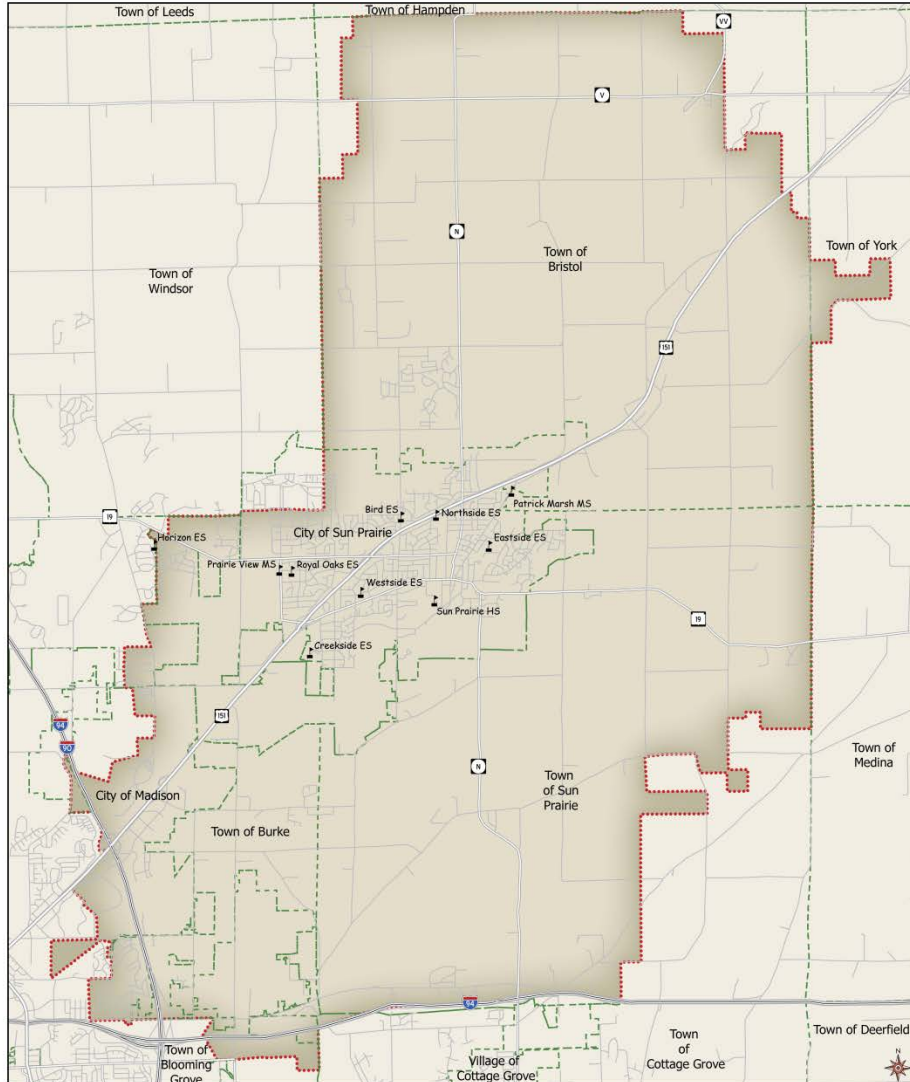


Planning for the Schools of Tomorrow



School Enrollment Projections Series Sun Prairie Area School District

November 2016

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Introduction

This report offers a summary of the Enrollment Projection Analysis completed for the Sun Prairie Area School District by the Applied Population Laboratory, University of Wisconsin-Madison. Projections (2017/18-2026/27) are provided for the district as a whole, by grade grouping, and for each individual grade.

Past Projections Analysis

The APL completes enrollment projection analyses for the Sun Prairie Area School District on an annual basis, allowing us to compare past projections to recent district enrollment. Table A compares last year's 4K-12 projections with this school year's actual enrollment. The Baseline was the most reliable of the four models.

TABLE A
Comparison of Actual Enrollments (2016/17) with Projected Enrollment (2015/16)
Sun Prairie Area School District

Grade	2016-17 Enrollment	Baseline Model		5 Year Trend Model		2 Year "Trend" Model		Kindergarten Trend Model	
		15-16	Difference	15-16	Difference	15-16	Difference	15-16	Difference
4K	517	476	-41	476	-41	472	-45	476	-41
K	558	591	33	574	16	554	-4	575	17
1	573	569	-4	574	1	584	11	574	1
2	601	600	-1	607	6	614	13	607	6
3	636	642	6	645	9	648	12	645	9
4	610	610	0	613	3	619	9	613	3
5	600	585	-15	587	-13	599	-1	587	-13
6	615	632	17	635	20	634	19	635	20
7	549	557	8	561	12	566	17	561	12
8	558	569	11	578	20	583	25	578	20
9	565	598	33	586	21	578	13	586	21
10	643	640	-3	646	3	650	7	646	3
11	566	573	7	571	5	575	9	571	5
12	596	601	5	603	7	607	11	603	7
TOTAL	8,187	8,244	57	8,256	69	8,283	96	8,257	70
K-5	3,578	3,596	18	3,599	21	3,618	40	3,600	22
6-7	1,164	1,189	25	1,196	32	1,200	36	1,196	32
8-9	1,123	1,168	45	1,164	41	1,161	38	1,164	41
10-12	1,805	1,815	10	1,821	16	1,832	27	1,821	16

Table B compares the past three years of projections with the actual 2016-17 school year enrollment by projections model. The percent difference in Table B allows the district to assess which projections model has been most reliable over the last three years for this current school year. Over the last three years and reviewing all grade groupings, the Baseline model is slightly more reliable than the other models.



TABLE B
Comparison of Actual Enrollment Compared to Previous Enrollment Projections
Sun Prairie Area School District

Actual and Projected Enrollments

Projection Year	4K-12 Enrollment		
	2015/16	2014/15	2013/14
Actual (2016/17)	8,187	8,187	8,187
Baseline	8,244	8,240	7,955
5 Year Trend	8,256	8,228	7,937
2 Year "Trend"	8,283	8,239	8,070
Kindergarten Trend	8,257	8,214	8,066

Percent Error

Projection Year	4K-12 Enrollment		
	2015/16	2014/15	2013/14
Baseline	0.70%	0.65%	-2.84%
5 Year Trend	0.84%	0.50%	-3.06%
2 Year "Trend"	1.17%	0.64%	-1.43%
Kindergarten Trend	0.86%	0.34%	-1.48%

K-5 Enrollment

Projection Year	K-5 Enrollment		
	2015/16	2014/15	2013/14
Actual (2016/17)	3,578	3,578	3,578
Baseline	3,596	3,576	3,432
5 Year Trend	3,599	3,561	3,381
2 Year "Trend"	3,618	3,552	3,407
Kindergarten Trend	3,600	3,548	3,510

K-5 Enrollment

Projection Year	K-5 Enrollment		
	2015/16	2014/15	2013/14
Baseline	0.5%	0.0%	-4.1%
5 Year Trend	0.6%	-0.5%	-5.5%
2 Year "Trend"	1.1%	-0.7%	-4.8%
Kindergarten Trend	0.6%	-0.8%	-1.9%

6-7 Enrollment

Projection Year	6-7 Enrollment		
	2015/16	2014/15	2013/14
Actual (2016/17)	1,164	1,164	1,164
Baseline	1,189	1,207	1,181
5 Year Trend	1,196	1,202	1,155
2 Year "Trend"	1,200	1,228	1,184
Kindergarten Trend	1,196	1,202	1,155

6-7 Enrollment

Projection Year	6-7 Enrollment		
	2015/16	2014/15	2013/14
Baseline	2.2%	3.7%	1.4%
5 Year Trend	2.7%	3.3%	-0.8%
2 Year "Trend"	3.1%	5.5%	1.7%
Kindergarten Trend	2.7%	3.3%	-0.8%

8-9 Enrollment

Projection Year	8-9 Enrollment		
	2015/16	2014/15	2013/14
Actual (2016/17)	1,123	1,123	1,123
Baseline	1,168	1,144	1,122
5 Year Trend	1,164	1,165	1,128
2 Year "Trend"	1,161	1,191	1,182
Kindergarten Trend	1,164	1,165	1,128

8-9 Enrollment

Projection Year	8-9 Enrollment		
	2015/16	2014/15	2013/14
Baseline	4.0%	1.9%	-0.1%
5 Year Trend	3.7%	3.7%	0.4%
2 Year "Trend"	3.4%	6.0%	5.3%
Kindergarten Trend	3.7%	3.7%	0.4%

10-12 Enrollment

Projection Year	10-12 Enrollment		
	2015/16	2014/15	2013/14
Actual (2016/17)	1,805	1,805	1,805
Baseline	1,815	1,838	1,757
5 Year Trend	1,821	1,825	1,811
2 Year "Trend"	1,832	1,810	1,835
Kindergarten Trend	1,821	1,825	1,811

10-12 Enrollment

Projection Year	10-12 Enrollment		
	2015/16	2014/15	2013/14
Baseline	0.5%	1.8%	-2.6%
5 Year Trend	0.9%	1.1%	0.3%
2 Year "Trend"	1.5%	0.3%	1.7%
Kindergarten Trend	0.9%	1.1%	0.3%



District Enrollment History

Figure 1-A and Tables 1 and 2 display the last ten years of enrollment history and the change in enrollment over time for the Sun Prairie Area School District. PK-12 Enrollment shows an increase since 2006/07 by 2,233 students, or a 37.2% increase (4.1% annually).

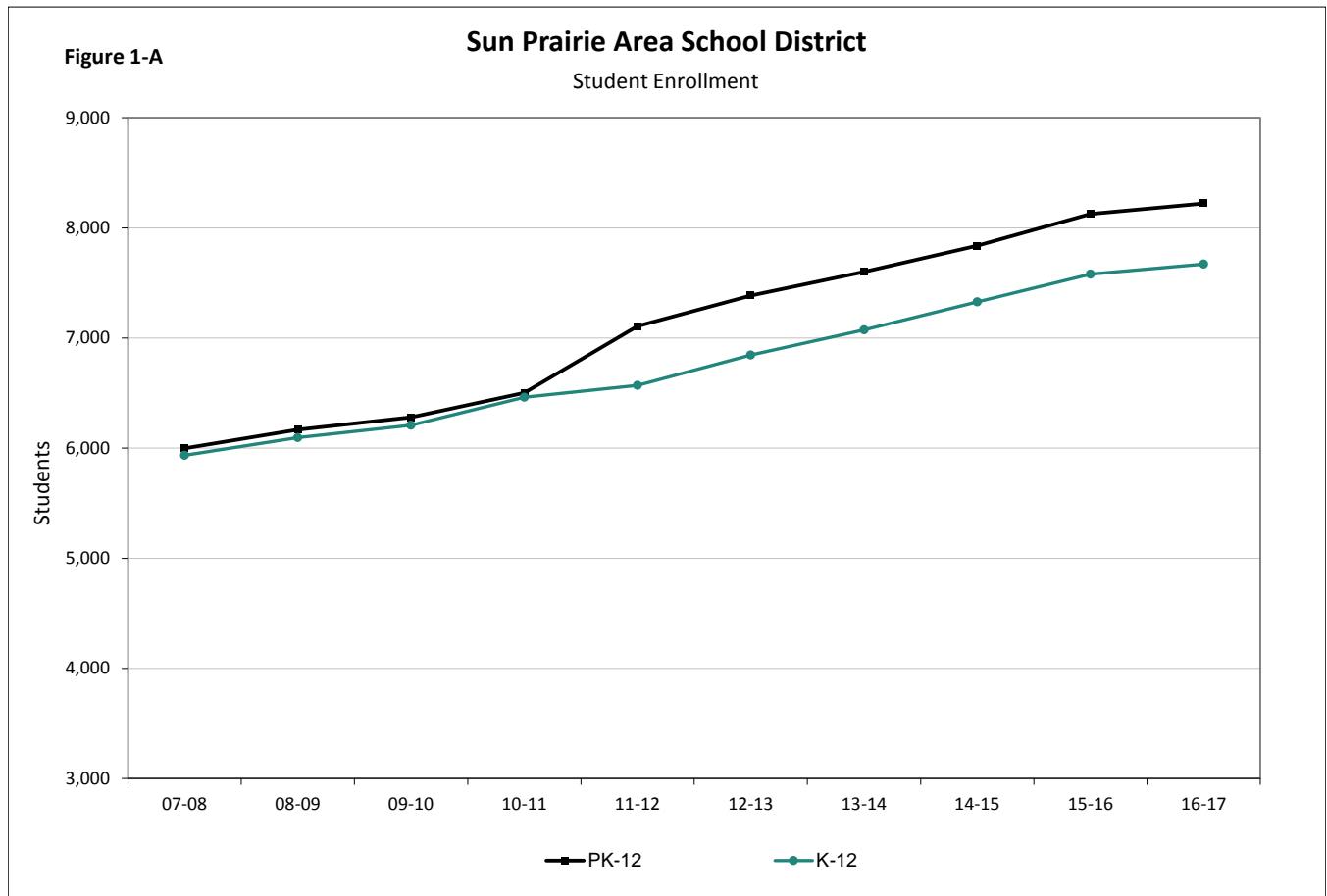


TABLE 1
Student Enrollment
Sun Prairie Area School District

	SCHOOL YEAR									
	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
PK	64	72	70	41	52	43	33	37	41	44
4K					486	496	493	473	507	517
K	492	481	506	548	531	567	580	570	562	558
1	507	503	490	508	550	540	573	602	592	573
2	471	512	495	497	515	567	544	585	634	601
3	477	483	520	502	496	513	592	554	601	636
4	455	481	500	519	498	511	521	602	578	610
5	444	463	484	498	522	502	506	546	617	600
6	455	459	466	496	500	541	526	530	550	615
7	430	467	448	480	499	509	553	538	548	549
8	417	443	474	448	483	523	556	602	559	558
9	477	452	466	533	476	524	537	566	632	565
10	429	466	469	471	534	494	523	566	563	624
11	446	421	462	453	445	521	476	503	555	535
12	434	464	429	437	441	464	515	483	508	547
PPA 10				5	0	1	1	5	3	19
PPA 11				26	34	21	31	31	27	31
PPA 12				41	46	47	40	45	50	49
TOTAL	5,998	6,167	6,279	6,503	7,108	7,384	7,600	7,838	8,127	8,231
K-5	2,846	2,923	2,995	3,072	3,112	3,200	3,316	3,459	3,584	3,578
6-7	885	926	914	976	999	1,050	1,079	1,068	1,098	1,164
8-9	894	895	940	981	959	1,047	1,093	1,168	1,191	1,123
10-12	1,309	1,351	1,360	1,433	1,500	1,548	1,586	1,633	1,706	1,805

TABLE 2
Student Enrollment Changes
Sun Prairie Area School District

GRADE	ABSOLUTE CHANGE			PERCENT CHANGE			AVERAGE ANNUAL PERCENT CHANGE		
	'07 to '16	'07 to '11	'12 to '16	'07 to '16	'07 to '11	'12 to '16	'07 to '16	'07 to '11	'12 to '16
PK	-20	-12	1	-31.3	-18.8	2.3	-3.5	-4.7	0.6
4K	517	486	21	na	na	4.2	na	na	1.1
K	66	39	-9	13.4	7.9	-1.6	1.5	2.0	-0.4
1	66	43	33	13.0	8.5	6.1	1.4	2.1	1.5
2	130	44	34	27.6	9.3	6.0	3.1	2.3	1.5
3	159	19	123	33.3	4.0	24.0	3.7	1.0	6.0
4	155	43	99	34.1	9.5	19.4	3.8	2.4	4.8
5	156	78	98	35.1	17.6	19.5	3.9	4.4	4.9
6	160	45	74	35.2	9.9	13.7	3.9	2.5	3.4
7	119	69	40	27.7	16.0	7.9	3.1	4.0	2.0
8	141	66	35	33.8	15.8	6.7	3.8	4.0	1.7
9	88	-1	41	18.4	-0.2	7.8	2.0	-0.1	2.0
10	195	105	148	45.5	24.5	30.0	5.1	6.1	7.5
11	89	-1	24	20.0	-0.2	4.6	2.2	-0.1	1.2
12	113	7	85	26.0	1.6	18.3	2.9	0.4	4.6
TOTAL	2,233	1,110	847	37.2	18.5	11.5	4.1	4.6	2.9
K-5	732	266	378	25.7	9.3	11.8	2.9	2.3	3.0
6-7	279	114	114	31.5	12.9	10.9	3.5	3.2	2.7
8-9	229	65	76	25.6	7.3	7.3	2.8	1.8	1.8
10-12	496	191	257	37.9	14.6	16.6	4.2	3.6	4.2



Figure 1-B shows enrollment history broken down by grade groupings (4K, K-5, 6-7, 8-9, and 10-12). Elementary school enrollment has increased over the last ten years by 2.9% annually. Middle school enrollment has increased by 3.5% annually the past ten years, while upper middle school enrollment has increased by 2.8% annually. High school enrollment increased the most by 4.2% annually since 2007/08.

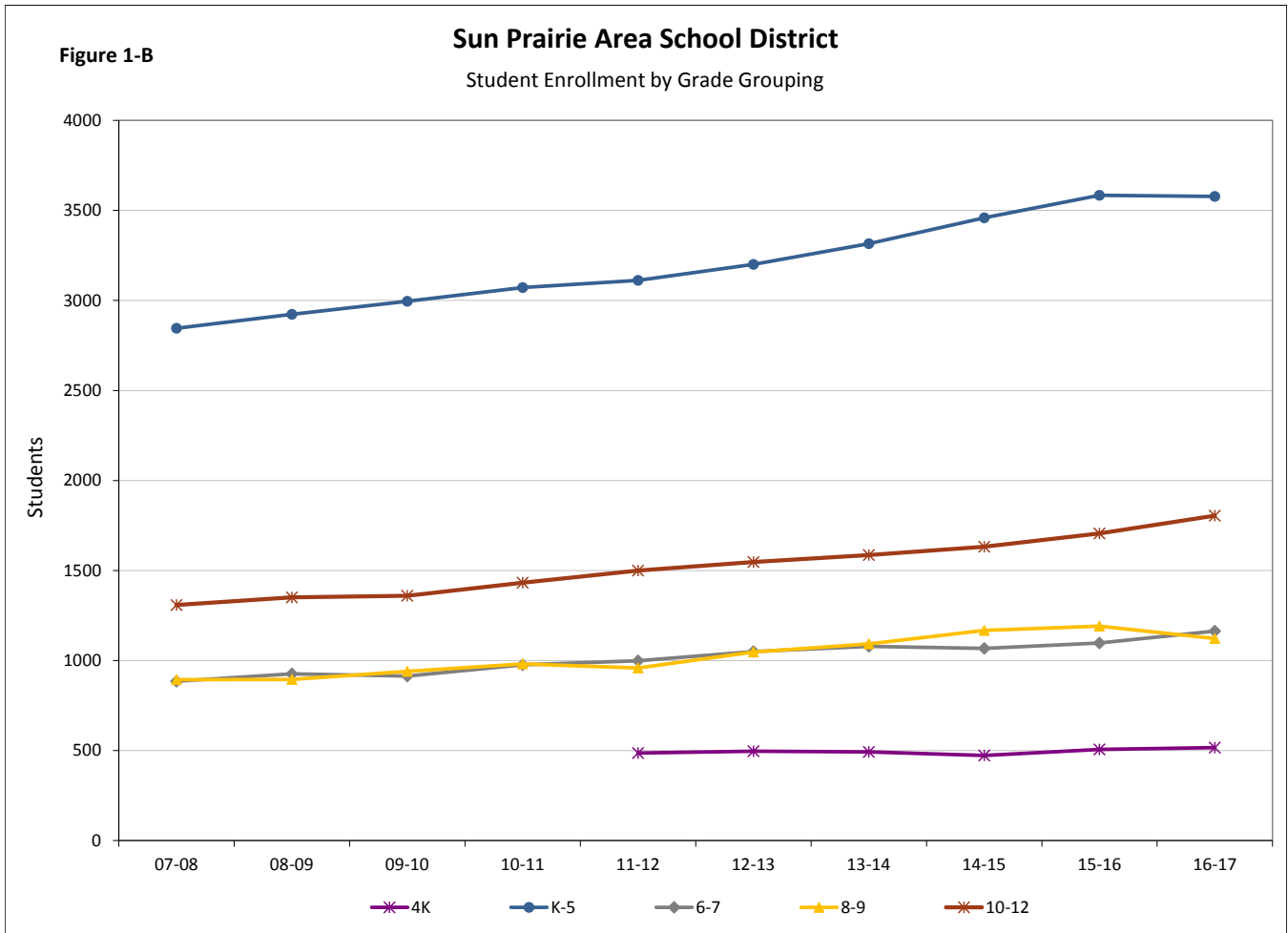
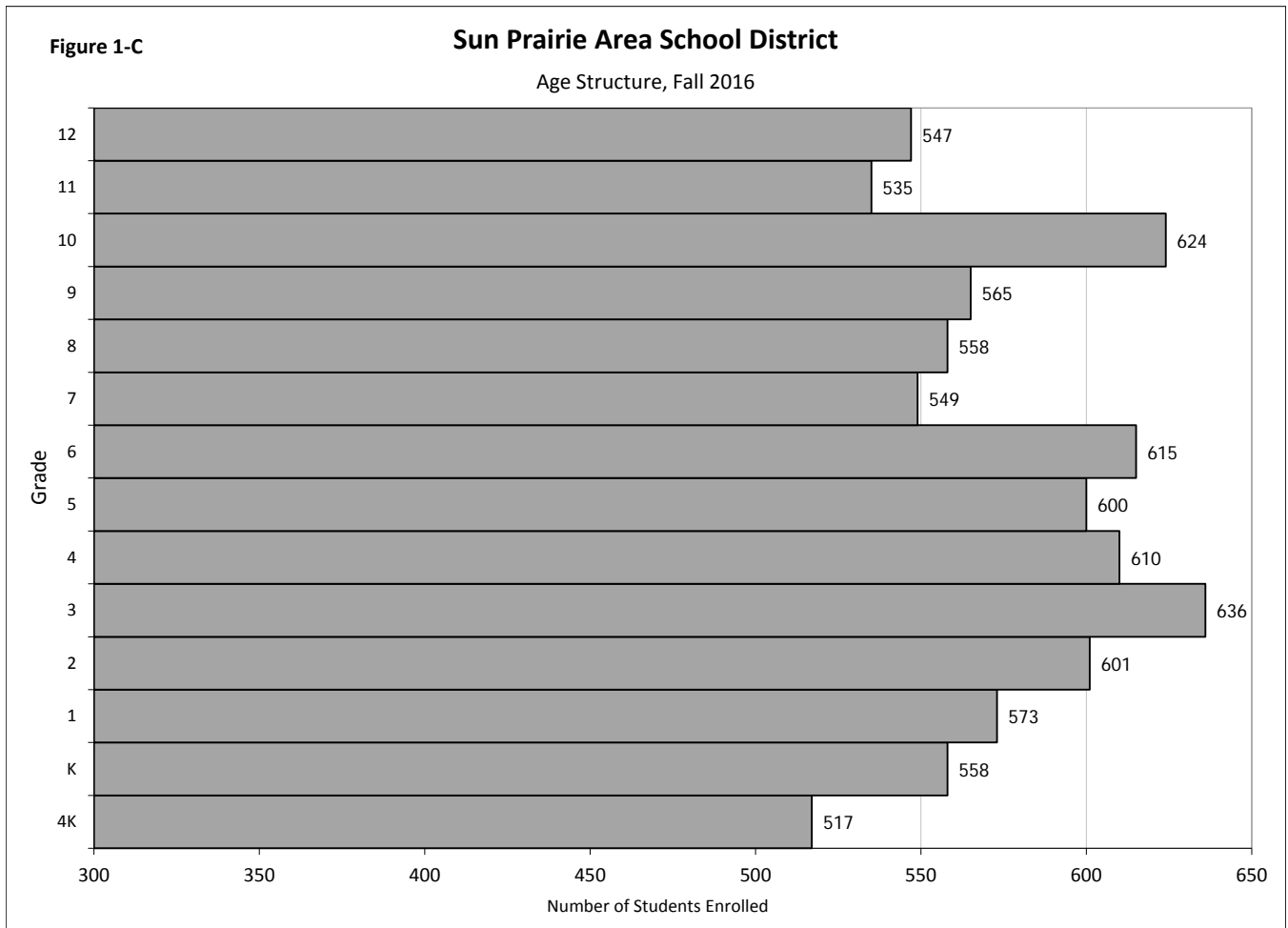
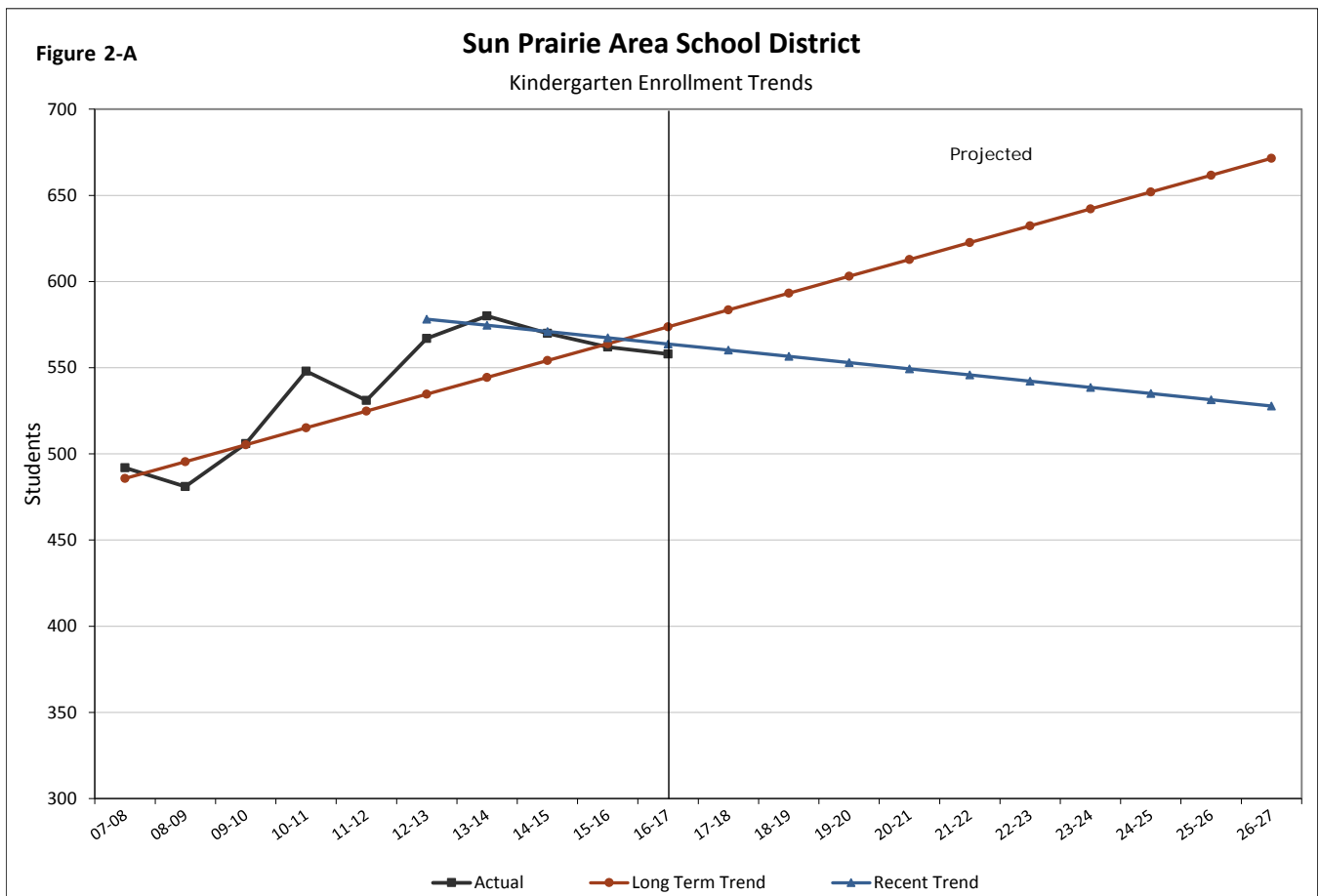


Figure 1-C shows the age structure in the Fall of 2016 of the student population with the number of 4 year old kindergarteners at the bottom and the number of 12th graders at the top. 3rd, 6th and 10th grades are largest in 2016/17, while the smallest grades this school year include 4K, 11th and 12th grades.

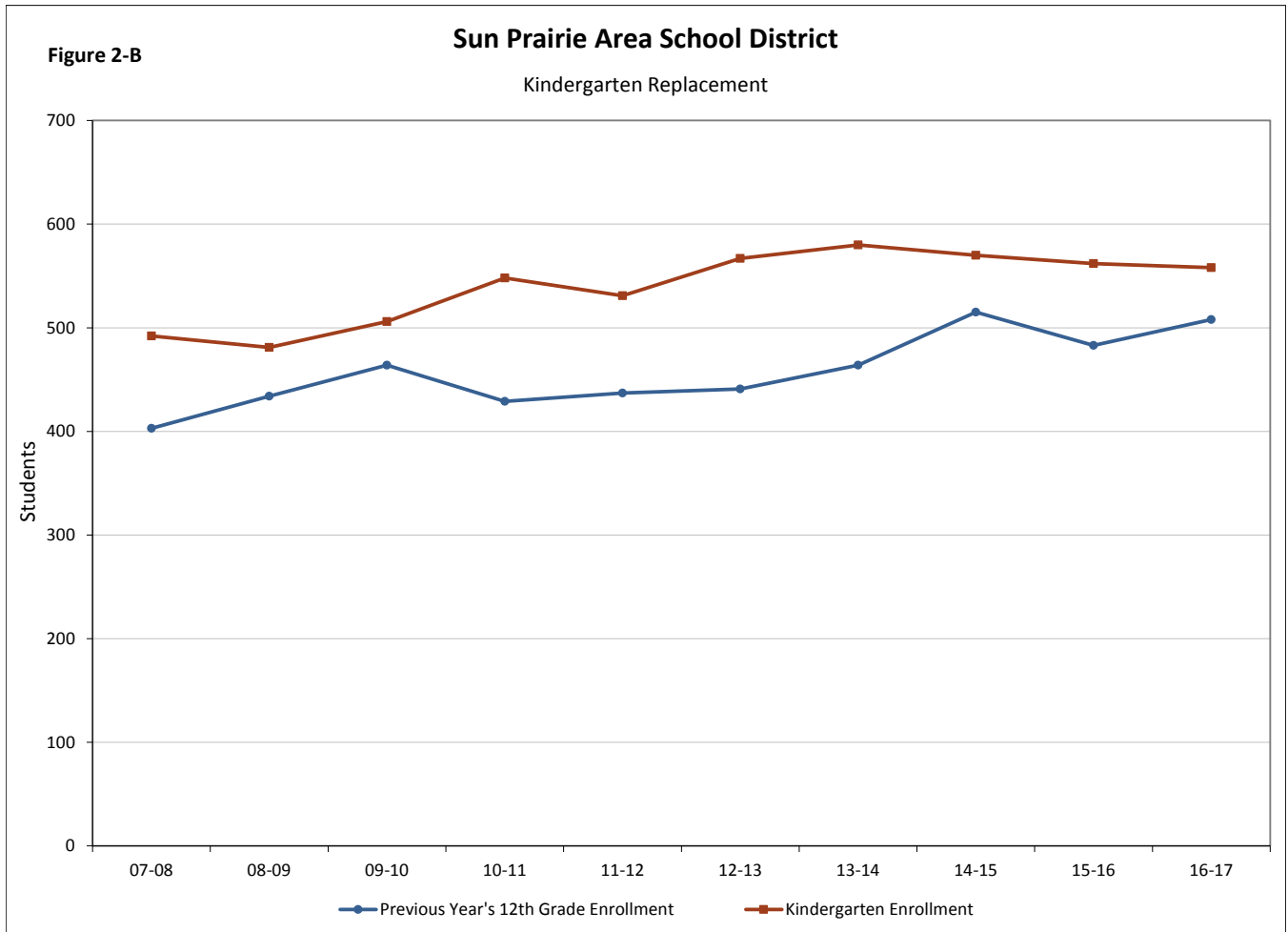


Kindergarten Enrollment Trends

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. Figure 2-A shows kindergarten enrollment history in black, and trend lines depicting kindergarten enrollment in red and blue. The long term trend will be used to project future kindergartners in the Kindergarten Trend model found later in the report.

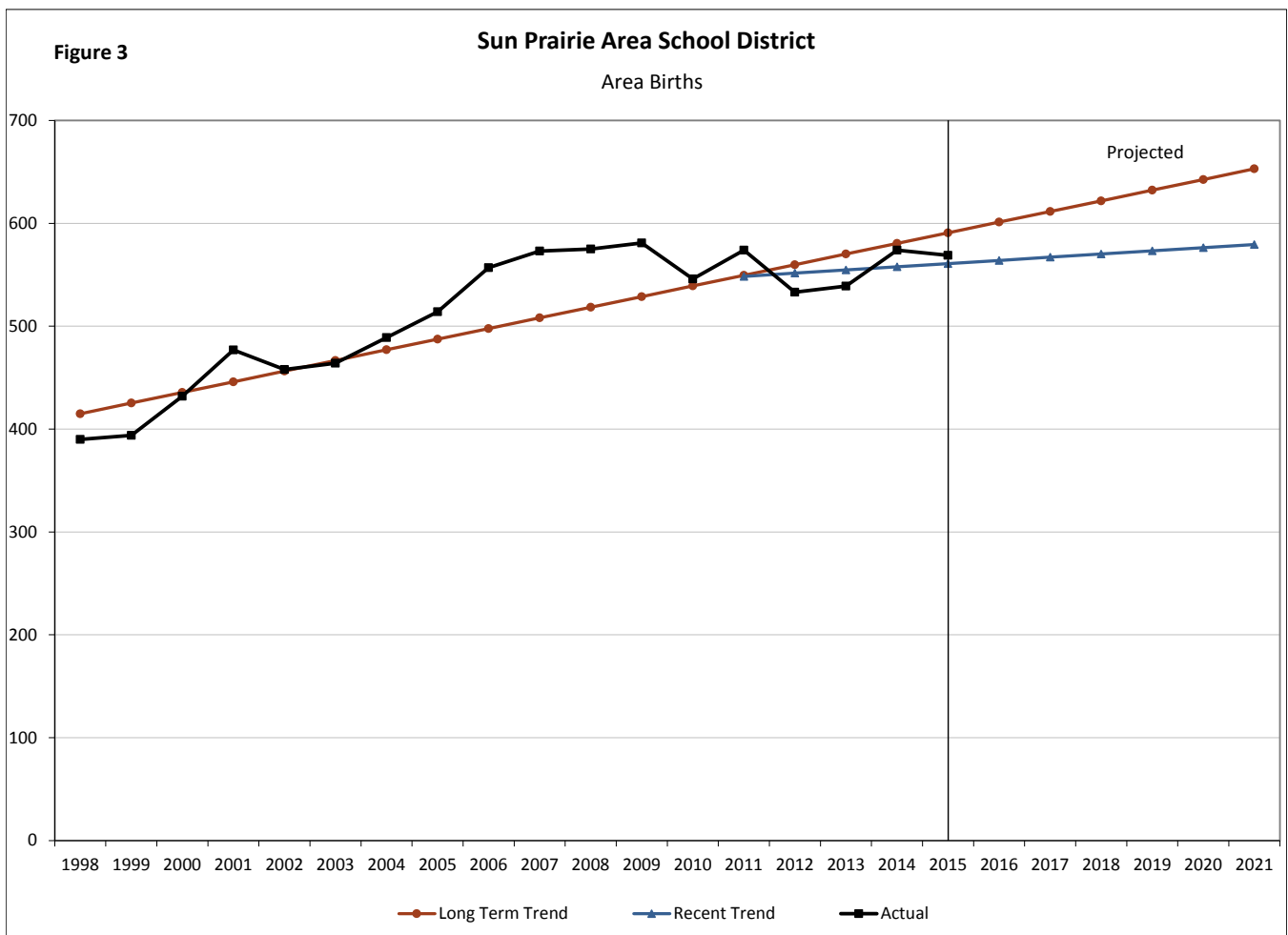


In addition to examining kindergarten enrollment on its own, comparing kindergarten enrollment to outgoing 12th graders offers a snapshot of how the age structure of district enrollment is shifting either from older to younger, or younger to older. Table 2-B shows kindergarten replacement. In the Sun Prairie Area School District, kindergarteners replaced outgoing 12th graders every year over the last ten years.



Birth Trends and Projections

We use historical and projected birth data to forecast the number of kindergarten students who will enroll in the Sun Prairie Area 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 1998-2015, as collected from the Wisconsin Department of Health Services. We count resident births from the City of Sun Prairie, and the Towns of Sun Prairie, Bristol and Burke. 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 1998 and 2015). The blue line examines birth patterns for the last five years and corresponds to the Recent Trend projection models shown later in this report.



Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
# of Births	390	394	432	477	458	464	489	514	557
Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
# of Births	573	575	581	546	574	533	539	574	569

Source: WI Department of Health Services



Population Estimates

This section examines population trends for municipalities that fall within the Sun Prairie Area School District. 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 and Figure 4-A provide U. S. Census population counts and Wisconsin Department of Administration (DOA) estimates for district area municipalities from 2010 to 2016. The last six years' population estimates indicate continued general population growth in the district area especially in the city.

TABLE 3
Total Population by Municipality: 2010-2015
Sun Prairie Area School District

Municipality	POPULATION						
	Census 2010	est. 2011	est. 2012	est. 2013	est. 2014	est. 2015	est. 2016
C. Sun Prairie	29,364	29,433	29,840	30,395	31,213	31,810	32,613
T. Sun Prairie	2,326	2,315	2,315	2,324	2,337	2,352	2,381
T. Bristol	3,765	3,794	3,819	3,896	3,970	4,045	4,169
T. Burke	3,284	3,294	3,308	3,321	3,329	3,339	3,341
District Area	38,739	38,836	39,282	39,936	40,849	41,546	42,504
Dane County	488,073	489,331	491,555	495,921	502,251	508,379	518,537
State of Wisconsin	5,686,986	5,694,236	5,703,525	5,717,110	5,732,981	5,753,324	5,774,996

Municipality	PERCENT CHANGE						
	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2010 to 2016
C. Sun Prairie	0.2%	1.4%	1.9%	2.7%	1.9%	2.5%	11.1%
T. Sun Prairie	-0.5%	0.0%	0.4%	0.6%	0.6%	1.2%	2.4%
T. Bristol	0.8%	0.7%	2.0%	1.9%	1.9%	3.1%	10.7%
T. Burke	0.3%	0.4%	0.4%	0.2%	0.3%	0.1%	1.7%
District Area	0.3%	1.1%	1.7%	2.3%	1.7%	2.3%	9.7%
Dane County	0.3%	0.5%	0.9%	1.3%	1.2%	2.0%	6.2%
State of Wisconsin	0.1%	0.2%	0.2%	0.3%	0.4%	0.4%	1.5%

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



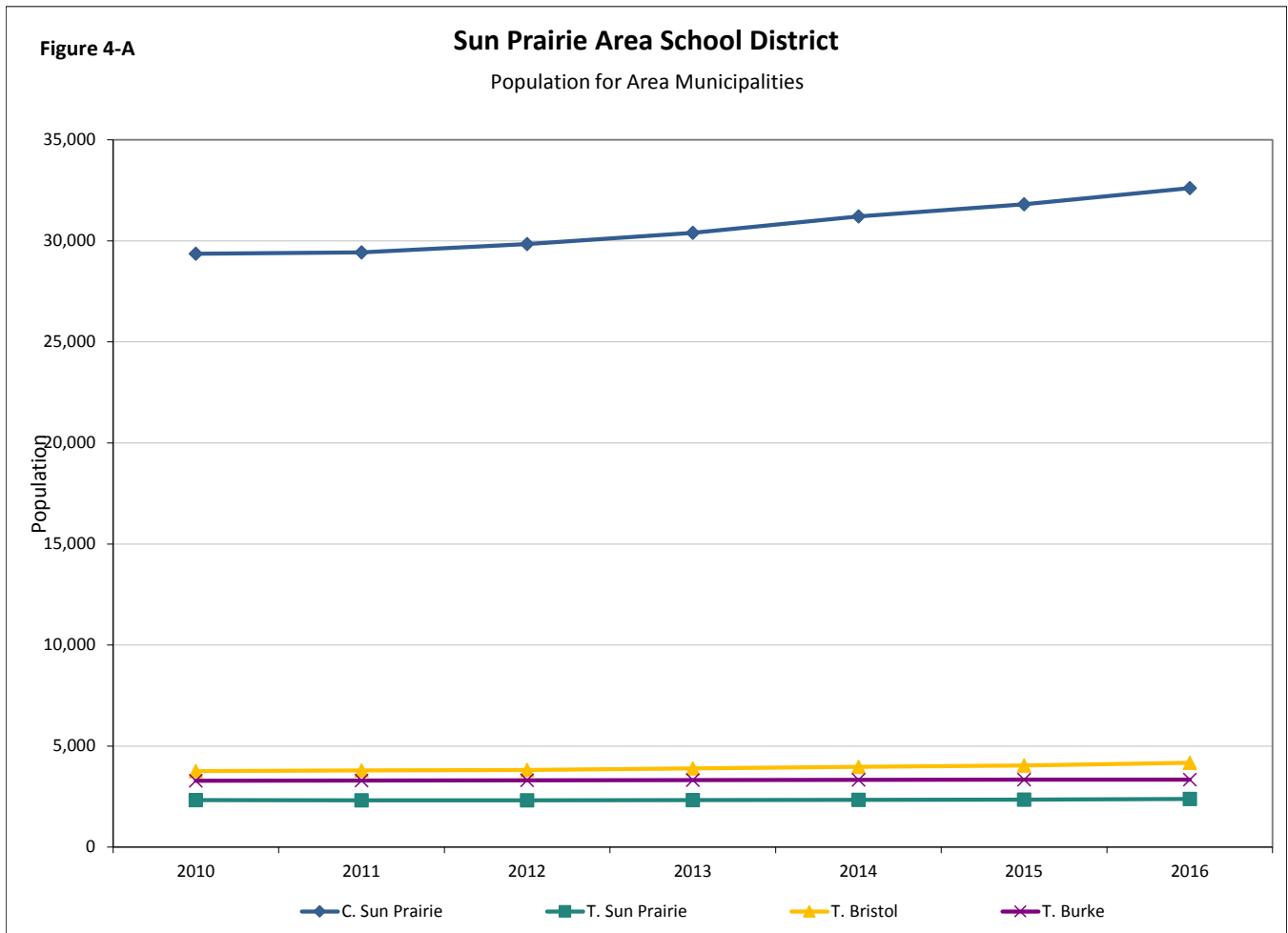


Figure 4-B and Table 4 compares the 2009 and 2014 population by age for the Sun Prairie Area School District from the 2005-2009 and 2010-2014 American Community Survey. Age 0-19 population (1,442 increase) has increased over this time period.



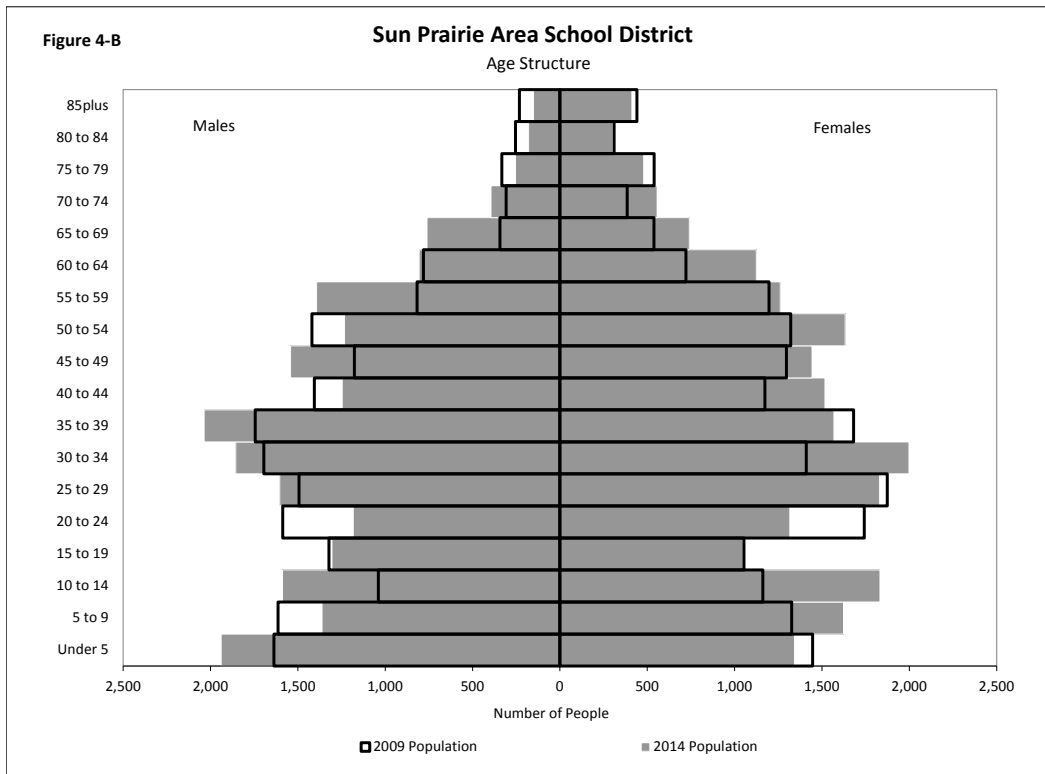


TABLE 4
Population by Age and Gender, 2000-2010
Sun Prairie Area School District

Age	2014 Total			Age	2009 Total		
	Males	Females	Total		Males	Females	Total
Under 5	1,939	1,343	3,282	Under 5	1,637	1,446	3,083
5 to 9	1,362	1,623	2,985	5 to 9	1,613	1,326	2,939
10 to 14	1,588	1,832	3,420	10 to 14	1,039	1,162	2,201
15 to 19	1,305	1,048	2,353	15 to 19	1,322	1,053	2,375
20 to 24	1,183	1,316	2,499	20 to 24	1,587	1,742	3,329
25 to 29	1,604	1,830	3,434	25 to 29	1,493	1,874	3,367
30 to 34	1,855	1,998	3,853	30 to 34	1,695	1,410	3,105
35 to 39	2,036	1,569	3,605	35 to 39	1,744	1,681	3,425
40 to 44	1,246	1,517	2,763	40 to 44	1,406	1,173	2,579
45 to 49	1,541	1,443	2,984	45 to 49	1,176	1,296	2,472
50 to 54	1,233	1,633	2,866	50 to 54	1,419	1,321	2,740
55 to 59	1,393	1,261	2,654	55 to 59	818	1,197	2,015
60 to 64	806	1,124	1,930	60 to 64	781	721	1,502
65 to 69	761	741	1,502	65 to 69	343	538	881
70 to 74	395	556	951	70 to 74	308	385	693
75 to 79	254	479	733	75 to 79	332	539	871
80 to 84	179	303	482	80 to 84	254	310	564
85plus	151	412	563	85plus	232	441	673
	20,831	22,028	42,859		19,199	19,615	38,814

Source: American Community Survey



Residential Development

Table 5 shows the number of housing starts in the Sun Prairie Area School District over the past ten years. Area housing starts were lowest in 2010 (75 housing starts). However, since that time housing starts have been increasing each year, especially single family homes. New housing listed for the towns of Burke and Bristol include the entire town, although only portions are in the school district. The housing starts listed for the City of Madison include construction within the school district. Smaller portions of other towns which are part of the school district are not included in this table.

TABLE 5
School District Area Housing Starts
Sun Prairie Area School District

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
District Area										
TOTAL	499	285	257	120	75	276	405	346	575	327
Single Family	119	93	81	65	69	61	89	165	151	203
Two Family	44	20	8	0	2	2	2	10	10	6
Multi-family	336	172	168	55	4	213	314	171	414	118
C. Sun Prairie										
TOTAL	429	195	233	96	50	250	367	300	275	286
Single Family	83	66	63	44	44	35	51	119	114	162
Two Family	44	20	8	0	2	2	2	10	10	6
Multi-family	302	109	162	52	4	213	314	171	151	118
T. Sun Prairie										
TOTAL	9	4	3	4	4	2	5	7	5	7
Single Family	9	4	3	4	4	2	5	7	5	7
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
T. Bristol										
TOTAL	22	14	10	13	15	17	30	32	27	31
Single Family	22	14	10	13	15	17	30	32	27	31
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
T. Burke										
TOTAL	5	9	5	4	6	7	3	7	5	3
Single Family	5	9	5	4	6	7	3	7	5	3
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	0	0	0	0	0	0	0	0	0	0
C. Madison										
TOTAL	34	63	6	3	0	0	0	0	263	0
Single Family	0	0	0	0	0	0	0	0	0	0
Two Family	0	0	0	0	0	0	0	0	0	0
Multi-family	34	63	6	3	0	0	0	0	263	0

Source: Demographic Services Center, WIDOA



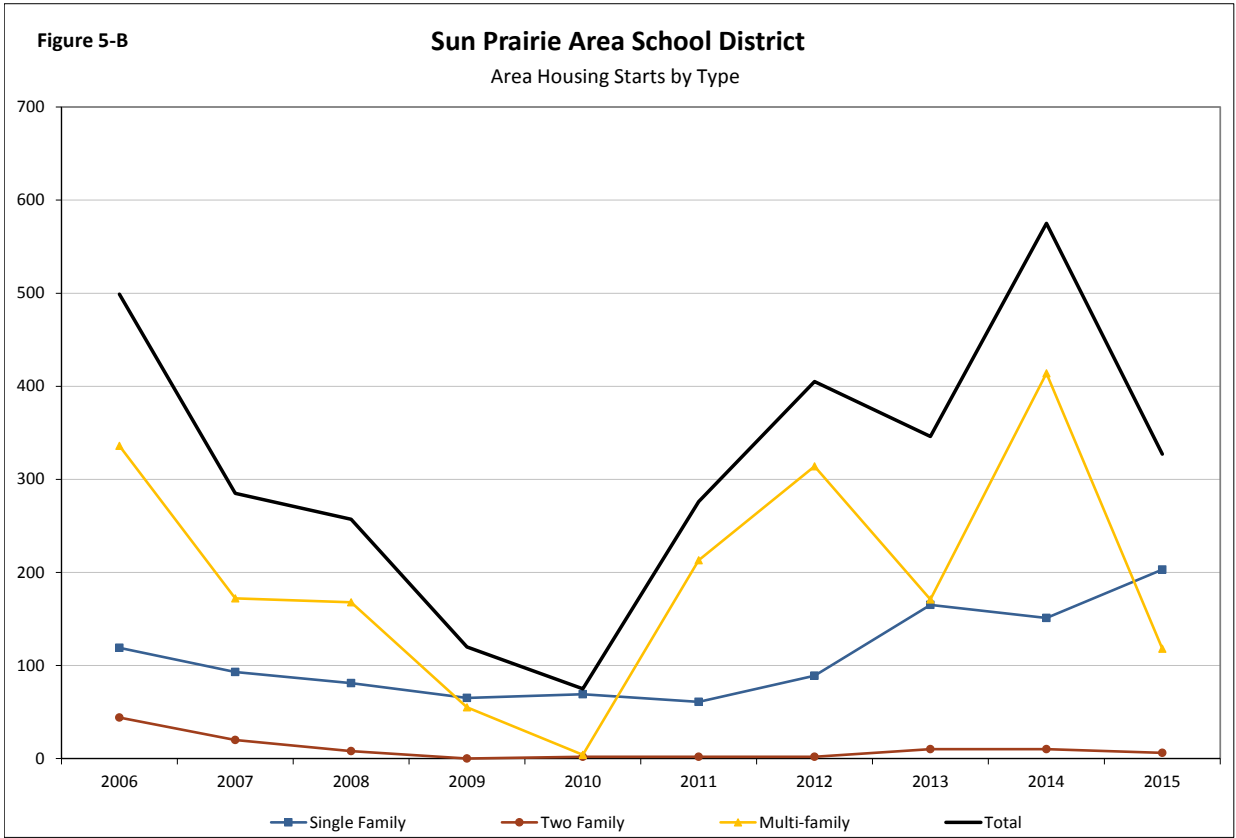
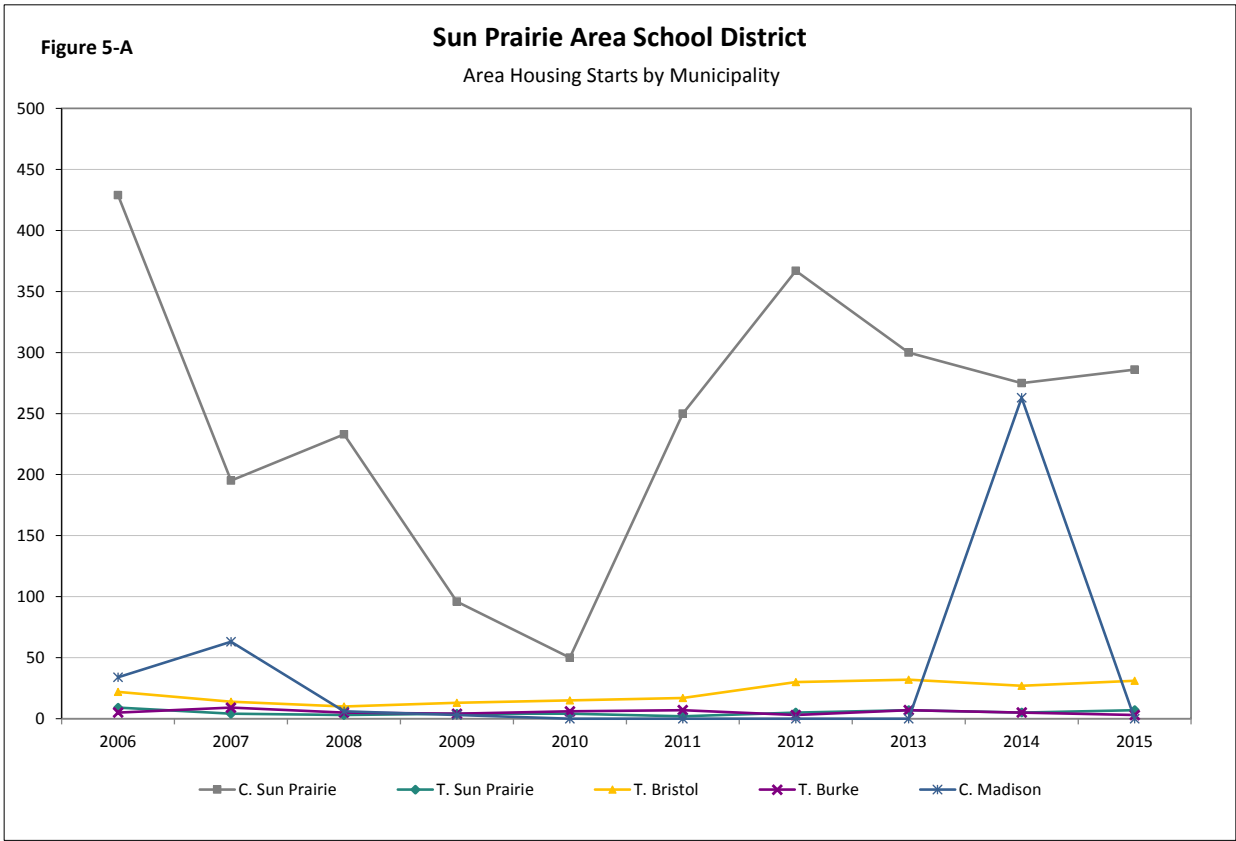
Examining trends in recent housing development can help to explain how in-migration into the Sun Prairie Area School District area might be affecting school enrollment. If the number of housing starts in the district area is expected to be reasonably consistent for the next several years, then we assume that in-migration of school-age children will also remain relatively consistent. If the number of housing starts is expected to increase significantly above and beyond recent levels, in-migration may play an increasing role in 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 Sun Prairie. Most of the development in the area has consisted of single-family homes although several multi-family units were constructed throughout this time period. Households in single family homes, on average, contain more school-aged children than in two family and multi-family complexes.

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 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 occur 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 Sun Prairie Area School District. Figure 5-B shows housing starts in the area by type of housing unit: single family home, duplex, and multi-family 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.

Grade Progression Ratios

Table 6 shows the grade progression ratios for the Sun Prairie 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
Sun Prairie Area School District

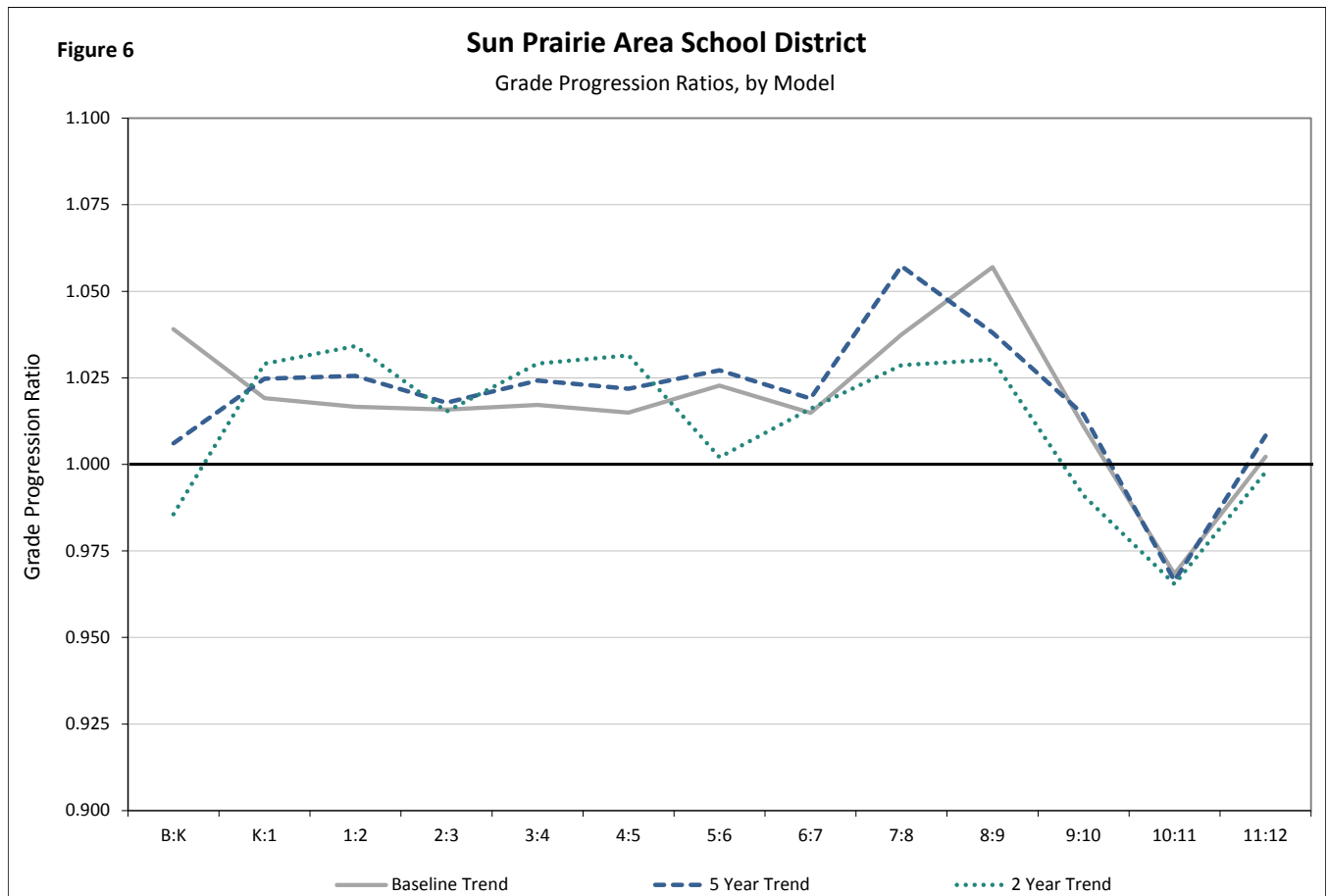
YEAR CHANGES	B:K	K:1	1:2	2:3	3:4	4:5	5:6	6:7	7:8	8:9	9:10	10:11	11:12
07-08/08-09	1.036	1.022	1.010	1.025	1.008	1.018	1.034	1.026	1.030	1.084	0.977	0.981	1.040
08-09/09-10	1.095	1.019	0.984	1.016	1.035	1.006	1.006	0.976	1.015	1.052	1.038	0.991	1.019
09-10/10-11	1.140	1.004	1.014	1.014	0.998	0.996	1.025	1.030	1.000	1.124	1.011	0.966	0.946
10-11/11-12	1.050	1.004	1.014	0.998	0.992	1.006	1.004	1.006	1.006	1.063	1.002	0.945	0.974
11-12/12-13	1.045	1.017	1.031	0.996	1.030	1.008	1.036	1.018	1.048	1.085	1.038	0.976	1.043
12-13/13-14	1.022	1.011	1.007	1.044	1.016	0.990	1.048	1.022	1.092	1.027	0.998	0.964	0.988
13-14/14-15	0.992	1.038	1.021	1.018	1.017	1.048	1.047	1.023	1.089	1.018	1.054	0.962	1.015
14-15/15-16	0.971	1.039	1.053	1.027	1.043	1.025	1.007	1.034	1.039	1.050	0.995	0.981	1.010
15-16/16-17	1.001	1.020	1.015	1.003	1.015	1.038	0.997	0.998	1.018	1.011	0.987	0.950	0.986
Baseline	1.039	1.019	1.017	1.016	1.017	1.015	1.023	1.015	1.038	1.057	1.011	0.968	1.002
5 Year Trend	1.006	1.025	1.026	1.018	1.024	1.022	1.027	1.019	1.057	1.038	1.014	0.966	1.008
2 Year "Trend"	0.986	1.029	1.034	1.015	1.029	1.031	1.002	1.016	1.029	1.030	0.991	0.965	0.998

*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 1.017. This means that in the Sun Prairie Area School District, the second grade is on average 1.7% larger 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 (birth to kindergarten) Baseline ratio of 1.039 indicates that, on average, an additional 3.9% of births from outside the district enroll in kindergarten in Sun Prairie Area School District.



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 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.



4K Grade Progression Ratios

Table 7 shows the observed transfer ratio between birth to 4K and 4K to K for the last seven years and the five year and two year grade progression ratio averages. 4K:K ratios are provided but not used to determine kindergarten enrollment in any of the projections models. The five year average grade progression will be used to project 4K enrollment in the Baseline, Five Year, and Kindergarten trend models while the two year average will be used to project 4K in the Two Year "Trend" model.

TABLE 7
4K Grade Progression Ratios
Sun Prairie Area School District

	B:4K	4K:K
09-10/10-11	0.900	-
10-11/11-12	0.896	1.167
11-12/12-13	0.874	1.167
12-13/13-14	0.858	1.169
13-14/14-15	0.817	1.156
14-15/15-16	0.909	1.188
15-16/16-17	0.916	1.101
5 Year Trend	0.875	1.156
2 Year "Tend"	0.912	1.144



School Enrollment Projections

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.

Baseline Projections

The Baseline model (Table 8) projects enrollment 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. This model projects that PK-12 enrollment will increase over the next five years, increasing from 8,231 students in 2016/17 to 8,824 students in 2021/22. This is an increase of 603 students over the next five years.

TABLE 8
Baseline Projection Model
Sun Prairie Area School District

	SCHOOL YEAR									
	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
PK	44	44	44	44	44	44	44	44	44	44
4K	470	492	499	450	432	441	450	460	469	478
K	568	558	584	593	614	632	643	653	664	675
1	569	579	569	595	604	625	644	655	666	677
2	583	578	589	578	605	614	636	655	666	677
3	611	592	587	598	587	615	624	646	665	676
4	647	621	602	597	608	597	625	635	657	676
5	619	657	630	611	606	617	606	635	644	667
6	614	633	672	645	625	620	631	620	649	659
7	624	623	643	682	654	634	629	641	629	659
8	570	648	646	667	707	679	658	653	665	653
9	590	602	684	683	705	747	717	695	690	703
10	571	596	609	692	690	713	756	725	703	698
11	604	553	577	589	670	669	690	732	702	681
12	536	606	554	579	591	672	670	692	733	704
PPA 10	5	5	5	5	5	5	5	5	5	5
PPA 11	29	29	29	29	29	29	29	29	29	29
PPA 12	46	46	46	46	46	46	46	46	46	46
TOTAL	8,299	8,461	8,570	8,683	8,824	9,000	9,105	9,220	9,327	9,406
K-5	3,596	3,584	3,561	3,573	3,625	3,701	3,778	3,878	3,962	4,048
6-7	1,238	1,256	1,314	1,326	1,279	1,254	1,261	1,261	1,279	1,318
8-9	1,159	1,250	1,331	1,350	1,412	1,426	1,375	1,348	1,355	1,356
10-12	1,792	1,835	1,821	1,940	2,032	2,133	2,196	2,229	2,219	2,163



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. With recent migration rates and birth trends weighted more heavily, PK-12 enrollment in the school district is projected to increase from 8,231 students in 2016/17 to 8,848 students in 2021/22. This is an increase of 627 students over the next five years.

TABLE 9
5 Year Trend Projection Model
Sun Prairie Area School District

GRADE	SCHOOL YEAR									
	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
PK	44	44	44	44	44	44	44	44	44	44
4K	470	492	499	450	432	441	450	460	469	478
K	550	540	566	574	569	569	573	576	579	582
1	572	564	554	580	588	583	584	587	590	593
2	588	586	578	568	594	603	598	598	602	605
3	612	598	597	588	578	605	614	609	609	612
4	651	627	613	611	603	592	620	629	623	624
5	623	666	640	626	625	616	605	633	643	637
6	616	640	684	658	643	642	632	621	650	660
7	627	628	652	697	670	655	654	644	633	663
8	580	663	664	690	737	708	693	691	681	669
9	579	603	688	689	716	765	735	719	718	707
10	573	588	611	698	699	726	776	746	729	728
11	603	554	568	591	674	676	702	750	721	705
12	539	608	558	573	596	680	681	708	756	727
PPA 10	5	5	5	5	5	5	5	5	5	5
PPA 11	29	29	29	29	29	29	29	29	29	29
PPA 12	46	46	46	46	46	46	46	46	46	46
TOTAL	8,308	8,479	8,596	8,716	8,848	8,986	9,041	9,095	9,127	9,115
K-5	3,596	3,581	3,547	3,547	3,557	3,569	3,593	3,632	3,646	3,654
6-7	1,243	1,268	1,336	1,354	1,313	1,297	1,286	1,266	1,283	1,323
8-9	1,160	1,265	1,352	1,379	1,453	1,473	1,428	1,410	1,399	1,377
10-12	1,796	1,830	1,818	1,941	2,049	2,162	2,239	2,283	2,286	2,240



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" model, PK-12 enrollment is projected to increase from 8,231 students in 2016/17 to 8,628 students in 2021/22. This is an increase of 407 students over the next five years.

TABLE 10
2 Year "Trend" Projection Model
Sun Prairie Area School District

GRADE	SCHOOL YEAR									
	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
PK	44	44	44	44	44	44	44	44	44	44
4K	490	513	521	470	451	460	470	479	489	498
K	539	529	554	562	558	558	561	564	567	570
1	574	555	545	570	579	574	574	577	580	584
2	593	594	573	563	590	599	593	594	597	600
3	610	602	603	582	572	599	608	602	603	606
4	655	628	619	620	599	589	616	625	620	620
5	629	675	648	639	640	618	607	636	645	639
6	601	630	677	649	640	641	619	608	637	646
7	625	611	641	687	659	650	652	629	618	647
8	565	643	628	659	707	678	669	670	647	636
9	575	582	662	647	679	729	699	689	691	667
10	560	570	577	656	642	673	722	693	683	684
11	602	541	550	557	634	619	650	697	669	659
12	534	601	539	549	555	632	618	648	695	667
PPA 10	5	5	5	5	5	5	5	5	5	5
PPA 11	29	29	29	29	29	29	29	29	29	29
PPA 12	46	46	46	46	46	46	46	46	46	46
TOTAL	8,276	8,397	8,461	8,536	8,628	8,743	8,782	8,837	8,865	8,849
K-5	3,600	3,582	3,542	3,537	3,537	3,536	3,559	3,599	3,612	3,620
6-7	1,226	1,241	1,317	1,336	1,299	1,292	1,271	1,238	1,255	1,294
8-9	1,140	1,225	1,291	1,306	1,386	1,407	1,368	1,359	1,338	1,303
10-12	1,776	1,792	1,746	1,842	1,911	2,005	2,070	2,118	2,127	2,091



Kindergarten Trend Projections

For the Kindergarten Trend model (Table 11), we perform a kindergarten 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. According to this hybrid projection model, PK-12 enrollment would increase over the next five years from 8,231 students in 2016/17 to 9,074 students in 2021/22, or an increase of 853 students.

TABLE 11
Kindergarten Trend Projection Model
Sun Prairie Area School District

GRADE	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
PK	44	44	44	44	44	44	44	44	44	44
4K	470	492	499	450	432	441	450	460	469	478
K	583	593	603	613	623	632	642	652	662	671
1	572	598	608	618	628	638	648	658	668	678
2	588	586	613	623	634	644	654	665	675	685
3	612	598	597	624	635	645	655	666	676	687
4	651	627	613	611	639	650	661	671	682	693
5	623	666	640	626	625	653	664	675	686	697
6	616	640	684	658	643	642	671	682	693	705
7	627	628	652	697	670	655	654	684	695	707
8	580	663	664	690	737	708	693	691	723	735
9	579	603	688	689	716	765	735	719	718	750
10	573	588	611	698	699	726	776	746	729	728
11	603	554	568	591	674	676	702	750	721	705
12	539	608	558	573	596	680	681	708	756	727
PPA 10	5	5	5	5	5	5	5	5	5	5
PPA 11	29	29	29	29	29	29	29	29	29	29
PPA 12	46	46	46	46	46	46	46	46	46	46
TOTAL	8,341	8,567	8,722	8,884	9,074	9,280	9,411	9,550	9,677	9,769
K-5	3,629	3,668	3,674	3,716	3,783	3,862	3,925	3,987	4,049	4,111
6-7	1,243	1,268	1,336	1,354	1,313	1,297	1,325	1,366	1,389	1,411
8-9	1,160	1,265	1,352	1,379	1,453	1,473	1,428	1,410	1,440	1,485
10-12	1,796	1,830	1,818	1,941	2,049	2,162	2,239	2,283	2,286	2,240



Comparison of Projection Models

Figures 7-11 and Tables 12-16 compare the four enrollment projection models broken down by total PK-12 district enrollment and by grade groupings.

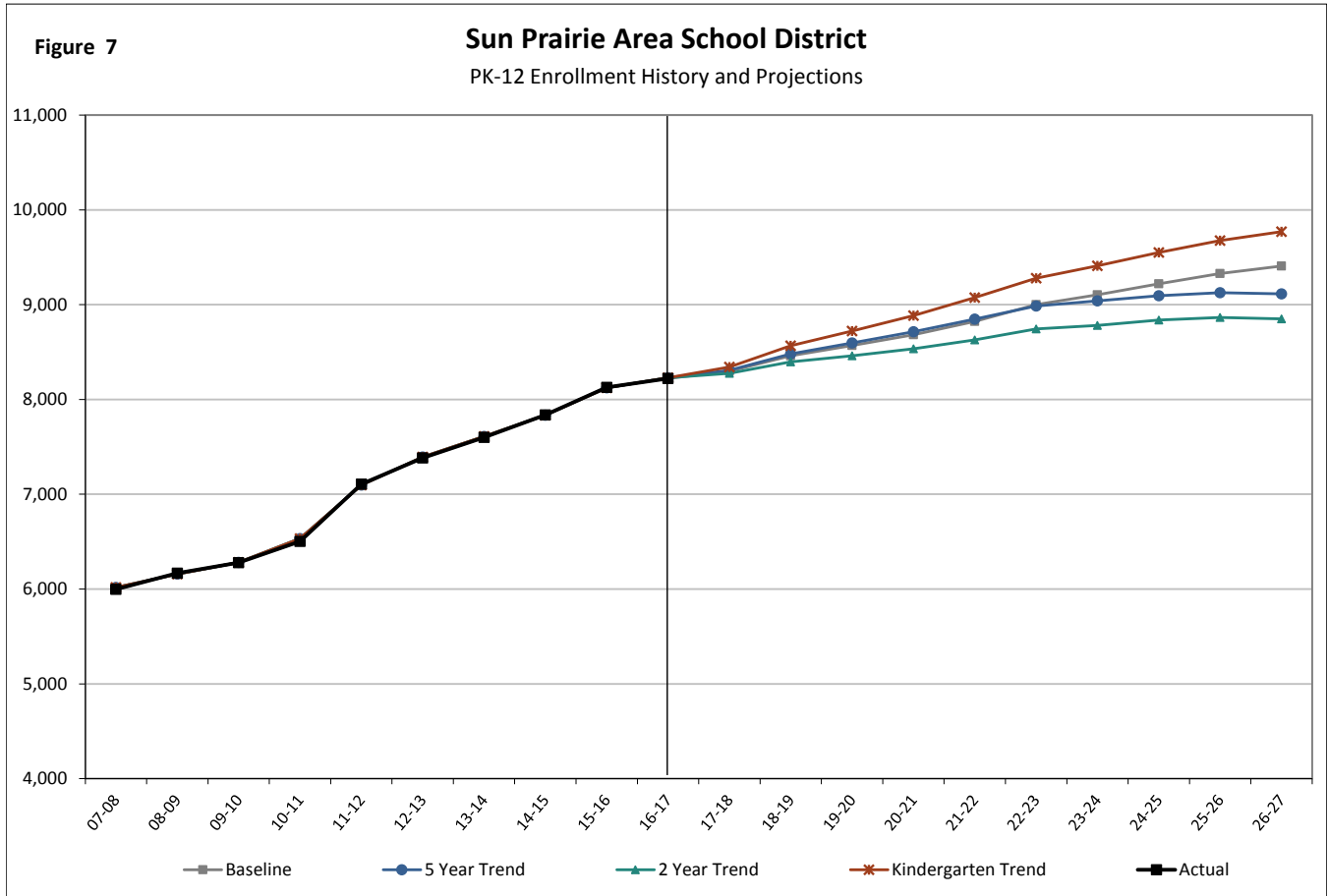


TABLE 12
Summary of PK-12 Enrollment Projections
Sun Prairie Area School District

	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Baseline	8,299	8,461	8,570	8,683	8,824	9,000	9,105	9,220	9,327	9,406
5 Year Trend	8,308	8,479	8,596	8,716	8,848	8,986	9,041	9,095	9,127	9,115
2 Year "Trend"	8,276	8,397	8,461	8,536	8,628	8,743	8,782	8,837	8,865	8,849
Kindergarten Trend	8,341	8,567	8,722	8,884	9,074	9,280	9,411	9,550	9,677	9,769

PK-12 enrollment for 2016/17 is 8,231. All models project increasing PK-12 enrollment with the Kindergarten Trend model indicating the greatest amount of increase while the Two Year "Trend" model projects the least amount of increase. PK-12 enrollment projections five years from now (2021/22) forecast a range of enrollment from 8,628 to 9,074.



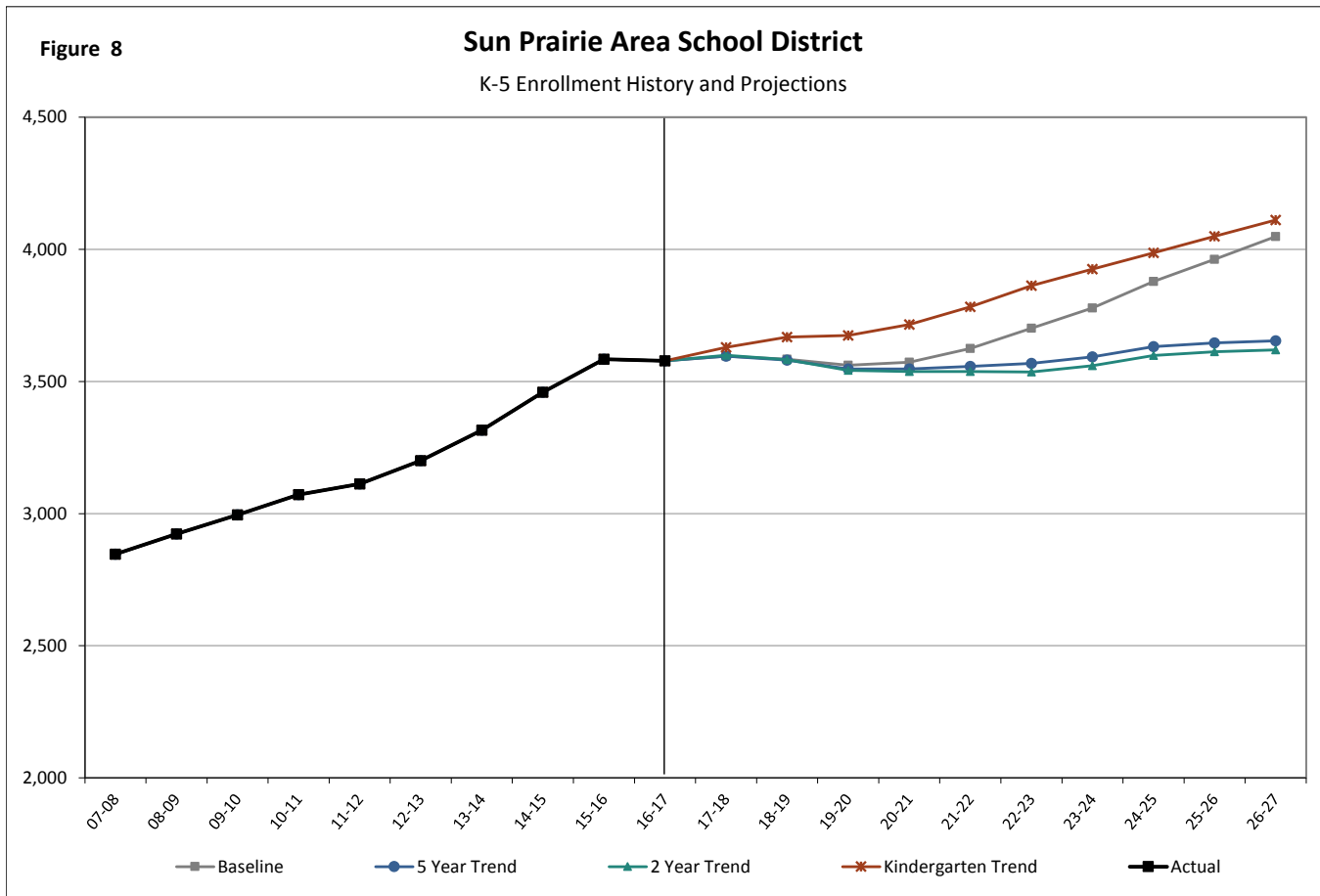


TABLE 13
Summary of K-5 Enrollment Projections
Sun Prairie Area School District

	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Baseline	3,596	3,584	3,561	3,573	3,625	3,701	3,778	3,878	3,962	4,048
5 Year Trend	3,596	3,581	3,547	3,547	3,557	3,569	3,593	3,632	3,646	3,654
2 Year "Trend"	3,600	3,582	3,542	3,537	3,537	3,536	3,559	3,599	3,612	3,620
Kindergarten Trend	3,629	3,668	3,674	3,716	3,783	3,862	3,925	3,987	4,049	4,111

K-5 enrollment for 2016/17 is 3,578. All models, except the Kindergarten Trend model, project slightly increasing enrollment over the next two years. The Baseline and Kindergarten Trend models project significant increasing enrollment over time, while the Five Year and Two Year trend models project steady enrollment. K-5 enrollment projections five years from now (2021/22) forecast a range of enrollment from 3,561 to 3,687.



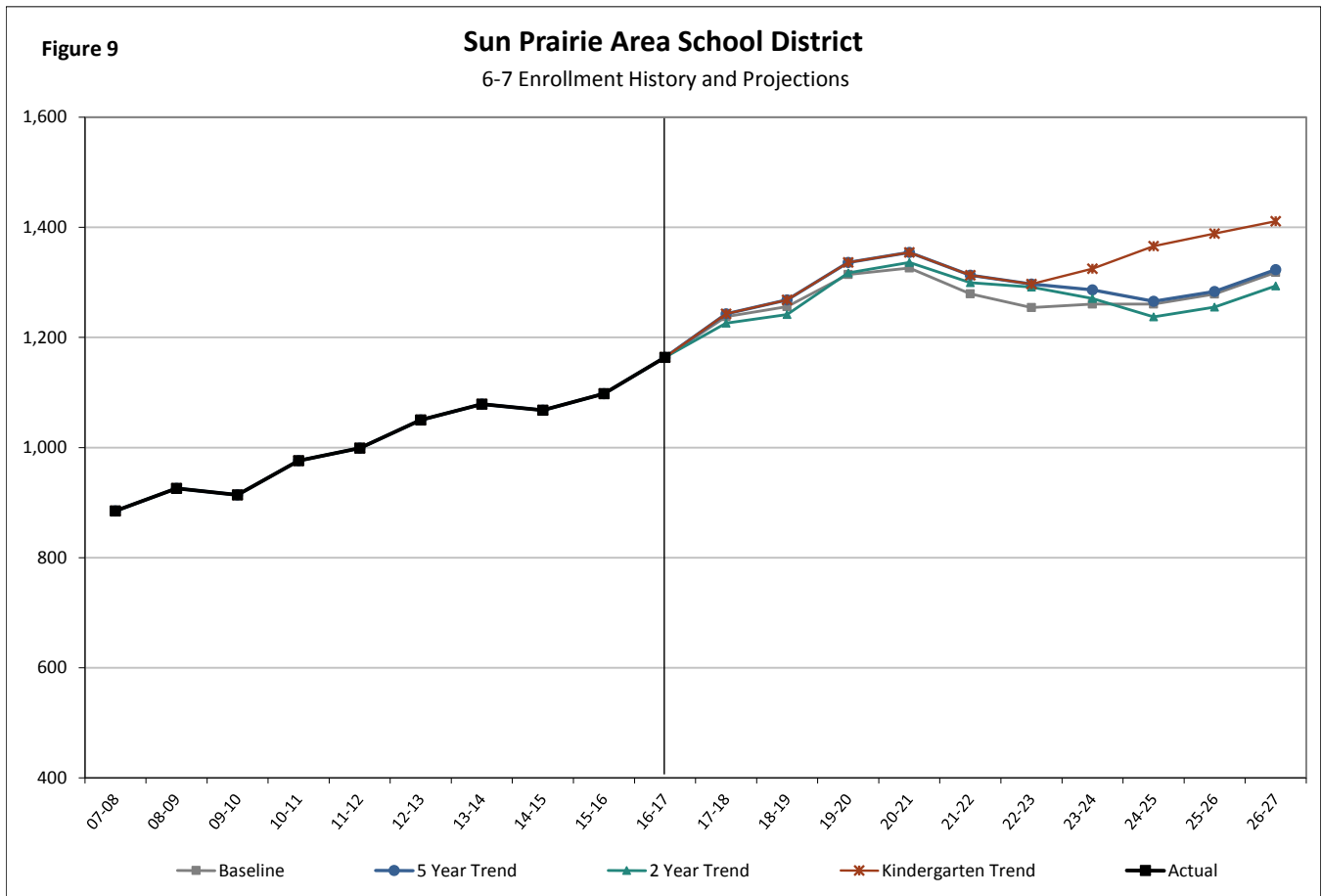


TABLE 14
Summary of 6-7 Enrollment Projections
Sun Prairie Area School District

	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Baseline	1,238	1,256	1,314	1,326	1,279	1,254	1,261	1,261	1,279	1,318
5 Year Trend	1,243	1,268	1,336	1,354	1,313	1,297	1,286	1,266	1,283	1,323
2 Year "Trend"	1,226	1,241	1,317	1,336	1,299	1,292	1,271	1,238	1,255	1,294
Kindergarten Trend	1,243	1,268	1,336	1,354	1,313	1,297	1,325	1,366	1,389	1,411

6-7 enrollment for 2016/17 is 1,164. At middle school, all models project increasing enrollment in the foreseeable future. 6-7 enrollment projections five years from now (2021/22) predict a range of enrollment from 1,279 to 1,313.



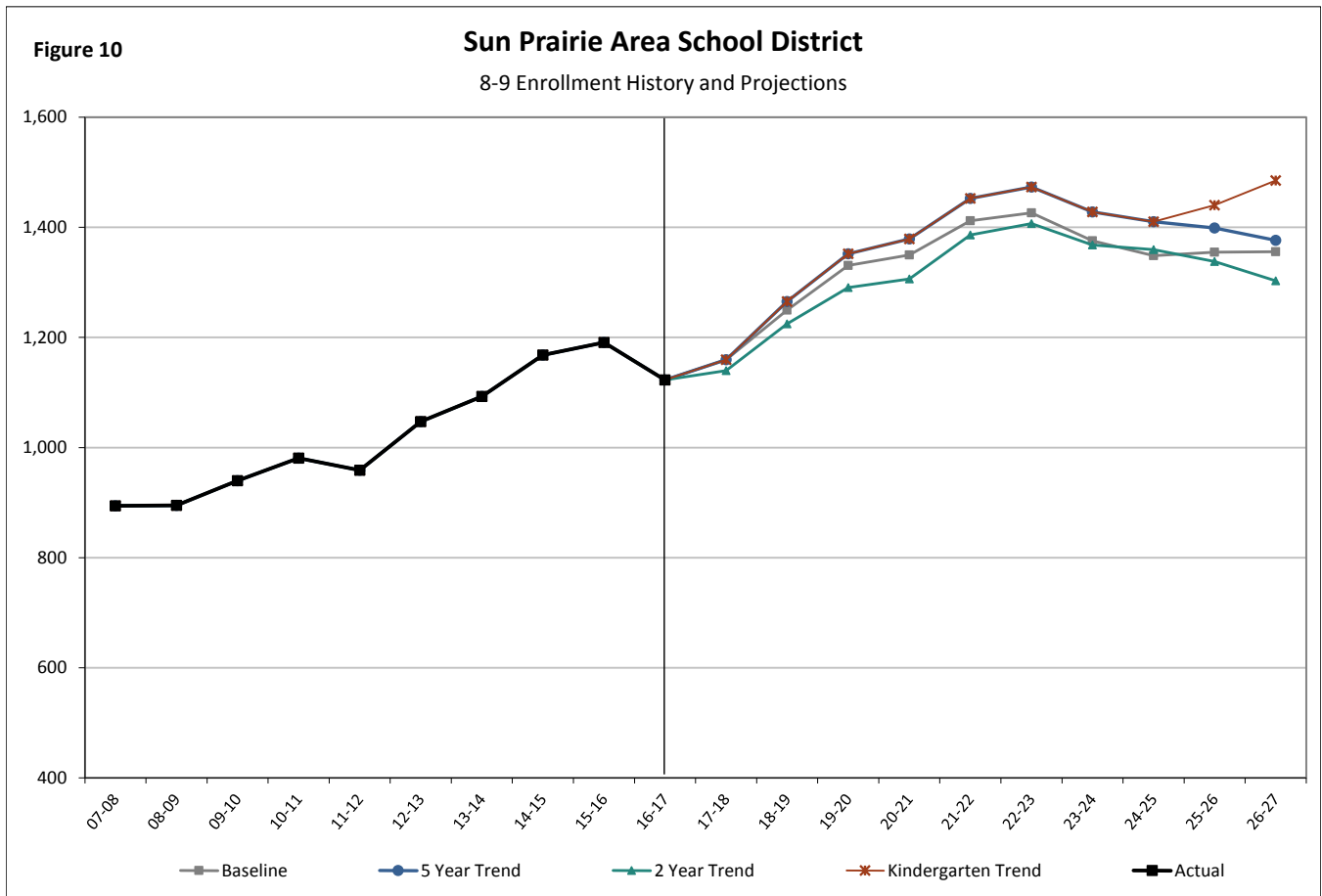


TABLE 15
Summary of 8-9 Enrollment Projections
Sun Prairie Area School District

	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Baseline	1,159	1,250	1,331	1,350	1,412	1,426	1,375	1,348	1,355	1,356
5 Year Trend	1,160	1,265	1,352	1,379	1,453	1,473	1,428	1,410	1,399	1,377
2 Year "Trend"	1,140	1,225	1,291	1,306	1,386	1,407	1,368	1,359	1,338	1,303
Kindergarten Trend	1,160	1,265	1,352	1,379	1,453	1,473	1,428	1,410	1,440	1,485

8-9 enrollment for 2016/17 is 1,123. At the upper middle school grades, all models project increasing enrollment over the next five years. Enrollment projections five years from now (2021/22) predict a range of enrollment from 1,386 to 1,453.



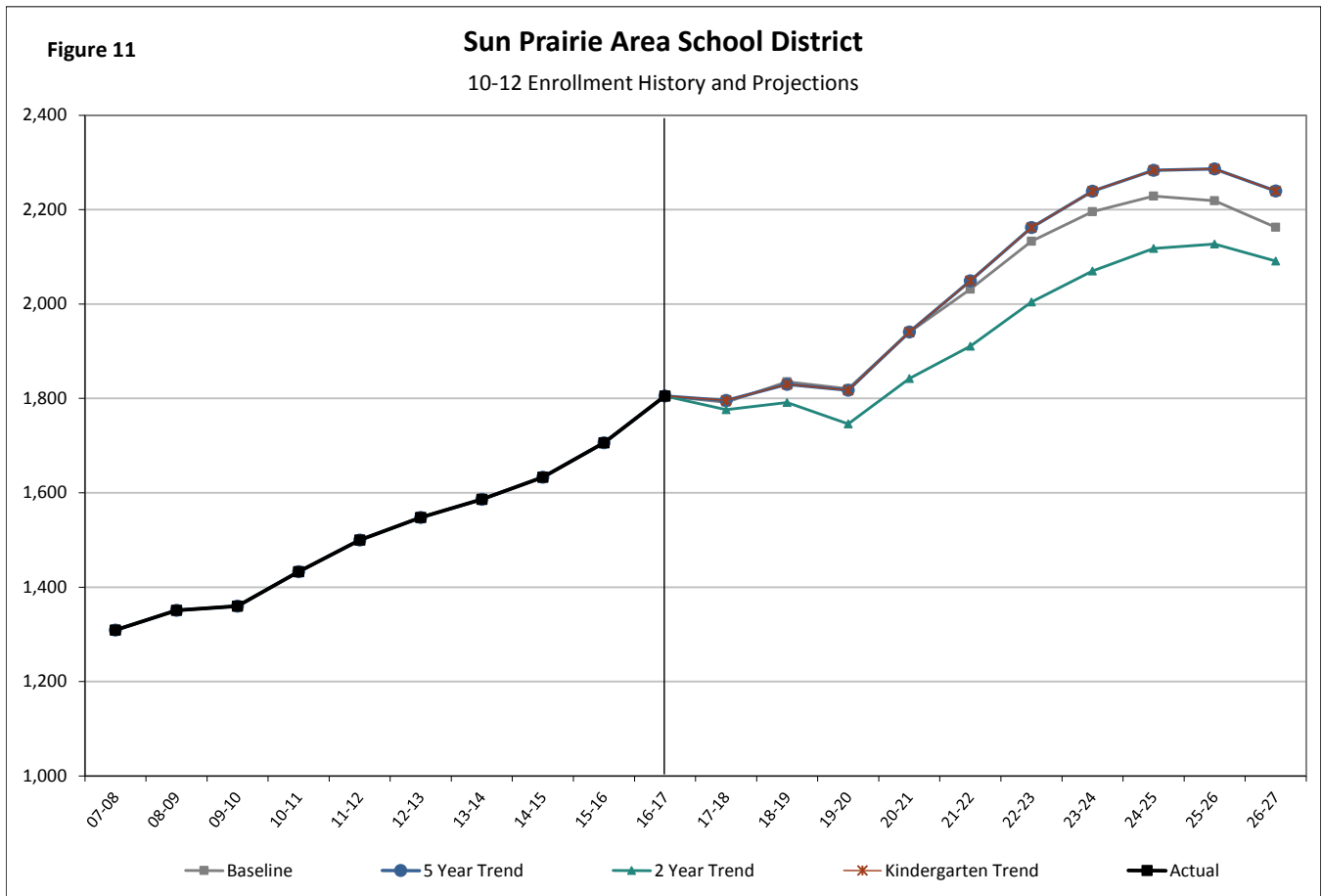


TABLE 16
Summary of 10-12 Enrollment Projections
Sun Prairie Area School District

	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27
Baseline	1,792	1,835	1,821	1,940	2,032	2,133	2,196	2,229	2,219	2,163
5 Year Trend	1,796	1,830	1,818	1,941	2,049	2,162	2,239	2,283	2,286	2,240
2 Year "Trend"	1,776	1,792	1,746	1,842	1,911	2,005	2,070	2,118	2,127	2,091
Kindergarten Trend	1,796	1,830	1,818	1,941	2,049	2,162	2,239	2,283	2,286	2,240

10-12 enrollment for 2016/17 is 1,805. In high school, all projections models forecast steady enrollment over the next three years then increasing enrollment for the foreseeable future as larger cohorts of middle school students enter the high school. 10-12 enrollment projections five years from now (2021/22) project a range of enrollment from 1,911 to 2,049.



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 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 deviate from these projections by ever increasing amounts. The reason for this is that birth trends, in-migration of pre-school age children, and student transfers into the district are more difficult to predict. As with nearly all types of forecasts, accuracy in these enrollment projections decreases over time.

The projections provided in this report point towards increasing enrollment for the next decade, though each model points to slightly different rates of growth. The Kindergarten Trend model projects higher enrollment than the other models. The Two Year "Trend" model projects the least amount of enrollment increases. All grade grouping enrollment is expected to increase in the near term if these current levels of in-migration into the district continue into the future. However, K-5 enrollment may be showing signs of not increasing as greatly as it has in the past. The district should expect continued enrollment increases especially in the upper grades as current students advance from grade to grade.

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 helps the district to determine which of the models seems to be the most realistic to use for planning purposes.

