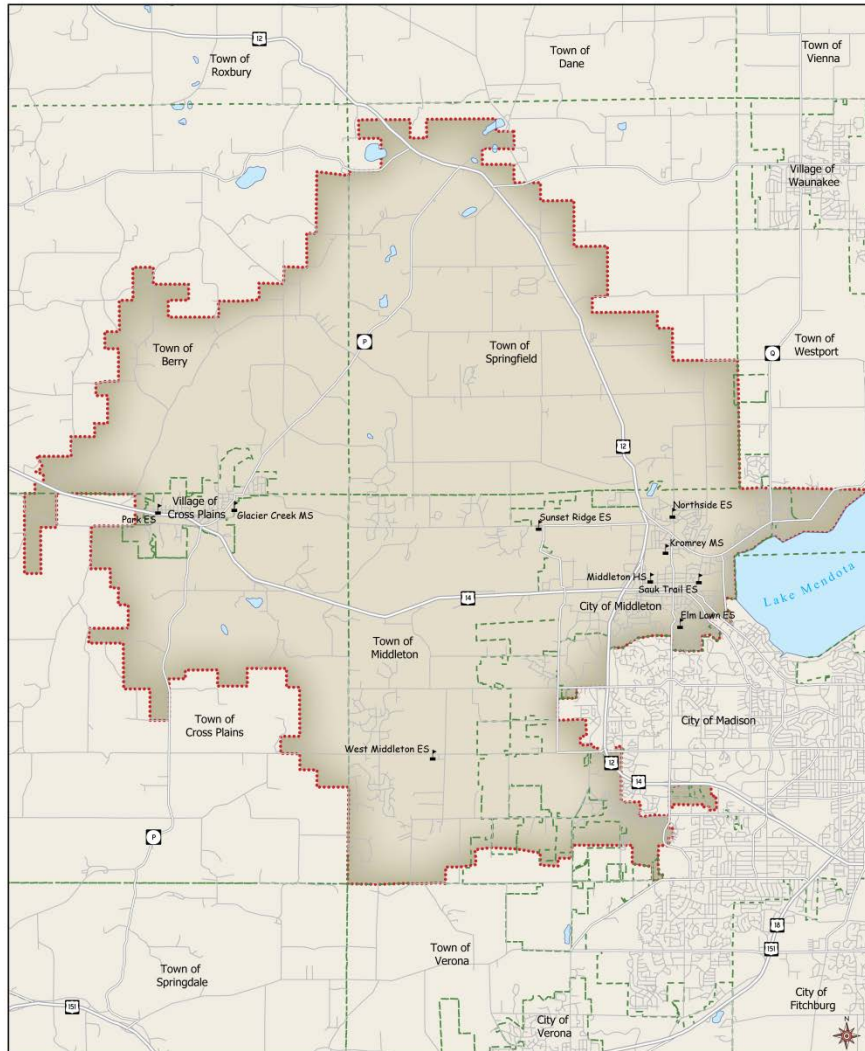


# Planning for the Schools of Tomorrow

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## School Enrollment Projections Series Middleton-Cross Plains Area School District

January 2015

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## Introduction

This report offers a summary of the Enrollment Projections Analysis completed for the Middleton-Cross Plains Area School District by the Applied Population Laboratory, University of Wisconsin-Madison. Ten year projections 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 school district.

## Past Projections Compared to Current Enrollment

The Applied Population Laboratory completes enrollment projection analyses for the Middleton-Cross Plains Area School District on an annual basis, allowing us to compare past projections to recent district enrollment. Table A compares the actual enrollment for the current school year to the projections that were completed last fall in 2013. The Two Year "Trend" model for K-12 was the most accurate of the four projection models provided last year. However, the Baseline model was more accurate for grades K-4. Last school year the method to project kindergartners utilized geocoded births instead of the births from each municipality in the district.

TABLE A  
Comparison of Actual Enrollments (Fall 2014) with Projected Enrollment (Fall 2013)  
Middleton-Cross Plains Area School District

Grade	2014-13 Enrollment	Baseline Model		5 Year Trend Model		2 Year "Trend" Model		Kindergarten Trend Model	
		13-14	Difference	13-14	Difference	13-14	Difference	13-14	Difference
K	396	400	4	422	26	432	36	455	59
1	467	468	1	464	-3	466	-1	464	-3
2	470	476	6	474	4	483	13	474	4
3	467	467	0	457	-10	460	-7	457	-10
4	502	497	-5	495	-7	501	-1	495	-7
5	477	448	-29	449	-28	438	-39	449	-28
6	481	487	6	482	1	490	9	482	1
7	441	431	-10	428	-13	429	-12	428	-13
8	484	461	-23	459	-25	460	-24	459	-25
9	487	482	-5	482	-5	477	-10	482	-5
10	504	496	-8	498	-6	508	4	498	-6
11	467	457	-10	455	-12	451	-16	455	-12
12	503	513	10	524	21	522	19	524	21
<b>TOTAL</b>	<b>6,146</b>	<b>6,083</b>	<b>-63</b>	<b>6,090</b>	<b>-56</b>	<b>6,116</b>	<b>-30</b>	<b>6,122</b>	<b>-24</b>
K-4	2,302	2,307	5	2,313	11	2,343	41	2,345	43
5-8	1,883	1,828	-55	1,818	-65	1,817	-66	1,818	-65
9-12	1,961	1,948	-13	1,959	-2	1,957	-4	1,959	-2



Table B compares this year's actual enrollment with the last three years of enrollment projections. Comparing models from the last three years of projections can provide insight on which model performed best over time. The right-side of the table highlights the most accurate model for each projection year. The Two Year "Trend" model has been the most reliable for K-12 enrollment, although the Baseline model performed better overall.

**TABLE B**  
**Comparison of Actual Enrollment Compared to Previous Projections**  
**Middleton-Cross Plains Area School District**

Comparison of 2014/15 Enrollment with Projections			
	K-12 Enrollment		
Projection Year	2013/14	2012/13	2011/12
Actual (2014/15)	6,146	6,146	6,146
Baseline	6,083	6,254	6,256
5 Year Trend	6,090	6,251	6,231
2 Year "Trend"	6,116	6,172	6,163
Kindergarten Trend	6,122	6,175	6,119

Percent Difference between Actual and Projected			
	K-12 Enrollment		
Projection Year	2013/14	2012/13	2011/12
Baseline	-1.02%	1.76%	1.78%
5 Year Trend	-0.91%	1.71%	1.39%
2 Year "Trend"	-0.48%	0.42%	0.27%
Kindergarten Trend	-0.39%	0.46%	-0.44%

K-4 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Actual (2014/15)	2,302	2,302	2,302
Baseline	2,307	2,418	2,399
5 Year Trend	2,313	2,421	2,416
2 Year "Trend"	2,343	2,358	2,330
Kindergarten Trend	2,345	2,344	2,304

K-4 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Baseline	0.2%	5.0%	4.2%
5 Year Trend	0.5%	5.2%	5.0%
2 Year "Trend"	1.8%	2.4%	1.2%
Kindergarten Trend	1.9%	1.8%	0.1%

5-8 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Actual (2014/15)	1,883	1,883	1,883
Baseline	1,828	1,869	1,888
5 Year Trend	1,818	1,855	1,856
2 Year "Trend"	1,817	1,835	1,880
Kindergarten Trend	1,818	1,855	1,856

5-8 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Baseline	-2.9%	-0.7%	0.2%
5 Year Trend	-3.5%	-1.5%	-1.4%
2 Year "Trend"	-3.5%	-2.5%	-0.2%
Kindergarten Trend	-3.5%	-1.5%	-1.4%

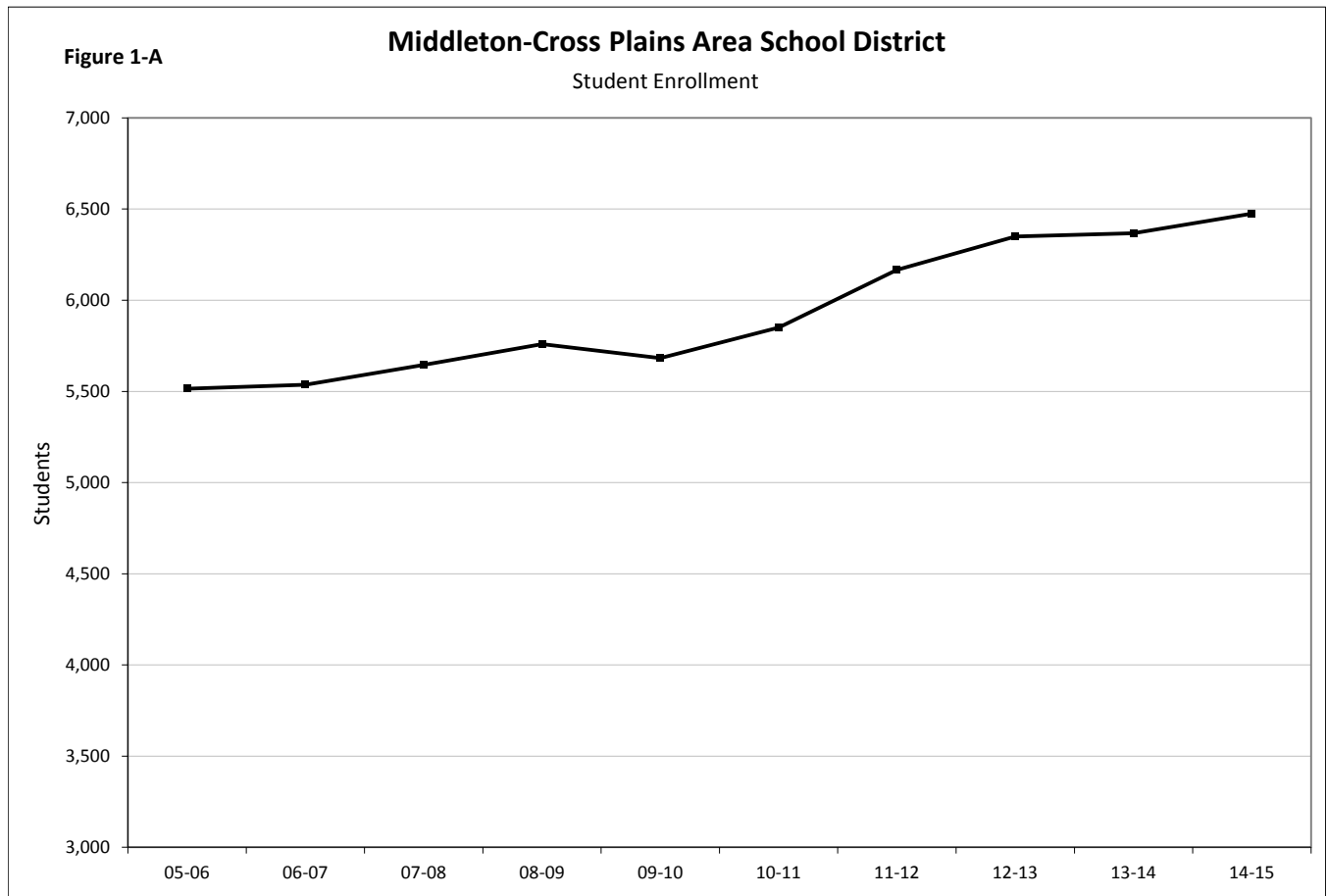
9-12 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Actual (2014/15)	1,961	1,961	1,961
Baseline	1,948	1,967	1,969
5 Year Trend	1,959	1,975	1,959
2 Year "Trend"	1,957	1,979	1,953
Kindergarten Trend	1,959	1,975	1,959

9-12 Enrollment			
Projection Year	2013/14	2012/13	2011/12
Baseline	-0.6%	0.3%	0.4%
5 Year Trend	-0.1%	0.7%	-0.1%
2 Year "Trend"	-0.2%	0.9%	-0.4%
Kindergarten Trend	-0.1%	0.7%	-0.1%



## District Enrollment History

Figure 1-A and Tables 1 and 2 display the last ten years of enrollment history in the Middleton-Cross Plains Area School District. The district enrollment history includes resident-in district students, but does not include resident 21st Century eSchool students and open enrollment "in" or "out" students.



**TABLE 1**  
**Student Enrollment**  
**Middleton-Cross Plains Area School District**

	SCHOOL YEAR									
	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15
4K							306	357	297	329
K	373	366	386	434	419	444	418	456	454	396
1	409	376	394	400	422	441	461	434	462	467
2	370	414	389	414	400	441	440	481	455	470
3	425	391	438	403	402	415	435	446	486	467
4	386	441	407	441	392	430	411	467	441	502
5	400	393	464	429	438	424	440	405	468	477
6	397	411	416	471	426	467	423	464	421	481
7	435	394	426	429	469	438	476	437	466	441
8	423	429	397	437	429	460	427	466	434	484
9	496	493	511	450	477	504	500	470	511	487
10	469	468	480	489	427	458	494	507	458	504
11	478	481	467	483	483	431	457	487	498	467
12	454	480	471	480	498	497	478	472	517	503
<b>TOTAL</b>	<b>5,515</b>	<b>5,537</b>	<b>5,646</b>	<b>5,760</b>	<b>5,682</b>	<b>5,850</b>	<b>6,166</b>	<b>6,349</b>	<b>6,368</b>	<b>6,475</b>
K-12	5,515	5,537	5,646	5,760	5,682	5,850	5,860	5,992	6,071	6,146
K-4	1,963	1,988	2,014	2,092	2,035	2,171	2,165	2,284	2,298	2,302
5-8	1,655	1,627	1,703	1,766	1,762	1,789	1,766	1,772	1,789	1,883
9-12	1,897	1,922	1,929	1,902	1,885	1,890	1,929	1,936	1,984	1,961

**TABLE 2**  
**Student Enrollment Changes**  
**Middleton-Cross Plains Area School District**

GRADE	ABSOLUTE CHANGE			PERCENT CHANGE			AVERAGE ANNUAL PERCENT CHANGE		
	'05 to '14	'05 to '09	'10 to '14	'05 to '14	'05 to '09	'10 to '14	'05 to '14	'05 to '09	'10 to '14
4K	329	0	329	na	na	107.5	na	na	26.9
K	23	46	-48	6.2	12.3	-10.8	0.7	3.1	-2.7
1	58	13	26	14.2	3.2	5.9	1.6	0.8	1.5
2	100	30	29	27.0	8.1	6.6	3.0	2.0	1.6
3	42	-23	52	9.9	-5.4	12.5	1.1	-1.4	3.1
4	116	6	72	30.1	1.6	16.7	3.3	0.4	4.2
5	77	38	53	19.3	9.5	12.5	2.1	2.4	3.1
6	84	29	14	21.2	7.3	3.0	2.4	1.8	0.7
7	6	34	3	1.4	7.8	0.7	0.2	2.0	0.2
8	61	6	24	14.4	1.4	5.2	1.6	0.4	1.3
9	-9	-19	-17	-1.8	-3.8	-3.4	-0.2	-1.0	-0.8
10	35	-42	46	7.5	-9.0	10.0	0.8	-2.2	2.5
11	-11	5	36	-2.3	1.0	8.4	-0.3	0.3	2.1
12	49	44	6	10.8	9.7	1.2	1.2	2.4	0.3
<b>TOTAL</b>	<b>960</b>	<b>167</b>	<b>625</b>	<b>17.4</b>	<b>3.0</b>	<b>10.7</b>	<b>1.9</b>	<b>0.8</b>	<b>2.7</b>
K-12	631	167	296	11.4	3.0	5.1	1.3	0.8	1.3
K-4	339	72	131	17.3	3.7	6.0	1.9	0.9	1.5
5-8	228	107	94	13.8	6.5	5.3	1.5	1.6	1.3
9-12	64	-12	71	3.4	-0.6	3.8	0.4	-0.2	0.9





District K-12 enrollment has grown overall since 2005-06, from 5,515 students to 6,146 students in 2014-15. This is a growth of 631 students, or an 11.4% increase in enrollment. Figure 1-B shows enrollment history broken down by grade groupings (4K, K-4, 5-8, and 9-12). The elementary school enrollment grew in the last ten years by 1.9% annually. In the middle school grades, enrollment grew over the last ten years by 1.5% annually. At the high school level, the first five years' enrollment decreased by 0.2% annually, but the last five years' enrollment increased by 0.9%.

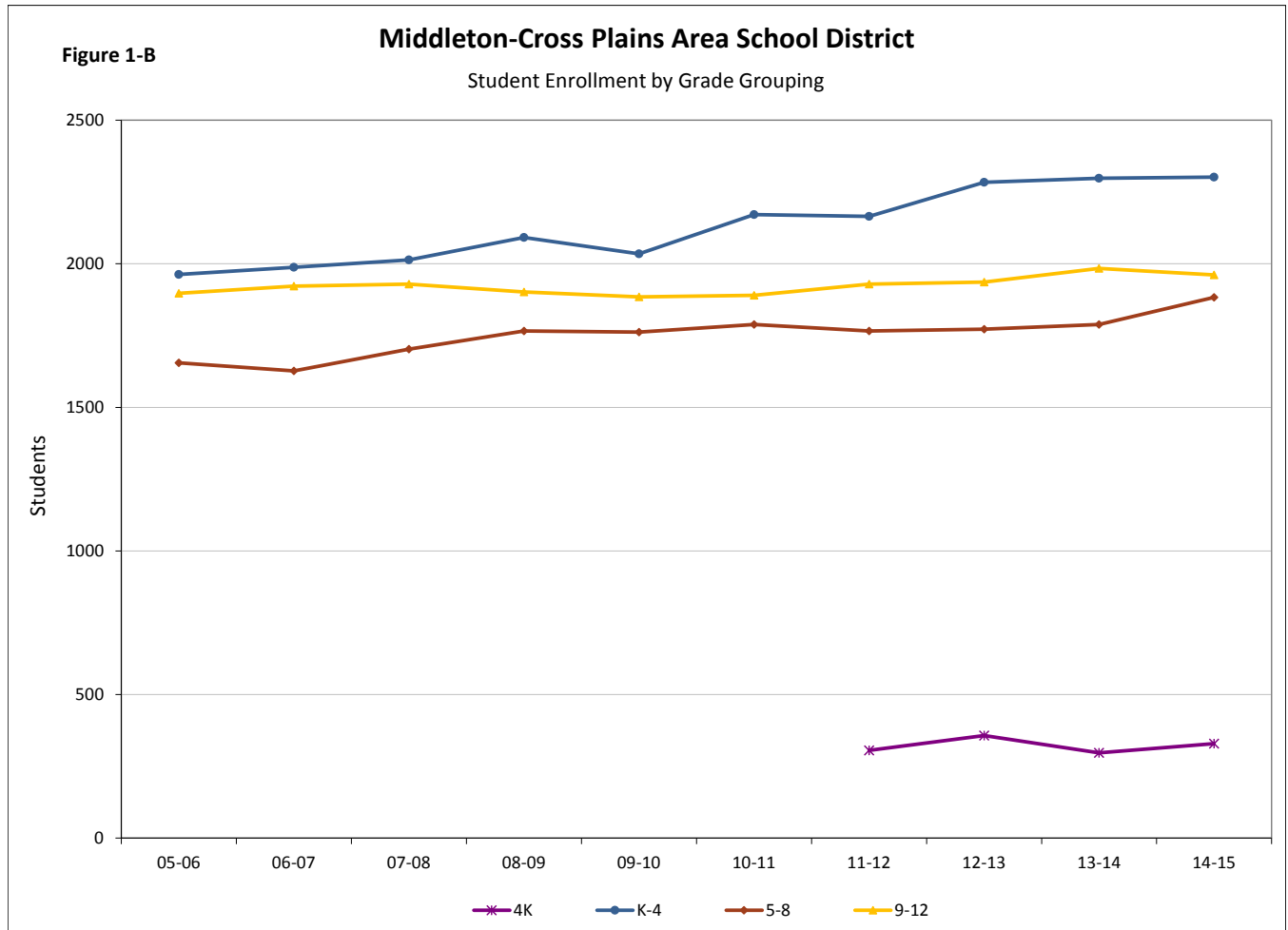
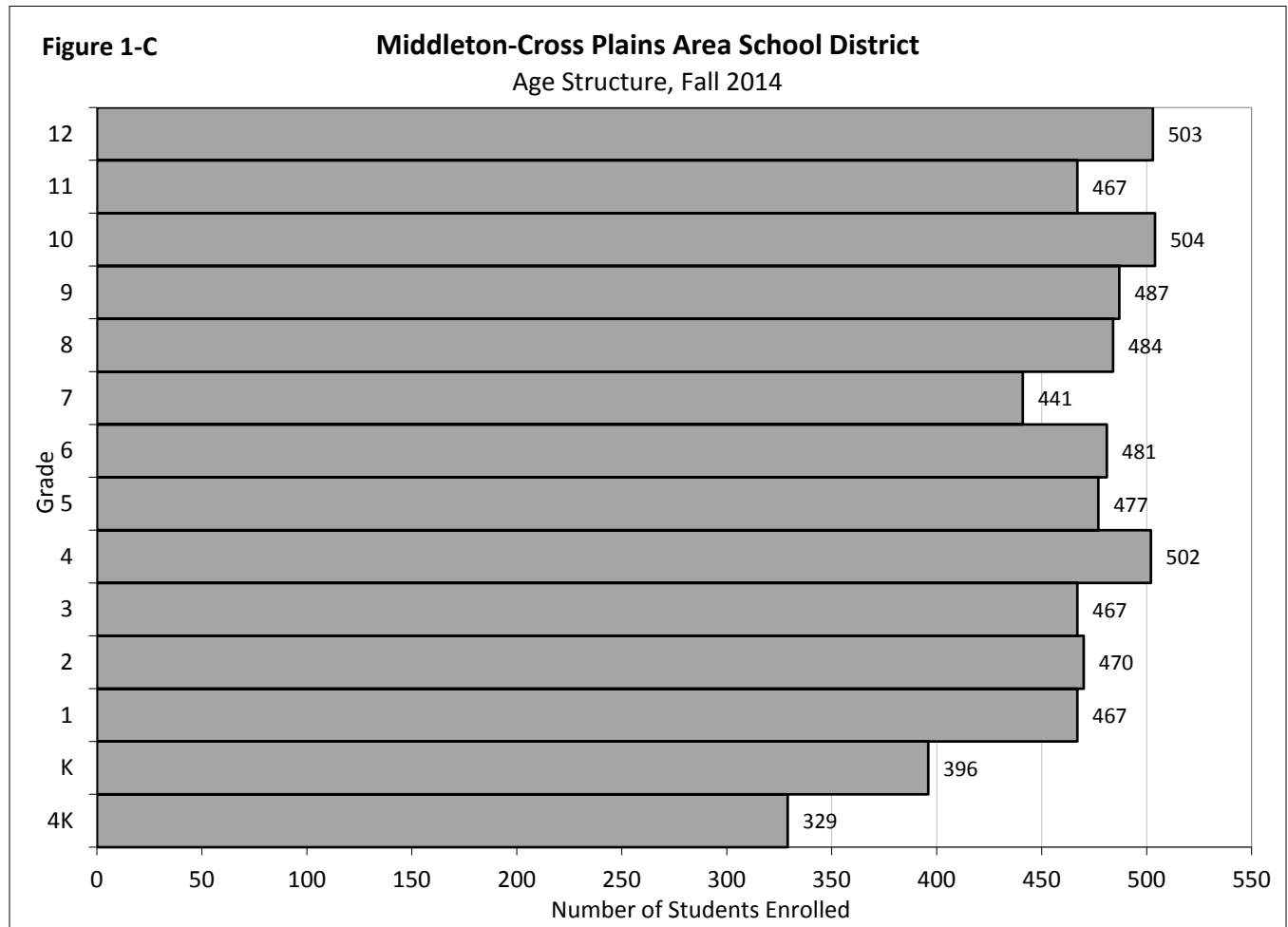
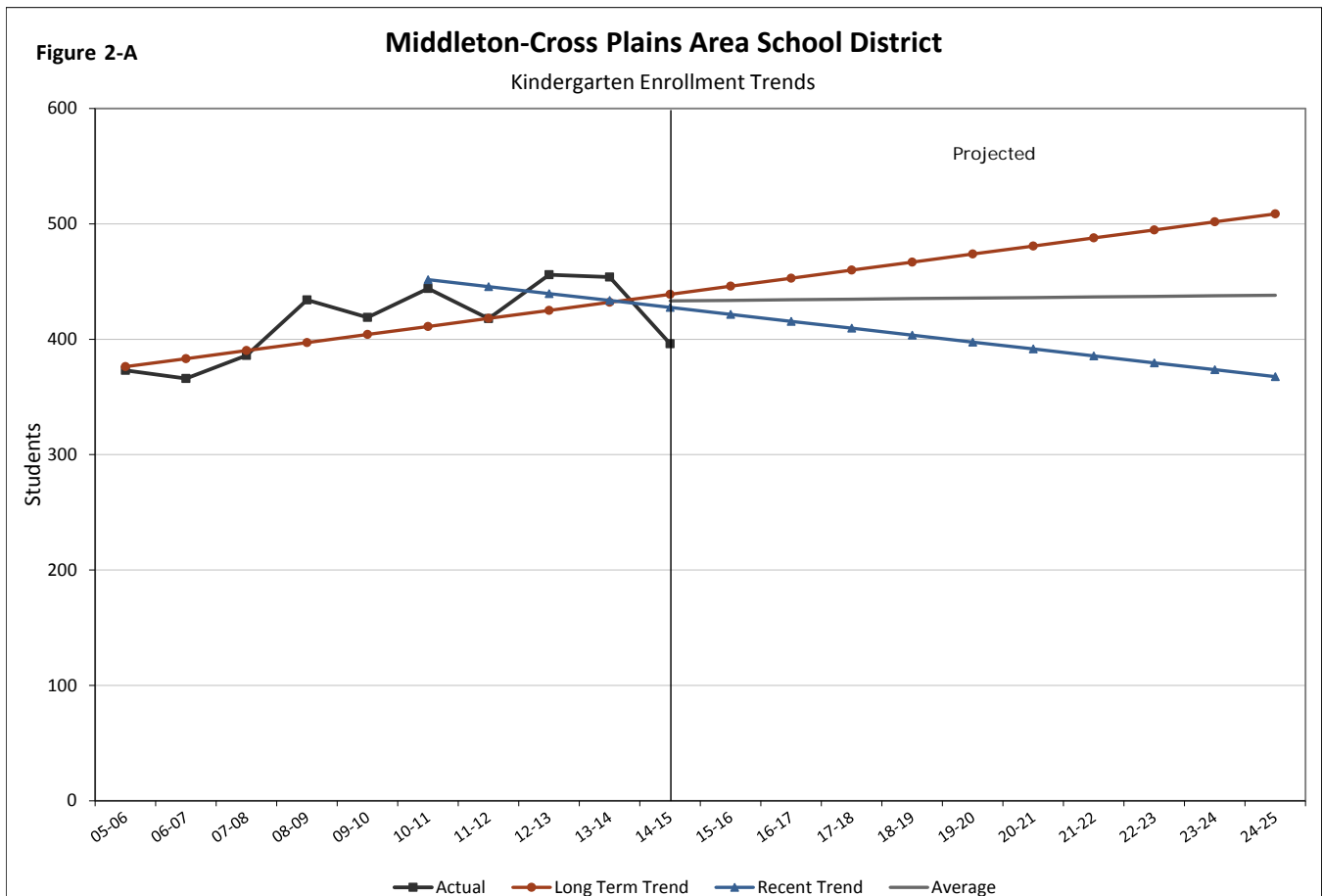


Figure 1-C shows the age structure in the fall of 2014 of the student population with the number of four-year-old kindergarteners at the bottom and the number of 12<sup>th</sup> graders at the top. The greatest number of students are in 4<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> grades, while 4K, K and 7<sup>th</sup> grades contain the fewest number of students.

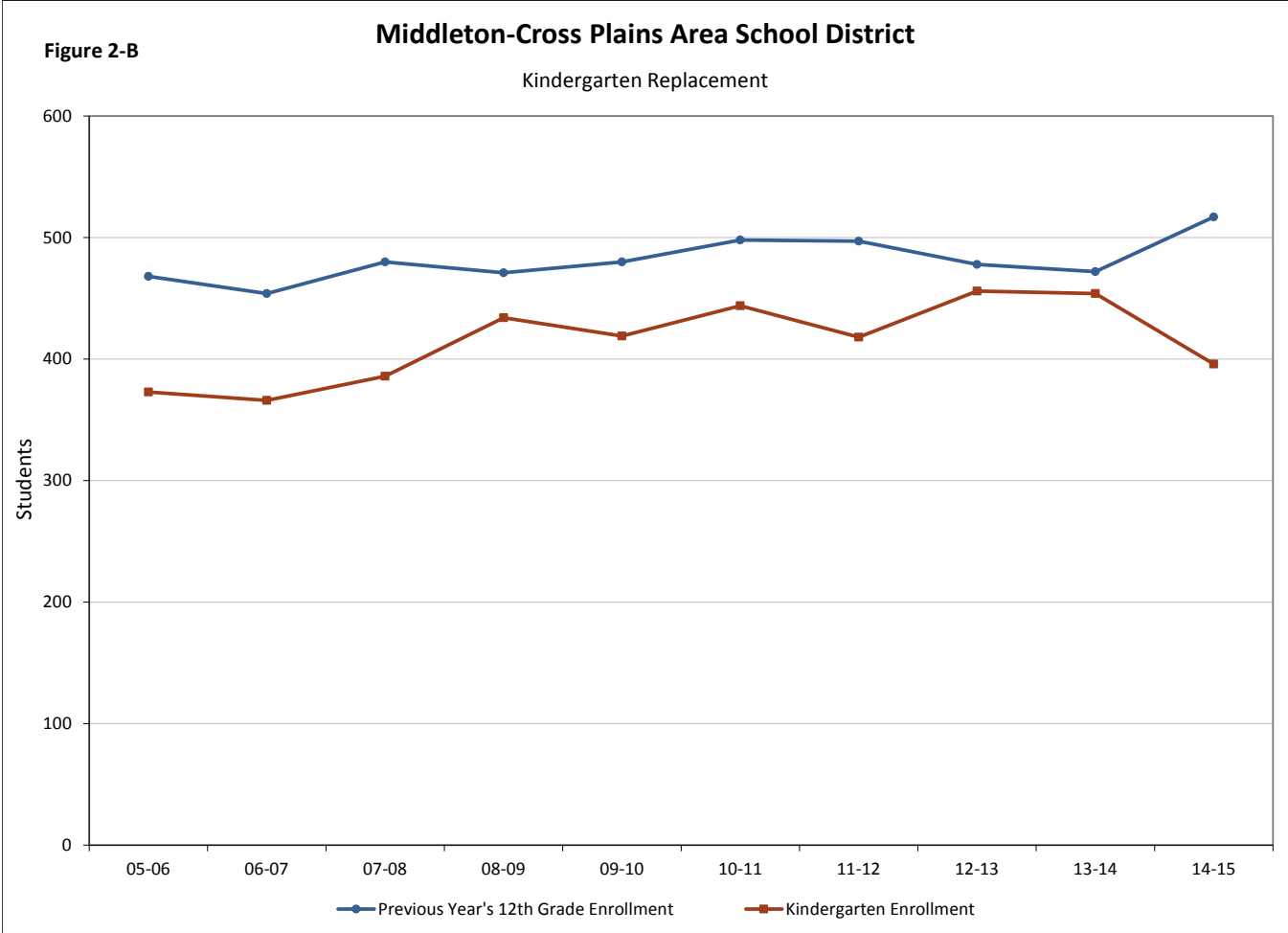


## Kindergarten Enrollment Trends

Examining trends in kindergarten enrollment is particularly informative for gaining perspective on future district enrollment, as today’s kindergartners 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 averages kindergarten enrollment changes over the last ten years. The “Recent Trend” line emphasizes kindergarten enrollment changes over the last five years. In the Middleton-Cross Plains Area School District, the long term trend indicate increasing kindergarten enrollment while the recent trend indicates declining enrollment. An average of the two trends will be used to project future kindergartners in the Kindergarten Trend model found later in the report.



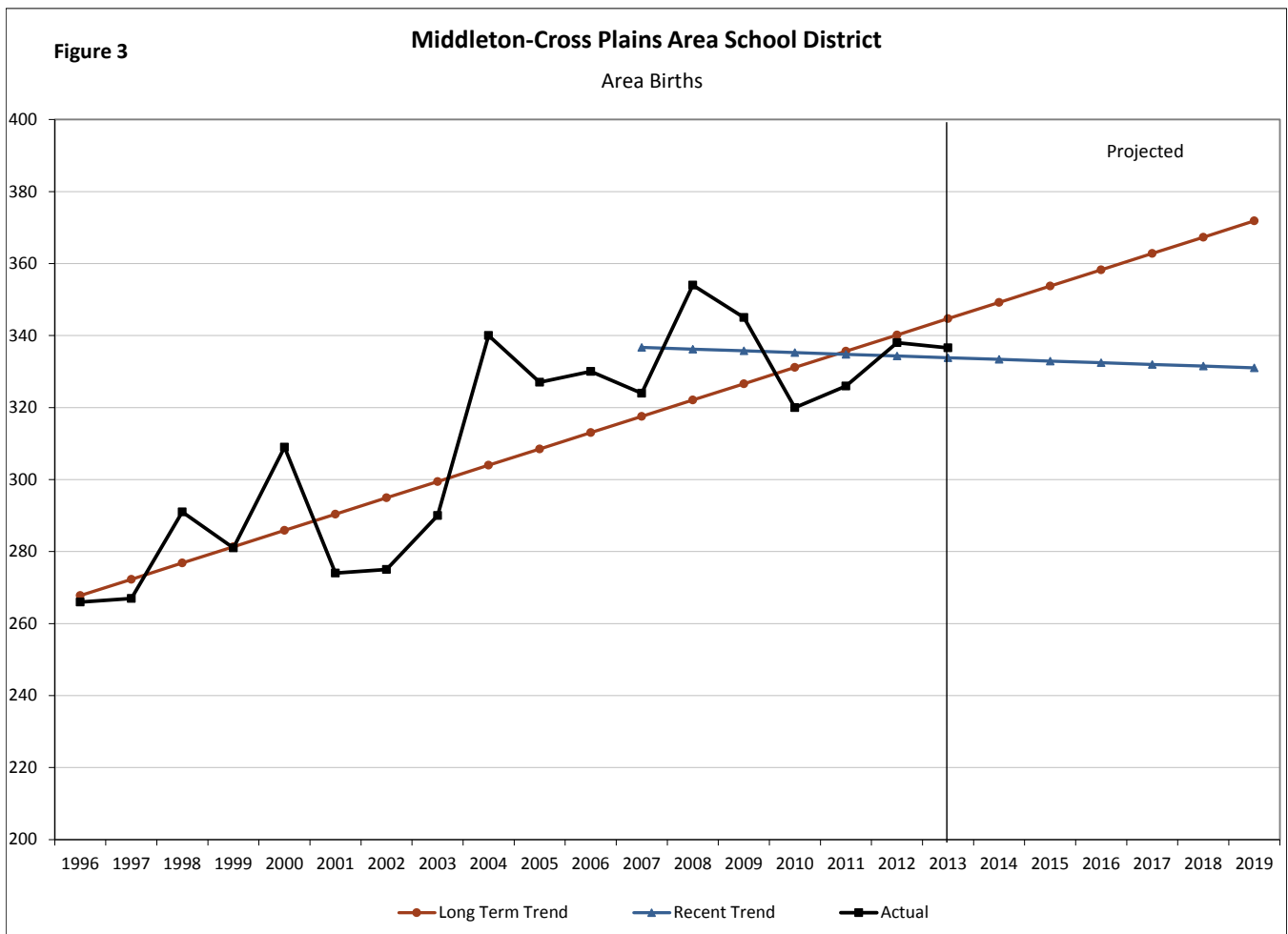
In addition to examining kindergarten enrollment on its own, comparing kindergarten enrollment to outgoing 12<sup>th</sup> graders offers a snapshot of how the age structure of district enrollment is shifting either from older to younger, or younger to older. A district may experience overall growth when kindergarten enrollment outpaces outgoing 12<sup>th</sup> grade students, and they tend to experience decline when kindergartners do not fully replace the number of graduates. Although private schools may also influence the number of kindergartners as some students will attend a private school through 8<sup>th</sup> grade but move to public school for high school. Over the last ten years, there were fewer incoming kindergartners than outgoing 12<sup>th</sup> graders from the previous year.



## Birth Trends and Projections

We use historical and projected birth data to forecast the number of kindergarten students who will enroll in the school district in future years. Figure 3 shows (in black) the number of births to mothers living in municipalities that fall within school district boundaries, by year, from 1996-2013, as collected from the Wisconsin Department of Health Services. We count resident births from the City of Middleton, the Village of Cross Plains, and the Towns of Berry, Cross Plains, Middleton, and Springfield.

We extrapolate these birth trends into the future to correspond with our Baseline and Recent Trend projection models, using the grade progression ratios to convert births into future kindergarteners. The red line represents birth trends over the long term and the blue line examines birth patterns for the last seven years.



Year	1996	1997	1998	1999	2000	2001	2002	2003	2004
# of Births	266	267	291	281	309	274	275	290	340
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
# of Births	327	330	324	354	345	320	326	338	337

Source: WI Department of Health Services



## Population Estimates and Projections

This section examines population trends for municipalities that fall within the Middleton-Cross Plains Area School District. Table 3 and Figure 4-A provide U. S. Census population counts and Wisconsin Department of Administration (DOA) estimates for district area municipalities from 2010 to 2014. These population totals can be compared with populations for Dane County and State of Wisconsin. The majority of growth has been in the City and Town of Middleton.

**TABLE 3**  
**Total Population by Municipality: 2010-2014**  
**Middleton-Cross Plains Area School District**

Municipality	POPULATION				
	Census 2010	est. 2011	est. 2012	est. 2013	est. 2014
<b>C. Middleton</b>	17,442	17,555	17,903	18,146	18,323
<b>T. Middleton</b>	5,877	5,921	5,950	6,021	6,143
<b>V. Cross Plains</b>	3,538	3,543	3,547	3,560	3,596
<b>T. Cross Plains</b>	1,507	1,510	1,511	1,519	1,520
<b>T. Berry</b>	1,127	1,131	1,135	1,139	1,138
<b>T. Springfield</b>	2,734	2,739	2,749	2,756	2,772
<b>District Area</b>	<b>32,225</b>	<b>32,399</b>	<b>32,795</b>	<b>33,141</b>	<b>33,492</b>
<b>Dane County</b>	488,073	489,331	491,555	495,921	502,251
<b>State of Wisconsin</b>	5,686,986	5,694,236	5,703,525	5,717,110	5,732,981

Municipality	PERCENT CHANGE			
	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014
<b>C. Middleton</b>	0.6%	2.0%	1.4%	1.0%
<b>T. Middleton</b>	0.7%	0.5%	1.2%	2.0%
<b>V. Cross Plains</b>	0.1%	0.1%	0.4%	1.0%
<b>T. Cross Plains</b>	0.2%	0.1%	0.5%	0.1%
<b>T. Berry</b>	0.4%	0.4%	0.4%	-0.1%
<b>T. Springfield</b>	0.2%	0.4%	0.3%	0.6%
<b>District Area</b>	<b>0.5%</b>	<b>1.2%</b>	<b>1.1%</b>	<b>1.1%</b>
<b>Dane County</b>	0.3%	0.5%	0.9%	1.3%
<b>State of Wisconsin</b>	0.1%	0.2%	0.2%	0.3%

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



Figure 4-A

### Middleton-Cross Plains Area School District

Population for Area Municipalities

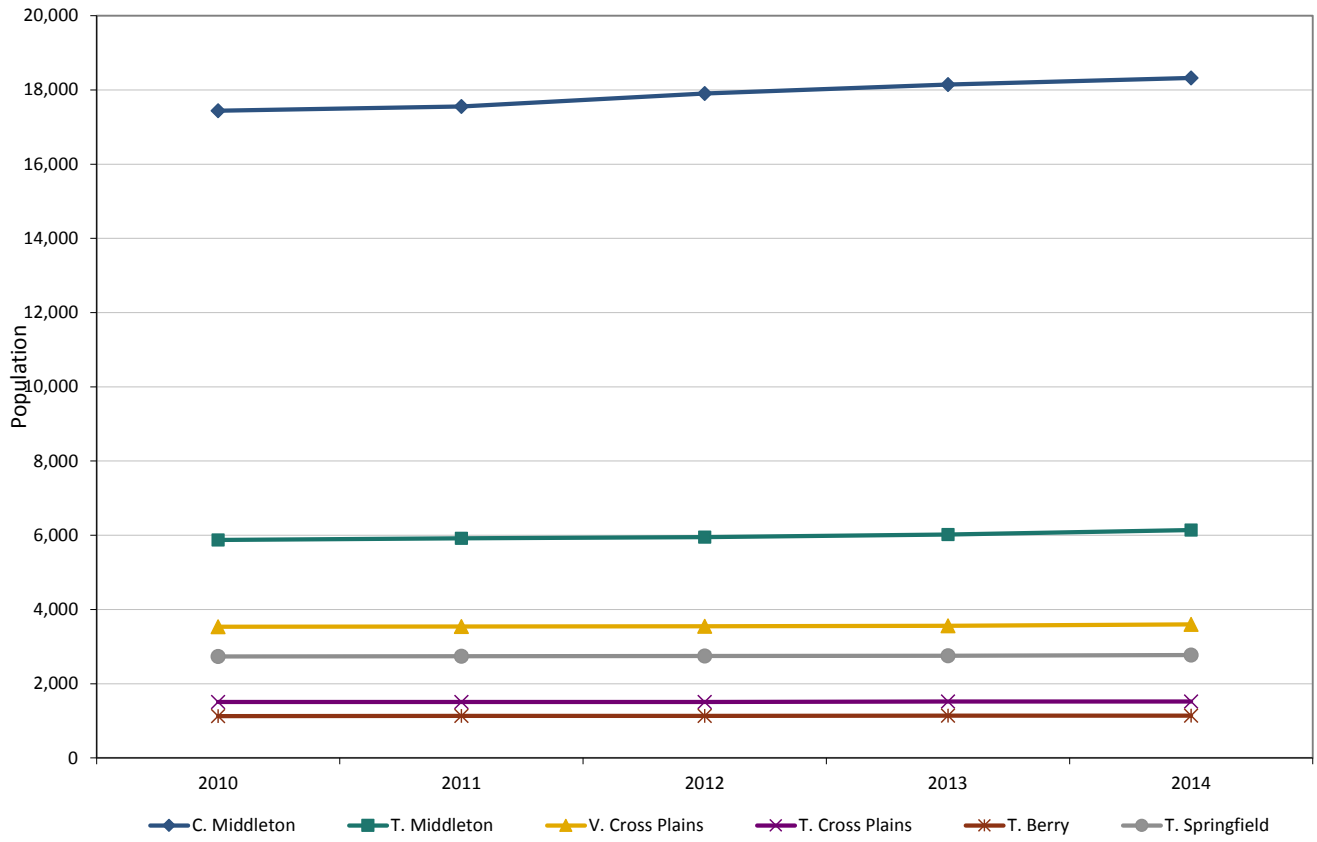
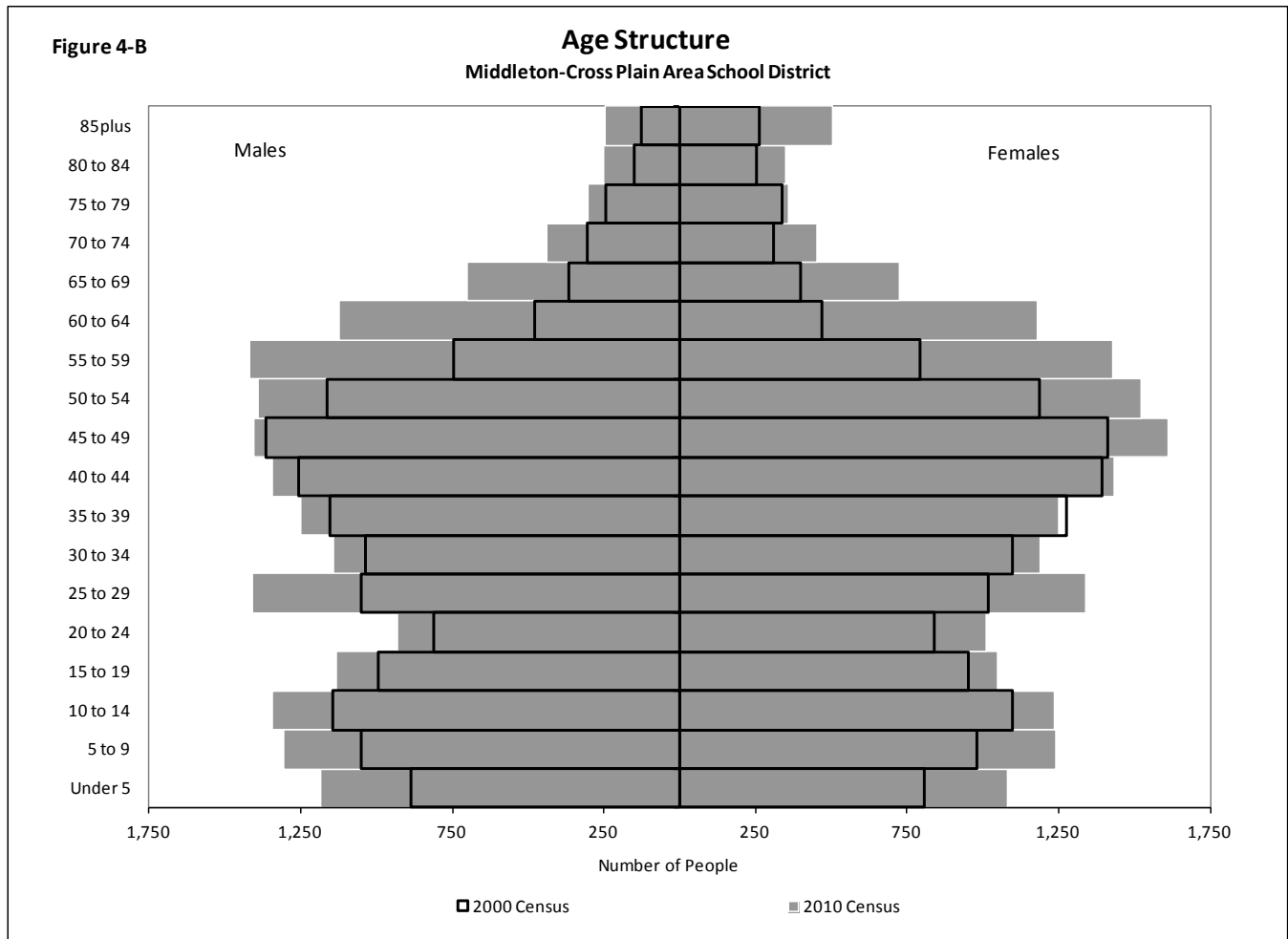


Figure 4-B compares the 2000 population to the 2010 population by age for Middleton-Cross Plains Area School District from the U.S. Census Bureau. All school age populations (Under 5, 5-9, and 10-14) have increased over this ten year period in the school district. The municipalities in the district area experienced, on average, 13.6% growth from 2000 to 2010 according to the U.S. Census.





## Residential Development

Table 5 shows the number of housing starts in the Middleton-Cross Plains Area School District area. Area housing starts have fluctuated from a high of 359 units in 2004 (including 238 single family homes), to a low of 66 new housing starts (including 62 single family homes) in 2007. However, since 2007 the district area has seen an increase in housing starts, especially single family homes.

**TABLE 5**  
**School District Area Housing Starts**  
**Middleton-Cross Plains Area School District**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>District Area</b>										
<b>TOTAL</b>	<b>359</b>	<b>201</b>	<b>112</b>	<b>66</b>	<b>119</b>	<b>129</b>	<b>106</b>	<b>282</b>	<b>156</b>	<b>234</b>
Single Family	238	161	86	62	76	67	80	83	105	134
Two Family	1	10	10	4	4	2	2	0	0	4
Multi-family	120	30	16	0	39	60	24	199	51	96
<b>C. Middleton</b>										
<b>TOTAL</b>	<b>209</b>	<b>84</b>	<b>52</b>	<b>29</b>	<b>70</b>	<b>97</b>	<b>69</b>	<b>248</b>	<b>102</b>	<b>122</b>
Single Family	88	48	28	27	27	38	43	49	51	64
Two Family	1	6	8	2	4	2	2	0	0	2
Multi-family	120	30	16	0	39	57	24	199	51	56
<b>T. Middleton</b>										
<b>TOTAL</b>	<b>68</b>	<b>65</b>	<b>30</b>	<b>18</b>	<b>27</b>	<b>12</b>	<b>24</b>	<b>17</b>	<b>36</b>	<b>41</b>
Single Family	68	65	30	18	27	12	24	17	36	41
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>V. Cross Plains</b>										
<b>TOTAL</b>	<b>49</b>	<b>25</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>49</b>
Single Family	49	21	7	4	4	5	3	3	4	7
Two Family	0	4	2	2	0	0	0	0	0	2
Multi-family	0	0	0	0	0	0	0	0	0	40
<b>T. Cross Plains</b>										
<b>TOTAL</b>	<b>9</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>5</b>
Single Family	9	1	5	5	7	3	2	3	7	5
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. Berry</b>										
<b>TOTAL</b>	<b>11</b>	<b>9</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>2</b>
Single Family	11	9	4	3	4	3	4	2	1	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
<b>T. Springfield</b>										
<b>TOTAL</b>	<b>13</b>	<b>17</b>	<b>12</b>	<b>5</b>	<b>7</b>	<b>9</b>	<b>4</b>	<b>9</b>	<b>6</b>	<b>15</b>
Single Family	13	17	12	5	7	6	4	9	6	15
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	3	0	0	0	0

Source: Demographic Services Center, WIDOA



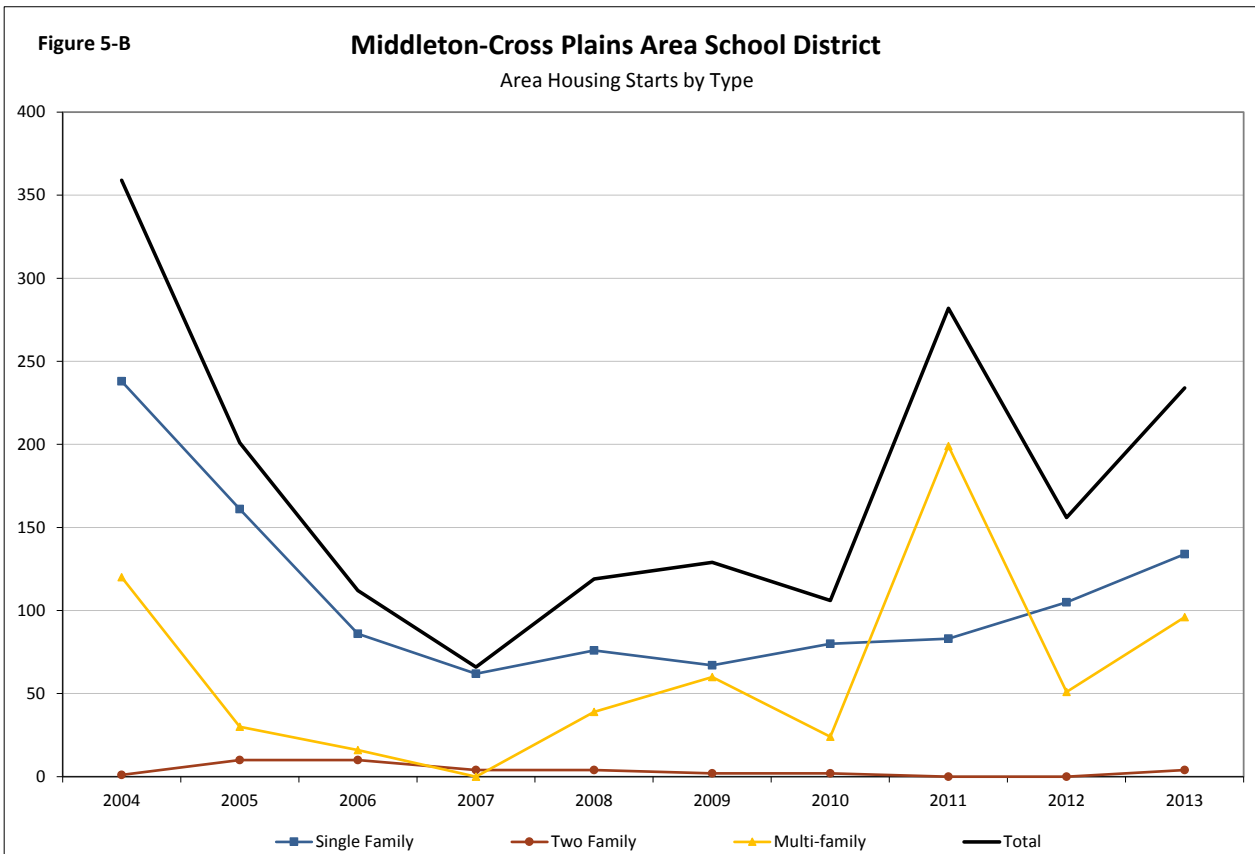
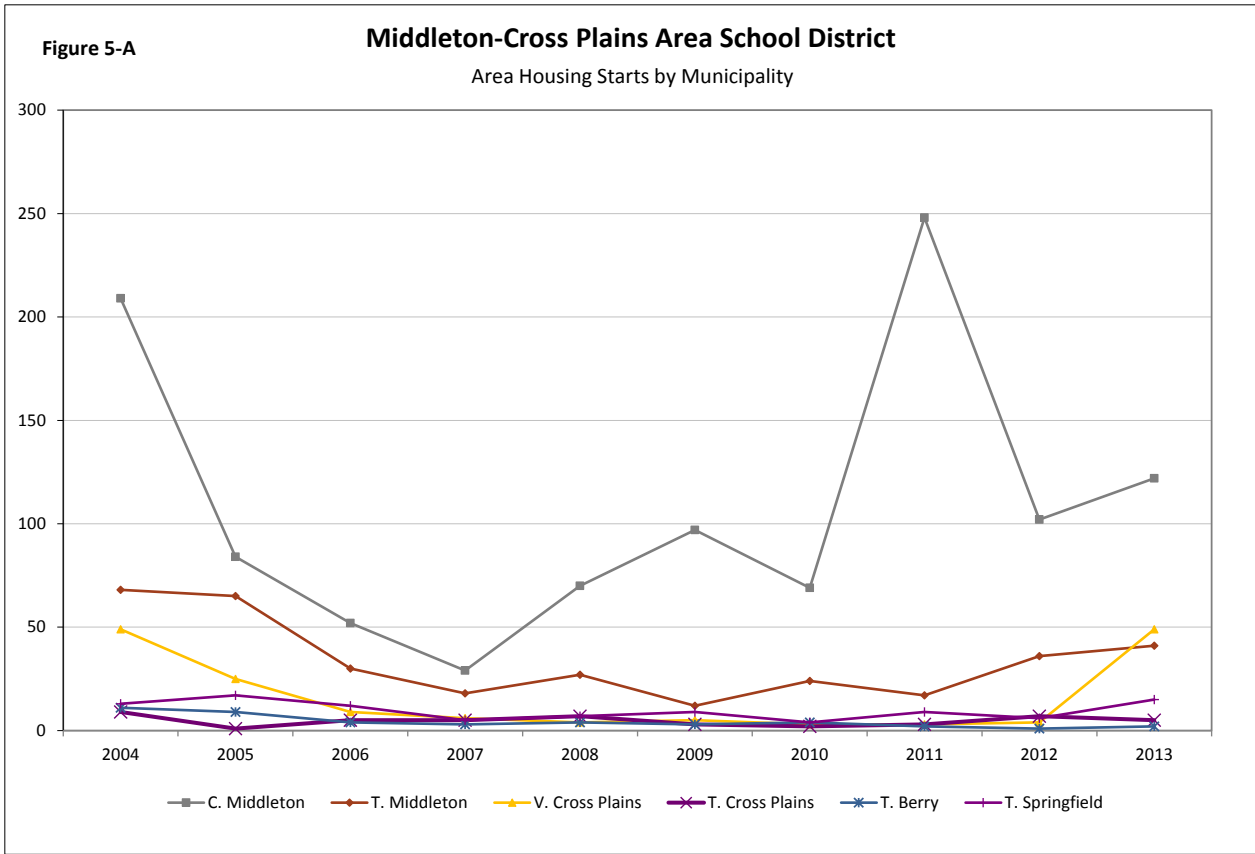
Examining trends in recent housing development can help to explain how in-migration into the Middleton-Cross Plains Area School District area might be affecting school enrollment. If the number of housing starts in the district area is expected to be reasonably consistent for the next several years, then we assume that in-migration of school-age children will also remain relatively consistent. If the number of housing starts is expected to decrease significantly outside recent levels, in-migration may slow in the school district. 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 in the early 2000s occurred in the City of Middleton and the Town of Middleton. Home construction has not increased to the levels that were seen in the early 2000s. However, the district has seen a steady increase in home construction since the market bottomed out in 2007. Most of the development in the area has consisted of single-family homes; however the district area has seen some spikes in multi-family residential development in 2004, 2011, and 2013. Households in two family and multi-family complexes, on average, contain fewer school-aged children than single family homes.

It is also important to consider that turnover in ownership of existing housing stock also contributes to changes in enrollment. A district may increase or decrease in 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 ratio. 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 school district will tend to see new students enrolling into the district's schools. Absent new housing development or housing turnover, families 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.

Figure 5-A shows the number of residential building permits issued by municipality for communities that fall within the Middleton-Cross Plains Area School District. Figure 5-B shows housing starts in the area by type of housing unit.





## Method

In order to generate school enrollment projections, we rely on a commonly used demographic technique called the “cohort survival” method or the “grade progression ratio” 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 will impact future enrollment. Four different models are provided using different assumptions regarding past enrollment trends and birth trends.

### 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 school district in the recent past. By examining these, we can better understand recent changes in enrollment. We use these ratios as the rates of transfer to inform future student projections.

Table 6 shows the grade progression ratios for the Middleton-Cross Plains Area 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 6**  
Grade Progression Ratios  
Middleton-Cross Plains Area 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
05-06/06-07	1.221	1.008	1.012	1.057	1.038	1.018	1.028	0.992	0.986	1.165	0.944	1.026	1.004
06-07/07-08	1.351	1.077	1.035	1.058	1.041	1.052	1.059	1.036	1.008	1.191	0.974	0.998	0.979
07-08/08-09	1.580	1.036	1.051	1.036	1.007	1.054	1.015	1.031	1.026	1.134	0.957	1.006	1.028
08-09/09-10	1.470	0.972	1.000	0.971	0.973	0.993	0.993	0.996	1.000	1.092	0.949	0.988	1.031
09-10/10-11	1.373	1.053	1.045	1.038	1.070	1.082	1.066	1.028	0.981	1.175	0.960	1.009	1.029
10-11/11-12	1.262	1.038	0.998	0.986	0.990	1.023	0.998	1.019	0.975	1.087	0.980	0.998	1.109
11-12/12-13	1.386	1.038	1.043	1.014	1.074	0.985	1.055	1.033	0.979	1.101	1.014	0.986	1.033
12-13/13-14	1.393	1.013	1.048	1.010	0.989	1.002	1.040	1.004	0.993	1.097	0.974	0.982	1.062
13-14/14-15	1.151	1.029	1.017	1.026	1.033	1.082	1.028	1.048	1.039	1.122	0.986	1.020	1.010
<b>Baseline</b>	<b>1.351</b>	<b>1.031</b>	<b>1.031</b>	<b>1.025</b>	<b>1.016</b>	<b>1.024</b>	<b>1.037</b>	<b>1.025</b>	<b>0.989</b>	<b>1.114</b>	<b>0.969</b>	<b>0.997</b>	<b>1.028</b>
<b>5 Year Trend</b>	<b>1.313</b>	<b>1.034</b>	<b>1.030</b>	<b>1.015</b>	<b>1.031</b>	<b>1.035</b>	<b>1.037</b>	<b>1.026</b>	<b>0.993</b>	<b>1.116</b>	<b>0.983</b>	<b>0.999</b>	<b>1.048</b>
<b>2 Year "Trend"</b>	<b>1.272</b>	<b>1.021</b>	<b>1.033</b>	<b>1.018</b>	<b>1.011</b>	<b>1.042</b>	<b>1.034</b>	<b>1.026</b>	<b>1.016</b>	<b>1.109</b>	<b>0.980</b>	<b>1.001</b>	<b>1.036</b>

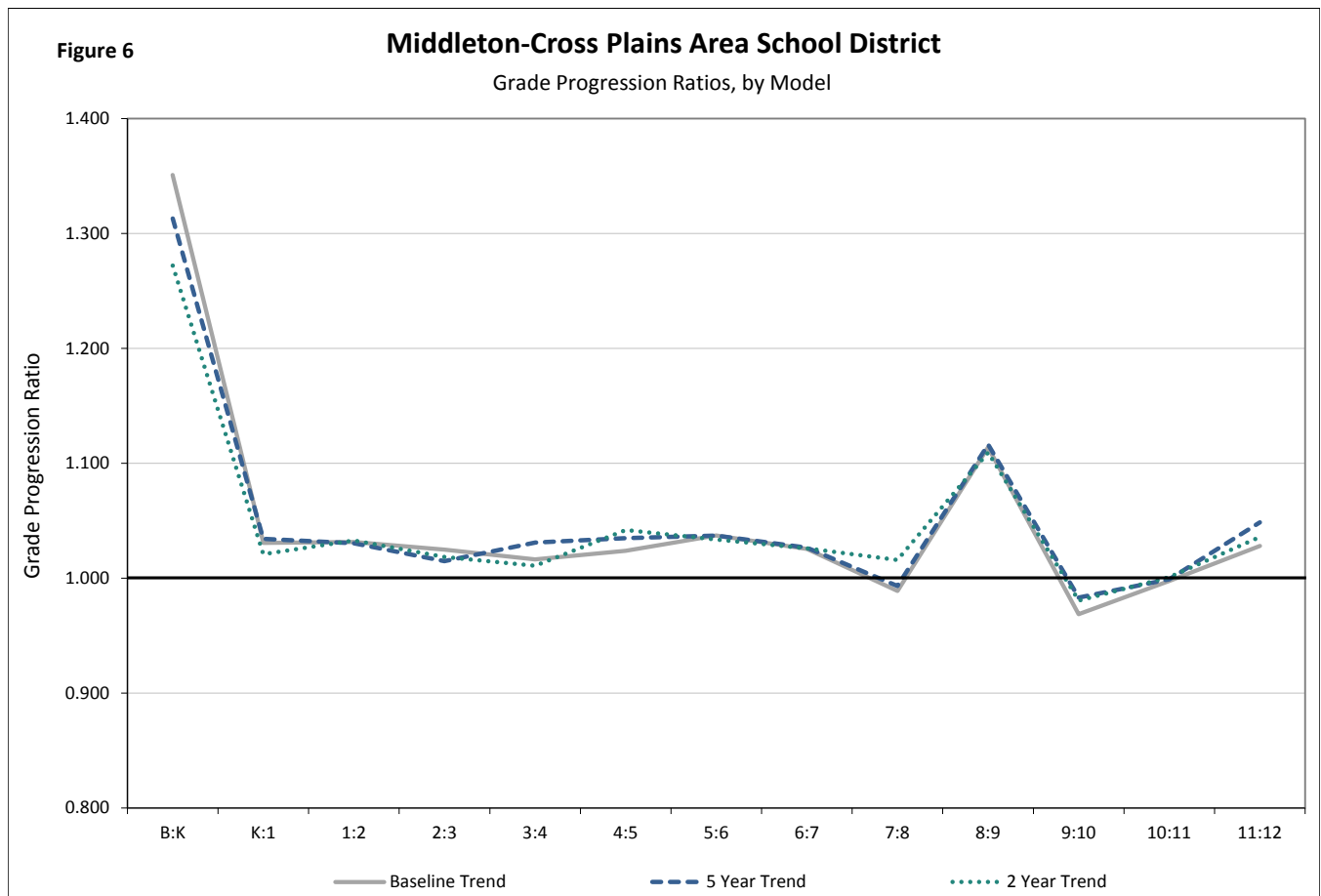
\*Shaded progression ratios are excluded from the Baseline Average

The grade progression ratios can be interpreted in the following manner. The Baseline ratio for 1:2 is 1.031. This means that in the Middleton-Cross Plains Area School District, the second grade class is on average 3.1% larger each year than the first grade class was the previous year (the result of transfers from other schools and in-migration into the district). The B:K Baseline ratio of 1.351



indicates that on average, an additional 35% of kindergartners are from births outside the district in Middleton-Cross Plains Area 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 of enrollment), we examine rates of transfer in the last 5 years and 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

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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 further into the future. This is especially true for elementary grades, because the students who will enter kindergarten after 2018 have not yet been born. Overall, our projections are more reliable over the next five years (up to the 2019-20 school year) than they are in the latter half of the next decade.

### 4K Enrollment and Projections

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To generate 4K enrollment projections, the grade progression ratio that will be used to project 4K enrollment is .959. Table 7 shows the observed transfer ratio between birth and 4K for the last four years and the four year and two year grade progression ratio trend averages. The same 4K enrollment projections will be used for all four projection models.

**TABLE 7**  
**4K Grade Progression Ratios**  
**Middleton-Cross Plains Area School District**

	<b>B:4K</b>	<b>4K:K</b>
10-11/11-12	0.930	-
11-12/12-13	1.095	1.490
12-13/13-14	0.863	1.272
13-14/14-15	0.945	1.333
<b>4 Year Tend</b>	<b>0.959</b>	<b>1.365</b>
<b>2 Year "Tend"</b>	<b>0.904</b>	<b>1.303</b>



Baseline Projections

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 trends (past ten years) in enrollment and migration will be representative of future trends in the district. Enrollment is projected to increase from 6,475 students in 2014-15 to 6,849 students in 2019-20. Over the next five years (2019-20), the Baseline model projects that K-12 enrollment will increase by 5.8%.

**TABLE 8**  
**Baseline Projection Model**  
**Middleton-Cross Plains Area School District**

	SCHOOL YEAR									
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
4K	311	320	323	299	290	294	299	303	307	312
K	444	438	451	455	466	476	482	488	494	500
1	408	457	451	465	469	480	490	497	503	509
2	482	421	472	465	480	484	495	506	512	519
3	482	494	431	483	477	492	496	508	518	525
4	475	489	502	438	491	485	500	504	516	527
5	514	486	501	514	449	503	496	511	516	528
6	495	533	504	520	533	466	522	515	530	535
7	493	507	547	517	533	546	477	535	528	544
8	436	488	502	540	511	527	540	472	529	522
9	539	486	543	559	602	569	587	602	526	589
10	472	522	470	526	541	583	551	569	583	509
11	503	471	521	469	525	540	582	550	567	581
12	480	517	484	536	482	540	555	598	565	583
<b>TOTAL</b>	<b>6,532</b>	<b>6,628</b>	<b>6,702</b>	<b>6,787</b>	<b>6,849</b>	<b>6,984</b>	<b>7,072</b>	<b>7,157</b>	<b>7,196</b>	<b>7,284</b>
K-12	6,221	6,308	6,379	6,488	6,559	6,690	6,774	6,854	6,888	6,973
K-4	2,290	2,299	2,307	2,307	2,383	2,417	2,464	2,503	2,544	2,580
5-8	1,938	2,014	2,053	2,091	2,026	2,042	2,035	2,033	2,103	2,129
9-12	1,994	1,995	2,018	2,090	2,151	2,232	2,275	2,318	2,241	2,263



## 5 Year Trend Projections

The 5 Year Trend model (Table 9) uses the grade progression ratios from the last five years and recent birth trends to project what future enrollments would look like if more recent patterns were representative of future trends. For the 5 Year Trend, enrollment is projected to increase from 6,475 students in 2014-15 to 6,868 students in 2019-20. With recent migration rates weighted more heavily, enrollment in the Middleton-Cross Plains Area School District is projected to increase by 6% over the next five years.

**TABLE 9**  
**5 Year Trend Projection Model**  
**Middleton-Cross Plains Area School District**

GRADE	SCHOOL YEAR									
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
4K	311	320	323	299	290	294	299	303	307	312
K	431	425	439	443	439	437	437	436	435	435
1	410	446	440	453	458	454	452	452	451	450
2	481	422	459	453	467	472	468	466	465	465
3	477	488	428	466	460	474	479	475	473	472
4	482	492	503	442	481	474	489	493	490	488
5	519	498	509	521	457	497	491	506	511	507
6	495	539	517	528	540	474	516	509	525	530
7	494	508	553	530	542	555	486	530	523	539
8	438	490	504	549	527	538	551	483	526	519
9	540	489	547	563	613	588	601	615	539	587
10	479	531	481	538	553	603	578	591	605	530
11	503	478	531	480	538	553	602	578	590	604
12	490	528	501	556	503	564	580	631	606	619
<b>TOTAL</b>	<b>6,549</b>	<b>6,655</b>	<b>6,736</b>	<b>6,822</b>	<b>6,868</b>	<b>6,977</b>	<b>7,028</b>	<b>7,067</b>	<b>7,045</b>	<b>7,055</b>
K-12	6,238	6,335	6,413	6,523	6,578	6,683	6,729	6,764	6,738	6,743
K-4	2,280	2,273	2,270	2,257	2,305	2,312	2,324	2,322	2,314	2,310
5-8	1,946	2,035	2,083	2,129	2,066	2,064	2,044	2,028	2,084	2,094
9-12	2,012	2,026	2,060	2,138	2,208	2,307	2,361	2,414	2,339	2,340





2 Year "Trend" Projections

The 2 Year "Trend" model (Table 10) uses the grade 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 2 Year "Trend," enrollment is projected to increase from 6,475 students in 2014-15 to 6,779 students in 2019-20, or a 4.7% increase.

**TABLE 10**  
**2 Year "Trend" Projection Model**  
**Middleton-Cross Plains Area School District**

GRADE	SCHOOL YEAR									
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
4K	311	320	323	299	290	294	299	303	307	312
K	418	412	425	429	425	424	423	422	422	421
1	404	426	421	434	438	434	433	432	431	431
2	482	418	440	435	448	452	449	447	446	445
3	479	491	425	449	443	456	460	457	455	454
4	472	484	497	430	453	447	461	465	462	460
5	523	492	504	517	448	472	466	480	485	481
6	493	541	508	521	535	463	488	482	497	501
7	493	506	555	522	535	549	475	501	494	509
8	448	501	514	563	530	543	557	482	509	502
9	537	497	556	570	625	588	602	618	535	564
10	477	526	487	545	559	613	576	591	606	525
11	504	478	527	488	546	559	613	577	591	607
12	484	523	495	546	505	565	579	635	597	612
<b>TOTAL</b>	<b>6,526</b>	<b>6,615</b>	<b>6,677</b>	<b>6,746</b>	<b>6,779</b>	<b>6,860</b>	<b>6,882</b>	<b>6,893</b>	<b>6,838</b>	<b>6,825</b>
K-12	6,215	6,295	6,354	6,447	6,489	6,566	6,584	6,590	6,530	6,514
K-4	2,255	2,231	2,208	2,175	2,207	2,214	2,226	2,223	2,216	2,212
5-8	1,958	2,040	2,081	2,123	2,047	2,027	1,987	1,946	1,985	1,994
9-12	2,003	2,024	2,065	2,149	2,235	2,325	2,371	2,421	2,330	2,308



## Kindergarten Trend Projections

For this method we perform an analysis of the average of the long and short term kindergarten trends to project the number of future kindergarten students, rather than relying upon the traditional birth to kindergarten grade progression ratio. Then, the 5 Year Trend grade progression ratios are used for projecting the other grades (1-12) in the district. For the Kindergarten Trend model (Table 11), enrollment is projected to increase from 6,475 students in 2014-15 to 6,866 students in 2019-20, or a 6% increase over a five year period.

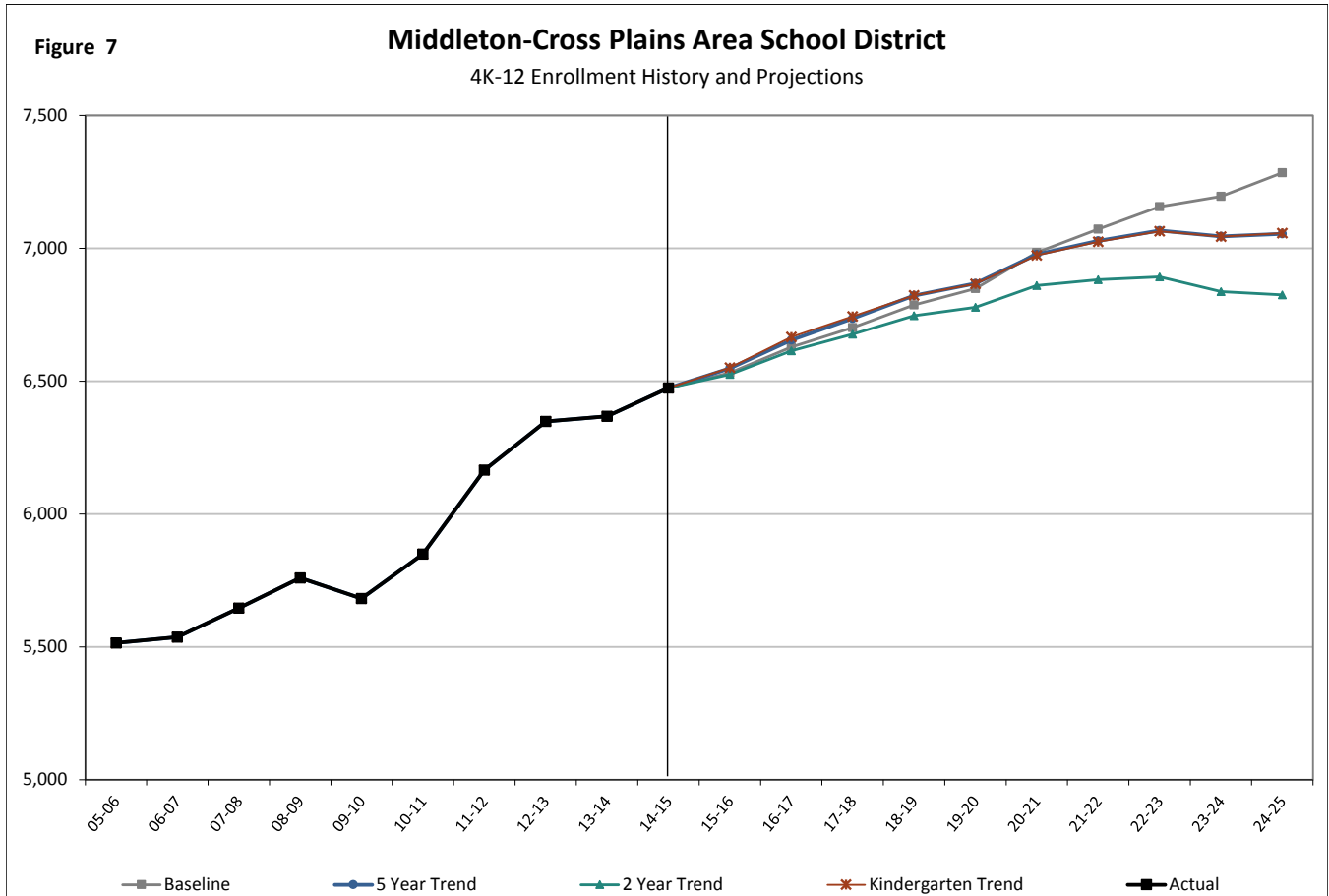
**TABLE 11**  
**Kindergarten Trend Projection Model**  
**Middleton-Cross Plains Area School District**

GRADE	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
4K	311	320	323	299	290	294	299	303	307	312
K	434	434	435	435	436	436	437	437	438	438
1	410	449	449	450	450	451	451	452	452	453
2	481	422	462	463	463	464	464	465	465	466
3	477	488	428	469	470	470	471	471	472	472
4	482	492	503	442	484	484	485	485	486	486
5	519	498	509	521	457	501	501	502	502	503
6	495	539	517	528	540	474	519	520	520	521
7	494	508	553	530	542	555	486	533	533	534
8	438	490	504	549	527	538	551	483	529	530
9	540	489	547	563	613	588	601	615	539	591
10	479	531	481	538	553	603	578	591	605	530
11	503	478	531	480	538	553	602	578	590	604
12	490	528	501	556	503	564	580	631	606	619
<b>TOTAL</b>	<b>6,552</b>	<b>6,667</b>	<b>6,744</b>	<b>6,823</b>	<b>6,866</b>	<b>6,974</b>	<b>7,024</b>	<b>7,065</b>	<b>7,044</b>	<b>7,058</b>
K-12	6,241	6,346	6,421	6,524	6,576	6,680	6,726	6,762	6,737	6,746
K-4	2,283	2,285	2,278	2,258	2,302	2,305	2,308	2,310	2,313	2,315
5-8	1,946	2,035	2,083	2,129	2,066	2,067	2,058	2,037	2,085	2,087
9-12	2,012	2,026	2,060	2,138	2,208	2,307	2,361	2,414	2,339	2,343



## Comparison of Projection Models

Figures 7-12 and Tables 12-15 compare the four enrollment projection models broken down by total 4K-12 and K-12 district enrollment and by grade groupings (K-4, 5-8, and 9-12).



**TABLE 12**  
**Middleton-Cross Plains Area School District**

**Summary of 4K-12 Enrollment Projections**

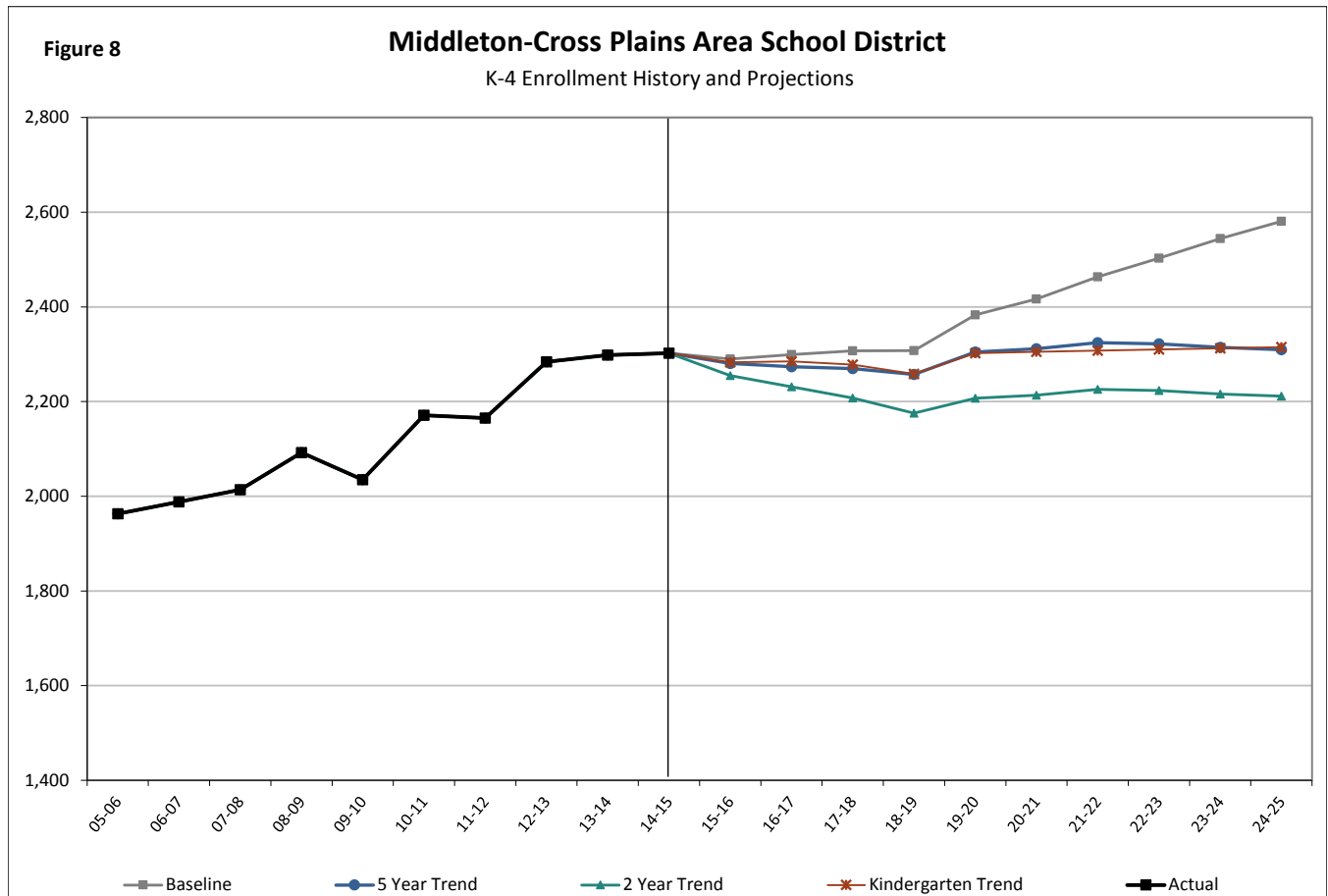
	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Baseline	6,532	6,628	6,702	6,787	6,849	6,984	7,072	7,157	7,196	7,284
5 Year Trend	6,549	6,655	6,736	6,822	6,868	6,977	7,028	7,067	7,045	7,055
2 Year "Trend"	6,526	6,615	6,677	6,746	6,779	6,860	6,882	6,893	6,838	6,825
Kindergarten Trend	6,552	6,667	6,744	6,823	6,866	6,974	7,024	7,065	7,044	7,058

**Summary of K-12 Enrollment Projections**

	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Baseline	6,221	6,308	6,379	6,488	6,559	6,690	6,774	6,854	6,888	6,973
5 Year Trend	6,238	6,335	6,413	6,523	6,578	6,683	6,729	6,764	6,738	6,743
2 Year "Trend"	6,215	6,295	6,354	6,447	6,489	6,566	6,584	6,590	6,530	6,514
Kindergarten Trend	6,241	6,346	6,421	6,524	6,576	6,680	6,726	6,762	6,737	6,746



4K-12 enrollment for 2013-14 is 6,475. All models project increasing 4K-12 enrollment with the Baseline model indicating the greatest amount of increase while the Two Year "Trend" model projects the least amount of increase. 4K-12 enrollment projections five years from now (2019-20) forecast a range of enrollment from 6,779 to 6,868.

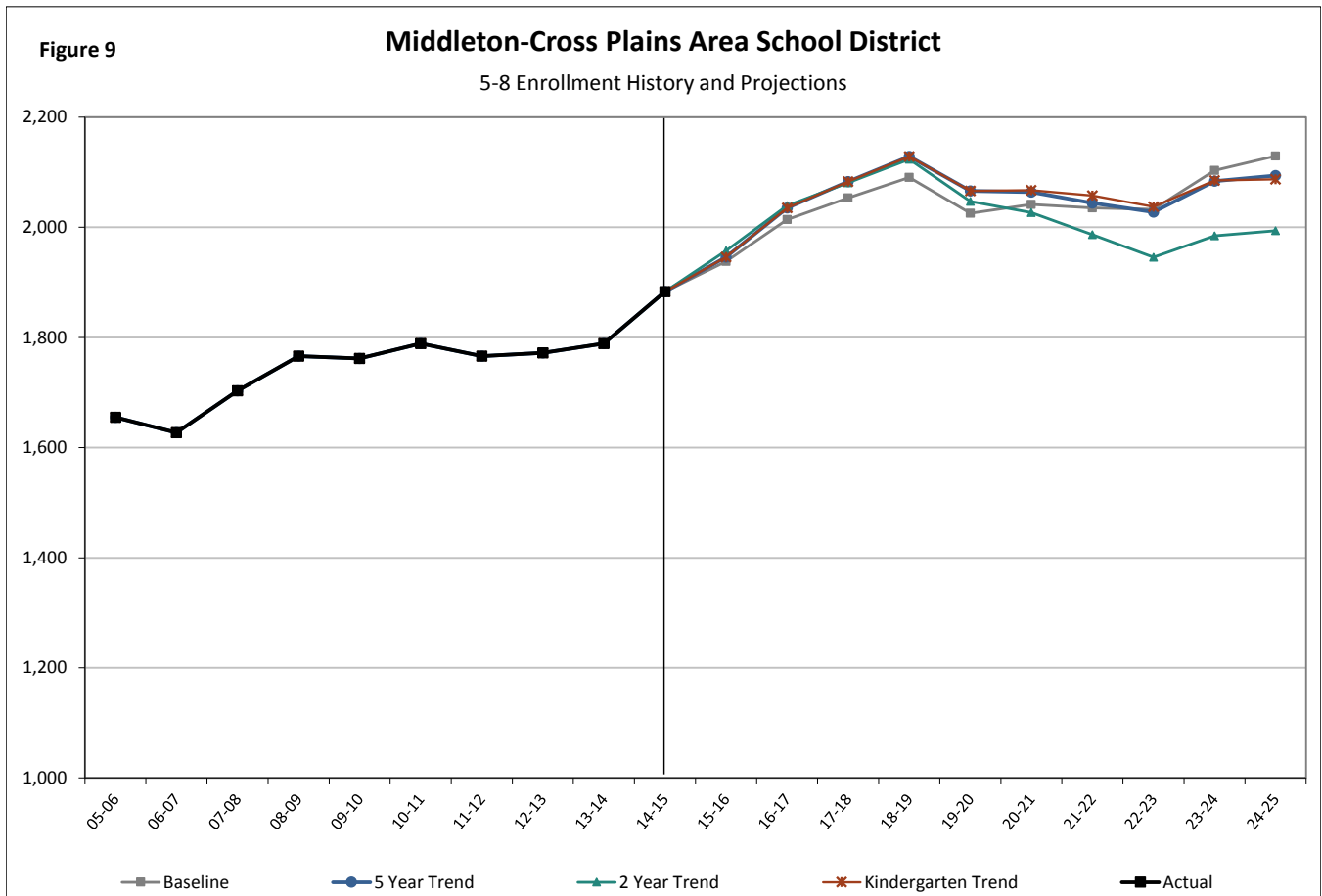


**TABLE 13**  
**Summary of K-4 Enrollment Projections**  
**Middleton-Cross Plains Area School District**

	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Baseline	2,290	2,299	2,307	2,307	2,383	2,417	2,464	2,503	2,544	2,580
5 Year Trend	2,280	2,273	2,270	2,257	2,305	2,312	2,324	2,322	2,314	2,310
2 Year "Trend"	2,255	2,231	2,208	2,175	2,207	2,214	2,226	2,223	2,216	2,212
Kindergarten Trend	2,283	2,285	2,278	2,258	2,302	2,305	2,308	2,310	2,313	2,315

K-4 enrollment for 2013-14 is 2,302. The Baseline model projects increasing enrollment, while the Two Year "Trend" model projects decreasing enrollment. The Five Year and Kindergarten Trend models project steady enrollment. K-4 enrollment projections five years from now (2019-20) forecast a range of enrollment from 2,207 to 2,383.



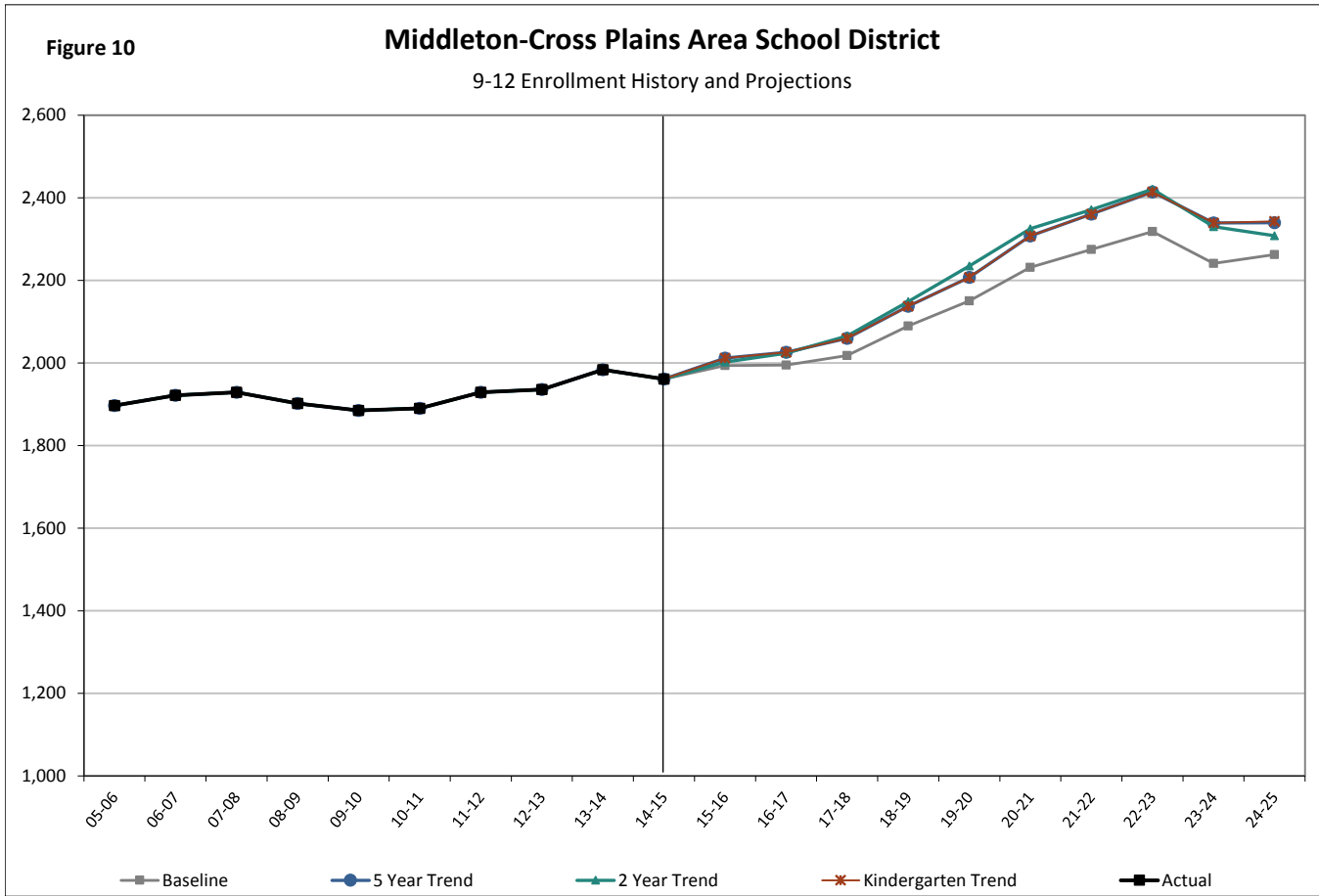


**TABLE 14**  
**Summary of 5-8 Enrollment Projections**  
**Middleton-Cross Plains Area School District**

	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Baseline	1,938	2,014	2,053	2,091	2,026	2,042	2,035	2,033	2,103	2,129
5 Year Trend	1,946	2,035	2,083	2,129	2,066	2,064	2,044	2,028	2,084	2,094
2 Year "Trend"	1,958	2,040	2,081	2,123	2,047	2,027	1,987	1,946	1,985	1,994
Kindergarten Trend	1,946	2,035	2,083	2,129	2,066	2,067	2,058	2,037	2,085	2,087

5-8 enrollment for 2013-14 is 1,883. At the middle school grade level, all models project enrollment increases over the next five years. 5-8 enrollment projections five years from now (2019-20) predict a range of enrollment from 2,026 to 2,066.





**TABLE 15**  
**Summary of 9-12 Enrollment Projections**  
**Middleton-Cross Plains Area School District**

	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25
Baseline	1,994	1,995	2,018	2,090	2,151	2,232	2,275	2,318	2,241	2,263
5 Year Trend	2,012	2,026	2,060	2,138	2,208	2,307	2,361	2,414	2,339	2,340
2 Year "Trend"	2,003	2,024	2,065	2,149	2,235	2,325	2,371	2,421	2,330	2,308
Kindergarten Trend	2,012	2,026	2,060	2,138	2,208	2,307	2,361	2,414	2,339	2,343

9-12 enrollment for 2013-14 is 1,961. At the high school level, all projection models forecast increasing enrollment for the foreseeable future. 9-12 enrollment projections five years from now (2019-20) project a range of enrollment from 2,151 to 2,235.



## Conclusions

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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 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 demographic information provided in this school enrollment projections report points to increased enrollment in the Middleton-Cross Plains Area School District over the next decade. All models project enrollment growth with the Baseline model indicating the greatest increase while the Two Year "Trend" model projects less of an increase. Most models indicate steady to slightly increasing enrollment in grades K-4 in the near term. The district is likely to see increasing enrollment in grades 5-8 as the larger elementary grades progress to middle school. Enrollment in grades 9-12 will be increasing in the long term. Although the district saw a dip in municipal births in 2010 the number of births have been increasing and new housing starts point to continued growth in the district.

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 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.

