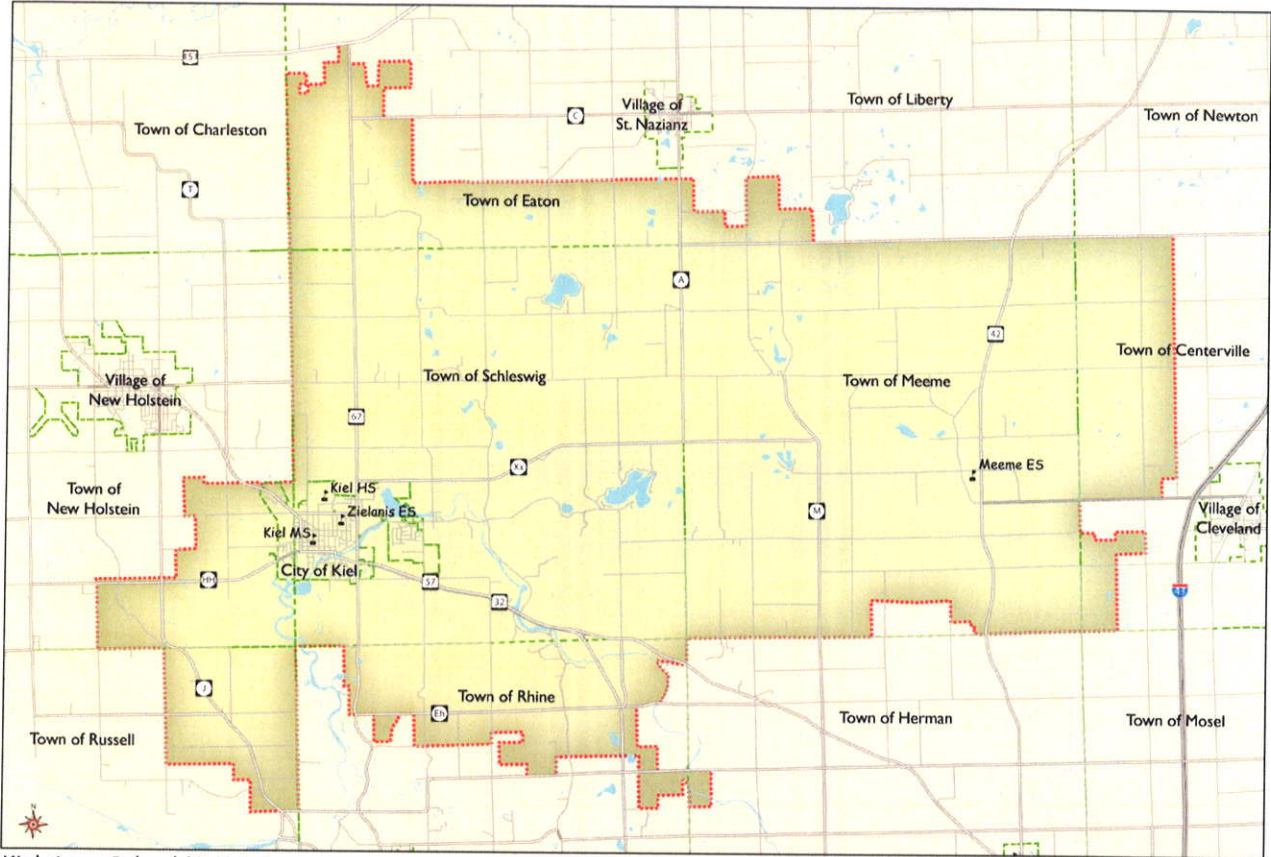# Planning for the Schools of Tomorrow



**Kiel Area School District**
- : Kiel Area Schools
- Municipalities
- School District
- Water

0  0.5  1 Miles

Prepared by the Applied Population Laboratory
University of Wisconsin-Madison
Department of Community & Environmental Sociology

# School Enrollment Projections Series
# Kiel Area School District

June 2012

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# Table of Contents

# Introduction

This report offers a summary of the Enrollment Projection Analysis completed for the Kiel Area 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 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 Kiel Area School District. Table 2 does not show grade 4K individually, but four year old kindergarten enrollment is included in the total section of the table. District enrollment has grown overall since 2002, but only by a total of 9 students in the past ten years. The district has seen slight declines in enrollment over the past five years.
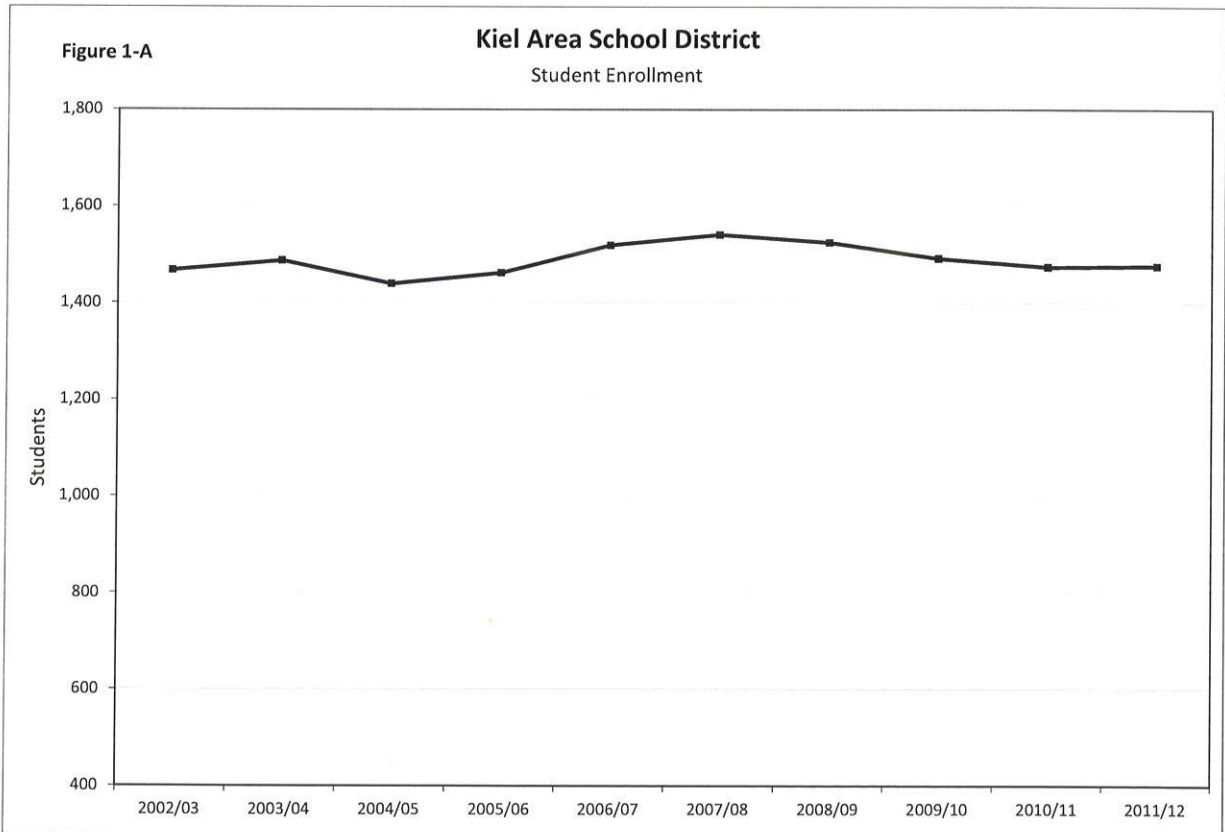
**Figure 1-A**

**Kiel Area School District**
Student Enrollment

# TABLE 1
## Student Enrollment
## Kiel Area 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 | 75 | 86 | 92 | 84 | 91 | 78 | 100 |
| K | 94 | 102 | 81 | 87 | 99 | 104 | 102 | 92 | 96 | 99 |
| 1 | 93 | 91 | 98 | 78 | 96 | 107 | 106 | 102 | 90 | 85 |
| 2 | 84 | 95 | 96 | 98 | 85 | 108 | 109 | 107 | 100 | 93 |
| 3 | 100 | 86 | 92 | 93 | 100 | 86 | 113 | 104 | 106 | 102 |
| 4 | 101 | 103 | 92 | 94 | 98 | 103 | 84 | 110 | 105 | 110 |
| 5 | 113 | 104 | 100 | 98 | 100 | 109 | 104 | 90 | 115 | 102 |
| 6 | 115 | 109 | 105 | 99 | 103 | 101 | 107 | 106 | 92 | 119 |
| 7 | 108 | 114 | 108 | 107 | 104 | 104 | 100 | 110 | 106 | 93 |
| 8 | 116 | 111 | 118 | 105 | 109 | 105 | 102 | 99 | 112 | 109 |
| 9 | 121 | 133 | 126 | 135 | 122 | 129 | 120 | 97 | 111 | 120 |
| 10 | 152 | 130 | 133 | 127 | 142 | 126 | 133 | 122 | 102 | 114 |
| 11 | 147 | 160 | 127 | 137 | 130 | 136 | 125 | 133 | 119 | 102 |
| 12 | 123 | 149 | 163 | 129 | 145 | 131 | 136 | 129 | 142 | 128 |
| TOTAL | 1,467 | 1,487 | 1,439 | 1,462 | 1,519 | 1,541 | 1,525 | 1,492 | 1,474 | 1,476 |
| K-12 | 1,467 | 1,487 | 1,439 | 1,387 | 1,433 | 1,449 | 1,441 | 1,401 | 1,396 | 1,376 |
| K-4 | 472 | 477 | 459 | 450 | 478 | 508 | 514 | 515 | 497 | 489 |
| 5-8 | 452 | 438 | 431 | 409 | 416 | 419 | 413 | 405 | 425 | 423 |
| 9-12 | 543 | 572 | 549 | 528 | 539 | 522 | 514 | 481 | 474 | 464 |

# TABLE 2
## Student Enrollment Changes
## Kiel Area 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 | 5 | 5 | -5 | 5.3 | 5.3 | -4.8 | 0.6 | 1.3 | -1.2 |
| 1 | -8 | 3 | -22 | -8.6 | 3.2 | -20.6 | -1.0 | 0.8 | -5.1 |
| 2 | 9 | 1 | -15 | 10.7 | 1.2 | -13.9 | 1.2 | 0.3 | -3.5 |
| 3 | 2 | 0 | 16 | 2.0 | 0.0 | 18.6 | 0.2 | 0.0 | 4.7 |
| 4 | 9 | -3 | 7 | 8.9 | -3.0 | 6.8 | 1.0 | -0.7 | 1.7 |
| 5 | -11 | -13 | -7 | -9.7 | -11.5 | -6.4 | -1.1 | -2.9 | -1.6 |
| 6 | 4 | -12 | 18 | 3.5 | -10.4 | 17.8 | 0.4 | -2.6 | 4.5 |
| 7 | -15 | -4 | -11 | -13.9 | -3.7 | -10.6 | -1.5 | -0.9 | -2.6 |
| 8 | -7 | -7 | 4 | -6.0 | -6.0 | 3.8 | -0.7 | -1.5 | 1.0 |
| 9 | -1 | 1 | -9 | -0.8 | 0.8 | -7.0 | -0.1 | 0.2 | -1.7 |
| 10 | -38 | -10 | -12 | -25.0 | -6.6 | -9.5 | -2.8 | -1.6 | -2.4 |
| 11 | -45 | -17 | -34 | -30.6 | -11.6 | -25.0 | -3.4 | -2.9 | -6.3 |
| 12 | 5 | 22 | -3 | 4.1 | 17.9 | -2.3 | 0.5 | 4.5 | -0.6 |
| TOTAL | 9 | 52 | -65 | 0.6 | 3.5 | -4.2 | 0.1 | 0.9 | -1.1 |
| K-12 | -91 | -34 | -73 | -6.2 | -2.3 | -5.0 | -0.7 | -0.6 | -1.3 |
| K-4 | 17 | 6 | -19 | 3.6 | 1.3 | -3.7 | 0.4 | 0.3 | -0.9 |
| 5-8 | -29 | -36 | 4 | -6.4 | -8.0 | 1.0 | -0.7 | -2.0 | 0.2 |
| 9-12 | -79 | -4 | -58 | -14.5 | -0.7 | -11.1 | -1.6 | -0.2 | -2.8 |

Figure 1-B shows enrollment history broken down by grade groupings (4K, K-4, 5-8, and 9-12). Elementary school enrollment has increased the most over the past decade, growing by 3.6% since Fall 2002. The 4K program began in 2005, and this along with elementary schools account for all of the growth in the district. Middle school enrollment has remained fairly stable or decreased somewhat over the last ten years, while high school enrollment has steadily declined.



**Figure 1-B**

**Kiel Area School District**
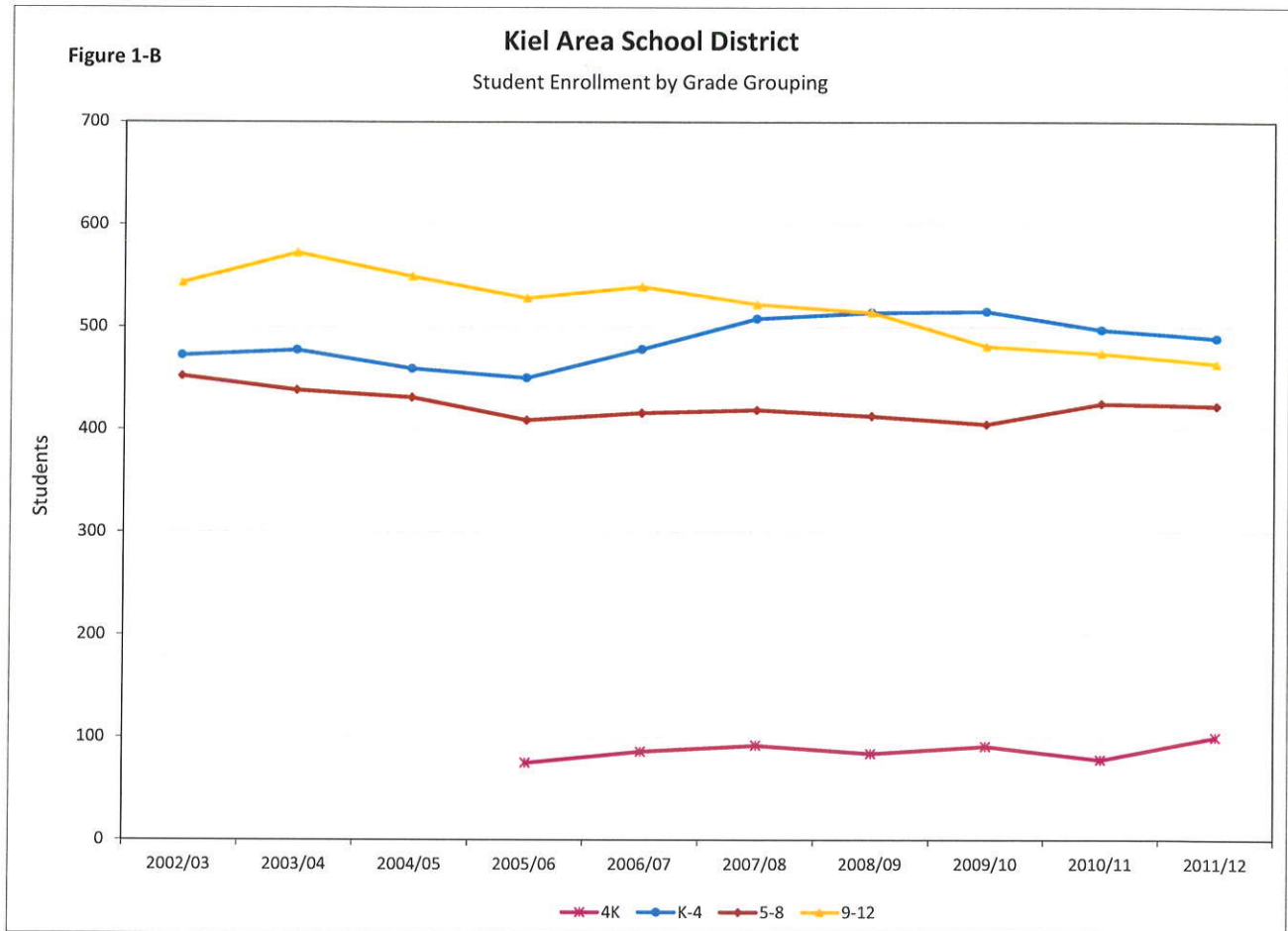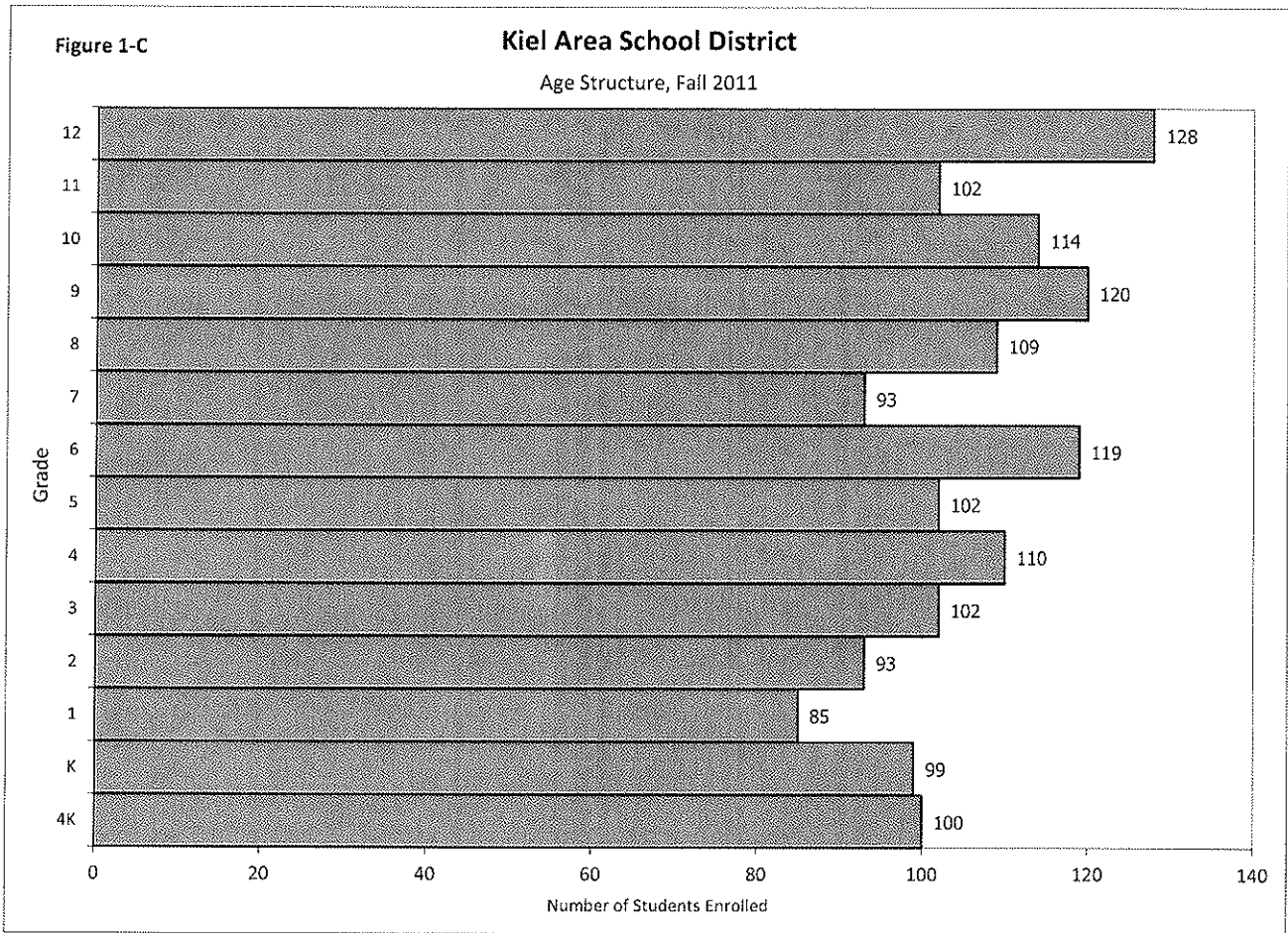
Student Enrollment by Grade Grouping

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 12th graders at top. High school cohorts are relatively large in comparison to other age groups. Cohorts in grades K-3 are small in 2011. The 6th grade cohort is especially large this school year.

**Figure 1-C**  **Kiel Area School District**

Age Structure, Fall 2011

| Grade | Number of Students Enrolled |
|---|---|
| 12 | 128 |
| 11 | 102 |
| 10 | 114 |
| 9 | 120 |
| 8 | 109 |
| 7 | 93 |
| 6 | 119 |
| 5 | 102 |
| 4 | 110 |
| 3 | 102 |
| 2 | 93 |
| 1 | 85 |
| K | 99 |
| 4K | 100 |

# 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 farther 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 the Kiel Area School District, kindergarten enrollment has varied over the last ten years, resulting in a growing long term trend but a declining short term trend.



**Figure 2-A**

**Kiel Area School District**
Kindergarten Enrollment Trends
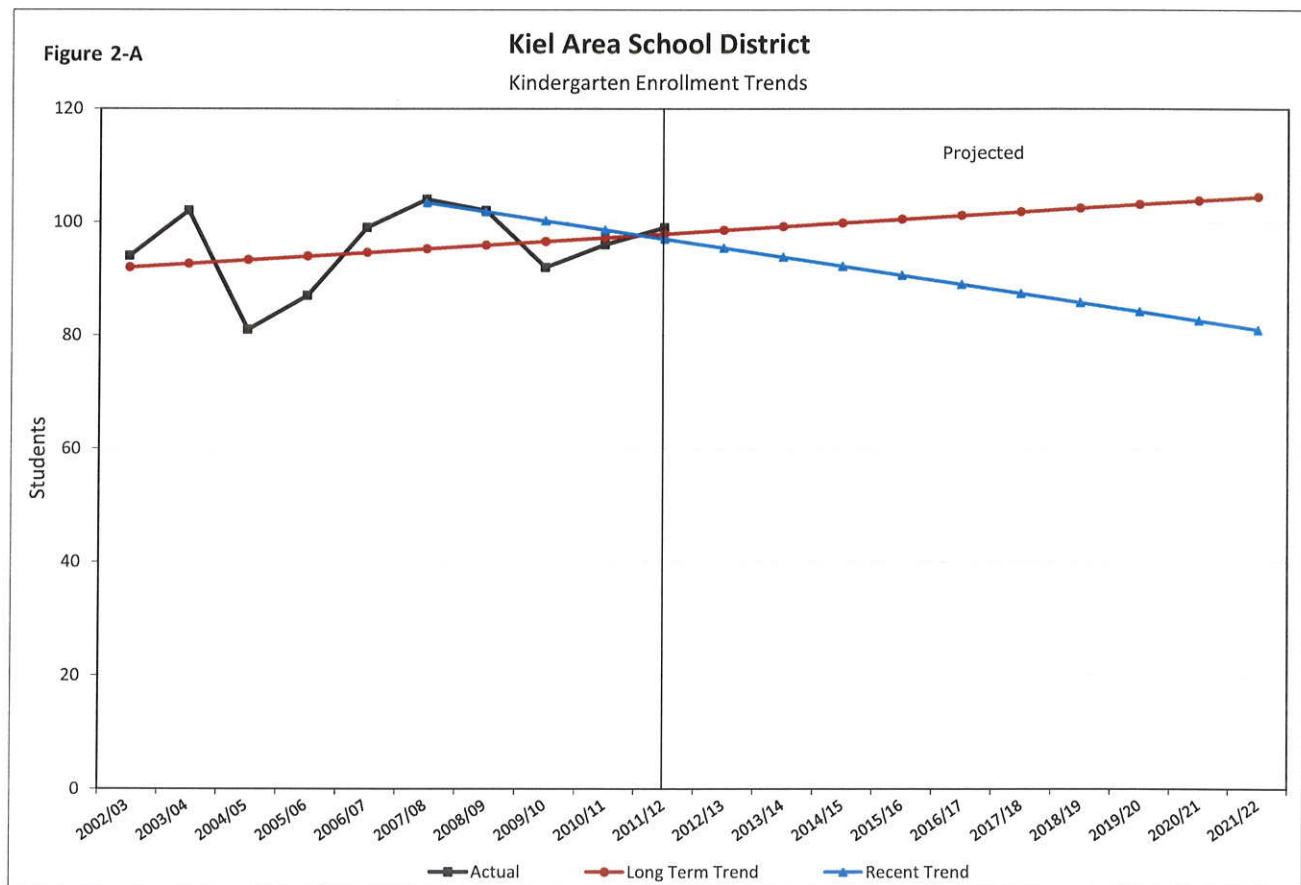
In addition to examining kindergarten enrollment on its own, comparing kindergarten enrollment to outgoing 12th graders offers a snapshot of how the age structure of district enrollment is shifting either from older to younger, or younger to older. Districts tend to experience overall growth when kindergarten enrollment outpaces outgoing students, and they tend to experience decline when kindergarteners do not fully replace the number of graduates. In the Kiel Area School District, kindergarteners have not replaced the outgoing 12th graders in the past ten years.



**Kiel Area School District**

Kindergarten Replacement

Figure 2-B

Legend: Previous Year's 12th Grade Enrollment · Kindergarten Enrollment
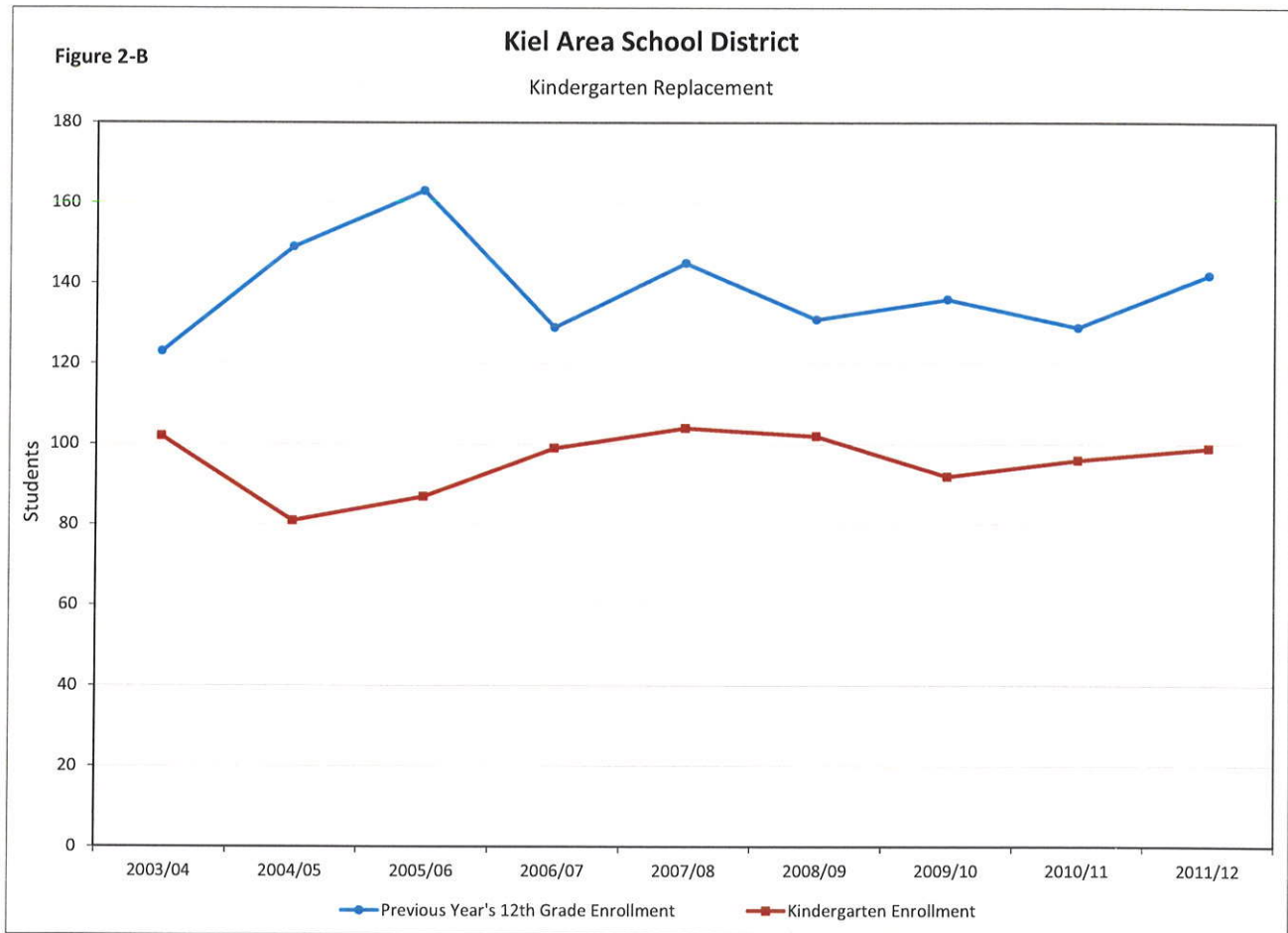
## Birth Trends and Projections

We use historical and projected birth data to forecast the number of Kindergarten students who will enroll in the Kiel Area School District in the 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 1992-2009, as collected from the Wisconsin Department of Health Services. Numbers of births have decreased overall in the district area over the years.

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 in Figure 3 represents birth trends over the longer term (between 1992 and 2009). The blue line examines birth patterns for the last seven years and corresponds to the Recent Trend projection models shown later in this report.



**Figure 3**

**Kiel Area School District**
Area Births
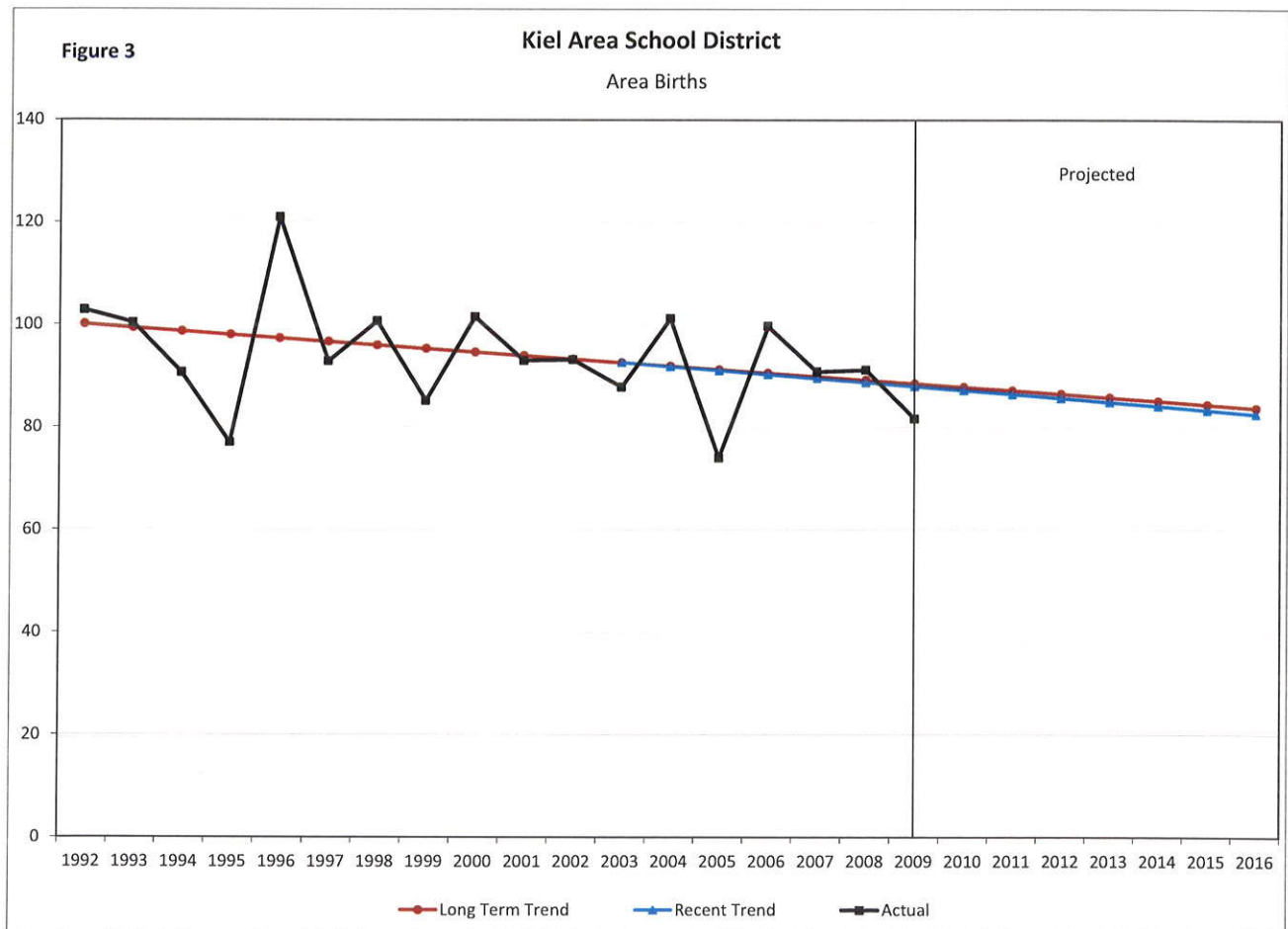
# Population Estimates and Projections

This section examines population trends of the recent past for municipalities that fall within the Kiel Area 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 and Figure 4-A provide U.S. Census population counts and Wisconsin Department of Administration (DOA) estimates for district area municipalities from 1980 to 2010. These municipal estimates can be compared with estimates for Manitowoc County and the State of Wisconsin. The school district area grew quickly from 1995-2005. Since that point in time, growth has slowed considerably, although the City of Kiel is still experiencing steady growth.

TABLE 3
Total Population by Municipality: 1980-2010
Kiel Area School District

| Municipality | POPULATION | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | Census 1980 | est. 1985 | Census 1990 | est. 1995 | Census 2000 | est. 2005 | Census 2010 |
| T.Centerville | 796 | 771 | 685 | 675 | 713 | 726 | 645 |
| T.Eaton | 764 | 761 | 761 | 783 | 761 | 792 | 833 |
| T.Meeme | 1,535 | 1,507 | 1,516 | 1,547 | 1,538 | 1,544 | 1,446 |
| T.New Holstein | 1,527 | 1,406 | 1,406 | 1,415 | 1,457 | 1,518 | 1,508 |
| T.Rhine | 1,910 | 1,920 | 2,235 | 2,343 | 2,244 | 2,321 | 2,134 |
| T.Russell | 429 | 392 | 362 | 342 | 399 | 406 | 377 |
| T.Schleswig | 1,633 | 1,579 | 1,641 | 1,656 | 1,900 | 2,037 | 1,963 |
| C.Kiel | 3,083 | 3,087 | 2,910 | 3,047 | 3,450 | 3,570 | 3,738 |
| District Area | 11,677 | 11,423 | 11,516 | 11,808 | 12,462 | 12,914 | 12,644 |
| Manitowoc County | 82,918 | 83,128 | 80,421 | 82,632 | 82,893 | 84,480 | 81,442 |
| State of Wisconsin | 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 | |
| T.Centerville | -3.1% | -11.2% | -1.5% | 5.6% | 1.8% | -11.2% | -1.1% |
| T.Eaton | -0.4% | 0.0% | 2.9% | -2.8% | 4.1% | 5.2% | 1.1% |
| T.Meeme | -1.8% | 0.6% | 2.0% | -0.6% | 0.4% | -6.3% | -0.7% |
| T.New Holstein | -7.9% | 0.0% | 0.6% | 3.0% | 4.2% | -0.7% | 0.4% |
| T.Rhine | 0.5% | 16.4% | 4.8% | -4.2% | 3.4% | -8.1% | -0.5% |
| T.Russell | -8.6% | -7.7% | -5.5% | 16.7% | 1.8% | -7.1% | -0.6% |
| T.Schleswig | -3.3% | 3.9% | 0.9% | 14.7% | 7.2% | -3.6% | 0.4% |
| C.Kiel | 0.1% | -5.7% | 4.7% | 13.2% | 3.5% | 4.7% | 0.9% |
| District Area | -2.2% | 0.8% | 2.5% | 5.5% | 3.6% | -2.1% | 0.2% |
| Manitowoc County | 0.3% | -3.3% | 2.7% | 0.3% | 1.9% | -3.6% | -0.2% |
| State of Wisconsin | 1.6% | 2.4% | 4.3% | 5.1% | 4.0% | 1.9% | 0.7% |

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

**Figure 4-A**

**Kiel Area School District**

Population for Area Municipalities
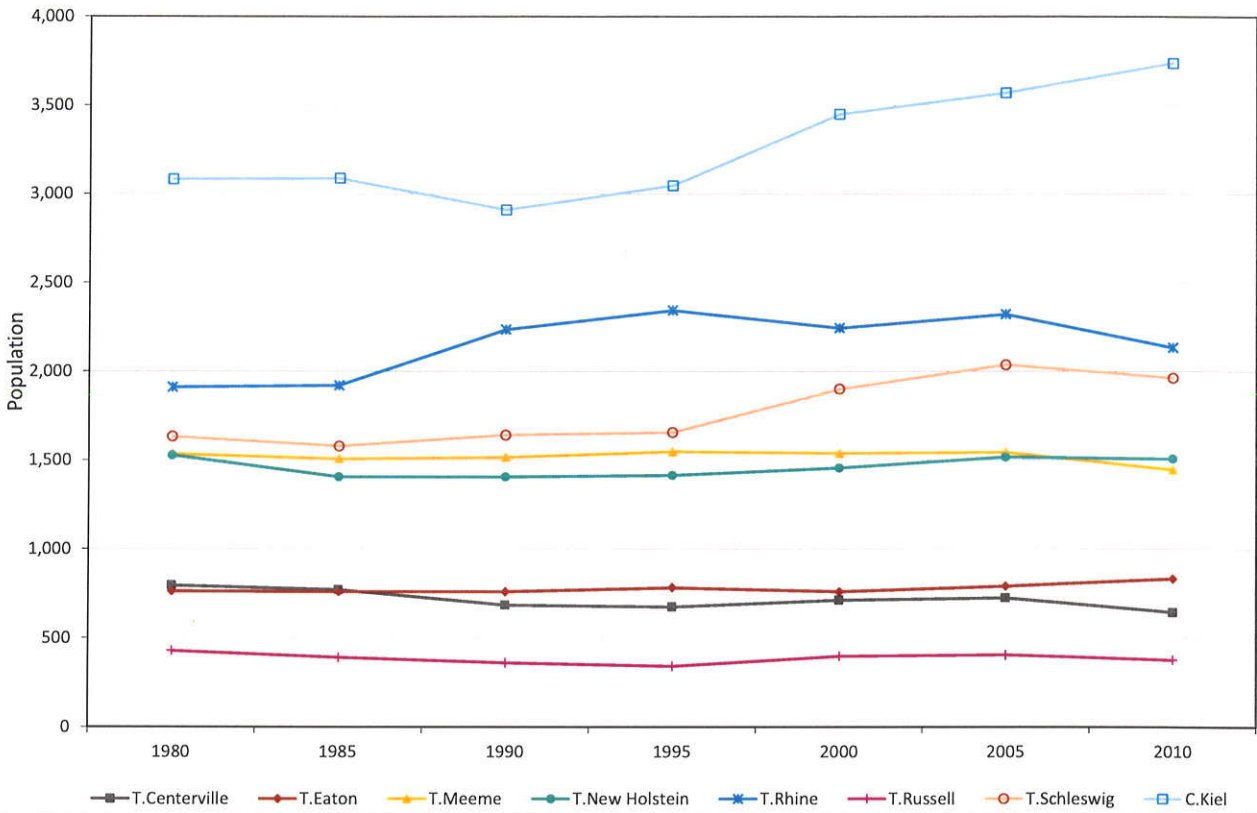
Population breakdown by race and ethnicity in 2010 for the Kiel Area School District area municipalities are provided in Table 4. These numbers show that even though all municipalities are a majority non-Hispanic white, there are minority populations within the district.

TABLE 4
Race/Ethnicity Population by Municipality: 2010
Kiel Area School District

| Municipality | Total | White | African American | Hispanic | Asian | American Indian |
|---|---|---|---|---|---|---|
| T.Centerville | 645 | 626 | 2 | 10 | 1 | 4 |
| T.Eaton | 833 | 806 | 8 | 10 | 9 | 0 |
| T.Meeme | 1,446 | 1,416 | 6 | 15 | 3 | 5 |
| T.New Holstein | 1,508 | 1,472 | 1 | 13 | 13 | 8 |
| T.Rhine | 2,134 | 2,090 | 3 | 13 | 25 | 3 |
| T.Russell | 377 | 368 | 0 | 7 | 0 | 2 |
| T.Schleswig | 1,963 | 1,906 | 5 | 24 | 10 | 17 |
| C.Kiel | 3,738 | 3,581 | 21 | 74 | 33 | 28 |
| District Area | 12,644 | 12,265 | 46 | 166 | 94 | 67 |
| Manitowoc County | 81,442 | 75,210 | 609 | 2,565 | 2,212 | 662 |
| State of Wisconsin | 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 |
|---|---|---|---|---|---|
| T.Centerville | 97.1% | 0.3% | 1.6% | 0.2% | 0.6% |
| T.Eaton | 96.8% | 1.0% | 1.2% | 1.1% | 0.0% |
| T.Meeme | 97.9% | 0.4% | 1.0% | 0.2% | 0.3% |
| T.New Holstein | 97.6% | 0.1% | 0.9% | 0.9% | 0.5% |
| T.Rhine | 97.9% | 0.1% | 0.6% | 1.2% | 0.1% |
| T.Russell | 97.6% | 0.0% | 1.9% | 0.0% | 0.5% |
| T.Schleswig | 97.1% | 0.3% | 1.2% | 0.5% | 0.9% |
| C.Kiel | 95.8% | 0.6% | 2.0% | 0.9% | 0.7% |
| District Area | 97.0% | 2.7% | 10.3% | 4.9% | 3.8% |
| Manitowoc County | 92.3% | 0.7% | 3.1% | 2.7% | 0.8% |
| State of Wisconsin | 83.3% | 6.7% | 5.9% | 2.5% | 1.2% |

Source: U. S. Census Bureau

Table 5 shows population projections by age for Manitowoc County. In the county as a whole, the number of children aged 0-4, 5-9, and 10-14 is expected to increase over the next several years. Because these projections are for the entirety of Manitowoc County, they may or may not resemble the future age structure of the population within the Kiel Area School District area.

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

| Manitowoc County | | | | | |
|---|---|---|---|---|---|
| Age Group | 2015 | 2020 | 2025 | 2030 | 2035 |
| 0-4 | 4,920 | 5,104 | 5,150 | 5,071 | 4,977 |
| 5-9 | 5,087 | 5,327 | 5,494 | 5,521 | 5,420 |
| 10-14 | 5,197 | 5,279 | 5,515 | 5,682 | 5,706 |
| 15-19 | 5,386 | 5,072 | 5,153 | 5,388 | 5,557 |
| 20-24 | 4,852 | 4,415 | 4,158 | 4,229 | 4,428 |
| 25-29 | 5,660 | 5,318 | 4,840 | 4,559 | 4,640 |
| 30-34 | 5,912 | 5,942 | 5,577 | 5,068 | 4,776 |
| 35-39 | 5,086 | 6,159 | 6,173 | 5,796 | 5,260 |
| 40-44 | 4,855 | 5,208 | 6,286 | 6,298 | 5,919 |
| 45-49 | 5,894 | 4,901 | 5,256 | 6,339 | 6,354 |
| 50-54 | 6,847 | 5,864 | 4,880 | 5,243 | 6,328 |
| 55-59 | 6,836 | 6,733 | 5,776 | 4,819 | 5,189 |
| 60-64 | 5,892 | 6,564 | 6,478 | 5,570 | 4,662 |
| 65-69 | 4,598 | 5,498 | 6,141 | 6,083 | 5,246 |
| 70-74 | 3,358 | 4,146 | 4,974 | 5,583 | 5,558 |
| 75-79 | 2,499 | 2,988 | 3,707 | 4,473 | 5,055 |
| 80-84 | 1,984 | 1,993 | 2,404 | 3,005 | 3,657 |
| 85-89 | 1,506 | 1,372 | 1,398 | 1,710 | 2,165 |
| 90-94 | 753 | 815 | 764 | 794 | 992 |
| 95-99 | 233 | 273 | 304 | 296 | 316 |
| 100 & Over | 48 | 64 | 80 | 95 | 100 |
| Totals | 87,403 | 89,035 | 90,508 | 91,622 | 92,305 |

Source: Demographic Services Center, WIDOA

Figure 4-B shows population estimates for 2010 by age for Manitowoc County from the U.S. Census Bureau. At the present time, there are fairly large cohorts of school aged children (5 to 9, 10 to 14, and 15-19).



**Figure 4-B**

**Age Structure**
Manitowoc County
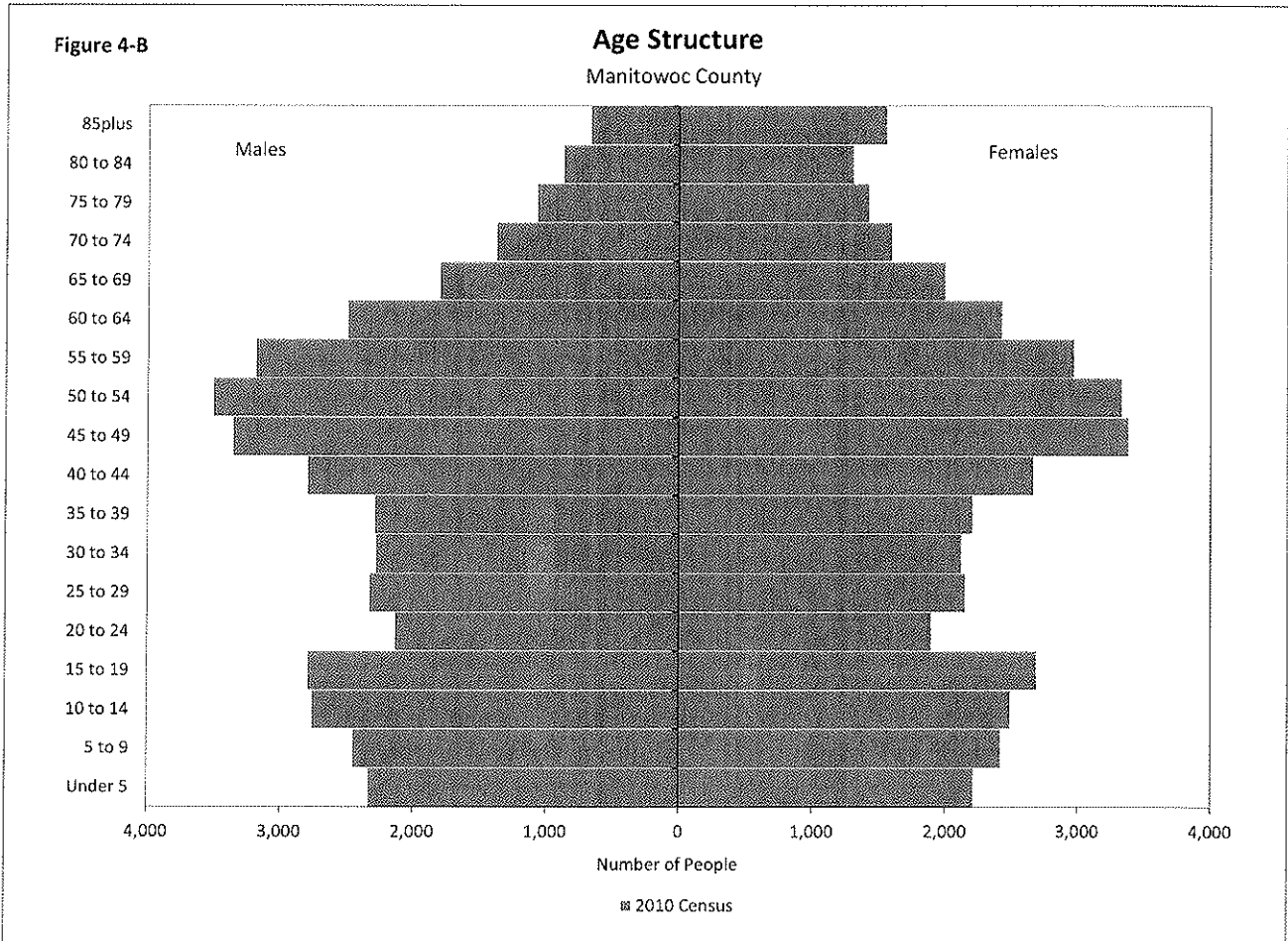
## Residential Development

Examining trends in recent housing development can help to explain how in-migration into the Kiel 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.

Table 6 shows the number of housing starts in the school district area over the past ten years. Area housing starts have fluctuated from a high of 93 units in 2005 (including 79 single family homes), to a low of 20 new housing starts in 2010.

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|
| **District Area** | | | | | | | | | | |
| TOTAL | 80 | 76 | 76 | 86 | 93 | 62 | 45 | 30 | 23 | 20 |
| Single Family | 70 | 67 | 67 | 81 | 79 | 58 | 43 | 28 | 21 | 20 |
| Two Family | 10 | 9 | 9 | 5 | 14 | 4 | 2 | 2 | 2 | 0 |
| Multi-family | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **T. Centerville** | | | | | | | | | | |
| TOTAL | 4 | 6 | 4 | 3 | 1 | 3 | 1 | 2 | 0 | 2 |
| Single Family | 4 | 6 | 4 | 3 | 1 | 3 | 1 | 2 | 0 | 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 |
| **T. Eaton** | | | | | | | | | | |
| TOTAL | 8 | 7 | 6 | 4 | 11 | 3 | 4 | 3 | 2 | 2 |
| Single Family | 8 | 7 | 6 | 4 | 11 | 3 | 4 | 3 | 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 |
| **T. Meeme** | | | | | | | | | | |
| TOTAL | 4 | 4 | 4 | 5 | 3 | 3 | 3 | 2 | 2 | 2 |
| Single Family | 4 | 4 | 4 | 5 | 3 | 3 | 3 | 2 | 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 |
| **T. New Holstein** | | | | | | | | | | |
| TOTAL | 12 | 6 | 13 | 16 | 10 | 5 | 8 | 1 | 1 | 1 |
| Single Family | 12 | 6 | 13 | 16 | 10 | 5 | 8 | 1 | 1 | 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 |
| **T. Rhine** | | | | | | | | | | |
| TOTAL | 14 | 12 | 10 | 14 | 10 | 10 | 7 | 6 | 7 | 4 |
| Single Family | 14 | 12 | 10 | 14 | 10 | 10 | 7 | 6 | 7 | 4 |
| 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. Russell** | | | | | | | | | | |
| TOTAL | 0 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 |
| Single Family | 0 | 5 | 1 | 0 | 0 | 1 | 1 | 0 | 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 |
| **T. Schleswig** | | | | | | | | | | |
| TOTAL | 20 | 14 | 25 | 27 | 18 | 7 | 10 | 8 | 5 | 7 |
| Single Family | 20 | 14 | 21 | 25 | 18 | 7 | 10 | 8 | 5 | 7 |
| Two Family | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multi-family | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **C. Kiel** | | | | | | | | | | |
| TOTAL | 18 | 22 | 13 | 17 | 40 | 30 | 11 | 8 | 5 | 2 |
| Single Family | 8 | 13 | 8 | 14 | 26 | 26 | 9 | 6 | 3 | 2 |
| Two Family | 10 | 9 | 5 | 3 | 14 | 4 | 2 | 2 | 2 | 0 |
| Multi-family | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: Demographic Services Center, WIDOA

The majority of housing development over the last several years has occurred in the City of Kiel. There has also been a small amount of development in the Town of Schleswig. Most of the development in the area has consisted of single-family homes. 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 four years. This is consistent with housing and economic trends in Manitowoc County, Wisconsin, and the United States as a whole. Despite these challenges, the Kiel Area School District still saw 20 new housing starts in 2010, indicating that development is still occurring within the district area.

Figure 5 shows housing starts in the district area by type of housing unit—single family home, duplex, multi-family housing unit, or mobile home.



Figure 5 — Kiel Area School District — Area Housing Starts by Type
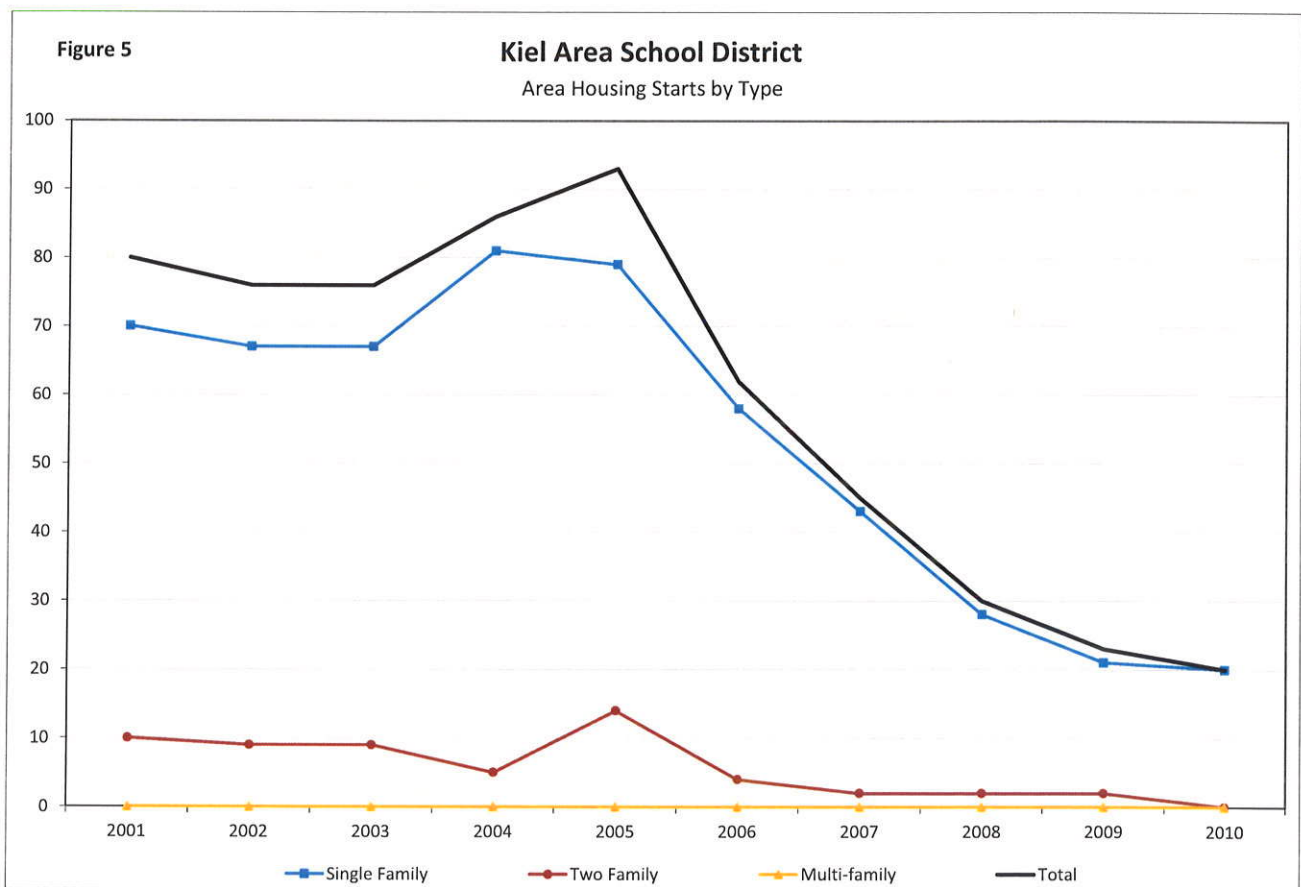
It is also important to consider that turnover in ownership of existing housing stock also contributes to changes in enrollment. A district can maintain or even increase enrollment depending upon the cycle of resident homeowners, regardless of housing starts. For instance, a younger community will have 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 happen for several years at varying rates.

# 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. In order to project incoming kindergarten students, we gather data on births from the Wisconsin Department of Health Services and assume that a certain percentage of the children born to mothers residing in the school district area will enroll as kindergarteners five to six years later. Finally, we customize 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/or 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 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 Kiel 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 7
Grade Progression Ratios
Kiel 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 02-03/03-04 | 0.997 | 0.968 | 1.022 | 1.024 | 1.030 | 1.030 | 0.965 | 0.991 | 1.028 | 1.147 | 1.074 | 1.053 | 1.014 |
| 03-04/04-05 | 0.826 | 0.961 | 1.055 | 0.968 | 1.070 | 0.971 | 1.010 | 0.991 | 1.035 | 1.135 | 1.000 | 0.977 | 1.019 |
| 04-05/05-06 | 0.963 | 0.963 | 1.000 | 0.969 | 1.022 | 1.065 | 0.990 | 1.019 | 0.972 | 1.144 | 1.008 | 1.030 | 1.016 |
| 05-06/06-07 | 1.031 | 1.103 | 1.090 | 1.020 | 1.054 | 1.064 | 1.051 | 1.051 | 1.019 | 1.162 | 1.052 | 1.024 | 1.058 |
| 06-07/07-08 | 1.085 | 1.081 | 1.125 | 1.012 | 1.030 | 1.112 | 1.010 | 1.010 | 1.010 | 1.183 | 1.033 | 0.958 | 1.008 |
| 07-08/08-09 | 1.095 | 1.019 | 1.019 | 1.046 | 0.977 | 1.010 | 0.982 | 0.990 | 0.981 | 1.143 | 1.031 | 0.992 | 1.000 |
| 08-09/09-10 | 1.027 | 1.000 | 1.009 | 0.954 | 0.973 | 1.071 | 1.019 | 1.028 | 0.990 | 0.951 | 1.017 | 1.000 | 1.032 |
| 09-10/10-11 | 0.993 | 0.978 | 0.980 | 0.991 | 1.010 | 1.045 | 1.022 | 1.000 | 1.018 | 1.121 | 1.052 | 0.975 | 1.068 |
| 10-11/11-12 | 1.191 | 0.885 | 1.033 | 1.020 | 1.038 | 0.971 | 1.035 | 1.011 | 1.028 | 1.071 | 1.027 | 1.000 | 1.076 |
| Baseline | 1.027 | 0.982 | 1.023 | 1.006 | 1.030 | 1.048 | 1.010 | 1.005 | 1.015 | 1.141 | 1.035 | 1.000 | 1.024 |
| 5 Year Trend | 1.078 | 0.993 | 1.033 | 1.005 | 1.006 | 1.042 | 1.014 | 1.008 | 1.005 | 1.094 | 1.032 | 0.985 | 1.037 |
| 2 Year "Trend" | 1.092 | 0.932 | 1.007 | 1.005 | 1.024 | 1.008 | 1.029 | 1.005 | 1.023 | 1.096 | 1.039 | 0.988 | 1.072 |

*Shaded progression ratios are excluded from the Baseline Average

The grade progression ratios can be interpreted in the following manner. The Baseline ratio for grades 1:2 is 1.023. This means that in the Kiel Area School District, the second grade is on average 2.3% 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 K:1 (kindergarten to first grade) Baseline ratio of 0.982 indicates that on average, approximately 98.2% of the kindergartners advance to 1st grade in the 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 data), 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.

**Figure 6**

**Kiel Area School District**

Grade Progression Ratios, by Model
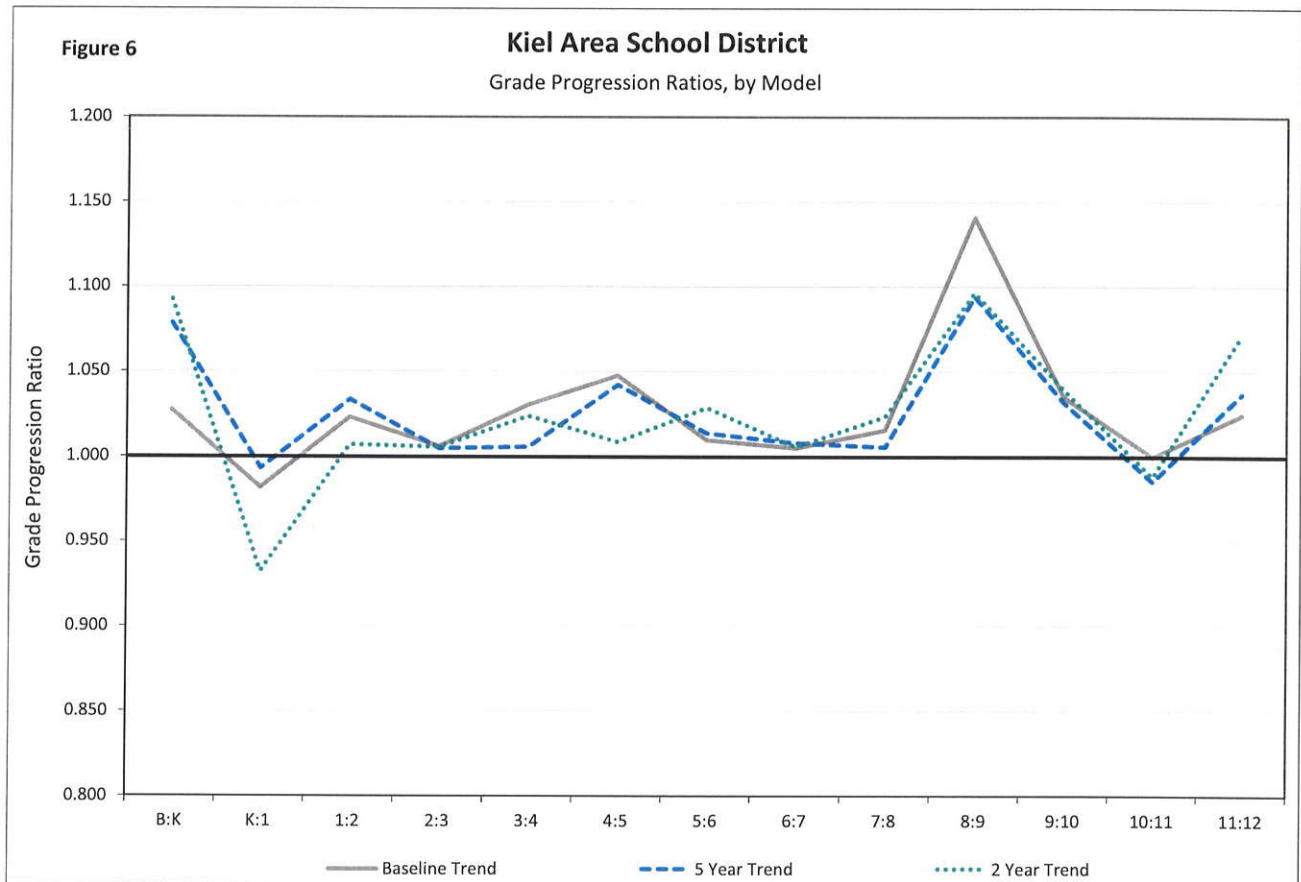
When considering all of the projections provided in this report for decision-making, it is important to recognize that population projections of all types, including school enrollment projections, are more accurate in the immediate future than they are farther into the future. This is especially true for grades K-4, because the students who will enter kindergarten after 2016 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.

## 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 remain relatively steady over the next ten years. The grade progression ratio of 1.00 is used to project future 4K students. Table 8 shows the observed transfer ratio between birth and 4K for the last seven years, future transfer ratio of 1.00 between birth and 4K, 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 8**
**4K Enrollment and Projections**
**Kiel Area School District**

| Birth/4K Year | B:4K | Enrollment |
|---|---|---|
| 00-01/05-06 | 0.768 | 75 |
| 01-02/06-07 | 0.934 | 86 |
| 02-03/07-08 | 1.017 | 92 |
| 03-04/08-09 | 0.919 | 84 |
| 04-05/09-10 | 0.998 | 91 |
| 05-06/10-11 | 0.954 | 78 |
| 06-07/11-12 | 1.044 | 100 |
| 07-08/12-13 | 1.000 | 89 |
| 08-09/13-14 | 1.000 | 88 |
| 09-10/14-15 | 1.000 | 86 |
| 10-11/15-16 | 1.000 | 85 |
| 11-12/16-17 | 1.000 | 84 |
| 12-13/17-18 | 1.000 | 83 |
| 13-14/18-19 | 1.000 | 82 |
| 14-15/19-20 | 1.000 | 81 |
| 15-16/20-21 | 1.000 | 79 |
| 16-17/21-22 | 1.000 | 78 |

The Baseline model (Table 9) 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 4K-12 enrollment will grow a little over the next six years or so, then begin to decline between 2018 and 2021. In the next five years, both elementary and middle school enrollment is projected to decline, while high school enrollment should increase.

**TABLE 9**
**Baseline Projection Model**
**Kiel Area 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 | 88 | 86 | 85 | 84 | 83 | 82 | 81 | 79 | 78 |
| K | 96 | 94 | 87 | 88 | 90 | 89 | 88 | 88 | 87 | 86 |
| 1 | 97 | 95 | 92 | 86 | 86 | 88 | 87 | 87 | 86 | 85 |
| 2 | 87 | 99 | 97 | 94 | 88 | 88 | 90 | 89 | 89 | 88 |
| 3 | 94 | 87 | 100 | 97 | 94 | 88 | 89 | 91 | 90 | 89 |
| 4 | 105 | 96 | 90 | 103 | 100 | 97 | 91 | 92 | 93 | 93 |
| 5 | 115 | 110 | 101 | 94 | 108 | 105 | 102 | 95 | 96 | 98 |
| 6 | 103 | 116 | 111 | 102 | 95 | 109 | 106 | 103 | 96 | 97 |
| 7 | 120 | 103 | 117 | 112 | 102 | 96 | 110 | 107 | 103 | 96 |
| 8 | 94 | 121 | 105 | 119 | 113 | 104 | 97 | 111 | 108 | 105 |
| 9 | 124 | 108 | 139 | 120 | 135 | 129 | 119 | 111 | 127 | 123 |
| 10 | 124 | 129 | 112 | 143 | 124 | 140 | 134 | 123 | 115 | 131 |
| 11 | 114 | 124 | 129 | 111 | 143 | 124 | 140 | 134 | 123 | 115 |
| 12 | 104 | 117 | 127 | 132 | 114 | 147 | 127 | 144 | 137 | 126 |
| | | | | | | | | | | |
| **TOTAL** | **1,467** | **1,488** | **1,492** | **1,487** | **1,479** | **1,488** | **1,462** | **1,454** | **1,430** | **1,411** |
| | | | | | | | | | | |
| K-12 | 1,378 | 1,400 | 1,406 | 1,401 | 1,395 | 1,405 | 1,380 | 1,373 | 1,350 | 1,333 |
| K-4 | 479 | 471 | 466 | 468 | 458 | 451 | 446 | 446 | 445 | 441 |
| 5-8 | 432 | 451 | 434 | 427 | 419 | 414 | 415 | 416 | 404 | 396 |
| 9-12 | 467 | 477 | 506 | 507 | 517 | 541 | 520 | 511 | 502 | 495 |

The 5 Year Trend model (Table 10) uses the grade progression ratios from the last five years and recent trends in the number of births in the 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 Kiel Area School District is projected to remain steady over the next five years, only decreasing by 8 students during this time period.

Between 2011 and 2016, the model projects K-4 and 5-8 enrollment will decrease slightly. Also during this time, enrollment in grades 9-12 is projected to increase by 25 students.

TABLE 10
5 Year Trend Projection Model
Kiel Area 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 | 88 | 86 | 85 | 84 | 83 | 82 | 81 | 79 | 78 |
| K | 101 | 98 | 91 | 92 | 93 | 93 | 92 | 91 | 90 | 89 |
| 1 | 98 | 100 | 97 | 91 | 91 | 93 | 92 | 91 | 90 | 89 |
| 2 | 88 | 102 | 104 | 101 | 94 | 94 | 96 | 95 | 94 | 93 |
| 3 | 93 | 88 | 102 | 104 | 101 | 94 | 95 | 96 | 95 | 95 |
| 4 | 103 | 94 | 89 | 103 | 105 | 102 | 95 | 95 | 97 | 96 |
| 5 | 115 | 107 | 98 | 92 | 107 | 109 | 106 | 99 | 99 | 101 |
| 6 | 103 | 116 | 108 | 99 | 94 | 108 | 111 | 107 | 100 | 101 |
| 7 | 120 | 104 | 117 | 109 | 100 | 94 | 109 | 112 | 108 | 101 |
| 8 | 93 | 121 | 105 | 118 | 110 | 101 | 95 | 110 | 112 | 109 |
| 9 | 119 | 102 | 132 | 115 | 129 | 120 | 110 | 104 | 120 | 123 |
| 10 | 124 | 123 | 106 | 136 | 118 | 133 | 124 | 113 | 107 | 124 |
| 11 | 112 | 122 | 121 | 104 | 134 | 116 | 131 | 122 | 112 | 106 |
| 12 | 106 | 116 | 126 | 126 | 108 | 139 | 121 | 136 | 126 | 116 |
| TOTAL | 1,465 | 1,481 | 1,483 | 1,474 | 1,468 | 1,480 | 1,457 | 1,452 | 1,432 | 1,420 |
| K-12 | 1,376 | 1,394 | 1,397 | 1,389 | 1,384 | 1,397 | 1,375 | 1,371 | 1,352 | 1,342 |
| K-4 | 483 | 482 | 483 | 490 | 485 | 476 | 469 | 469 | 467 | 462 |
| 5-8 | 431 | 448 | 428 | 419 | 410 | 413 | 421 | 428 | 420 | 411 |
| 9-12 | 461 | 464 | 485 | 480 | 489 | 508 | 485 | 475 | 466 | 468 |

The 2 Year "Trend" model (Table 11) 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 decrease from 1,476 students in 2011 to1,448 students in 2016. This is a decrease of 28 students over the next five years. This results from a decrease in elementary and middle school enrollment while high school enrollment is projected to increase during this time period.

The projections from this model show more loss than the two previous models. That is due to the lower grade progression ratios and the number of students enrolled has been lower than usual the past two years. If this trend continued in the years to come, this model would be appropriate.

**TABLE 11**
**2 Year "Trend" Projection Model**
**Kiel Area 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 | 88 | 86 | 85 | 84 | 83 | 82 | 81 | 79 | 78 |
| K | 102 | 99 | 93 | 93 | 95 | 94 | 93 | 92 | 91 | 90 |
| 1 | 92 | 95 | 93 | 86 | 87 | 88 | 87 | 87 | 86 | 85 |
| 2 | 86 | 93 | 96 | 93 | 87 | 87 | 89 | 88 | 87 | 86 |
| 3 | 93 | 86 | 93 | 97 | 94 | 87 | 88 | 89 | 88 | 88 |
| 4 | 104 | 96 | 88 | 96 | 99 | 96 | 89 | 90 | 91 | 91 |
| 5 | 111 | 105 | 97 | 89 | 96 | 100 | 97 | 90 | 91 | 92 |
| 6 | 105 | 114 | 108 | 99 | 91 | 99 | 103 | 100 | 93 | 93 |
| 7 | 120 | 105 | 115 | 109 | 100 | 92 | 100 | 103 | 100 | 93 |
| 8 | 95 | 122 | 108 | 117 | 111 | 102 | 94 | 102 | 106 | 102 |
| 9 | 119 | 104 | 134 | 118 | 129 | 122 | 112 | 103 | 112 | 116 |
| 10 | 125 | 124 | 108 | 139 | 123 | 134 | 127 | 116 | 107 | 116 |
| 11 | 113 | 123 | 123 | 107 | 138 | 121 | 132 | 125 | 115 | 106 |
| 12 | 109 | 121 | 132 | 131 | 115 | 148 | 130 | 142 | 134 | 123 |
| **TOTAL** | **1,464** | **1,477** | **1,474** | **1,461** | **1,448** | **1,454** | **1,422** | **1,408** | **1,381** | **1,360** |
| K-12 | 1,375 | 1,389 | 1,388 | 1,376 | 1,364 | 1,371 | 1,341 | 1,327 | 1,301 | 1,282 |
| K-4 | 478 | 470 | 463 | 465 | 461 | 453 | 446 | 446 | 444 | 440 |
| 5-8 | 431 | 447 | 427 | 414 | 399 | 393 | 393 | 395 | 389 | 381 |
| 9-12 | 466 | 472 | 497 | 496 | 504 | 525 | 501 | 486 | 468 | 461 |

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 seven years, regardless of the number of observed births in the school district area.

According to this hybrid projection method (Table 12), 4K-12 enrollment would decrease over the next five years. A good way to think about the projections provided by this model is that if the number of new kindergarteners continues to remain steady *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 12
Kindergarten Trend Projection Model
Kiel Area School District

| GRADE | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 21-22 |
|---|---|---|---|---|---|---|---|---|---|---|
| 4K | 89 | 88 | 86 | 85 | 84 | 83 | 82 | 81 | 79 | 78 |
| K | 95 | 94 | 92 | 91 | 89 | 87 | 86 | 84 | 83 | 81 |
| 1 | 98 | 95 | 93 | 92 | 90 | 88 | 87 | 85 | 84 | 82 |
| 2 | 88 | 102 | 98 | 96 | 95 | 93 | 91 | 90 | 88 | 86 |
| 3 | 93 | 88 | 102 | 98 | 97 | 95 | 93 | 92 | 90 | 88 |
| 4 | 103 | 94 | 89 | 103 | 99 | 97 | 96 | 94 | 92 | 91 |
| 5 | 115 | 107 | 98 | 92 | 107 | 103 | 101 | 100 | 98 | 96 |
| 6 | 103 | 116 | 108 | 99 | 94 | 108 | 104 | 103 | 101 | 99 |
| 7 | 120 | 104 | 117 | 109 | 100 | 94 | 109 | 105 | 103 | 102 |
| 8 | 93 | 121 | 105 | 118 | 110 | 101 | 95 | 110 | 106 | 104 |
| 9 | 119 | 102 | 132 | 115 | 129 | 120 | 110 | 104 | 120 | 116 |
| 10 | 124 | 123 | 106 | 136 | 118 | 133 | 124 | 113 | 107 | 124 |
| 11 | 112 | 122 | 121 | 104 | 134 | 116 | 131 | 122 | 112 | 106 |
| 12 | 106 | 116 | 126 | 126 | 108 | 139 | 121 | 136 | 126 | 116 |
| **TOTAL** | **1,459** | **1,471** | **1,474** | **1,463** | **1,452** | **1,459** | **1,430** | **1,417** | **1,389** | **1,369** |
| K-12 | 1,370 | 1,384 | 1,387 | 1,378 | 1,368 | 1,376 | 1,348 | 1,337 | 1,310 | 1,290 |
| K-4 | 478 | 472 | 474 | 479 | 469 | 461 | 453 | 445 | 437 | 428 |
| 5-8 | 431 | 448 | 428 | 419 | 410 | 406 | 410 | 417 | 408 | 401 |
| 9-12 | 461 | 464 | 485 | 480 | 489 | 508 | 485 | 475 | 466 | 461 |

# Comparison of Projection Models

Figures 7-10 and Tables 13-16 compare the four enrollment projection models broken down by total 4K-12 district enrollment and by grade groupings.
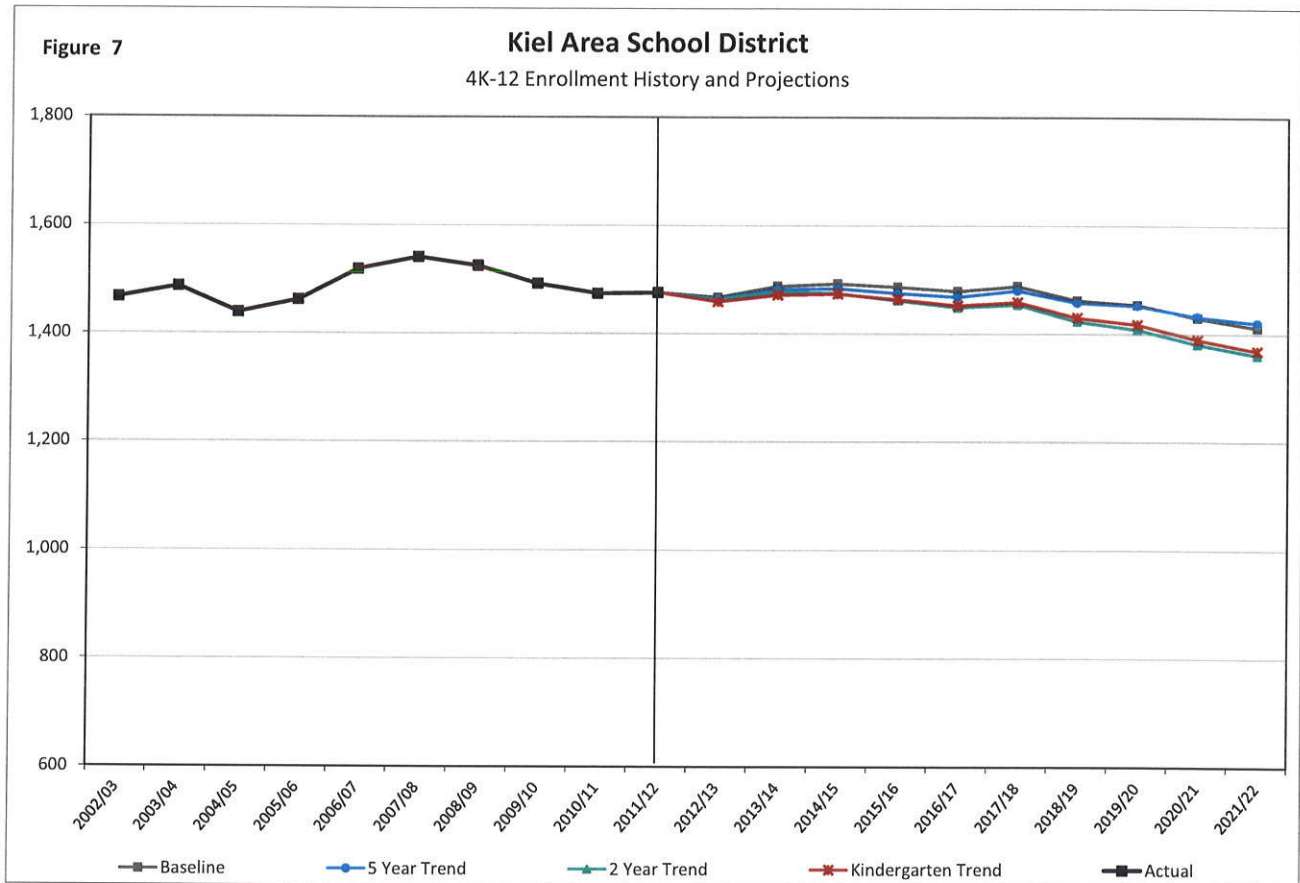


**Figure 7**

**Kiel Area School District**
4K-12 Enrollment History and Projections

Legend: Baseline, 5 Year Trend, 2 Year Trend, Kindergarten Trend, Actual

**Table 13**
**Summary of 4K-12 Enrollment Projections**
**Kiel Area School District**

|                    | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 21-22 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Baseline           | 1,467 | 1,488 | 1,492 | 1,487 | 1,479 | 1,488 | 1,462 | 1,454 | 1,430 | 1,411 |
| 5 Year Trend       | 1,465 | 1,481 | 1,483 | 1,474 | 1,468 | 1,480 | 1,457 | 1,452 | 1,432 | 1,420 |
| 2 Year "Trend"     | 1,464 | 1,477 | 1,474 | 1,461 | 1,448 | 1,454 | 1,422 | 1,408 | 1,381 | 1,360 |
| Kindergarten Trend | 1,459 | 1,471 | 1,474 | 1,463 | 1,452 | 1,459 | 1,430 | 1,417 | 1,389 | 1,369 |

All of the projection models forecast steady or slightly declining enrollment over the next five years followed by a decrease in enrollment over the long term. The 2 Year "Trend" and Kindergarten Trend project the most enrollment decline. District-wide enrollment projections five years from now (2016/17) predict a range of enrollment from 1,448 to 1,479.
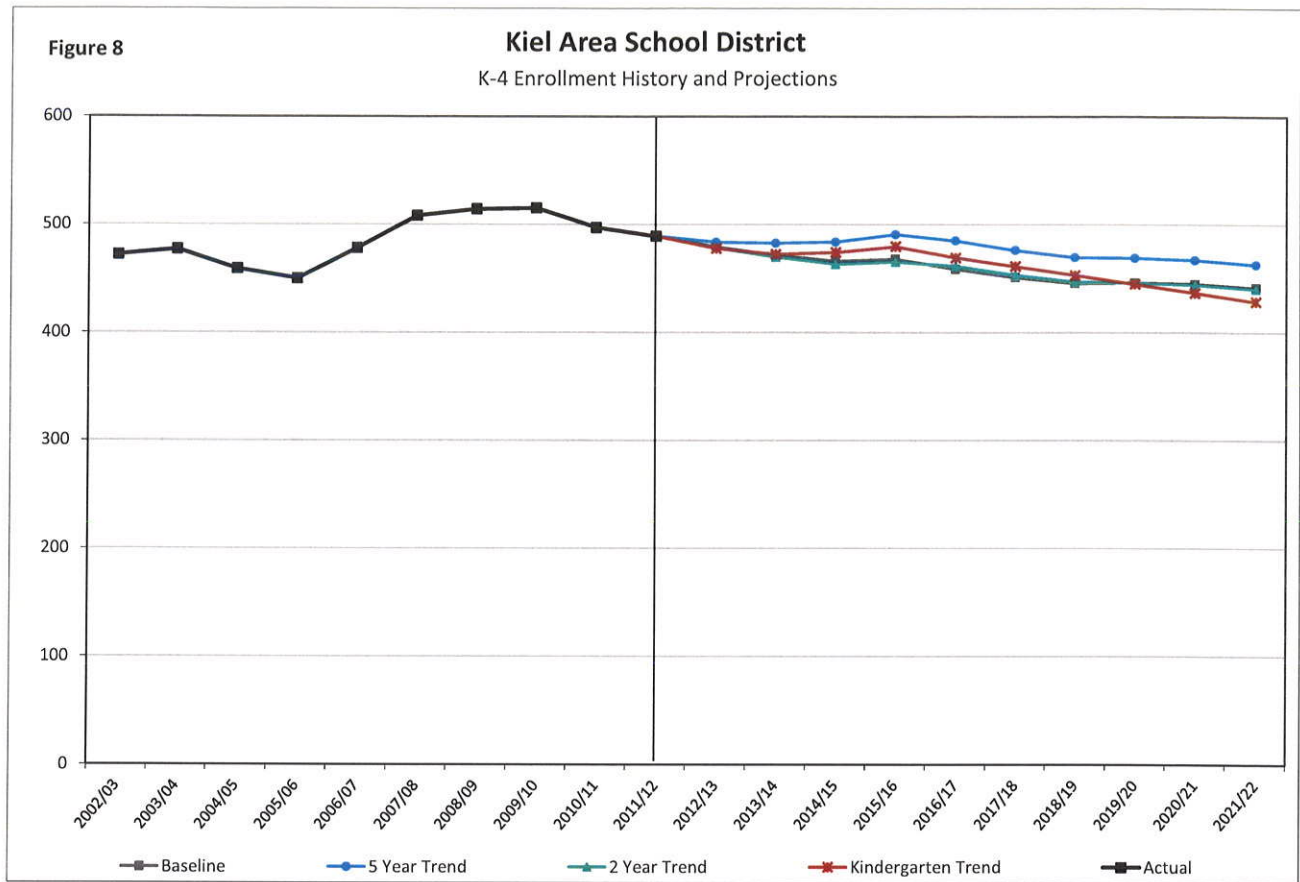
**Figure 8**

**Kiel Area School District**
K-4 Enrollment History and Projections

Legend: Baseline · 5 Year Trend · 2 Year Trend · Kindergarten Trend · Actual

**TABLE 14**
**Summary of K-4 Enrollment Projections**
**Kiel Area School District**

|  | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 21-22 |
|---|---|---|---|---|---|---|---|---|---|---|
| Baseline | 479 | 471 | 466 | 468 | 458 | 451 | 446 | 446 | 445 | 441 |
| 5 Year Trend | 483 | 482 | 483 | 490 | 485 | 476 | 469 | 469 | 467 | 462 |
| 2 Year "Trend" | 478 | 470 | 463 | 465 | 461 | 453 | 446 | 446 | 444 | 440 |
| Kindergarten Trend | 478 | 472 | 474 | 479 | 469 | 461 | 453 | 445 | 437 | 428 |

For grades K-4, all of the projection models project a decline in student enrollment over the next decade. This is due to a decreasing trend of births in the long and short term. The 5 Year Trend forecasts the least amount of enrollment decline. Enrollment for grades K-4 in the 2016/17 school year is projected to range from 458 to 485 students.
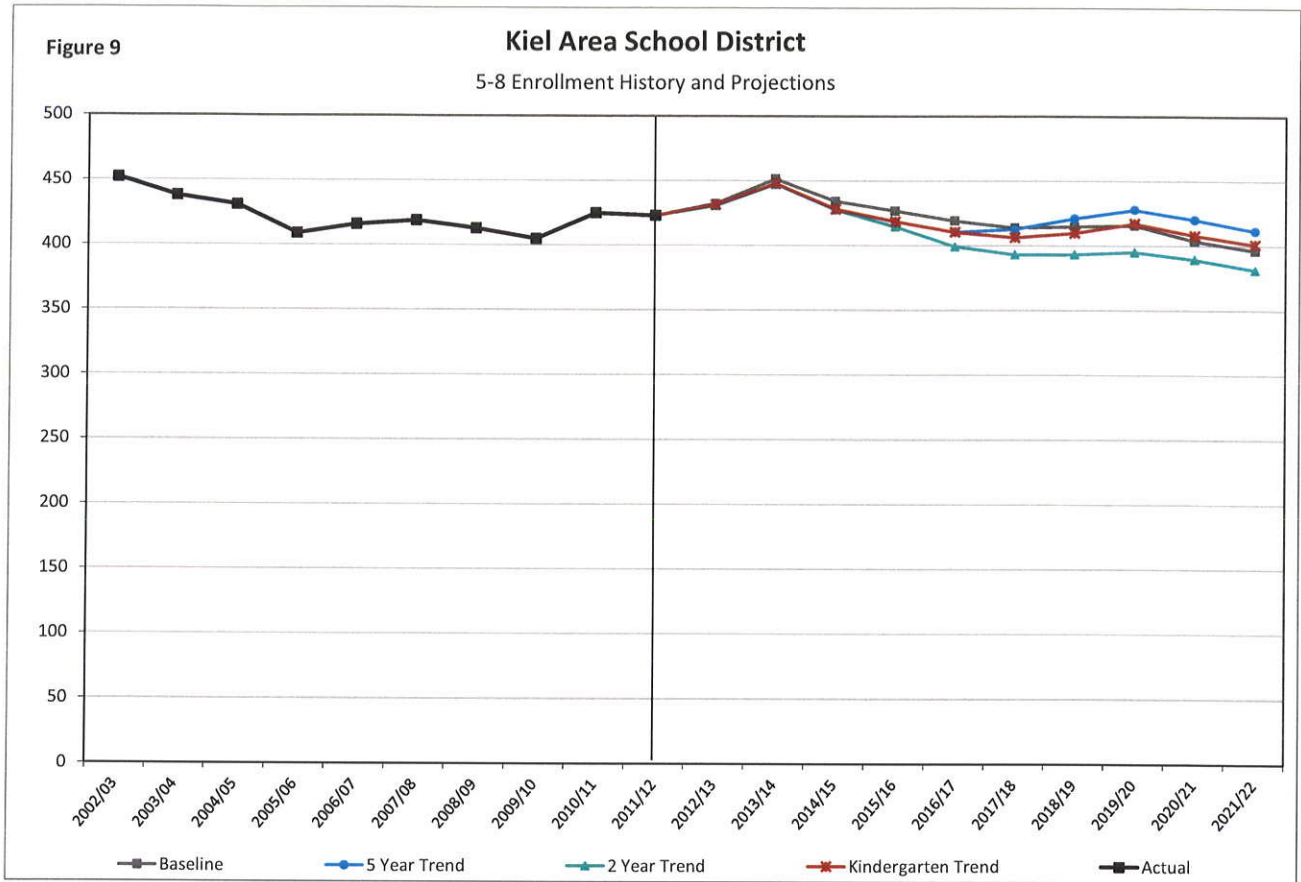
**Figure 9**

**Kiel Area School District**

5-8 Enrollment History and Projections

**TABLE 15**
**Summary of 5-8 Enrollment Projections**
**Kiel Area School District**

|                   | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 21-22 |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Baseline          | 432   | 451   | 434   | 427   | 419   | 414   | 415   | 416   | 404   | 396   |
| 5 Year Trend      | 431   | 448   | 428   | 419   | 410   | 413   | 421   | 428   | 420   | 411   |
| 2 Year "Trend"    | 431   | 447   | 427   | 414   | 399   | 393   | 393   | 395   | 389   | 381   |
| Kindergarten Trend| 431   | 448   | 428   | 419   | 410   | 406   | 410   | 417   | 408   | 401   |

At the middle school grade levels, all of the models project increasing enrollment over the next two years followed by a decrease in enrollment. The 5 Year Trend projects the least amount of decline while the 2 Year "Trend" shows the most enrollment decline. By the 2016/17 school year, middle school enrollment is projected to range between 399 to 419 students.
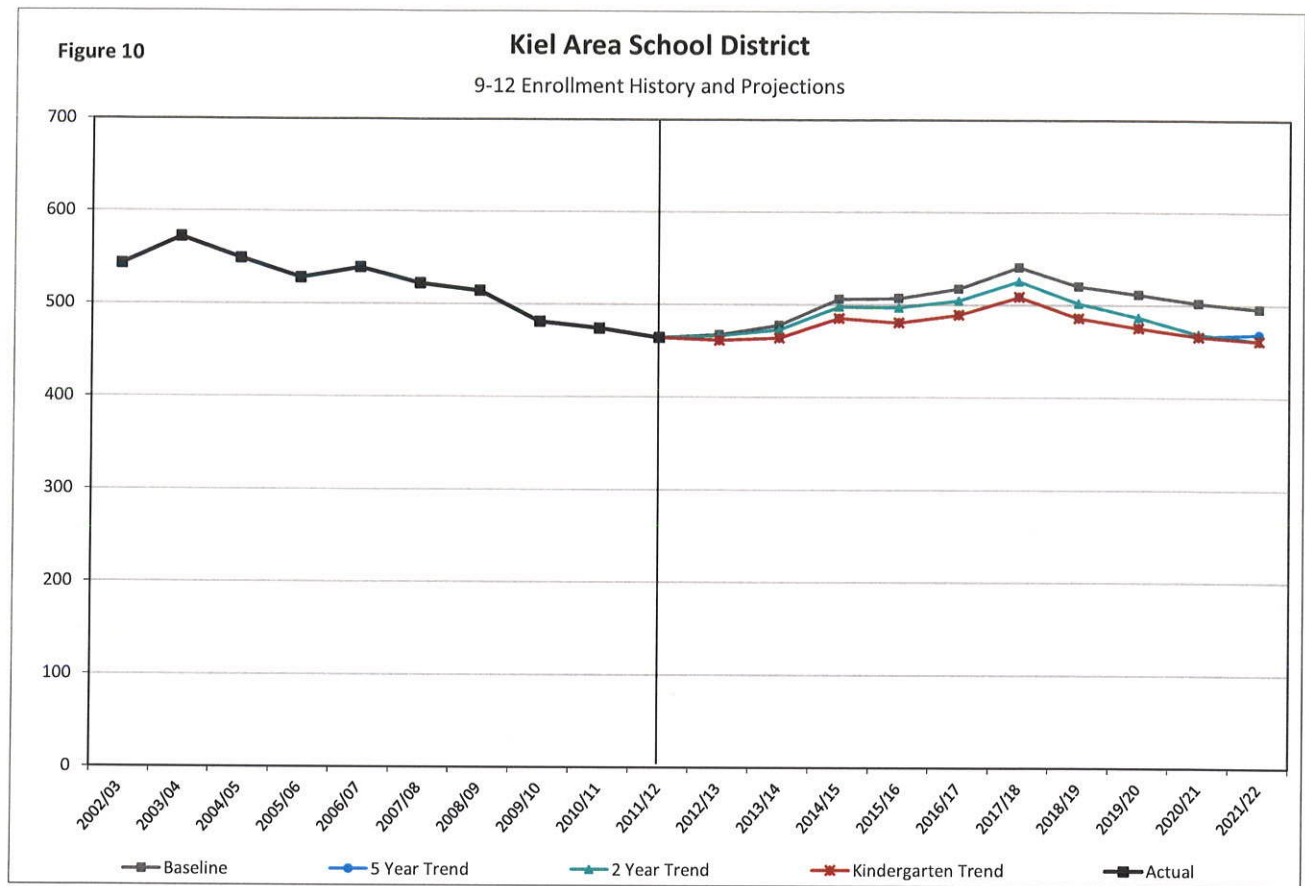
## Figure 10

### Kiel Area School District
#### 9-12 Enrollment History and Projections



Legend: Baseline, 5 Year Trend, 2 Year Trend, Kindergarten Trend, Actual

**TABLE 16**
**Summary of 9-12 Enrollment Projections**
**Kiel Area School District**

|  | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | 18-19 | 19-20 | 20-21 | 21-22 |
|---|---|---|---|---|---|---|---|---|---|---|
| Baseline | 467 | 477 | 506 | 507 | 517 | 541 | 520 | 511 | 502 | 495 |
| 5 Year Trend | 461 | 464 | 485 | 480 | 489 | 508 | 485 | 475 | 466 | 468 |
| 2 Year "Trend" | 466 | 472 | 497 | 496 | 504 | 525 | 501 | 486 | 468 | 461 |
| Kindergarten Trend | 461 | 464 | 485 | 480 | 489 | 508 | 485 | 475 | 466 | 461 |

The Baseline and 5 year Trend models project enrollment increase over the next decade for grades 9-12. The 2 Year "Trend" and Kindergarten Trend models project only a slight decrease in enrollment during this time period. Over the next five years, all models forecast an enrollment increase. By the 2016/17 school year, enrollment is projected to range from 489 to 517 students.

## 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 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 slightly decreasing enrollment in the Kiel Area School District in the short term, and larger enrollment decreases over the next decade. If decreasing birth trends continue as they have been the past couple years, then elementary enrollment will most likely decline. Middle school enrollment is also forecasted to decrease in the upcoming years. High school enrollment on the other hand is likely to increase in the next five years.

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.