	-
c	Accessible Routes of Travel Between Floor Levels - Elevators	-	-	-	-
<b>4</b>	<b>Railings</b>				
a	Stair Railings	boiler	not required	-	-
b	Ramp Railings	-	-	-	-
<b>5</b>	<b>Manuevering, Thresholds, &amp; Push / Pull</b>				
a	Push / Pull	building	ADA compliant standards for manuevering are met	-	-
b	Manuevering			-	-
c	Thresholds	building	ADA compliant standards for thresholds are met	-	-
<b>6</b>	<b>Door Hardware &amp; Panic Hardware</b>				
a	Door Hardware	building	generally compliant hardware; four doors are not ADA compliant	replace as needed	x
<b>7</b>	<b>Restrooms</b>				
a	5'-0" Wheelchair Clearance	restrooms	meets ADA requirements	-	-
b	ADA Accessible Stall	building	meets ADA requirements	-	-
c	Unisex Restrooms	building	meets ADA requirements	-	-
d	Grab Bars	-	-	-	-
e	Showers	-	-	-	-
<b>8</b>	<b>Drinking Fountains &amp; Protruding Objects</b>				
a	Drinking Fountains	building	drinking fountains meet ADA compliance	-	-
b	Protruding Objects	building	ADA required wing walls are not present	provide ADA compliant wing walls	x
<b>9</b>	<b>Casework, Transaction Counters, &amp; Counters with Sinks</b>				
a	Transaction Counters	main office	contains at least 3'-0" length of transaction counter at ADA compliant height	-	-
b	Workstation Counters	building	generally contains at least 3'-0" length of workspace at ADA compliant height	provide 3'-0" length of counter / workspace at ADA compliant height in speech room	x
c	Counters with Sinks	building	at ADA compliant height	-	-





COLUMBUS ELEMENTARY SCHOOL: ROOF PLAN



ROOF PLAN  
not to scale





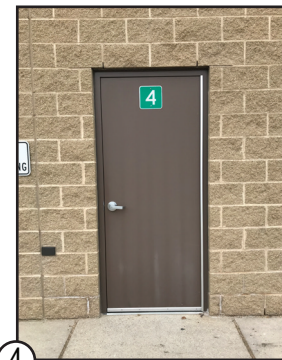
THIS PAGE IS INTENTIONALLY LEFT BLANK.

# COLUMBUS ELEMENTARY SCHOOL: EXTERIOR DOOR ANALYSIS

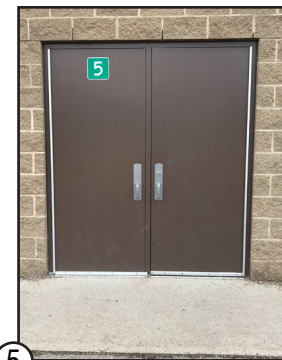
Elementary School			
No.	Door Type	Frame Type	Visual Condition
1	Aluminum	Aluminum Storefront	Good
2	Aluminum	Aluminum	Good
3	Aluminum	Aluminum Storefront	Good
4	Hollow Metal	Hollow Metal	Good
5	Hollow Metal	Hollow Metal	Good
6	Hollow Metal	Hollow Metal	Good
7	Hollow Metal	Hollow Metal	Good
8	Aluminum	Aluminum	Good
9	Hollow Metal	Hollow Metal	Poor
10	Aluminum	Aluminum Storefront	Good
11	Aluminum	Aluminum Storefront	Good



ALUMINUM DOORS & ALUMINUM STOREFRONT



HOLLOW METAL DOORS & HOLLOW METAL FRAME



HOLLOW METAL DOORS & HOLLOW METAL FRAME



ALUMINUM DOORS & ALUMINUM STOREFRONT



HOLLOW METAL DOORS & HOLLOW METAL FRAME



ALUMINUM DOORS & ALUMINUM FRAME





THIS PAGE IS INTENTIONALLY LEFT BLANK.

# COLUMBUS ELEMENTARY SCHOOL: EXTERIOR WINDOW ANALYSIS

Elementary School		
No.	Window Type	Consider Replacement
1	Aluminum w/ Double Pane	
2	Aluminum w/ Double Pane	
3	Aluminum w/ Double Pane	
4	Aluminum w/ Double Pane	
5	Aluminum w/ Double Pane	
7	Aluminum w/ Double Pane	
8	Aluminum w/ Double Pane	Replace Broken Glass
9	Aluminum w/ Double Pane	
10	Aluminum w/ Double Pane	
11	Aluminum w/ Double Pane	
12	Aluminum w/ Double Pane	
13	Aluminum w/ Double Pane	
14	Aluminum w/ Double Pane	



1 ALUMINUM W/ DOUBLE PANE



4 ALUMINUM W/ DOUBLE PANE



7 ALUMINUM W/ DOUBLE PANE



13 ALUMINUM W/ DOUBLE PANE



12 ALUMINUM W/ DOUBLE PANE



8 ALUMINUM W/ DOUBLE PANE



# COLUMBUS ELEMENTARY SCHOOL: ENGINEER REPORT - PLUMBING

---

## **Plumbing System Review:**

The following report is the result of a site visit by Justin Monk of Muermann Engineering, LLC that occurred on March 6, 2019. Site observations, existing plan review and interviews with staff were all used in the preparation of this report.

The original building was built in 1952 with additions and renovations occurring in 1995, 2000 and 2015.

## **Domestic Water**

### Observations

- A. The facility has (3) 2" water services with a 2" water meter.
- B. Water pressure in the building appears to be adequate.
- C. The original 1952 building has problems with domestic hot water reaching the fixtures within an appropriate time period. This problem does not appear to be the case in the later additions.
- D. The original building is almost entirely galvanized water piping, whereas the new additions have been provided with copper tubing.
- E. The building has backflow preventers that required annual testing.
- F. The building does not have an automatic fire sprinklers system. The existing water service is not large enough to support a new fire protection system.

### Recommendations

- A. If the facility does any major expansion, it is recommended that the existing galvanized domestic water piping be replaced. Also, hot water return piping needs to be incorporated into the original building.
- B. Continue to test and service backflow preventers annually.
- C. If the facility requires fire sprinkler protection, a new 6" minimum size water service will be required.

## **Sanitary and Storm Piping**

### Observations

- A. The majority of sanitary piping is cast iron. Vent piping in the original building is mostly galvanized and appears to be in good condition.
- B. Problems with the sanitary sewer were not reported by the staff.
- C. Slow and clogged drains are reported by staff in art room sinks.
- D. The sanitary sewer for the kitchen does not have a grease interceptor. Although the kitchen is not a production kitchen, the 4-comp sink would require an interceptor if remodeling were done in this space.



Art Room Sink

- E. The staff reported a problem with water leaking at the wall of the cafeteria. This problem is likely the result of a roofing issue and is not directly related to the storm sewer.
- F. Storm drains on the roof are in good condition and no problems are reported with the interior storm drainage system.
- G. Storm problems were reported with the exterior sewer, however those problems appear to have been remedied.
- H. Sanitary ejector pump serving 2000 addition appears to be original installation.

## Recommendations

- A. Continue to maintain and monitor the existing sewer and associated drainage system. Replace existing sewer sanitary and vent piping as problems arise.
- B. Provide solid waste interceptor for all art rooms sinks.
- C. Provided grease interceptor for kitchen.

## Plumbing Equipment

### Observations

- A. The facility has multiple water heaters. This facility has both electric and gas fired water heaters which appear to be past their warranty. Neither style of water heater is energy efficient.
- B. Hot water system circulation pump has corrosion on it.

### Recommendations

- A. Water heaters should be replaced with new high efficient modulating heaters. The domestic hot water should be integrated to utilize one domestic hot water source.
- B. Replace existing hot water system circulation pump with new and resize to improve hot water deliverer. Piping upgrades may be required.

## Plumbing Fixtures

### Observations

- A. Fixtures for the facility are in poor to good condition. Fixtures located in the latest addition are in good condition. The existing faucets in the two oldest parts of the facility appear to be in the worse condition; the faucets are old and are beyond their life expectancy. Classroom sinks are in fair condition and would not need to be replaced.
- B. Fixtures located in the two oldest parts of the building are not water efficient. Fixtures located in the newest addition comply with current minimum code standards regarding water efficiency per ADA requirements.
- C. The majority of the water closets and urinals fixture have flush valves. Water closets are a mixture of floor outlet and wall mounted fixtures whereas urinals are primarily floor outlet fixtures.



# COLUMBUS ELEMENTARY SCHOOL: ENGINEER REPORT - PLUMBING

---

- D. The main toilet room located in the 1952 building is not ADA compliant.

## Recommendations

- A. Replace the existing fixtures located in the 1952 building with new ADA compliant water efficient fixtures.
- B. Upgraded faucets should be low flow water efficient fixtures with ceramic disc cartridges to promote positive shut-off. All handles shall be level style for ADA Compliance.

The following report is the result of a site visit by Jason Testin of Fredericksen Engineering that occurred on March 6, 2019. Site observations, construction plan review, and interviews with staff were all used in the preparation of this report.

The original building was constructed in 1952, with additions being constructed in 1995 and 2000. There were HVAC upgrades performed in 2016.

### 1.4 Heating System

#### A. Existing Data

1. One boiler plant serves the building. The boiler plant consists of three DeDietrich hot water boilers each fired with natural gas. The boilers were installed in 2016. One boiler is a PK Mach boiler, installed in 2016.
2. The piping and pumping system for the boilers consists of a single circuit system with a stand-by pump. If the primary pump fails, the secondary (stand-by) pump will provide hot water circulation to the system.
3. Each boiler has an inline pump to circulate water through each boiler.

#### B. Observations

1. According to information obtained by the Owner, the boiler plants have no reserve capacity at this point, as all boilers are brought online during periods of colder weather.
2. The boiler plant is in good condition. The three boilers have an estimate life expectancy of 20 years.
3. Boiler water chemical systems are in place and appear to function as intended.
4. The Owner has indicated that there are no current concerns or issues with the heating supply system.

#### C. Recommendations

1. Continue preventative maintenance on the system.
2. Any future additions or construction may require the addition of boiler capacity to serve the additional spaces.

### 1.5 Ventilation and Air Conditioning Systems

#### A. Existing Data

1. There are two systems that provide ventilation for the facility. The two systems are unit ventilators and constant volume air handling systems.
2. The classrooms are served by hot water unit ventilators and constant volume packaged rooftop unit. The unit ventilators consist of a supply fan, hot water heating coil and outside air damper. The unit is utilized for ventilation and supplemental heat. The rooftop units consist of a supply fan, gas fired heat exchanger, package DX cooling section and controls.
3. The gym is served by a constant volume air handling unit. The air handling unit consists of a supply fan, hot water heating coil and outside air damper. A DX cooling coil is installed in the ductwork. A room thermostat is used to control the temperature of the air supplied to the space.

#### B. Observations



1. The unit ventilators are original to the respective portion of the building. The rooftop units were installed in 2002. The rooftop units have exceeded the estimated life expectancy of 15 years.
2. The air handling unit was installed in 1995 and is in fair condition. The unit has an estimated life expectancy of 25 years.
3. Door transfer grilles are currently utilized to transfer relief air from the classrooms to the corridor.

### **C. Recommendations**

1. Plans should be made for the replacement of the aging rooftop units and unit ventilators. At the time of replacement, a single system should be utilized to serve the areas.
2. With any remodel or renovation, plans should be made to replace the door transfer grille relief system with a code approved system. The current building code does not allow transfer air into a path of emergency egress.

## **1.6 Control Systems**

### **A. Existing Data**

1. The entire building is served by an Automated Logic digital control system.

### **B. Observations**

1. Continue preventative maintenance on the system.

### **C. Recommendations**

1. Continue to maintain and operate the control system.

## **Electrical System Review:**

The following report is the result of a site visit by Curt Krupp of Muermann Engineering, LLC that occurred on March 6, 2019. Site observations, existing plan review and interviews with staff were all used in the preparation of this report.

The original building was built in 1952 with additions and renovations occurring in 1995, 2000 and 2015.

## **Main Electrical Service**

### Observations

- A. The building is fed with an 800 amp 120/208 volt electrical service. The service is fed underground from a utility owned pad mounted transformer on the north side of the facility in the original 1952 portion of the building. The service gear is SQ D type with an 800 amp main breaker. The panel contains smaller distribution breakers feeding the panels and other loads in the facility. The service is in good condition.



Electric Service

### Recommendations

- A. The service should remain in place. The electric service distribution has room for additions and can be added to if smaller loads are added. Any new loads should be evaluated prior to adding to the service panel.
- B. The demand reading from Columbus Water & Light indicated that the service peak demand is around 140 KW. This equates to approximately 480 amps. The service size is 800 amps. The service is approximately at 60% of its capacity.

## **Panelboards**

### Observations

- A. The panels in the facility are in reasonable condition; space is available for small additions if required.

### Recommendations

- A. Leave panels as is. Upgrades on panels can be done if additional circuits are required.

## **Generator**

### Observations

- A. No generator is present in this facility.

### Recommendations

- A. A possible addition to this facility is to add an emergency generator to power life safety loads and eliminate the battery backup equipment and to power data closets, intercom equipment and phone systems.





## Interior Lighting and Control

### Observations

- A. The interior fluorescent light fixtures contain T8 lamps and ballasts. All exit lights have been replaced with LED type. The gym HID lighting was replaced with new Fluorescent T8 high bay fixtures. Lighting motion sensors are installed in classrooms. We did note areas of the corridors where exit lights were not present for clear direction to exits.

### Recommendations

- A. A possible option is to replace the interior fixtures with LED. We would recommend waiting until the fluorescent fixture components begin to fail, then do a replacement project.

## Emergency Lighting

### Observations

- A. We noted very little egress lighting was present in corridors.

### Recommendations

- A. Upgrade entire building with proper emergency egress lighting. A more complete building evaluation needs to be performed as well as a simulated power outage to determine the exact needs.

## Exterior Lighting

### Observations

- A. New LED lighting replaced the existing HPS fixtures.

### Recommendations

- A. None

## Fire Alarm System

### Observations

- A. The system is a Simplex zoned 4002 panel. We did identify areas of the facility that do not meet code requirements with regard to annunciation for strobe and horn coverage. When this system was installed it met current codes. As additional code updates have occurred throughout the recent years, it has made many buildings non-code compliant.
- B. We did note open cubby areas do not contain smoke detection which is required per code.

### Recommendations

- A. Additional horn and strobe devices can be added to all occupied areas to bring the system up to complete code compliance. This will require a more in-depth study to determine the areas that need additional equipment added.



Fire Alarm Control Panel

## **Clock System**

### Observations

- A. New American Time battery clocks are present.

### Recommendations

- A. Add additional clocks as required.

## **Intercom**

### Observations

- A. A Simplex 5100 system is located near the office. The district staff indicated this system is failing and needs replacement.

### Recommendations

- A. Replace with new intercom system.

## **Data, Telephone**

### Observations

- A. The phone system for the district is Mitel IP based and is linked to the Middle and High schools. The facility contains wireless access throughout. The classrooms and offices contained Cat 5 data drops. Existing data racks are full for the most part, and no additional cabling can be added. The IDF rack is wall mounted and not easily accessible.

### Recommendations

- A. None.

## **CCTV System**

### Observations

- A. The facility contains an IP CCTV system which was recently upgraded as part of a state wide security grant.
- B. Owner noted CCTV on exterior of building is lacking.

### Recommendations

- A. Add to the existing system as required.

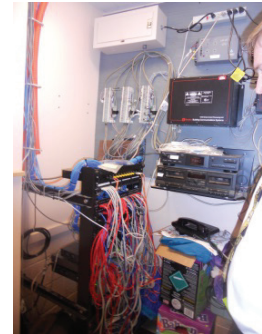
## **Access Control System**

### Observations

- A. A new "Tri Ad" IP Keyless entry system was recently added as part of a state wide security grant.

### Recommendations

- A. Add to the existing system as required.



Data Racks





# TOUR ELEMENTARY SCHOOL



**THANK YOU**  
**NEXT MEETING**  
**MONDAY APRIL 29 - 6:30-8:30**  
**HIGH SCHOOL LIBRARY**