



**Westerly Public Schools, RI  
Demographic Study**

**December 2017**



---

**Table of Contents**

<b>Executive Summary</b>	<b>1</b>
<b>Introduction</b>	<b>2</b>
<b>Data</b>	<b>2</b>
<b>Assumptions</b>	<b>3</b>
<b>Methodology</b>	<b>4</b>
<b>Results and Analysis of the Population Forecasts</b>	<b>5</b>
<b>Results and Analysis of Enrollment Forecasts</b>	<b>6</b>
<i>Elementary Enrollment</i>	<b>6</b>
<i>Middle School Enrollment</i>	<b>7</b>
<i>High School Enrollment</i>	<b>8</b>
<b>References</b>	<b>8</b>
<b>Appendix A: Supplemental Tables</b>	<b>9</b>
<b>Appendix B: Population Forecasts</b>	<b>13</b>
<b>Appendix C: Population Pyramids</b>	<b>15</b>
<b>Appendix D: Enrollment Forecasts</b>	<b>17</b>
<b>Appendix E: Live-Attend and Map Analysis</b>	<b>25</b>



### Executive Summary

1. The resident total fertility rate (TFR) for the Westerly Public Schools district over the life of the forecasts is below replacement level. (1.71 vs. the replacement level of 2.1)
2. Most of the in-migration to the district continues to occur in the 0-to-9 and 30-to-44 year-old age groups.
3. The local 18-to-24 year-old population continues to leave the district, going to college or moving to other urbanized areas. This population group accounts for the largest segment of the service area's out migration flow.
4. The primary factors causing the district's enrollment to decrease slightly are the low number of indigenous births, and the in-migration of young households and families that is not quite large enough to compensate for the low number of children in the 0-to-4 age cohorts.
5. Changes in year-to-year enrollment (at least for the next five years) will primarily be due to smaller grade cohorts entering and moving through the school system in conjunction with larger grade cohorts leaving the system.
6. The total elementary enrollment will begin to stabilize after 2021.
7. The median age of the population will increase from 44.3 in 2010 to 46.2 in 2025.
8. The primary cause of the decrease of the high school enrollment after 2021 is due to the wave of relatively small grade cohorts currently in the elementary and middle school grades.
9. Even if the district continues to have a modest level of annual new home construction, the rate, magnitude and price of existing home sales will become the increasingly dominant factors affecting the amount of population and enrollment change.
10. Total district enrollment is forecasted to decrease by 123 students, or -4.7%, between 2017-18 and 2022-23. Total enrollment will decrease by 93 students or -3.7% from 2022-23 to 2027-28.



## INTRODUCTION

By demographic principle, distinctions are made between projections and forecasts. A projection extrapolates the past (and present) into the future with little or no attempt to take into account any factors that may impact the extrapolation (e.g., changes in fertility rates, housing patterns or migration patterns) while a forecast results when a projection is modified by reasoning to take into account the aforementioned factors.

To maximize the use of this study as a planning tool, the ultimate goal is not simply to project the past into the future, but rather to assess various factors' impact on the future. A variety of factors influence the future population and enrollment changes of each school district and its individual attendance areas. Not all factors will influence the entire school district at the same level. Some may affect different areas at dissimilar magnitudes and rates causing changes at varying points of time within the same district. The forecaster's judgment, based on a thorough and intimate study of the district, has been used to modify the demographic trends and factors to more accurately predict likely changes. Therefore, strictly speaking, this study is a forecast, not a projection; and the amount of modification of the demographic trends varies between different areas of the district as well as within the timeframe of the forecast.

To calculate population forecasts of any type, particularly for smaller populations such as a school district or its attendance areas, realistic suppositions must be made as to what the future will bring in terms of the residents' general demographic behavior at certain points of the life course. The demographic history of the school district and its interplay with the social and economic history of the area is the starting point and the basis of most of these suppositions particularly on key factors such as the age/sex distribution, local vital rates, housing characteristics and special populations of the area. The unique nature of each district's and attendance area demographic composition and rate of change over time must be assessed and understood to be factors throughout the life of the forecast series. Moreover, no two populations, particularly at the school district and attendance area level, have exactly the same characteristics.

The manifest purpose of these forecasts is to ascertain the demographic factors that will ultimately influence the enrollment levels in the district's schools. There are of course, other non-demographic factors that affect enrollment levels over time. These factors include, but are not limited to: transfer policies within the district, student transfers to and from neighboring districts, placement of "special programs" within school facilities that may serve students from outside the attendance area, state or federal mandates that dictate the movement of students from one facility to another (No Child Left Behind was an excellent example of this factor), the development of charter schools in the district, the prevalence of home schooling in the area, and the dynamics of local private schools.

Unless the district specifically requests the calculation of forecasts that reflect the effects of changes in these non-demographic factors, their influences are held constant for the life of the forecasts. Again, the main function of these forecasts is to determine what impact demographic changes will have on future enrollment. It is quite possible to calculate special "scenario" forecasts to measure the impact of school policy modifications as well as planned economic and financial changes. However in this case the results of these population and enrollment forecast are meant to represent the most likely scenario for changes over the next 10 years in the district and its attendance areas.

The first part of the report will examine the assumptions made in calculating the population forecasts for the Westerly Public Schools and its attendance areas. Since the results of the population forecasts drive the subsequent enrollment forecasts, the assumptions listed in this section are paramount to understanding the area's demographic dynamics. The remainder of the report is an explanation and analysis of the district's population forecasts and how they will shape the district's grade level enrollment forecasts.

## DATA

The data used for the forecasts come from a variety of sources. Enrollments by grade and attendance center were provided by the Westerly Public Schools for school years 2013-14 to 2017-18. Birth and death data were obtained from the Rhode Island Department of Health for the years 2000 through 2016. The net migration values were calculated using Internal Revenue Service migration reports for the years 2000 through 2016. The data used for the calculation of migration models came from the United States Bureau of the Census, 2005 to 2010, and the models were designed using demographic and economic factors. The base age-sex population counts used is from the results of the 2010 Census.

Recently the Census Bureau began releasing annual estimates of demographic variables at the block group and tract level from the American Community Survey (ACS). There has been wide scale reporting of these results in the national, state and local media. However, due to the methodological problems the Census Bureau is experiencing with their estimates derived from ACS data, particularly in areas with a population of less than 60,000, the results of the ACS are not used in these forecasts. For example, given the sampling framework used by the Census Bureau, each year only 300 of the over 10,000 current households in the district would have been included. For comparison 1,500 households in the district were included in the sample for the long form questionnaire in the 2000 Census. As a result of this small sample size, the ACS survey result from the last 5 years must be aggregated to produce the tract and block group estimates.

To develop the population forecast models, past migration patterns, current age specific fertility patterns, the magnitude and dynamics of the gross migration, the age specific mortality trends, the distribution of the population by age and sex, the rate and type of existing housing unit sales,



housing tenure and amount of future housing unit construction are considered to be primary variables. In addition, the change in household size relative to the age structure of the forecast area was addressed. While there was a drop in the average household size in Westerly as well as most other areas of the state during the previous 20 years, the rate of this decline has been forecasted to slow over the next ten years.

## ASSUMPTIONS

For these forecasts, the mortality probabilities are held constant at the levels calculated for the year 2010. While the number of deaths in an area are impacted by and will change given the proportion of the local population over age 60, in the absence of an extraordinary event such as a natural disaster or a breakthrough in the treatment of heart disease, death rates rarely move rapidly in any direction, particularly at the school district or attendance area level. Thus, significant changes are not foreseen in district's mortality rates between now and the year 2025. Any increases forecasted in the number of deaths will be due primarily to the general aging of the district's population and specifically to the increase in the number of residents aged 65 and older.

Similarly, fertility rates are assumed to stay fairly constant for the life of the forecasts. Like mortality rates, age specific fertility rates rarely change quickly or dramatically, particularly in small areas. Even with the recently reported rise and subsequent decline in the fertility rates of the United States, overall fertility rates have stayed within a 10% range (Total Fertility Rates of 1.8 to 2.0) for most of the last 40 years. In fact, the vast majority of year to year change in an area's number of births is due to changes in the number of women in child bearing ages (particularly ages 20-to-34) rather than any fluctuation in an area's fertility rate.

The resident total fertility rate (TFR), the average number of births a woman will have in her while living in the district, is estimated to be 1.71 for the non-college population of the total district for the ten years of the population forecasts. A TFR of 2.1 births per woman is considered to be the theoretical "replacement level" of fertility necessary for a population to remain constant in the absence of in-migration. Therefore, over the course of the forecast period, fertility will not be sufficient, in the absence of migration, to maintain the current level of population (or school enrollment) within the Westerly Public Schools.

A close examination of data for the Westerly Public Schools has shown the age specific pattern of resident net migration will be nearly constant throughout the life of the forecasts. While the number of in and out migrants has changed in past years for the Westerly Public Schools (and will change again over the next 10 years), the basic age pattern of the migrants has stayed nearly the same over the last 30 years. Based on the analysis of data it is safe to assume this age specific migration trend will remain unchanged into the future. This pattern of migration shows a large part of the resident out-migration occurring in the 18-to-24 year-old age group

(those that grew up in the district) as young adults leave the area to go to college or move to other urbanized areas. A second group of out-migrants are those householders aged 70 and older, usually moving to areas outside of New England. Most of the in-migration occurs in the 0-to-9 and 30-to-44 age groups (bulk of which is from areas within 75 miles of the Westerly Public Schools) primarily consisting of younger adults and their children.

As Washington County is not currently contemplating any major expansions or contractions, the forecasts also assume the current economic, political, transportation and public works infrastructure (with a few notable exceptions), social, and environmental factors of the Westerly Public Schools and its attendance areas will remain the same through the year 2035.

Below is a list of assumptions and issues that are specific to the Westerly Public Schools. These issues have been used to modify the population forecast models to more accurately predict the impact of these factors on each attendance area's population change and composition. Specifically, the forecasts for the Westerly Public Schools assume that throughout the study period:

- a. There will be no short term economic recovery in the next 18 months and the national, state or regional economy does not go into deep recession at any time during the 10 years of the forecasts; (Deep recession is defined as four consecutive quarters where the GDP contracts greater than 1% per quarter)
- b. Interest rates have reached a historic low and will not fluctuate more than one percentage point in the short term; the interest rate for a 30 year fixed home mortgage stays below 5.0%;
- c. The rate of mortgage approval stays at 1999-2002 levels and lenders do not return to "sub-prime" mortgage practices;
- d. There are no additional restrictions placed on home mortgage lenders or additional bankruptcies of major credit providers;
- e. The rate of housing foreclosures does not exceed 125% of the 2005-2008 average of the Westerly Public Schools for any year in the forecasts;
- f. All currently planned, platted, and approved housing units are built and completed by 2027;
- g. The unemployment rates for Washington County and New London County will remain below 6.0% for the 10 years of the forecasts;
- h. The rate of students transferring into and out of the Westerly Public Schools will remain at the 2010-11 to 2017-18 average;
- i. The inflation rate for gasoline will stay below 5% per year for the 10 years of the forecasts;
- j. There will be no building moratorium within the district;
- k. Businesses within the district and the Greater New London Metropolitan Area will remain viable;
- l. The state will not make any changes in the current



- policies regarding open enrollment or vouchers;
- m. The number of existing home sales in the district that are a result of "distress sales" (homes worth less than the current mortgage value) will not exceed 20% of total homes sales in the district for any given year;
- n. Housing turnover rates (sale of existing homes in the district) will remain at their current levels. The majority of existing home sales are made by home owners over the age of 55;
- o. Private school and home school attendance rates will remain constant;
- p. The rate of foreclosures for commercial property remains at the 2004-2008 average for Washington County;

If a major employer in the district or in the Greater New London Metropolitan Area closes, reduces or expands its operations, the population forecasts would need to be adjusted to reflect the changes brought about by the change in economic and employment conditions. The same holds true for any type of natural disaster, major change in the local infrastructure (e.g., highway construction, water and sewer expansion, changes in zoning regulations etc.), a further economic downturn, any additional weakness in the housing market or any instance or situation that causes rapid and dramatic population changes that could not be foreseen at the time the forecasts were calculated.

The sizeable proportion of high school graduates from the Westerly Public Schools that attend college or move to urban areas outside of the district for employment is a significant demographic factor. Their departure is a major reason for the high out-migration in the 18-to-24 year-old age group and was taken into account when calculating these forecasts. The out-migration of graduating high school seniors is expected to continue over the period of the forecasts and the rate of this migration has been forecasted to remain the same over the life of the forecast series.

Finally, all demographic trends (i.e., births, deaths, and migration) are assumed to be linear in nature and annualized over the forecast period. For example, if 1,000 births are forecasted for a 5-year period, an equal number, or proportion of the births are assumed to occur every year, 200 per year. Actual year-to-year variations do and will occur, but overall year to year trends are expected to be constant.

## METHODOLOGY

The population forecasts presented in this report are the result of using the Cohort-Component Method of population forecasting. (Siegel, and Swanson, 2004: 561-601) (Smith et. al. 2004) As stated in the **INTRODUCTION**, the difference between a projection and a forecast is in the use of explicit judgment based upon the unique features of the area under study. Strictly speaking, a cohort-component projection refers to the future population that would result if a mathematical extrapolation of historical trends were applied to the components of change (i.e., births, deaths, and migration).

Conversely, a cohort-component forecast refers to the future population that is expected because of a studied and purposeful selection of the components of change believed to be critical factors of influence in each specific area.

Five sets of data are required to generate population and enrollment forecasts. These five data sets are:

1. a base-year population (here, the 2010 Census population for the Westerly Public Schools and their attendance areas);
2. a set of age-specific fertility rates for each attendance area to be used over the forecast period;
3. a set of age-specific survival (mortality) rates for each attendance area;
4. a set of age-specific migration rates for each attendance area; and
5. the historical enrollment figures by grade.

The most significant part of producing enrollment forecasts is the generation of the population forecasts in which the school age population (and enrollment) is embedded. In turn, the most difficult aspect of generating the population forecasts is found in deriving the rates of change in fertility, mortality, and migration as they relate to the age structure of the district and the attendance areas. From the standpoint of demographic analysis, the Westerly Public Schools and its three elementary attendance center districts are classified as "small area" populations (as compared to the population of the state of Rhode Island or to that of the United States). Small area population forecasts are more difficult to calculate because local variations in fertility, mortality, and migration may be more irregular than those at the state or national scale. Especially challenging to project are migration rates for local areas, because changes in the area's socioeconomic characteristics can quickly change from past and current patterns. (Peters and Larkin, 2002)

The population forecasts for Westerly Public Schools and its attendance areas were calculated using a cohort-component method with the populations divided into male and female groups by five-year age cohorts that range from 0-to-4 years of age to 85 years of age and older (85+). Age- and sex-specific fertility, mortality, and migration models were constructed to specifically reflect the unique demographic characteristics of each of the Westerly Public Schools attendance areas as well as the total school district.

The enrollment forecasts were calculated using a modified average survivorship method. Average survivor rates (i.e., the proportion of students who progress from one grade level to the next given the average amount of net migration for that grade level) over the previous five years of year-to-year enrollment data were calculated for grades two through twelve. This procedure is used to identify specific grades where there are large numbers of students changing facilities for non-demographic factors, such as private school transfers or enrollment in special programs.





The survivorship rates were modified or adjusted to reflect the average rate of forecasted in and out migration of 5-to-9, 10-to-14 and 15-to-17 year-old cohorts to each of the attendance centers in the Westerly Public Schools for the period 2005 to 2010. These survivorship rates then were adjusted to reflect the forecasted changes in age-specific migration the district should experience over the next five years. These modified survivorship rates were used to project the enrollment of grades 2 through 12 for the period 2010 to 2015. The survivorship rates were adjusted again for the period 2015 to 2020 to reflect the predicted changes in the amount of age-specific migration in the districts for the period. The process is repeated for the 2020 to 2025 time period.

The forecasted enrollments for kindergarten and first grade are derived from the 5-to-9 year-old population of the age-sex population forecast at the elementary attendance center district level. This procedure allows the changes in the incoming grade sizes to be factors of forecasted population change and not an extrapolation of previous class sizes. Given the potentially large amount of variation in kindergarten enrollment due to parental choice, changes in the state's minimum age requirement, and differing district policies on allowing children to start kindergarten early, first grade enrollment is deemed to be a more accurate and reliable starting point for the forecasts. (McKibben, 1996) The level of the accuracy for both the population and enrollment forecasts at the school district level is estimated to be  $\pm 2.0\%$  for the life of the forecasts.

## RESULTS AND ANALYSIS OF THE POPULATION FORECASTS

From 2010 to 2020, the populations of the Westerly Public Schools, Washington County; the state of Rhode Island, and the United States are forecasted to change as follows; the Westerly Public Schools will decrease by 0.5%, Washington County will decrease by 0.7% Rhode Island will increase by 0.1%; and the United States increase by 8.4% (see Table 1 below)

Table 1: Forecasted Population Change, 2010 to 2020

	2010	2015	2020	10-Year Change
U.S. (in millions)	308	322	334	8.4%
Rhode Island	1,052,567	1,053,100	1,053,800	0.1%
Washington County	126,979	126,500	126,100	-0.7%
Westerly	22,787	22,800	22,680	-0.5%

A number of general demographic factors will influence the growth rate of the Westerly Public Schools during this period, and include the following:

- The Baby Boom generation will have passed through prime childbearing ages by 2003, thereby reducing the overall proportion of the population at risk of having children;
- The remaining population in childbearing ages

- (women ages 15-to-45) will have fewer children;
- The local 18-to-24 year-old population, will continue to leave the area to go to college or to other urban areas, with the magnitude of this out-migration flow staying constant; and,
- The district will experience little increase in detached single family housing stock. The vast majority of in-migrating families will move into existing housing units or rental units.

The Westerly Public Schools will continue to experience in-migration (the movement of single person households and young families into the district) over the next 10 years. However, the size and age structure of the pool of potential in-migrants will change. The effects of the in-migration of families on population growth will be greatly offset by the continued steadily growing out-migration of young adults as graduating seniors continue to leave the district and a continues out-migration of households to nearby suburban areas.

From 2010 to 2015, the district's population is forecasted to increase by 13 or 0.1%, to 22,800. From 2015 to 2020, the population is forecasted decline by 120 persons or - 0.5%. During this decade, only one of the three attendance areas is forecasted to increase in population. Springbrook is forecasted to increase by 5.7% The Dunn's Corners and State Street attendance areas will experience a small population decrease this decade. (See Table 2 in Appendix A for population forecast results of each elementary attendance area).

While all attendance areas will see some amount of resident gross in-migration, (primarily in the 0-to-9 and 30-to-44 year-old age groups,) all areas also will continue to see gross out-migration. This out-migration primarily will be young adults, 18-to-24 years old, as graduating seniors continue to leave the district to go to college or seek employment in larger urbanized areas. There will also be an important secondary out-migration flow, which is householders, primarily ages 70 and over, moving to areas outside of New England.

As stated in the **ASSUMPTIONS** and emphasized above, the impact of the high proportion of high school graduates that leave the district to continue on to college or to seek employment in large urban areas is significant to the size and structure of the future population of the district. Up to 80% of all births occur to women between the ages of 20 and 34. (This is still true even with the recent rise in fertility rates for women age 30 and over) As the graduating seniors continue leave the district, the number of women at risk of childbirth during the next decade declines. Consequently, even though the district's resident fertility rate is just 0.3 points below the replacement level, the smaller number of non-college women in the district in prime child bearing ages will keep the number of births low despite the district having a slight increase in population (see the population pyramids in the appendix of this report for a graphic representation of the age distributions of the district and all of the attendance areas).



This will require the district to become dependent on the in-migration of children just to maintain current grade cohort sizes.

Another factor that needs to be considered is the birth dynamics of the last twenty years. An examination of national birth trends shows there was a large "Baby Boomlet" born between 1980 and 1995. This Boomlet was nearly as large as the Baby Boom of the 1950s and 1960s. However, unlike the Baby Boom, the Boomlet was a regional and not a national phenomenon. (McKibben, et. al. 1999) Because Rhode Island did not experience a Baby Boomlet, most of the expected enrollment growth will have to result from in-migration and not from an increase in the grade cohort size.

Clearly, the dominant factor that has affected the population growth rates of the Westerly Public Schools over the last 20 years has been the number and pace of existing homes sales. However, the dynamics of this in-migration flow are more complex than many realize. There is a common misconception that any changes in the economy, housing market or transportation system will an immediate impact of the size of an area's population and the total impact of that change will be experiences immediately.

This "delayed demographic reaction" is a key issue when attempting to ascertain the impact and duration of a trend. While it is true that the households moving into these new housing units bring many school age (particularly elementary) children into the district, they also bring many preschool age children as well. Consequently, the full impact of the growth in existing home sales is not seen immediately in elementary enrollment as it takes three to seven years for all of the children of a given household to age into the schools. This is a key issue since the number of births in the Westerly Public Schools is insufficient to maintain current enrollment levels over the next 10 years. The number of non-college women living in the district ages 20-to-34 (prime child bearing ages) is too small to produce birth cohorts that are the same size as those currently in the elementary grades.

Of additional concern are the issues of the district's aging population and the growing number of "empty nest" households, particularly in the Dunn's Corners area. For example, after the last school age child leaves high school, the household becomes an "empty nest" and most likely will not send any more children to the school system. In most cases, it takes 20 to 30 years before all original (or first time) occupants of a housing area move out and are replaced by new, young families with children. This principle also applies to children leaving elementary school and moving on the middle school. Households can still have school age children in the district's school, but also in effect be "empty nest" of elementary age children.

Note as well the steady increase in the median age of the population in the Westerly Public Schools and all of its attendance areas (see population forecasts in the appendix for the median age for each forecast year). The district as a whole will see the median age of its population increase from 44.3 in 2010 to 46.2 in 2025. This rise in median age is due to three factors, local 18-to-24 year-olds leaving the district, a high

proportion of their parents staying in their existing households and the decline in the number of births. (See Table 4 in Appendix A)

As a result of the "empty nest" syndrome, the attendance areas in the Westerly Public Schools will see a steady rise in the median age of their populations, even while the district as a whole continues to attract some new young families. It should be noted that many of these "childless" households are single persons and/or elderly (See Table 5 in Appendix A). Consequently, even if many of these housing units "turnover" and attract households of similar characteristics, they will add little to the number of school age children in the district. Furthermore, several of the empty nest households will "downsize" to smaller households within the district. In these cases new housing units may be developed in an area, yet there is no corresponding increase in school enrollment.

## RESULTS AND ANALYSIS OF ENROLLMENT FORECASTS

### *Elementary Enrollment*

The total elementary (PK-4) enrollment of the district is forecasted to decrease from 1,056 in 2017-18 to 1,034 in 2022-23, a decrease of 22 students or -2.1%. From 2022-23 to 2027-28, elementary enrollment is expected to decrease by 32 students to 1,002. This will represent a -3.1% decrease over the five-year period. All three attendance areas will experience a net decline in elementary enrollment over the next ten years (see Table 5 in Appendix A and the enrollment forecast results for each area).

The reason for this pattern of decline in elementary enrollment is the convergence of the effects of three factors, all fully occurring roughly by 2022. These factors are the reversal of cohort sizes in the elementary grades, the small number of existing housing units turning over, and the dramatic rise in the number of empty nest households. Each of these factors will contribute in part to the decline in elementary enrollment from 2017 to 2022.

One of the main reasons elementary enrollment was decreasing over the last several years was due to the fact that the number of children entering kindergarten and 1<sup>st</sup> grade was smaller than the number leaving elementary school after completing 4<sup>th</sup> grade. This "cohort imbalance" will reverse after 2022 as the size of the rising 4<sup>th</sup> grade classes will consistently be approximately 190 students. With the entering kindergarten and 1<sup>st</sup> grade cohorts being roughly the same size, elementary enrollment will begin to stabilize.

The second factor is the trends in the local home sales. While it is true that the Washington County and Westerly Public Schools District housing market has performed better than the national trends the last three years, it is not immune the effects of a tightening of the mortgage market and in increasingly restrictive lending practices. Additionally, the number of existing home for sale in the district is insufficient to insure a large enough in-migration flow of young households





with children. The current sales trends of existing homes is brisk and most homes put on the market sell within one month at close to or over the asking price. The fundamental problem is that the number of existing homes sold is far less than the number of homes empty nesting each year. While there is a significant level of rental units scheduled to come on line in the district over the next 10 years, these new units, as a rule tend to have many more school age children in them than elementary age. Additionally, there is the key factor of measuring the rate of increase of existing households that no longer have elementary or preschool age children in them against the in-migration rate of new households (rental and owner) with children ages 0-to-9 years old.

The third factor is the rise of the number of empty nest households in the district. In 2010 the district had 38.2% of their households headed by people ages 35-to-54 (The ages most people have school aged children). The district's proportion of households in these age groups has dropped over the last five years (and will continue to decline over the next 10 years) as people aged and the households became empty nest. Unfortunately, the large bubble of now empty nest households, (particularly empty of elementary age students) will not reach their 70s during the life of these forecasts. Post 70 year-old households are the stage of life when most householders downsize, allowing new young families with children to move in.

An excellent example of this phenomenon is the single year of age counts for the district from the 2010 Census (See Table 6 in Appendix A). The population at age six is closely related to the combined 1<sup>st</sup> grade enrollment of the public and private students in the district (as it is for all elementary grades). However, note the sharp reduction in the number of residents from under one to five years of age. This trend is an indication of the growing proportion of households in each area that will be beginning to empty nest of elementary age students. Without a substantial in-migration of young families with children under the age of five, this "pre-school dearth" will result in a marked decline in elementary enrollment of the next five years.

This "pre-school dearth" of population has existed in the Westerly Public Schools for over 20 years (this phenomena is quite common in suburban school districts). However, the large scale construct of new housing units and the subsequent in-migration of families with pre-school age children would increase to the age cohort sizes. By the time each age cohort would reach age six, (first grade) its relative size would be equal or greater the previous year's first grade group.

The issue over the next five to ten years is that the number of new and existing home sales over the last three years have been more than 60% lower on average than the previous seven years. Without this in-migration flow the district pre-school age cohorts will be of insufficient size to maintain the current elementary enrollment levels. The more dependents an area is on in-migration for students to compensate for a low number of births, the larger the enrollment will decline.

The demographic factors that will become the most influential over the next ten years are the growth rate of empty nest household in the attendance areas, the number of sales of existing homes, the rate and magnitude of existing housing unit "turn over", the relative size of the elementary and pre-school age cohorts and each area's fertility rate. Each of these factors will vary in the scale of their influence and timing of impact on the enrollment trends of any particular area.

Attendance areas that are currently experiencing a rise in empty nest households tend to be the same areas that are not the recipients of any large sustained new housing construction. Thus, some areas will see net declines in elementary enrollment. While these areas will continue to see net in-migration of families, it will not be at a sufficient rate to maintain current attendance levels.

As more elementary attendance areas become completely dependent upon existing home sales to attract new families, the overall elementary enrollment (after 2018) of the district will decline. Areas such as Springbrook will see their elementary enrollments peak by the end of the decade and then slowly decline. Thus, the best primary short- and long-term indicator for enrollment change in most of the attendance area will be the year-to-year rate of housing turnover. If the Total Fertility Rates of all the attendance areas remain at their current low levels (and they are forecasted to do so) they will insure that enrollments will continue to see slowing growth (or outright declines) even if the level of net out-migration is greatly reduced.

Additionally, areas that are characterized by the relatively high percentage of rental housing units and large concentrations of young adults tend to have more stable population distribution and enrollment trends. In these cases, young adults or the newly married, move to these areas and establish households. Because the population is in prime child bearing ages, these areas also have both a high absolute number of births and a higher than the district average birth rate. Later, as family size increases, these families often move to single family homes-usually moderately priced single family homes in other parts of the school district.

Consequently, the State Street area and other sub-attendance areas of the district with similar characteristics, serve as feeder areas for outlying areas in the district. This internal migration flow is far more important in determining future enrollment trends than the construction of new single family homes as an average of over 15 existing housing units are sold for every new housing unit built. Indeed, a close examination of the year to year trends in the family formation areas will serve as an excellent bellwether for short and medium term changes in areas that depend on in-migration for enrollment growth.

### *Middle School Enrollment*

The total middle school enrollment at Westerly Middle School is forecasted to decrease from 870 in 2017-18 to 753 in 2022-23, a 117 student or -13.4% decrease. Between



2022-23 and 2027-28, middle school enrollment is forecasted to grow to 782, an increase of 29 students or 3.9%.

The difference in the size of the individual grade cohorts and the aging of students through the school system are the primary reasons why the middle school enrollment trends are different than those of the elementary grades.

There are currently smaller grade cohorts enrolled in the elementary school grades compared to those in the middle schools' grade cohorts. As these elementary school cohorts "age" into the middle school and larger middle school cohorts age into high school, they increase the overall intermediate and middle school enrollment level. Note how the size of the incoming 5<sup>th</sup> grade class is usually larger than the previous year's 8<sup>th</sup> grade class, which has now moved on the high school. As long as this "deficit" in the enrollment pattern exists, there will be to some degree, a decrease in middle school enrollment at least until the 2023-24 school year. However, early next decade, the rate of decline moderates significantly as the size of the grade cohorts become more equal in size.

After the 2023-24 school year, this cohort trend will reverse. There will then be grade cohorts entering the middle school grades will roughly be the same compared (or slightly larger) to those leaving. The result is a modest level of decreased or at least a stabilization of middle school enrollment. This trend will most likely continue beyond the end of the forecasts series ending sometime after 2027.

### *High School Enrollment*

The total high school enrollment at Westerly High School is forecasted to increase from 798 in 2017-18 to 814 in 2022-23, a 16 student or 2.0% increase. The net result for the five-year period 2022-23 to 2027-28 will be a decrease of 90 students to 724 or -11.1%.

The aforementioned effects of changes in cohort size on middle school enrollment are also affecting the growth patterns of the high school population. The difference here is that in impact begins five years later. There are currently larger grade cohorts in the middle school enrollment that will begin to enter high school next year. Until that wave of students (now in the late elementary grades and middle school) passes through the high school grades, there will be continued increase at the district's high school. This trend should stabilize by 2021-22 and results in a decline after 2023-24 as smaller cohorts begin to enter 9<sup>th</sup> grade.

It is important to note that the vast majority of this future high school enrollment change will be a result of students aging into those grades. Specifically, students who already live in the district (and not in-migration of students ages 14 to 18) will be the primary cause of the forecasted increase in high school enrollment. Additionally, as was mentioned earlier, these forecasts represent the demographic changes that will affect high school enrollment. Any changes in the district's student transfer policy and/or changes in

special high school level programs will need to be added or subtracted from the forecast result.

High school enrollment is the most difficult of all the grade levels to project. The reason for this is the varying and constantly changing dropout rates, particularly in grades 10 and 11. For these forecasts the dropout rates at the high school were calculated for each grade over the last five years. These five-year averages were then held constant for the life of the forecast. The effects of any policy changes dealing with any school's dropout rates, program placement or reassignment of former students to new grade levels will need to be added or subtracted from the forecast results.

### REFERENCES

- McKibben, J.  
The Impact of Policy Changes on Forecasting for School Districts. Population Research and Policy Review, Vol. 15, No. 5-6, December 1996
- McKibben, J., M. Gann, and K. Faust.  
The Baby Boomlet's Role in Future College Enrollment. American Demographics, June 1999.
- Peters, G. and R. Larkin  
Population Geography. 7<sup>th</sup> Edition. Dubuque, IA: Kendall Hunt Publishing. 2002.
- Siegel, J. and D. Swanson  
The Methods and Materials of Demography: Second Edition, Academic Press: New York, New York. 2004.
- Smith, S., J. Tayman and D. Swanson  
State and Local Population Projections, Academic Press, New York, New York. 2001.



Appendix A: Supplemental Tables

**Table 1: Forecasted Elementary Area Population Change, 2010 to 2020**

	2010	2015	2010-2015 Change	2020	2015-2020 Change	2010-2020 Change
Dunn's Corners ES	8,863	8,790	-0.8%	8,630	-1.8%	-2.6%
Springbrook ES	5,733	5,890	2.7%	6,030	2.4%	5.2%
State Street ES	8,191	8,120	-0.9%	8,020	-1.2%	-2.1%
District Total	22,787	22,800	0.1%	22,680	-0.5%	-0.5%

**Table 2: Household Characteristics by Elementary Area, 2010 Census**

	HH w/ Pop Under 18	% HH w/ Pop Under 18	Total Households	Household Population	Persons Per Household
Dunn's Corners ES	1,003	27.9%	3,601	8,744	2.43
Springbrook ES	781	34.7%	2,251	5,627	2.50
State Street ES	911	23.9%	3,815	8,113	2.72
District Total	2,695	27.9%	9,666	22,484	2.33

**Table 3: Householder Characteristics by Elementary Area, 2010 Census**

	Percentage of Householders aged 35-54	Percentage of Householders aged 65+	Percentage of Householders Who Own Homes
Dunn's Corners ES	39.3%	29.6%	83.3%
Springbrook ES	44.0%	20.1%	62.9%
State Street ES	33.9%	30.7%	50.0%
District Total	38.2%	27.8%	65.4%



**Table 4: Percentage of Households that are Single Person Households and Single Person Households that are over age 65 by Elementary Area , 2010 Census**

	Percentage of Single Person Households	Percentage of Single Person Households and are 65+
Dunn's Corners ES	24.3%	10.4%
Springbrook ES	25.9%	8.0%
State Street ES	39.8%	18.2%
District Total	30.8%	13.0%

**Table 5: Elementary Enrollment (K-4), 2017, 2022, 2027**

	2017	2022	2017-2022 Change	2027	2022-2027 Change	2017-2027 Change
Dunn's Corners ES	326	318	-2.5%	317	-0.3%	-2.8%
Springbrook ES	327	334	2.1%	311	-6.9%	-4.9%
State Street ES	313	292	-6.7%	284	-2.7%	-9.3%
District Total	966	944	-2.3%	912	-3.4%	-5.6%

**Table 6: Age Under One to Age Ten Population Counts, by Year of Age, by Elementary Area: 2010 Census**

	Under 1 year	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Dunn's Corners ES	69	89	92	88	76	96	99	101	83	106	110
Springbrook ES	84	64	75	85	75	69	85	57	77	75	77
State Street ES	77	82	94	73	93	82	88	91	91	83	98
District Total	230	235	261	246	244	247	272	249	251	264	285



**Table 7: Comparison of District Enrollment by Grade with 2010 Census Counts by Age, 2011-2017**

2010 Census	Under 1 year	1 year	2 years	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years
<b>Westerly Public Schools Total</b>	<b>230</b>	<b>235</b>	<b>261</b>	<b>246</b>	<b>244</b>	<b>247</b>	<b>272</b>	<b>249</b>	<b>251</b>	<b>264</b>	<b>285</b>	<b>242</b>	<b>287</b>	<b>284</b>
2017 Enrollment	179	181	211	210	212	219	206	233	201	202	211	184		
	77.8%	77.0%	80.8%	85.4%	86.9%	88.7%	75.7%	93.6%	80.1%	76.5%	74.0%	76.0%		
2016 Enrollment	191	182	212	212	208	223	214	232	209	223	212	191	198	
	83.0%	77.4%	81.2%	86.2%	85.2%	90.3%	78.7%	93.2%	83.3%	84.5%	74.4%	78.9%	69.0%	
2015 Enrollment		190	216	212	226	217	213	232	208	214	226	201	203	218
		80.9%	82.8%	86.2%	92.6%	87.9%	78.3%	93.2%	82.9%	81.1%	79.3%	83.1%	70.7%	76.8%
2014 Enrollment			216	220	216	219	208	230	208	211	228	217	213	214
			82.8%	89.4%	88.5%	88.7%	76.5%	92.4%	82.9%	79.9%	80.0%	89.7%	74.2%	75.4%
2013 Enrollment				220	228	213	212	223	215	207	228	217	229	228
				89.4%	93.4%	86.2%	77.9%	89.6%	85.7%	78.4%	80.0%	89.7%	79.8%	80.3%

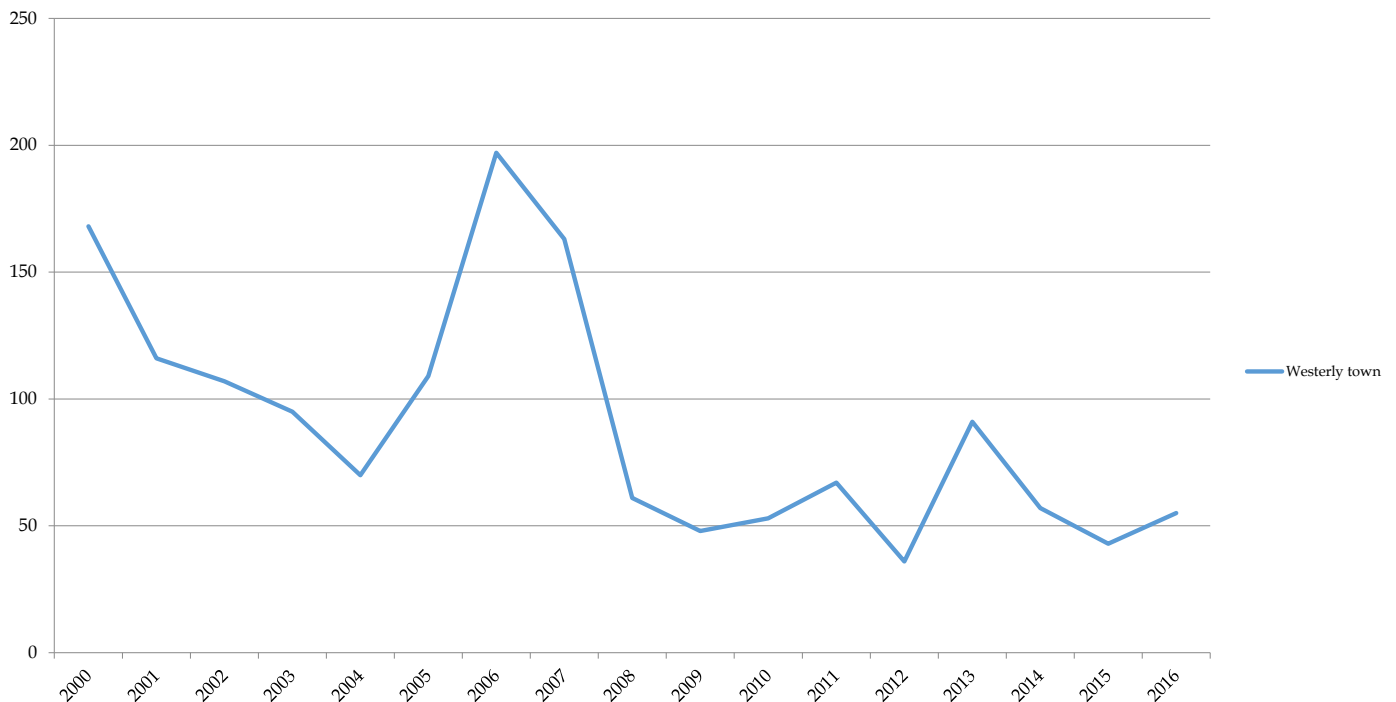




### United States Census Bureau Building Permits

Year	Name	Single Family Units		Dual Occupancy Units		Three or Four Units		Five or More Units		Total	
		Buildings	Total Units	Buildings	Total Units	Buildings	Total Units	Buildings	Total Units	Buildings	Total Units
2000	Westerly town	166	166	1	2	0	0	0	0	167	168
2001	Westerly town	113	113	0	0	1	3	0	0	114	116
2002	Westerly town	105	105	1	2	0	0	0	0	106	107
2003	Westerly town	95	95	0	0	0	0	0	0	95	95
2004	Westerly town	70	70	0	0	0	0	0	0	70	70
2005	Westerly town	86	86	6	12	1	4	1	7	94	109
2006	Westerly town	195	195	1	2	0	0	0	0	196	197
2007	Westerly town	163	163	0	0	0	0	0	0	163	163
2008	Westerly town	61	61	0	0	0	0	0	0	61	61
2009	Westerly town	48	48	0	0	0	0	0	0	48	48
2010	Westerly town	51	51	1	2	0	0	0	0	52	53
2011	Westerly town	59	59	1	2	0	0	1	6	61	67
2012	Westerly town	36	36	0	0	0	0	0	0	36	36
2013	Westerly town	77	77	0	0	2	6	1	8	80	91
2014	Westerly town	57	57	0	0	0	0	0	0	57	57
2015	Westerly town	27	27	0	0	2	8	1	8	30	43
2016	Westerly town	47	47	0	0	2	8	0	0	49	55

Westerly, RI: Total Building Permits





**Appendix B: Population Forecast**

**Westerly Public Schools**

Total	2010	2015	2020	2025
0-4	1,216	1,120	1,080	1,040
5-9	1,283	1,230	1,150	1,100
10-14	1,392	1,280	1,230	1,160
15-19	1,315	1,330	1,210	1,170
20-24	1,088	1,100	1,120	980
25-29	1,312	1,340	1,340	1,340
30-34	1,117	1,340	1,360	1,390
35-39	1,305	1,160	1,380	1,410
40-44	1,576	1,320	1,160	1,390
45-49	1,905	1,580	1,330	1,190
50-54	1,872	1,890	1,560	1,320
55-59	1,646	1,830	1,840	1,540
60-64	1,519	1,570	1,750	1,750
65-69	1,167	1,410	1,470	1,630
70-74	868	1,070	1,290	1,340
75-79	750	780	940	1,140
80-84	651	590	610	760
85+	805	860	860	880
<b>Total</b>	<b>22,787</b>	<b>22,800</b>	<b>22,680</b>	<b>22,530</b>
<b>Median Age</b>	<b>44.3</b>	<b>45.6</b>	<b>46.2</b>	<b>46.2</b>

	2010 to 2015	2015 to 2020	2020 to 2025
<b>Births</b>	1,010	990	930
<b>Deaths</b>	1,170	1,230	1,290
<b>Natural Increase</b>	-160	-240	-360
<b>Net Migration</b>	170	160	160
<b>Change</b>	10	-80	-200

Differences between period Totals may not equal Change due to rounding.

**Dunn's Corners Elementary School**

Total	2010	2015	2020	2025
0-4	414	390	370	350
5-9	486	420	400	380
10-14	542	490	420	410
15-19	515	530	470	400
20-24	354	360	370	290
25-29	337	380	380	410
30-34	324	390	420	440
35-39	476	370	430	480
40-44	599	490	390	450
45-49	797	610	510	420
50-54	788	790	610	510
55-59	711	770	770	600
60-64	728	690	750	750
65-69	537	690	650	700
70-74	396	500	640	610
75-79	333	350	440	570
80-84	245	260	280	360
85+	283	310	330	360
<b>Total</b>	<b>8,863</b>	<b>8,790</b>	<b>8,630</b>	<b>8,490</b>
<b>Median Age</b>	<b>47.4</b>	<b>49.7</b>	<b>51.3</b>	<b>52.1</b>

	2010 to 2015	2015 to 2020	2020 to 2025
<b>Births</b>	370	350	320
<b>Deaths</b>	480	520	560
<b>Natural Increase</b>	-110	-170	-240
<b>Net Migration</b>	40	40	50
<b>Change</b>	-70	-130	-190

Differences between period Totals may not equal Change due to rounding.



### Springbrook Elementary School

Total	2010	2015	2020	2025
0-4	383	370	360	350
5-9	363	390	380	370
10-14	381	360	390	380
15-19	389	350	330	370
20-24	324	340	310	290
25-29	396	400	410	370
30-34	349	420	430	440
35-39	362	360	440	440
40-44	413	360	360	440
45-49	503	410	350	360
50-54	458	500	400	350
55-59	340	450	490	400
60-64	279	310	420	450
65-69	222	250	290	390
70-74	175	200	220	250
75-79	144	160	170	190
80-84	138	110	120	140
85+	114	150	160	170
<b>Total</b>	<b>5,733</b>	<b>5,890</b>	<b>6,030</b>	<b>6,150</b>
<b>Median Age</b>	<b>38.9</b>	<b>39.4</b>	<b>39.6</b>	<b>40.7</b>

	2010 to 2015	2015 to 2020	2020 to 2025
Births	300	310	290
Deaths	220	240	260
Natural Increase	80	70	30
Net Migration	80	70	70
Change	160	140	100

Differences between period Totals may not equal Change due to rounding.

### State Street Elementary School

Total	2010	2015	2020	2025
0-4	419	360	350	340
5-9	434	420	370	350
10-14	469	430	420	370
15-19	411	450	410	400
20-24	410	400	440	400
25-29	579	560	550	560
30-34	444	530	510	510
35-39	467	430	510	490
40-44	564	470	410	500
45-49	605	560	470	410
50-54	626	600	550	460
55-59	595	610	580	540
60-64	512	570	580	550
65-69	408	470	530	540
70-74	297	370	430	480
75-79	273	270	330	380
80-84	268	220	210	260
85+	409	400	370	350
<b>Total</b>	<b>8,191</b>	<b>8,120</b>	<b>8,020</b>	<b>7,890</b>
<b>Median Age</b>	<b>44.1</b>	<b>45.1</b>	<b>45.4</b>	<b>45.3</b>

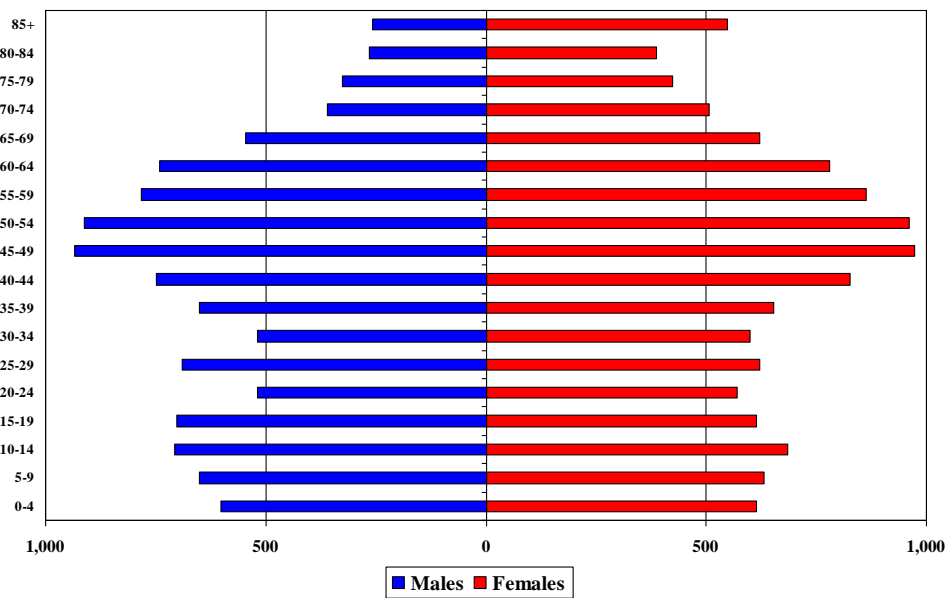
	2010 to 2015	2015 to 2020	2020 to 2025
Births	340	330	320
Deaths	470	470	470
Natural Increase	-130	-140	-150
Net Migration	50	50	40
Change	-80	-90	-110

Differences between period Totals may not equal Change due to rounding.

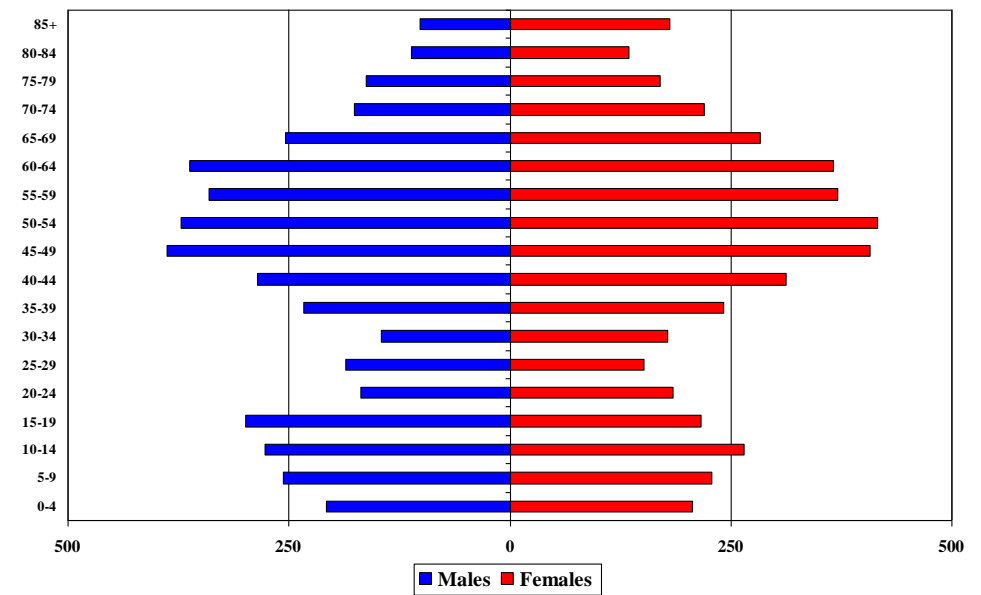


Appendix C: Population Pyramids

Westerly Public Schools, RI Total Population - 2010 Census

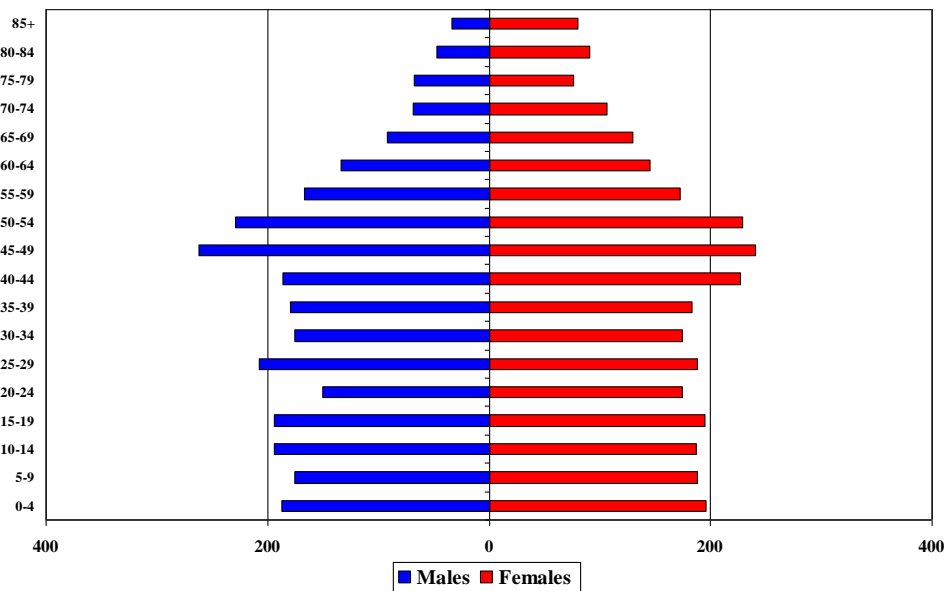


Dunn's Corners Elementary School Total Population - 2010 Census

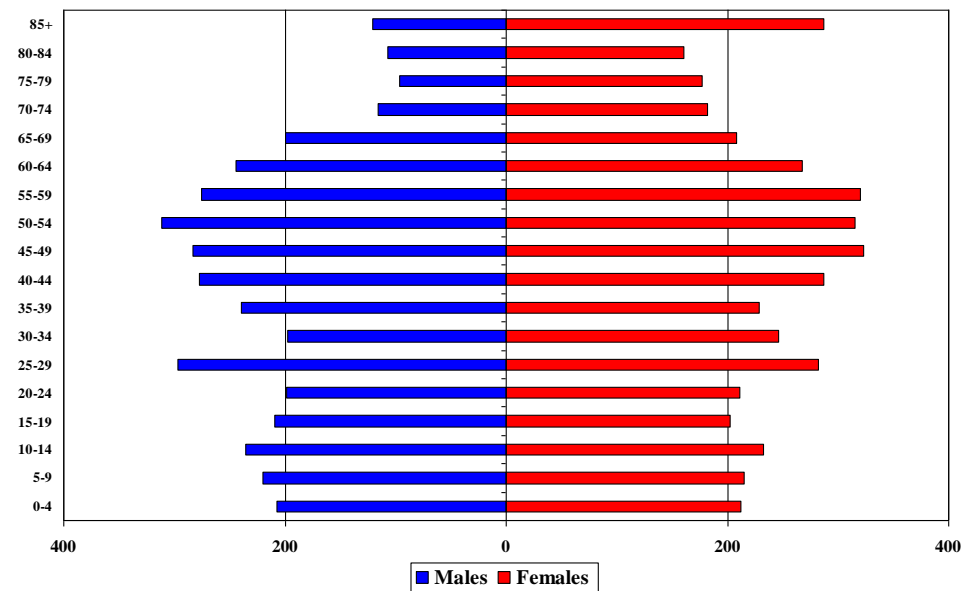




Springbrook Elementary School Total Population – 2010 Census



State Street Elementary School Total Population – 2010 Census







**Appendix D: Enrollment Forecasts**

**Westerly Public Schools**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	92	110	92	97	90	90	90	90	90	90	90	90	90	90	90
K	220	216	190	191	185	185	187	188	186	186	184	182	180	177	180
1	228	220	216	182	179	188	189	190	190	188	188	186	184	181	178
2	213	216	212	212	181	175	185	187	188	188	186	186	185	183	180
3	212	219	226	212	211	182	176	190	192	193	193	191	191	190	187
4	223	208	217	208	210	204	175	173	187	189	190	190	188	188	187
<b>Total: PK-4</b>	<b>1,188</b>	<b>1,189</b>	<b>1,153</b>	<b>1,102</b>	<b>1,056</b>	<b>1,024</b>	<b>1,002</b>	<b>1,018</b>	<b>1,033</b>	<b>1,034</b>	<b>1,031</b>	<b>1,025</b>	<b>1,018</b>	<b>1,009</b>	<b>1,002</b>

5	215	230	213	223	212	214	208	180	178	193	195	196	198	196	196
6	207	208	232	214	219	210	212	206	178	176	191	193	194	196	194
7	228	211	208	232	206	217	208	210	204	176	174	189	191	192	194
8	217	228	214	209	233	208	219	212	214	208	180	177	195	197	198
<b>Total: 5-8</b>	<b>867</b>	<b>877</b>	<b>867</b>	<b>878</b>	<b>870</b>	<b>849</b>	<b>847</b>	<b>808</b>	<b>774</b>	<b>753</b>	<b>740</b>	<b>755</b>	<b>778</b>	<b>781</b>	<b>782</b>

9	229	217	226	223	201	235	210	223	216	218	212	184	182	201	203
10	228	213	201	212	202	189	221	197	210	203	205	199	173	171	189
11	240	214	203	191	211	196	183	214	191	204	197	199	193	168	166
12	205	226	218	198	184	209	194	181	212	189	202	195	197	191	166
<b>Total: 9-12</b>	<b>902</b>	<b>870</b>	<b>848</b>	<b>824</b>	<b>798</b>	<b>829</b>	<b>808</b>	<b>815</b>	<b>829</b>	<b>814</b>	<b>816</b>	<b>777</b>	<b>745</b>	<b>731</b>	<b>724</b>
<b>Classification 190</b>	<b>56</b>	<b>61</b>	<b>39</b>	<b>60</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>
<b>Total: PK-12</b>	<b>3,013</b>	<b>2,997</b>	<b>2,907</b>	<b>2,864</b>	<b>2,790</b>	<b>2,768</b>	<b>2,723</b>	<b>2,707</b>	<b>2,702</b>	<b>2,667</b>	<b>2,653</b>	<b>2,623</b>	<b>2,607</b>	<b>2,587</b>	<b>2,574</b>

<b>Total: PK-12</b>	<b>3,013</b>	<b>2,997</b>	<b>2,907</b>	<b>2,864</b>	<b>2,790</b>	<b>2,768</b>	<b>2,723</b>	<b>2,707</b>	<b>2,702</b>	<b>2,667</b>	<b>2,653</b>	<b>2,623</b>	<b>2,607</b>	<b>2,587</b>	<b>2,574</b>
<b>Change</b>		-16	-90	-43	-74	-22	-45	-16	-5	-35	-14	-30	-16	-20	-13
<b>%-Change</b>		-0.5%	-3.0%	-1.5%	-2.6%	-0.8%	-1.6%	-0.6%	-0.2%	-1.3%	-0.5%	-1.1%	-0.6%	-0.8%	-0.5%

<b>Total: PK-4</b>	<b>1,188</b>	<b>1,189</b>	<b>1,153</b>	<b>1,102</b>	<b>1,056</b>	<b>1,024</b>	<b>1,002</b>	<b>1,018</b>	<b>1,033</b>	<b>1,034</b>	<b>1,031</b>	<b>1,025</b>	<b>1,018</b>	<b>1,009</b>	<b>1,002</b>
<b>Change</b>		1	-36	-51	-46	-32	-22	16	15	1	-3	-6	-7	-9	-7
<b>%-Change</b>		0.1%	-3.0%	-4.4%	-4.2%	-3.0%	-2.1%	1.6%	1.5%	0.1%	-0.3%	-0.6%	-0.7%	-0.9%	-0.7%

<b>Total: 5-8</b>	<b>867</b>	<b>877</b>	<b>867</b>	<b>878</b>	<b>870</b>	<b>849</b>	<b>847</b>	<b>808</b>	<b>774</b>	<b>753</b>	<b>740</b>	<b>755</b>	<b>778</b>	<b>781</b>	<b>782</b>
<b>Change</b>		10	-10	11	-8	-21	-2	-39	-34	-21	-13	15	23	3	1
<b>%-Change</b>		1.2%	-1.1%	1.3%	-0.9%	-2.4%	-0.2%	-4.6%	-4.2%	-2.7%	-1.7%	2.0%	3.0%	0.4%	0.1%

<b>Total: 9-12</b>	<b>902</b>	<b>870</b>	<b>848</b>	<b>824</b>	<b>798</b>	<b>829</b>	<b>808</b>	<b>815</b>	<b>829</b>	<b>814</b>	<b>816</b>	<b>777</b>	<b>745</b>	<b>731</b>	<b>724</b>
<b>Change</b>		-32	-22	-24	-26	31	-21	7	14	-15	2	-39	-32	-14	-7
<b>%-Change</b>		-3.5%	-2.5%	-2.8%	-3.2%	3.9%	-2.5%	0.9%	1.7%	-1.8%	0.2%	-4.8%	-4.1%	-1.9%	-1.0%

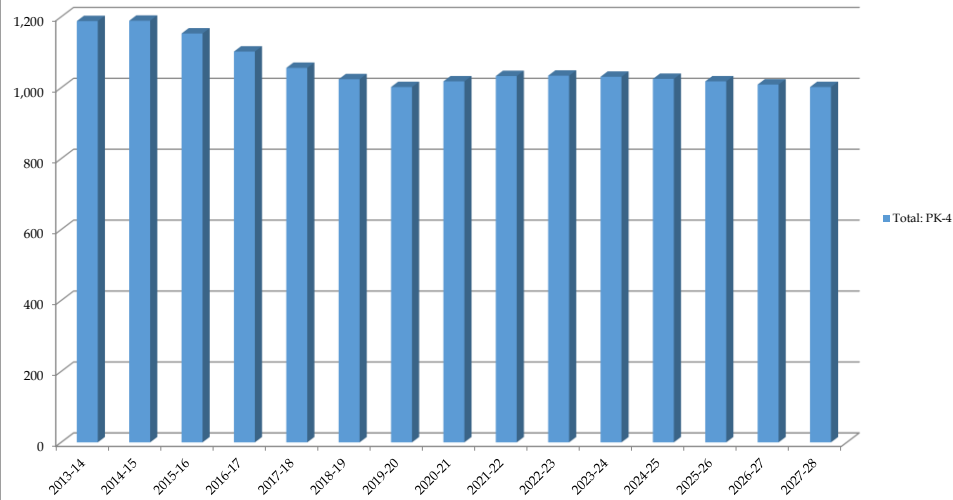
Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

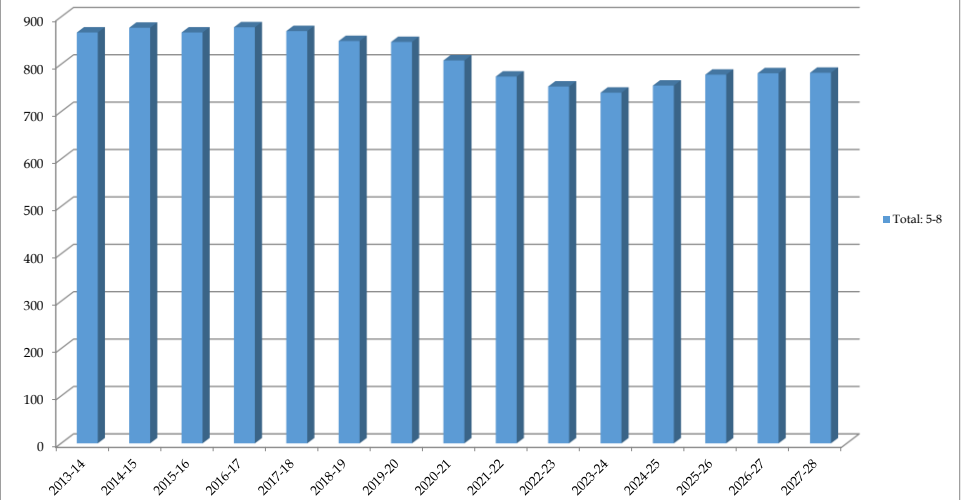
Blue Cells (2018-19 and later) are forecasted years



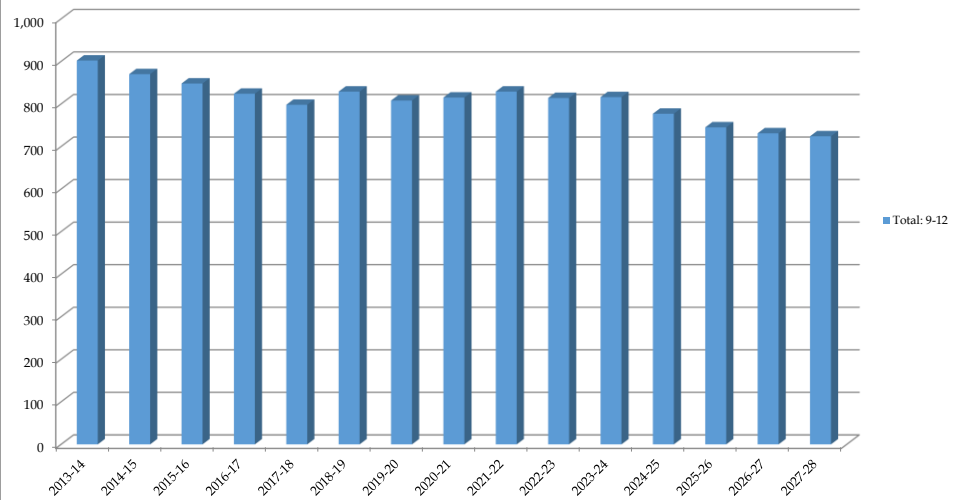
**Westerly Public Schools : PK-4th Enrollment**



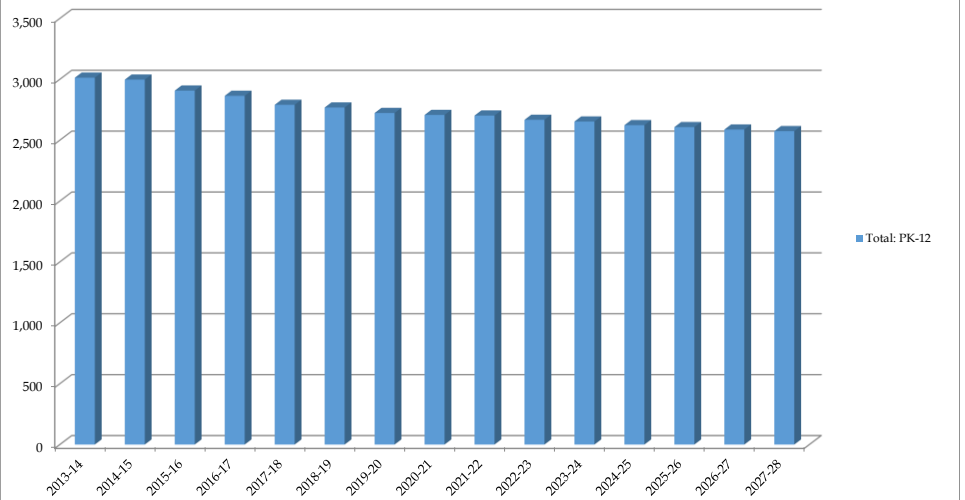
**Westerly Public Schools : 5-8th Enrollment**



**Westerly Public Schools : 9-12th Enrollment**



**Westerly Public Schools : Total District Enrollment**





## Dunn's Corners Elementary School

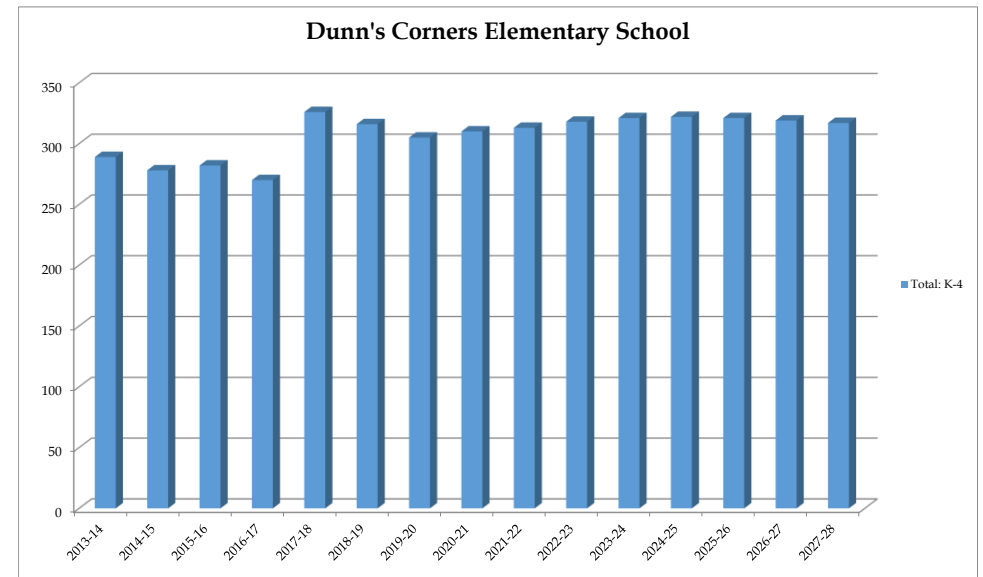
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
<b>K</b>	60	53	50	52	56	58	59	61	61	62	62	61	60	59	60
<b>1</b>	56	53	56	47	61	59	60	61	62	62	63	63	62	61	60
<b>2</b>	56	52	53	60	63	62	60	62	63	64	64	65	65	64	63
<b>3</b>	60	60	64	55	75	65	64	63	65	66	67	67	68	68	67
<b>4</b>	57	60	59	56	71	72	62	63	62	64	65	66	66	67	67
<b>Total: K-4</b>	<b>289</b>	<b>278</b>	<b>282</b>	<b>270</b>	<b>326</b>	<b>316</b>	<b>305</b>	<b>310</b>	<b>313</b>	<b>318</b>	<b>321</b>	<b>322</b>	<b>321</b>	<b>319</b>	<b>317</b>

<b>Total: K-4</b>	<b>289</b>	<b>278</b>	<b>282</b>	<b>270</b>	<b>326</b>	<b>316</b>	<b>305</b>	<b>310</b>	<b>313</b>	<b>318</b>	<b>321</b>	<b>322</b>	<b>321</b>	<b>319</b>	<b>317</b>
<b>Change</b>		-11	4	-12	56	-10	-11	5	3	5	3	1	-1	-2	-2
<b>% Change</b>		-3.8%	1.4%	-4.3%	20.7%	-3.1%	-3.5%	1.6%	1.0%	1.6%	0.9%	0.3%	-0.3%	-0.6%	-0.6%

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years





## Springbrook Elementary School

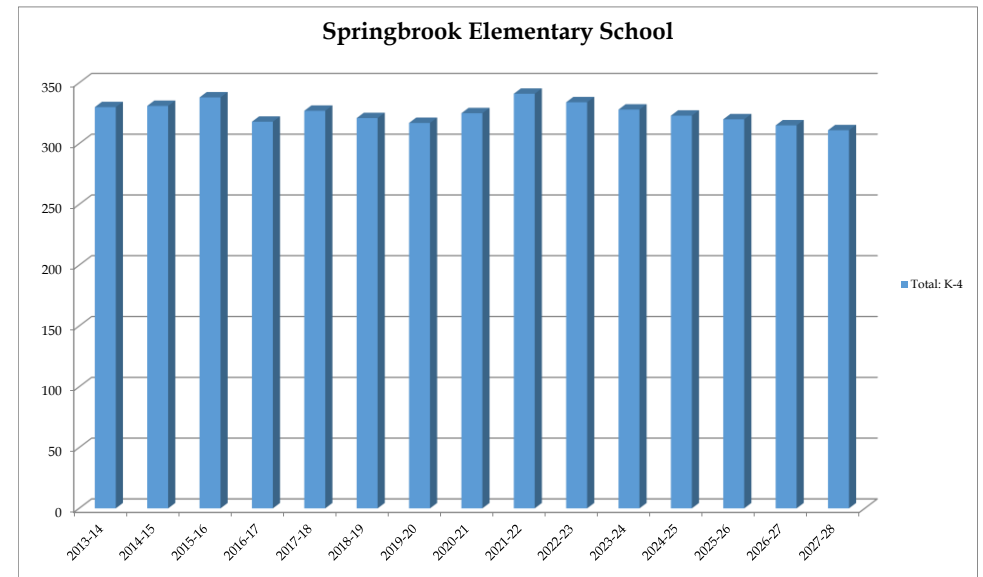
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
<b>K</b>	62	58	53	55	70	64	63	63	62	61	60	59	60	59	60
<b>1</b>	68	66	74	60	52	72	70	68	67	66	65	64	63	62	61
<b>2</b>	67	67	64	71	63	51	71	69	67	66	65	64	63	62	61
<b>3</b>	67	76	72	67	73	64	52	74	72	70	69	68	67	66	64
<b>4</b>	66	64	75	65	69	70	61	51	73	71	69	68	67	66	65
<b>Total: K-4</b>	<b>330</b>	<b>331</b>	<b>338</b>	<b>318</b>	<b>327</b>	<b>321</b>	<b>317</b>	<b>325</b>	<b>341</b>	<b>334</b>	<b>328</b>	<b>323</b>	<b>320</b>	<b>315</b>	<b>311</b>

<b>Total: K-4</b>	<b>330</b>	<b>331</b>	<b>338</b>	<b>318</b>	<b>327</b>	<b>321</b>	<b>317</b>	<b>325</b>	<b>341</b>	<b>334</b>	<b>328</b>	<b>323</b>	<b>320</b>	<b>315</b>	<b>311</b>
<b>Change</b>		1	7	-20	9	-6	-4	8	16	-7	-6	-5	-3	-5	-4
<b>% Change</b>		0.3%	2.1%	-5.9%	2.8%	-1.8%	-1.2%	2.5%	4.9%	-2.1%	-1.8%	-1.5%	-0.9%	-1.6%	-1.3%

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years





## State Street Elementary School

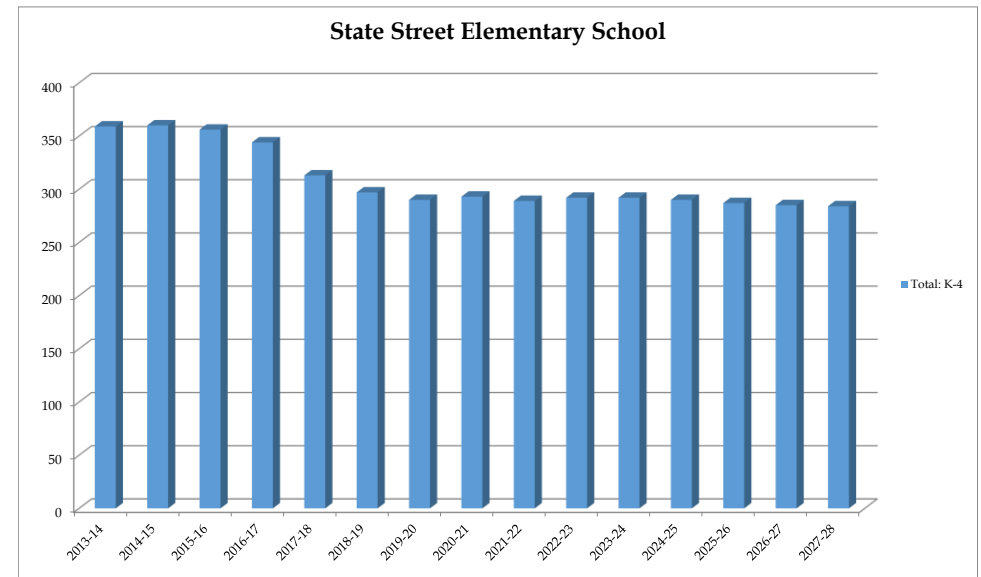
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
<b>K</b>	78	76	68	72	59	63	65	64	63	63	62	62	60	59	60
<b>1</b>	78	81	68	61	66	57	59	61	61	60	60	59	59	58	57
<b>2</b>	70	76	77	63	55	62	54	56	58	58	57	57	57	57	56
<b>3</b>	61	63	76	75	63	53	60	53	55	57	57	56	56	56	56
<b>4</b>	72	64	67	73	70	62	52	59	52	54	56	56	55	55	55
<b>Total: K-4</b>	<b>359</b>	<b>360</b>	<b>356</b>	<b>344</b>	<b>313</b>	<b>297</b>	<b>290</b>	<b>293</b>	<b>289</b>	<b>292</b>	<b>292</b>	<b>290</b>	<b>287</b>	<b>285</b>	<b>284</b>

<b>Total: K-4</b>	<b>359</b>	<b>360</b>	<b>356</b>	<b>344</b>	<b>313</b>	<b>297</b>	<b>290</b>	<b>293</b>	<b>289</b>	<b>292</b>	<b>292</b>	<b>290</b>	<b>287</b>	<b>285</b>	<b>284</b>
<b>Change</b>		1	-4	-12	-31	-16	-7	3	-4	3	0	-2	-3	-2	-1
<b>% Change</b>		0.3%	-1.1%	-3.4%	-9.0%	-5.1%	-2.4%	1.0%	-1.4%	1.0%	0.0%	-0.7%	-1.0%	-0.7%	-0.4%

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years







## Westerly Middle School

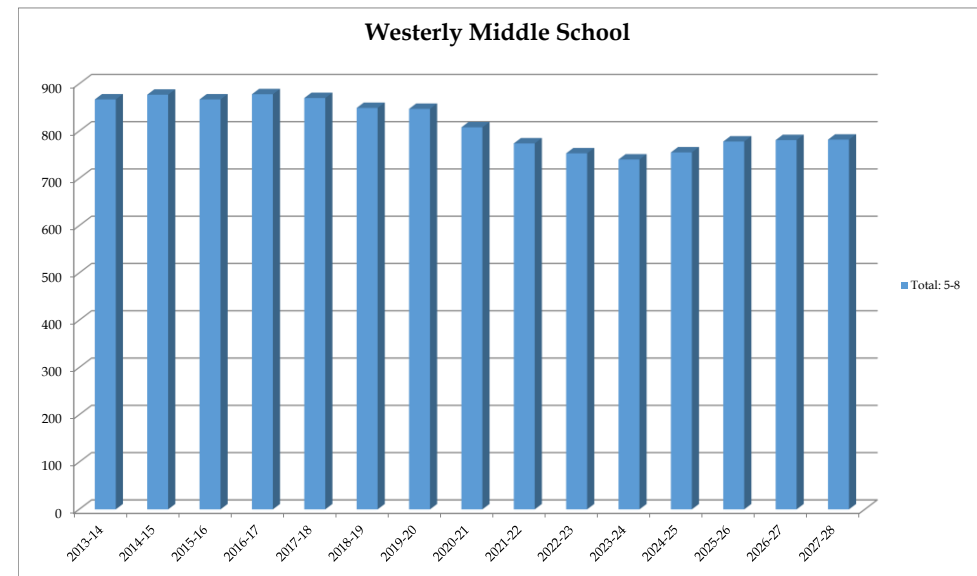
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
5	215	230	213	223	212	214	208	180	178	193	195	196	198	196	196
6	207	208	232	214	219	210	212	206	178	176	191	193	194	196	194
7	228	211	208	232	206	217	208	210	204	176	174	189	191	192	194
8	217	228	214	209	233	208	219	212	214	208	180	177	195	197	198
<b>Total: 5-8</b>	<b>867</b>	<b>877</b>	<b>867</b>	<b>878</b>	<b>870</b>	<b>849</b>	<b>847</b>	<b>808</b>	<b>774</b>	<b>753</b>	<b>740</b>	<b>755</b>	<b>778</b>	<b>781</b>	<b>782</b>

<b>Total: 5-8</b>	<b>867</b>	<b>877</b>	<b>867</b>	<b>878</b>	<b>870</b>	<b>849</b>	<b>847</b>	<b>808</b>	<b>774</b>	<b>753</b>	<b>740</b>	<b>755</b>	<b>778</b>	<b>781</b>	<b>782</b>
<b>Change</b>		10	-10	11	-8	-21	-2	-39	-34	-21	-13	15	23	3	1
<b>% Change</b>		1.2%	-1.1%	1.3%	-0.9%	-2.4%	-0.2%	-4.6%	-4.2%	-2.7%	-1.7%	2.0%	3.0%	0.4%	0.1%

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years





## Westerly High School

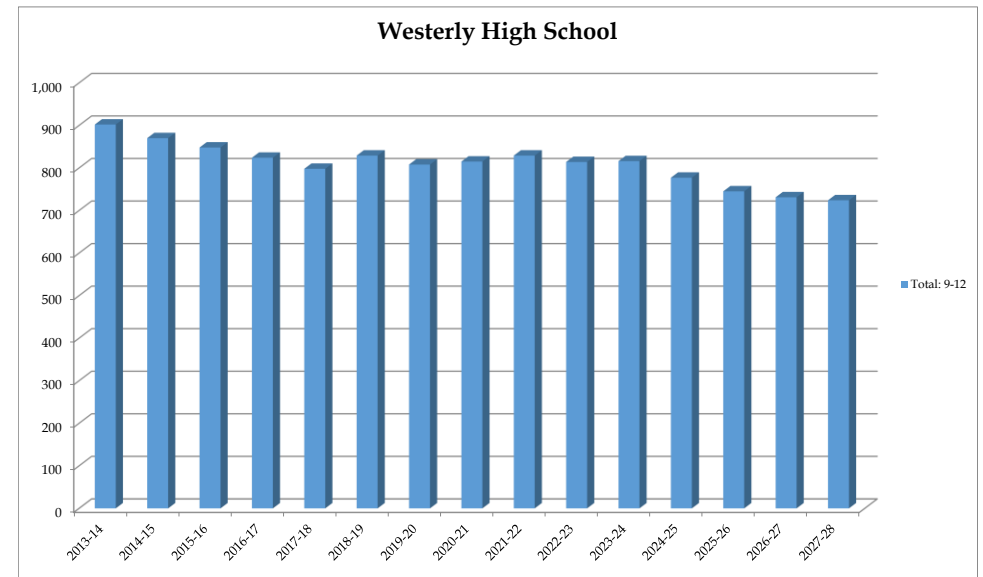
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
9	229	217	226	223	201	235	210	223	216	218	212	184	182	201	203
10	228	213	201	212	202	189	221	197	210	203	205	199	173	171	189
11	240	214	203	191	211	196	183	214	191	204	197	199	193	168	166
12	205	226	218	198	184	209	194	181	212	189	202	195	197	191	166
<b>Total: 9-12</b>	<b>902</b>	<b>870</b>	<b>848</b>	<b>824</b>	<b>798</b>	<b>829</b>	<b>808</b>	<b>815</b>	<b>829</b>	<b>814</b>	<b>816</b>	<b>777</b>	<b>745</b>	<b>731</b>	<b>724</b>

<b>Total: 9-12</b>	<b>902</b>	<b>870</b>	<b>848</b>	<b>824</b>	<b>798</b>	<b>829</b>	<b>808</b>	<b>815</b>	<b>829</b>	<b>814</b>	<b>816</b>	<b>777</b>	<b>745</b>	<b>731</b>	<b>724</b>
<b>Change</b>		-32	-22	-24	-26	31	-21	7	14	-15	2	-39	-32	-14	-7
<b>% Change</b>		-3.5%	-2.5%	-2.8%	-3.2%	3.9%	-2.5%	0.9%	1.7%	-1.8%	0.2%	-4.8%	-4.1%	-1.9%	-1.0%

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years





## Bradford Elementary School

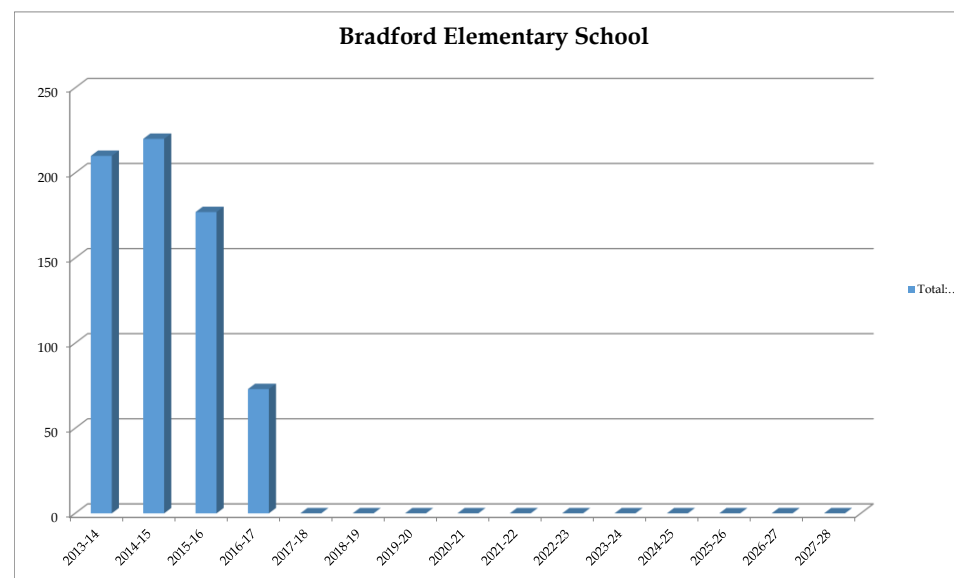
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
PK	92	110	92	-	-	-	-	-	-	-	-	-	-	-	-
K	20	29	19	12	-	-	-	-	-	-	-	-	-	-	-
1	26	20	18	14	-	-	-	-	-	-	-	-	-	-	-
2	20	21	18	18	-	-	-	-	-	-	-	-	-	-	-
3	24	20	14	15	-	-	-	-	-	-	-	-	-	-	-
4	28	20	16	14	-	-	-	-	-	-	-	-	-	-	-
<b>Total: PK-4</b>	<b>210</b>	<b>220</b>	<b>177</b>	<b>73</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

<b>Total: PK-4</b>	<b>210</b>	<b>220</b>	<b>177</b>	<b>73</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Change</b>		10	-43	-104	-73	0	0	0	0	0	0	0	0	0	0
<b>% Change</b>		4.8%	-19.5%	-58.8%	-100.0%										

Forecasts Developed December 2017

Green Cells (2017-18 and earlier) are historical data

Blue Cells (2018-19 and later) are forecasted years





**Appendix E: Live-Attend and Map Analysis**

*Live Attend Matrix*

The table below gives details on the schools that students attend and the school zones where they live. The schools of attendance are listed on the left while the districts where students live are listed on the top line. The numbers highlighted in green are counts of students who attend the assigned schools for the zones where they live. This student data is from 2017-18 Westerly Public Schools student database.

		Where KF-4th Students Live					
		Dunn's Corners ES	Springbrook ES	State Street ES	Out of District	Unmatched	Live Out, Attend In (KF-4th)
Where KF-4th Students Attend 2017-18	Dunn's Corners ES	326	311	302	344		
	Springbrook ES	324	295	8	21	2	29
	State Street ES	315	6	283	31	2	39
	Live In, Attend Out (KF-4th)		10	11	292	2	23
			16	19	52		

Attending School	Grade Config	Total Enrolled	Total Live-In	Out of District	Unmatched
Babcock Hall Pre-School	PF-PK	96	95	1	0
Westerly Middle School	5-8th	873	864	5	4
Westerly High School	9-12th	816	809	7	0



### Map Analysis

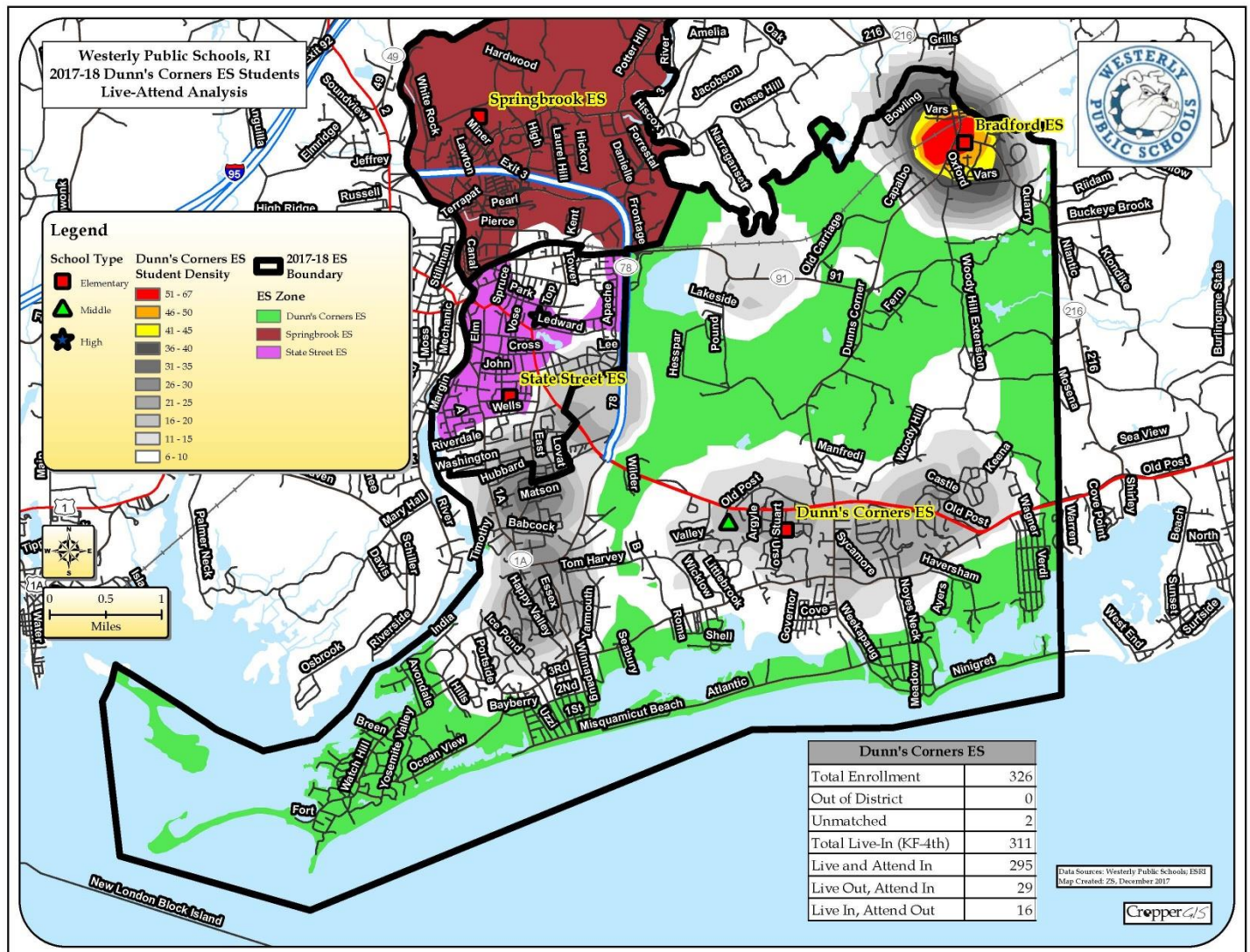
This map series focuses on illustrating the geographic distribution of 2017-18 Westerly Public Schools students in relation to school district boundaries.

Below is an example of a map from this series.

#### Basic Map Elements

The legend explains how different features are represented, either by a point (e.g. schools), or by color schemes (e.g. student density), or by an area/polygon (e.g. attendance boundaries). The scale bar references the distance ratio of the map in relation to the real world.

The student density is classified by color representing the number of individual students in a quarter mile radius at a given point on a map. Density of 5 students or less is intentionally removed for privacy purposes.







*Live-Attend Tables*

Each map has a table listing various statistics about the student data in this region. Here is a guide for reading this table:

<b>Dunn's Corners ES</b>	
Total Enrollment	326
Out of District	0
Unmatched	2
Total Live-In (KF-4th)	311
Live and Attend In	295
Live Out, Attend In	29
Live In, Attend Out	16

Total Enrollment – the number of students attending Dunn’s Corners Elementary School.

Out of District – the number of students who live outside any of the Westerly Public Schools attendance zone boundaries, for each level, yet attend this school.

Unmatched – the number of students attending Dunn’s Corners Elementary School whose addresses were not located by the GIS.

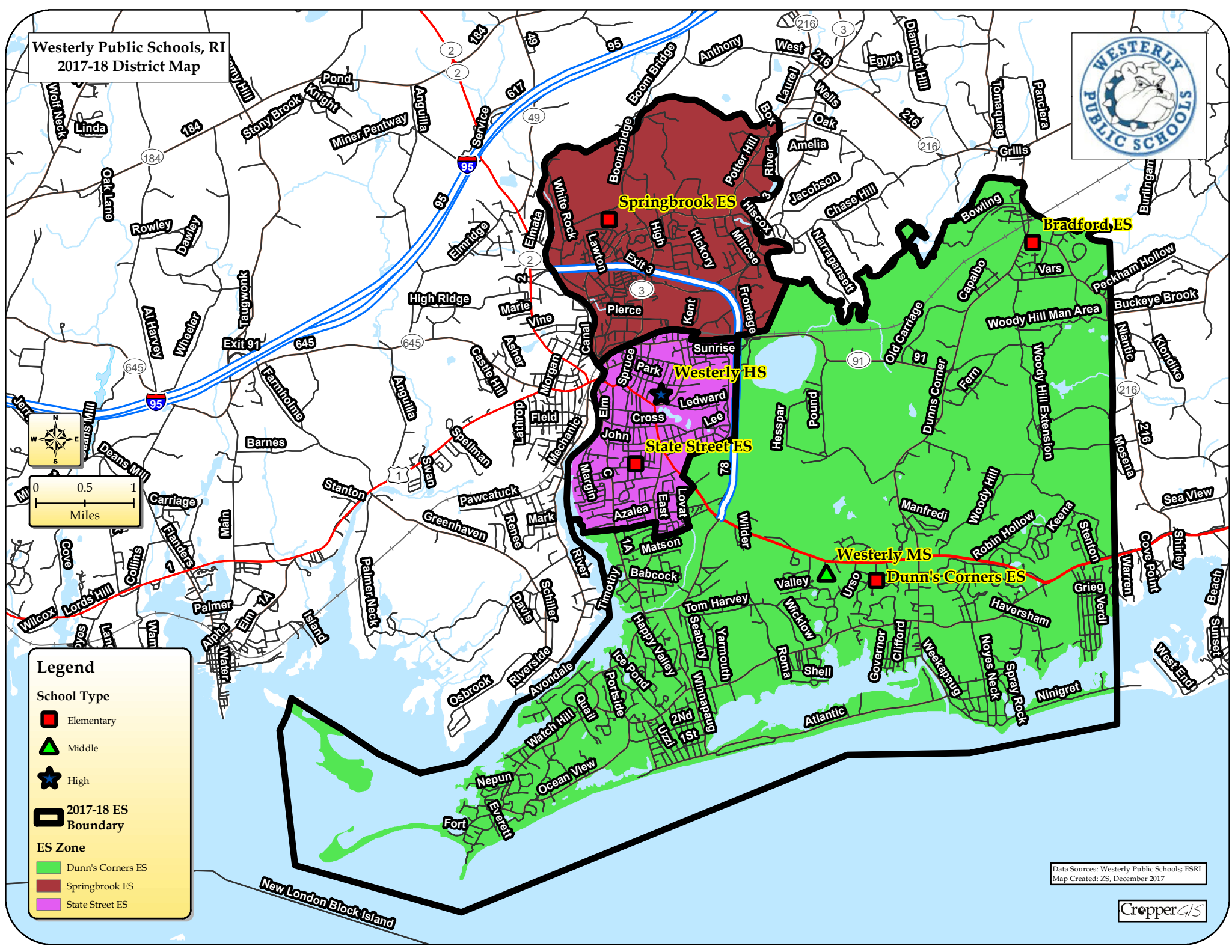
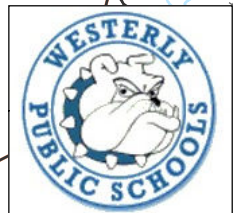
Total Live-In – number of students who live within the school’s attendance boundary, who are in the KF-4th grade cohort. The ‘total-live in’ statistic here indicates there are 311 KF-4th grade students living within the Dunn’s Corners Elementary School attendance boundary.

Live and Attend In – number of KF-4th students who live within the attendance boundary, and also attend that school. In this example, 295 KF-4th grade students who live within the Dunn’s Corners Elementary School attendance boundary also attend Dunn’s Corners Elementary School.

Live Out, Attend In – number of KF-4th students who live outside of the Dunn’s Corners Elementary School attendance boundary, but attend Dunn’s Corners Elementary School.

Live In, Attend Out – number of KF-4th students who live inside the Dunn’s Corners Elementary School attendance boundary, yet attend a different elementary school.

Westerly Public Schools, RI  
2017-18 District Map



**Legend**

**School Type**

- Elementary
- Middle
- High

**2017-18 ES Boundary**

**ES Zone**

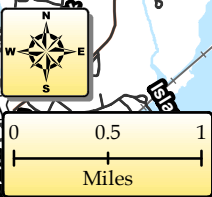
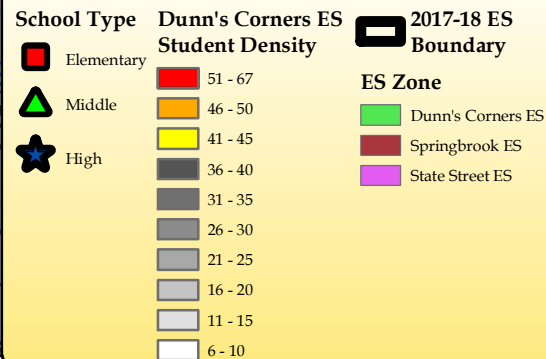
- Dunn's Corners ES
- Springbrook ES
- State Street ES

Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

Westerly Public Schools, RI  
2017-18 Dunn's Corners ES Students  
Live-Attend Analysis



Legend



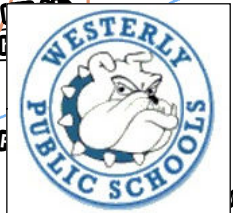
Dunn's Corners ES	
Total Enrollment	326
Out of District	0
Unmatched	2
Total Live-In (KF-4th)	311
Live and Attend In	295
Live Out, Attend In	29
Live In, Attend Out	16

Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

CropperGIS



Westerly Public Schools, RI  
2017-18 Springbrook ES Students  
Live-Attend Analysis



**Legend**

**School Type**

- Springbrook ES (Red square)
- State Street ES (Blue star)

**Springbrook ES Student Density**

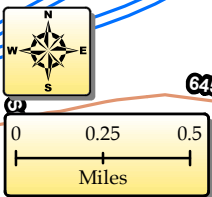
- Red (High density)
- Orange
- Yellow
- Light yellow
- White

**2017-18 ES Boundary**

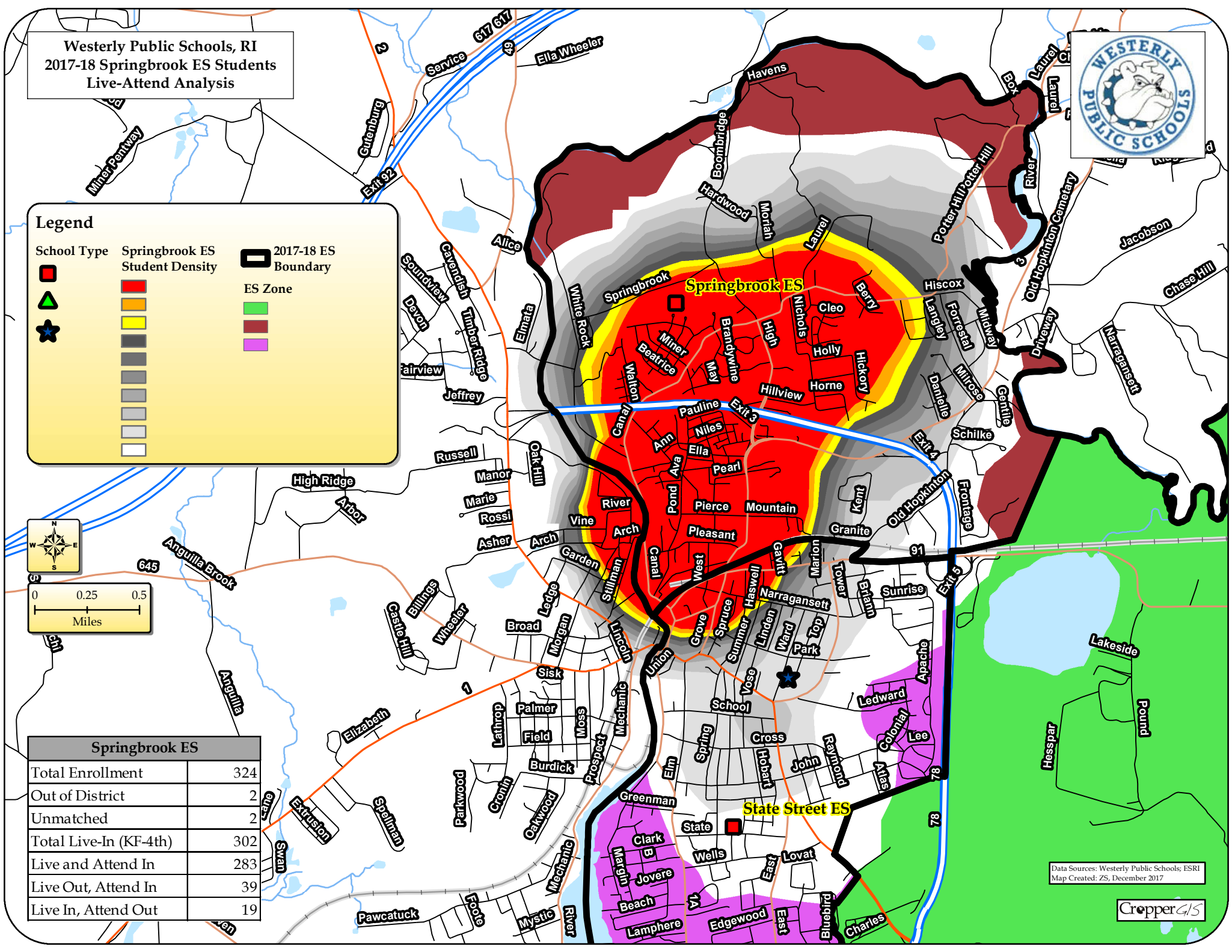
- Black line

**ES Zone**

- Green
- Brown
- Purple



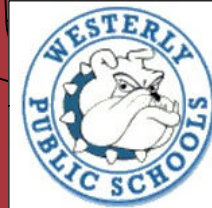
Springbrook ES	
Total Enrollment	324
Out of District	2
Unmatched	2
Total Live-In (KF-4th)	302
Live and Attend In	283
Live Out, Attend In	39
Live In, Attend Out	19



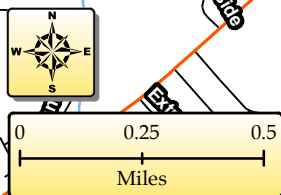
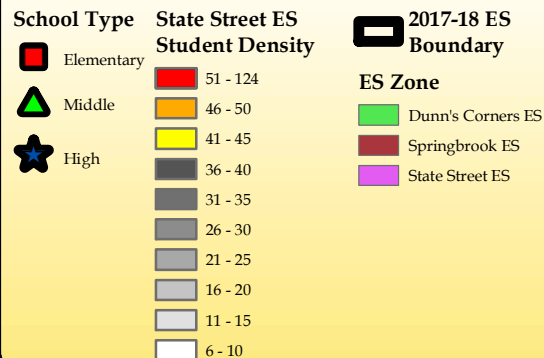
Data Sources: Westerly Public Schools; ESRI  
Map Created: 25, December 2017

CropperGIS

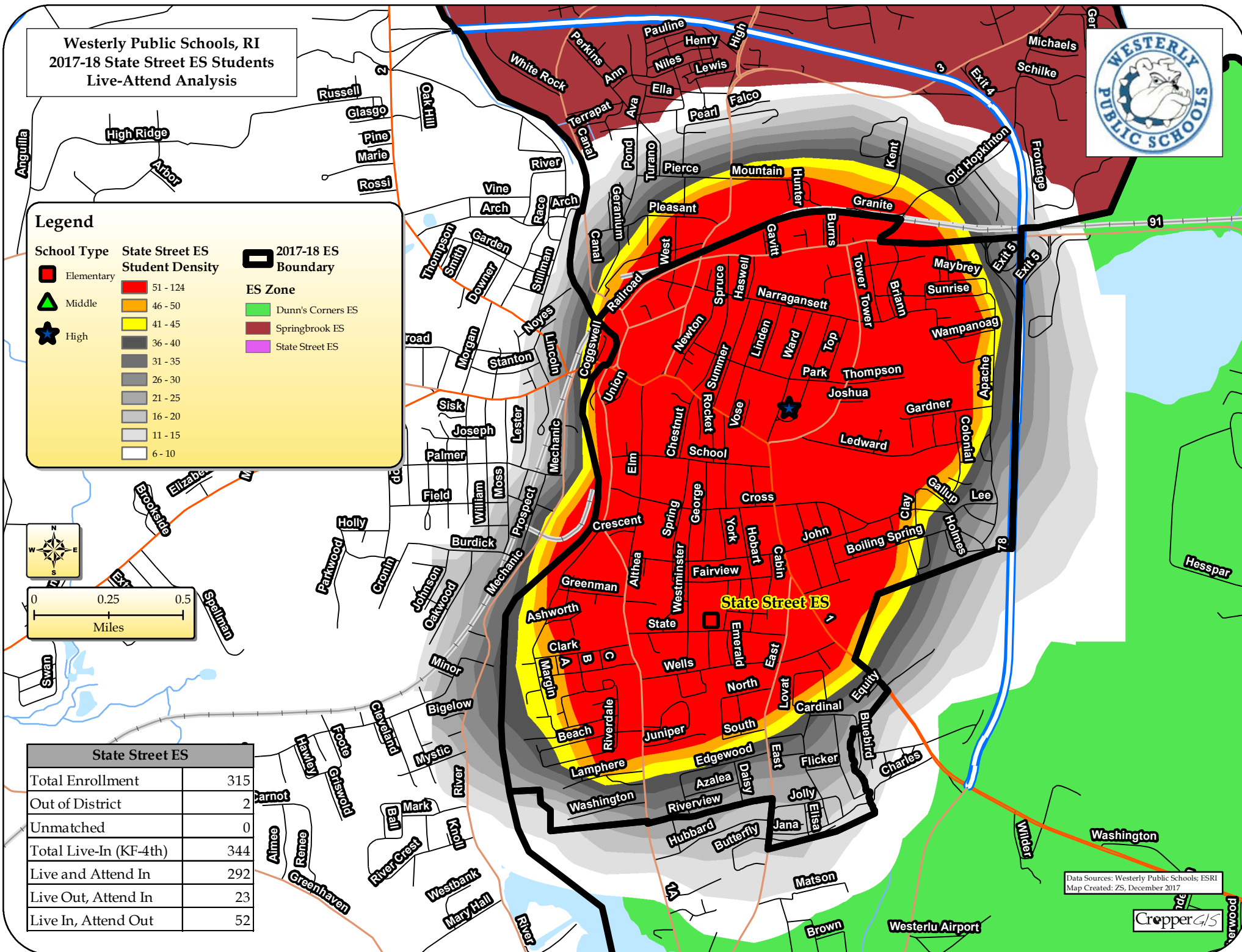
Westerly Public Schools, RI  
2017-18 State Street ES Students  
Live-Attend Analysis



Legend



State Street ES	
Total Enrollment	315
Out of District	2
Unmatched	0
Total Live-In (KF-4th)	344
Live and Attend In	292
Live Out, Attend In	23
Live In, Attend Out	52

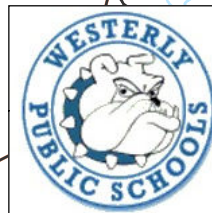


Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

CropperGIS



Westerly Public Schools, RI  
2017-18 Babcock Hall Pre-School Students  
Live-Attend Analysis



**Legend**

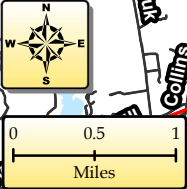
**School Type**

- Elementary (Red square)
- Middle (Green triangle)
- High (Blue star)

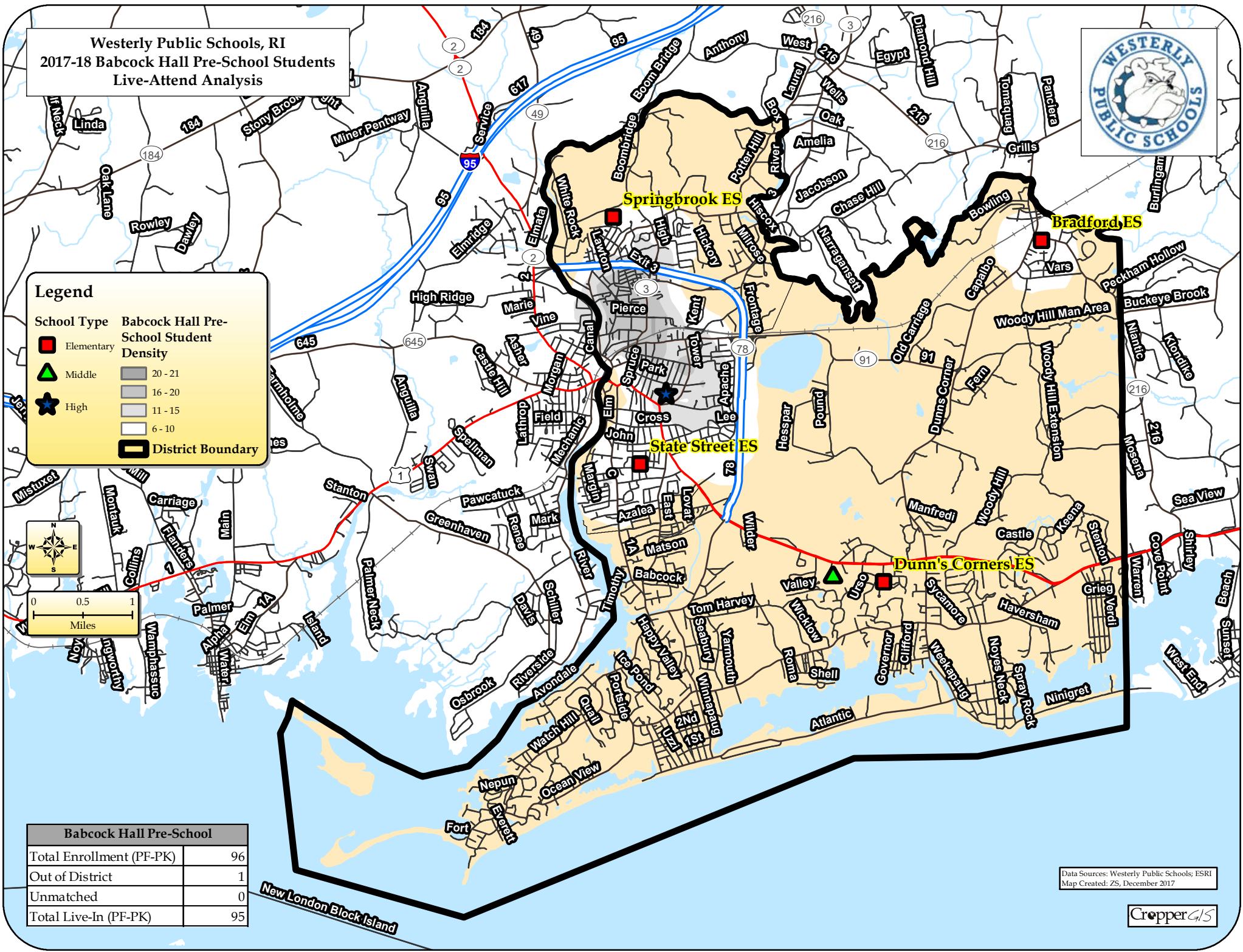
**Babcock Hall Pre-School Student Density**

- 20 - 21 (Dark grey)
- 16 - 20 (Medium grey)
- 11 - 15 (Light grey)
- 6 - 10 (White)

**District Boundary** (Thick black line)



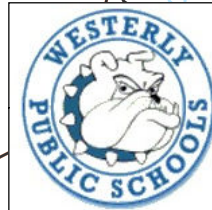
Babcock Hall Pre-School	
Total Enrollment (PF-PK)	96
Out of District	1
Unmatched	0
Total Live-In (PF-PK)	95



Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

CropperGIS

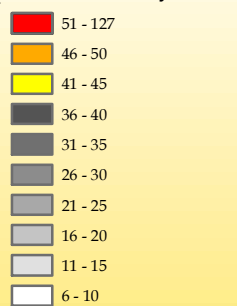
Westerly Public Schools, RI  
2017-18 Westerly MS Students  
Live-Attend Analysis



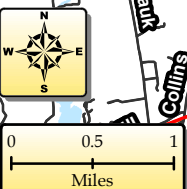
Legend

School Type Westerly MS Student Density

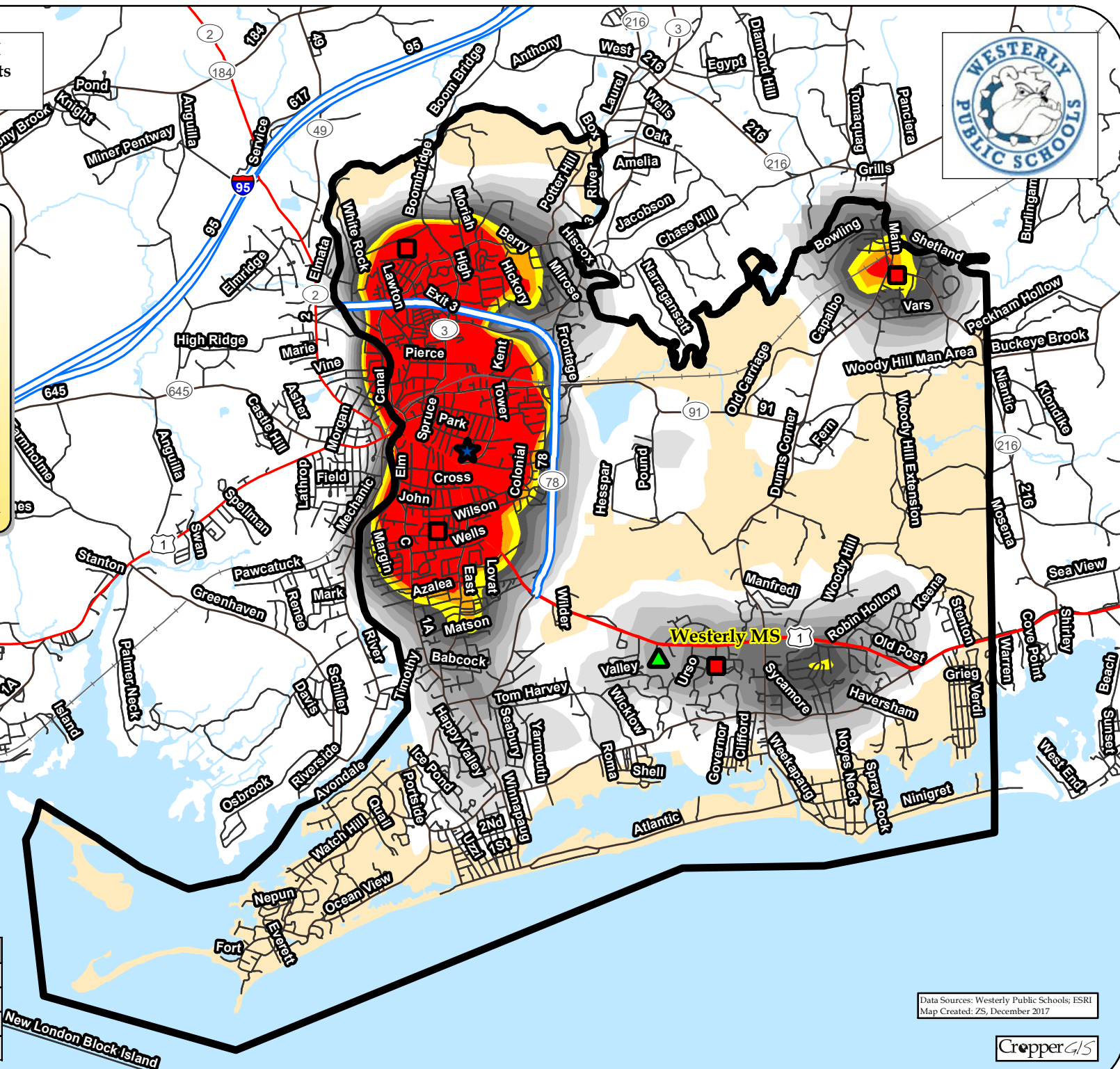
- Elementary
- ▲ Middle
- ★ High



District Boundary



Westerly Middle School	
Total Enrollment (5-8th)	873
Out of District	5
Unmatched	4
Total Live-In (5-8th)	864

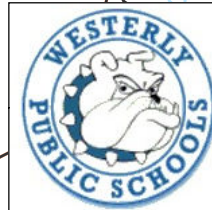


Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

CropperGIS



Westerly Public Schools, RI  
2017-18 Westerly HS Students  
Live-Attend Analysis



Legend

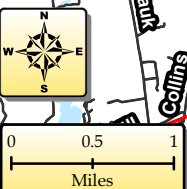
School Type

- Elementary
- ▲ Middle
- ★ High

Westerly HS  
Student Density

- 51 - 127
- 46 - 50
- 41 - 45
- 36 - 40
- 31 - 35
- 26 - 30
- 21 - 25
- 16 - 20
- 11 - 15
- 6 - 10

District Boundary



Westerly High School	
Total Enrollment (9-12th)	816
Out of District	7
Unmatched	0
Total Live-In (9-12th)	809

Data Sources: Westerly Public Schools; ESRI  
Map Created: ZS, December 2017

CropperGIS