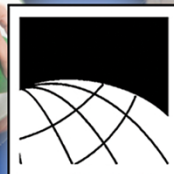


# APPROVED CAPITAL IMPROVEMENTS PROGRAM

Fiscal Years 2016 - 25



**Prince William County**

**PUBLIC SCHOOLS**

*Providing A World-Class Education*

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# Prince William County Public Schools

## *Capital Improvements Program Fiscal Years 2016-25*

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# CAPITAL IMPROVEMENTS PROGRAM

## Fiscal Years 2016-25

Prince William County Public Schools is the second largest of 132 school divisions in the Commonwealth of Virginia and the 38th largest school division in the country. The School Division provides services to over six percent of the state's student enrollment. The total 2014-15 enrollment is 86,209 students with permanent capacity for 85,593 students. This capacity is supplemented with 200 instructional portable classrooms. Permanent capacity is set to increase by 19,479 seats over the next ten years with completion of new school facility construction identified within this Capital Improvements Program (CIP).

Prince William County Public Schools is organized to focus on meeting the needs of its students and employees while managing 92 schools, along with administrative and support facilities. The CIP is a management tool for planning the capital improvements projects needed to house these students and employees adequately. It is an ongoing plan designed to address the need for construction of new school facilities, classroom additions to existing schools, site acquisition, renewals of existing facilities, and upgrading and maintaining the School Division's infrastructure. The CIP is a blueprint of work to be performed over the next ten-year period as determined in assessments of building needs, capacity, and utilization.

Faced with continuing growth in enrollment, the CIP enables the School Division to address the changing enrollment patterns and utilize facilities in ways that are consistent with world-class educational programs. As the CIP is reviewed and updated on an annual basis, long range plans are adjusted based on enrollment projections and fiscal limitations (debt service and budget constraints.)

The CIP addresses the need for new schools as well as renovations and/or additions to existing school facilities, providing general guidance for the next ten years. It is not an inventory of all the work that must be performed on school facilities over the next ten years. It is, rather, a specific budget for the first year of the program (FY 2016) combined with a more general planning schedule for four additional years (FY 2017-20) and then an estimate of projects needed for FY 2021-25. The projects designated for the first two years of the plan are the highest priority needs.

## Strategic Plan

The Capital Improvements Program must meet the following objective of the Strategic Plan:

***Objective 2.3: Enhance the appearance, condition, and capacity of physical plants, facilities, and equipment.***

- 2.3.1 All Division facilities will pass compliance audits and meet building code regulations.
- 2.3.2 Each year, the number of trailers will be reduced so that students are housed in permanent facilities.

This objective is addressed in two general program areas:

- New Construction - projects under construction and planned construction projects to include additions
- Renovations/Renewals/Maintenance - managing existing school building conditions

## Recent Accomplishments

In the past five years eight new schools and fourteen additions have been constructed, costing \$340 million and adding 10,387 student seats. The new schools included four elementary schools, one middle school, one high school, the PACE West replacement and a K-8 school.

Haymarket Elementary School opened in September 2014, as well as The Nokesville School, a K-8 school replacing Nokesville Elementary School. Additions at two schools were recently completed and opened in September 2014. An elementary school addition was completed at River Oaks Elementary School adding 7 classrooms. Also a middle school addition was completed at Parkside Middle School adding 15 classrooms and space for the middle school IHS program.

Major renewals of 7 schools were completed in the last five years at a cost of nearly \$79 million. The renewals included Title IX improvements and energy infrastructure improvements.

Additionally, we continue to assess and improve school safety, including multi-million dollar enhancements in new school design and upgrades to existing buildings by providing controlled access entryways.

## Major Changes

### *Major changes from the 2015-24 CIP include:*

- Elementary School East (Neabsco Mills Area) delayed from 2017 to 2018
- Site Acquisition Funds added to 2016 and 2017
- Western Bus Facility delayed one year from 2017 to 2018
- Elementary School at Vint Hill Road delayed from 2018 to 2023
- Middle School West (Linton Hall Area) delayed from 2018 to 2023
- Lake Ridge MS 13-classroom addition and Stonewall MS 17-classroom addition added to 2018
- 13<sup>th</sup> HS delayed one year from 2019 to 2020
- Elementary School (Lake Ridge Area) moved forward one year from 2020 to 2019
- Pattie ES 10-classroom Addition moved forward one year from 2020 to 2019
- Middle School at Potomac Shores delayed one year from 2020 to 2021
- 14<sup>th</sup> HS delayed one year from 2021 to 2022
- New Dominion 10-classroom addition removed from 2019
- New Dominion School converted to Special Needs Transportation Center added to 2019
- Elementary 6-classroom Addition Haymarket Area delayed from 2019 to 2021
- Elementary School (Haymarket Area) removed from 2022
- Elementary School (Linton Hall Area) removed from 2022
- Middle School (TBD) delayed from 2022 to 2024

## Planning

Planning for capital improvements is an ongoing process to meet critical system-wide capacity demands associated with current and projected enrollment growth. Priorities shift as conditions change at individual facilities, as programs change, and as the student population totals change. The official student enrollment count for Prince William County Public Schools, as of September 30, 2014, is 86,209 students. From 2013 to 2014, total enrollment grew by 1,154 students, or 1.4 percent growth rate. This is compared to growth from 2012 to 2013 of 1,504 students, or 1.8 percent.

2015-16 enrollment is projected to be 87,500 students, an increase of 1,291 students overall. Examining student enrollment growth within school attendance areas, “Geographic Areas,” and school program capacities, guides the identification of the need for additional space for students. Possible solutions to overcrowding conditions include portable classrooms, relocation of special programs, changes in attendance area boundaries, additions, and the construction of new facilities.

Student enrollment projections are utilized for a variety of planning and decision-making functions, among which operational and capital budgeting needs are most prominent. The functional objective of the Student Housing program is to ensure the accurate preparation of information to enable decision-making with respect to the housing of Prince William County students. Individual school forecasts provide a snapshot of the anticipated changes that Prince William County’s public schools will encounter in the course of the current planning period.

Annually, the status of student housing is assessed for the next ten (10) years. This assessment includes determining the current availability of space for students, assessing current student enrollment, projecting future student enrollment, and preparing recommendations for current and future housing of students. During the next five years, student enrollment is projected to increase by an average annual rate of about 1.5 percent. This will result in about 6,848 additional students during this period. Building new school facilities and additions to existing school facilities addresses the overwhelming need for additional classrooms; where possible, additions are utilized as cost-effective alternatives to the construction of new facilities.

The School Division is preparing for the PACE East/Multi Space replacement of the current facilities now housing the students at Independent Hill School, PACE East, New Dominion, and New Directions. The plan is to disburse Independent Hill students to existing schools and replace PACE East, New Dominion, and New Directions facilities in 2018. This involves adding classrooms to new elementary construction, increasing classroom additions at east and west middle schools, and adding space with the construction of the 12th High School. This allows the students of Independent Hill School to be educated in the least restrictive environment.

### *School Facility Totals*

| <i>School Type</i>               | <i>2008-09</i> | <i>2009-10</i> | <i>2010-11</i> | <i>2011-12</i> | <i>2012-13</i> | <i>2013-14</i> | <i>2014-15</i> |
|----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Elementary Schools               | 55             | 55             | 55             | 57             | 57             | 57             | 57             |
| Traditional Schools              | 2              | 2              | 2              | 2              | 2              | 2              | 2              |
| K-8 School                       | --             | --             | --             | --             | --             | --             | 1              |
| Middle Schools                   | 15             | 15             | 15             | 15             | 16             | 16             | 16             |
| High Schools                     | 10             | 10             | 10             | 11             | 11             | 11             | 11             |
| <i>Total (Regular Education)</i> | <b>82</b>      | <b>82</b>      | <b>82</b>      | <b>85</b>      | <b>86</b>      | <b>86</b>      | <b>87</b>      |
| Special Education                | 4              | 4              | 3              | 3              | 3              | 3              | 3              |
| Alternative Education            | 2              | 2              | 2              | 2              | 2              | 2              | 2              |
| <b>Total</b>                     | <b>88</b>      | <b>88</b>      | <b>87</b>      | <b>90</b>      | <b>91</b>      | <b>91</b>      | <b>92</b>      |

## Funding

This CIP is presented by the Superintendent as part of the budget and reviewed and adopted by the Prince William County School Board after a public hearing. The CIP is then presented to the Prince William Board of County Supervisors as part of the School Division’s budget for funding appropriation.

Prioritizing the work within the available funding to address the most critical needs is an ever-present challenge. Funds are included in the approved budget to support the CIP. The funding formula developed by the Associate Superintendent for Finance and Support Services provides targets for construction and maintenance expenditures.

It is impossible to address all School Division needs in a single year; therefore, a long-term approach is needed to balance expenditures with anticipated revenues. Funding for long-range plans is adjusted for Prince William County’s overall bonding capacity to maintain a Triple A bond rating, as directed by the Prince William Board of County Supervisors.

“Proffered” funds also provide revenue. Proffers are residential rezoning applicant’s monetary or in-kind contribution to the School Division to help mitigate the capital costs associated with residential development.

### *Proffer Funds Received by PWCS*

| <i>Fiscal Year Received</i> | <i>Amount</i>       | <i>Purpose</i>   |
|-----------------------------|---------------------|--|
| 2015*                       | \$7,438,000         | Construction projects, Portable classroom relocation   |
| 2014                        | \$7,676,500         | Construction projects, Portable classroom relocation   |
| 2013                        | \$5,527,008         | Construction and renewal projects, Portable classroom relocation/maintenance   |
| 2012                        | \$5,427,209         | Construction and renewal projects, Portable classroom relocation/maintenance   |
| 2011                        | \$3,223,771         | Construction and renewal projects, Portable classroom relocation/maintenance   |
| 2010                        | \$7,363,382         | Construction and renewal projects, Portable classroom relocation/maintenance   |
| 2009                        | \$8,018,018         | Construction and site acquisition, Renewal projects  |
| 2008                        | \$7,054,482         | Construction and site acquisition, Renewal projects  |
| 2007                        | \$10,686,615        | PACE West / Yorkshire replacement / various construction, Renewal projects   |
| 2006                        | \$9,799,063         | Tyler addition construction, Various construction projects   |
| 2005                        | \$9,600,000         | East and West sites, Administration Building, Construction   |
| 2003                        | \$2,200,000         | Acquisition of the Williams ES site, Additions to Sudley ES and Bristow Run ES                                       |
| 2002                        | \$4,265,554         | New construction/renewals, Land acquisition for Transportation Center Central, Middle school site at Four Year Trail |
| 2001                        | \$1,000,000         | Acquisition of 10th high school site   |
| 2000                        | \$876,680           | New Marsteller MS clearing and grading, Improvement of the Gar-Field HS athletic fields                              |
| 1999                        | \$980,000           | Improvement of the Brentsville HS parking lot, tennis court and the bus loop   |
| 1998                        | \$1,600,000         | Acquisition of Ashland ES site   |
| 1996                        | \$450,000           | Acquisition of additional land for the Kingsbrooke ES site   |
| 1995                        | \$671,955           | Acquisition of land for the Kingsbrooke ES site  |
| 1994                        | \$793,055           | Lightner Road and Old Bridge Schools, Site Acquisition   |
| <b>Total</b>                | <b>\$94,651,292</b> |  |

\*Proffer amount as of 2/2015



## New Schools, Additions, and Other Bond-Funded Projects

| <i>Scheduled Completion</i> | <i>Project</i>   | <i>Cost</i>                                 |
|-----------------------------|--|---|
| <i>September 2015</i>       | Yung Elementary School/IHS Space                         | <i>Previously Funded/Under Construction</i> |
|                             | Featherstone Elementary Addition (6 rooms)               |   |
| <i>September 2016</i>       | Ferlazzo Elementary School/IHS Space                     | \$28,534,000                                |
|                             | Site Acquisition Funding                                 | \$1,000,000                                 |
|                             | 12th High School/IHS (Mid-County)                        | \$110,943,000                               |
|                             | Rippon Middle Addition/IHS (8 rooms + 1 IHS)             | \$7,410,000                                 |
|                             | Maintenance Facility (Independent Hill site)             | \$11,444,000                                |
|                             | <b>Total 2016</b>  | <b>\$159,331,000</b>                        |
| <i>September 2017</i>       | Elementary School at Potomac Shores                      | \$29,374,000                                |
|                             | Kilby Elementary School Replacement                      | \$31,476,000                                |
|                             | Belmont Elementary Addition (10 rooms)                   | \$8,667,000                                 |
|                             | Henderson Elementary Addition (10 rooms)                 | \$9,318,000                                 |
|                             | Neabsco Elementary School Addition (8 rooms)             | \$7,904,000                                 |
|                             | Site Acquisition Funding                                 | \$2,000,000                                 |
|                             | <b>Total 2017</b>  | <b>\$88,739,000</b>                         |
| <i>September 2018</i>       | Elementary School East (Neabsco Mills Area) <sup>1</sup> | \$30,847,000                                |
|                             | Lake Ridge Middle School Addition (13 rooms)             | \$13,031,000                                |
|                             | Stonewall Middle School Addition (17 rooms)              | \$16,016,000                                |
|                             | Western Bus Facility <sup>1</sup>                        | \$5,068,000                                 |
|                             | PACE East Replacement/Multi-Space                        | \$35,850,000                                |
|                             | <b>Total 2018</b>  | <b>\$100,812,000</b>                        |
| <i>September 2019</i>       | Elementary School (Lake Ridge Area) <sup>1</sup>         | \$32,393,000                                |
|                             | Leesylvania Elementary School Addition (4 rooms)         | \$6,900,000                                 |
|                             | Pattie Elementary School Addition (10 rooms)             | \$10,479,000                                |
|                             | Special Needs Transportation Center @ New Dominion       | \$2,000,000                                 |
|                             | <b>Total 2019</b>  | <b>\$51,772,000</b>                         |
| <i>September 2020</i>       | 13th High School (West)                                  | \$124,053,000                               |
|                             | <b>Total 2020</b>  | <b>\$124,053,000</b>                        |
| <i>September 2021</i>       | Elementary School (Cherry Hill Area) <sup>1</sup>        | \$35,721,000                                |
|                             | Middle School at Potomac Shores                          | \$64,736,000                                |
|                             | Elementary Addition Haymarket Area (6 rooms)             | \$8,094,000                                 |
|                             | <b>Total 2021</b>  | <b>\$108,551,000</b>                        |

## New Schools, Additions, and Other Bond-Funded Projects

| Scheduled Completion             | Project   | Cost                        |
|----------------------------------|---|-----------------------------|
| <i>September 2022</i>            | 14th High School (Mid-County) <sup>1</sup>                | \$133,869,000               |
|                                  | <b><i>Total 2022</i></b>                                  | <b><i>\$133,869,000</i></b> |
| <i>September 2023</i>            | Elementary School (Stonewall/Yorkshire Area) <sup>1</sup> | \$39,389,000                |
|                                  | Elementary School at Vint Hill Rd                         | \$39,389,000                |
|                                  | Middle School (West - Linton Hall Area)                   | \$71,379,000                |
|                                  | <b><i>Total 2023</i></b>                                  | <b><i>\$150,157,000</i></b> |
| <i>September 2024</i>            | Middle School (TBD) <sup>1</sup>                          | \$74,951,000                |
|                                  | <b><i>Total 2024</i></b>                                  | <b><i>\$74,951,000</i></b>  |
| <b><i>TOTAL (FY 2016-25)</i></b> |   | <b><i>\$992,235,000</i></b> |

*Note 1 - Sites needed by proffer or purchase (Current CIP includes limited site acquisition funds)*

## Site Acquisition

School staff reviews county residential development plans and maintains a database containing the number of anticipated housing units and the stage of development. This information is used in making enrollment projections. The projected enrollments by geographic area determine future school locations and attendance areas. School sites acquired must be located and sized in accordance with the adopted Prince William County Comprehensive Plan.

The County's level of development has made school site land acquisitions challenging as prime undeveloped land has been purchased or optioned by developers for future residential, commercial, and industrial development. As real estate costs continue to escalate, acquiring sites sooner prevents paying higher premiums later. Even with purchased and proffered sites, there are still six school sites and one bus facility needed by 2024. If proffered school sites are not used, an additional number of sites would need to be acquired.

Land acquisition will continue to figure prominently in this and future capital improvement budgets. Funding for school site acquisition comes from a combination of "proffered" funds or sites, bond funds, and the operating budget. "Proffered" funds contributions to the School Division help to offset the impact of new residential development on schools.

Proffers have become an increasingly significant factor in Prince William County's land use regulation process. In 1990, as part of the Comprehensive Plan, Prince William County established level of service (LOS) criteria as a standard or bench-mark to measure the quantity and/or quality of service provided by a government agency. The LOS standards provide an objective justification for mitigation requests. The suggested voluntary monetary contribution amount for Schools was increased July 2014 (previous update - July 2006).

In making efforts to acquire proffered sites, staff works cooperatively with developers of land to secure the best possible land or monetary contribution. Actual monetary amounts received by Prince William County Schools vary depending on the year a development was first proposed and the number and type of residential units to be constructed. Funds are received when individual units are permitted/built within the development and not in one lump sum.

The location, character, and extent of all proposed public facilities must be consistent with Prince William County's Comprehensive Plan as determined by the Prince William County Planning Commission and the Prince William Board of County Supervisors.

## Site Acquisition Funding

| Year To Open                          | Year To Acquire | New School                           | Property Status                   | Estimated Funds Required (Range in millions)** |
|---------------------------------------|-----------------|--------------------------------------|-----------------------------------|--|
| 2016                                  | N/A             | Ferlazzo Elementary School           | Proffered                         | N/A  |
|                                       |                 | 12th High School                     | PWCS Owned - 110 acres            | N/A  |
|                                       |                 | Maintenance Facility                 | PWC Owned - Independent Hill Site | N/A  |
| 2017                                  | N/A             | ES @ Potomac Shores                  | Proffered                         | N/A  |
|                                       |                 | Kilby ES Replacement                 | PWCS Owned                        | N/A  |
| 2018                                  | 2015-16         | ES East (Neabsco Mills Area)*        | Site Needed                       | \$2.8-\$4                                      |
|                                       | 2016            | Western Transportation Facility*     | Site Needed                       | \$3.0  |
|                                       | N/A             | PACE East Replacement - Multi -Space | PWCS Owned – Independent Hill     | N/A  |
| 2019                                  | 2015-16         | 13th High School (West)*             | Potential Proffer @ Stone Haven   | \$0  |
|                                       |                 |                                      | Otherwise Site Needed             | \$10.6-\$17                                    |
| 2020                                  | 2017            | ES (Lake Ridge Area)*                | Site Needed                       | \$2.8-\$4                                      |
|                                       | 2014            | MS East @ Potomac Shores             | Proffer                           | N/A  |
| 2021                                  | 2016            | 14th High School (Mid-County)*       | Site Needed                       | \$11-17  |
| 2022                                  | 2019            | ES (Cherry Hill Area)*               | Site Needed                       | \$2.9-\$5                                      |
|                                       | 2018            | MS West (Linton Hall Area)*          | Proffered - Vint Hill Rd          | N/A  |
|                                       |                 |                                      | Otherwise Site Needed             | \$5.7-\$7.2                                    |
| 2023                                  | 2020            | ES (Stonewall/Yorkshire Area)*       | Site Needed                       | \$2.9-\$5.5                                    |
|                                       | N/A             | ES West (Vint Hill Rd.)              | Proffered - Vint Hill Rd          | N/A  |
| 2024                                  | 2020            | MS (TBD)*                            | Site Needed                       | \$5.9-\$7.5                                    |
| <b>Total Amount of Unfunded Sites</b> |                 |                                      |                                   | <b>\$47.6-\$70.2</b>                           |

*\*Sites needed by proffer or purchase. Limited site acquisition funds identified in current CIP*

*\*\*Estimated range based on PWC Proffer Guidelines and recent PWCS land acquisitions*

## Renovations/Renewals

New construction projects are only part of the CIP picture. Renovations/renewals are programmed to assure that all schools are safe, functional, and provide the facilities necessary to support the current educational programs regardless of the age of the building. School renewals are infrastructure improvements that are important to improve capacity, provide adequate activity spaces, and to meet current instructional needs such as technology and music.

Forty-eight of the Division’s 92 school facilities are 25 years or older. The goal of the school renewal program is to renovate schools prior to 25 years of age since last renewal. The older buildings are well-maintained but are in constant need of repair. They must be renewed to provide quality space, continuity, and stability for a *World-Class Education*.

The Office of Facilities Services continues to meet these challenges head-on and to make dramatic improvements to the physical condition of schools. School building conditions are assessed annually and consideration of critical needs and prior facility upgrades are evaluated. Recent renewals allow for changing the emphasis from systems replacements to maintenance in areas such as roofing and paving repairs.

This CIP addresses the reduction of the backlog of renewal projects at older buildings, with age of each school building the first consideration. The order of renewals may be altered when major components are addressed with previous projects, accelerated deterioration conditions warrant, and with funding constraints. The Schedule of Renovations and Renewals includes annual dollars for kitchen upgrades, roof replacement/repairs, upgrades for HVAC equipment and controls, energy infrastructure improvements, Title IX improvements, and technology improvements.

The projects contained in this plan are based on the planning, design review, and input from a team of in-house facility maintenance professionals, administration, school principals, and facility-condition evaluations conducted by architect and engineer consultants. The list of capital projects identified provides a clear statement of school facility requirements that have been categorized within the limitation of projected funding.

The FY 2016 budget includes funds for renewals at Henderson, King, Lake Ridge, Loch Lomond, and Springwoods Elementary Schools; roof replacements for Lake Ridge Middle School and Hylton High School; and various kitchen upgrades, energy infrastructure improvements, HVAC upgrades, Technology Improvements and Title IX improvements.

| <i>School Renewals / Major Infrastructure Renovations may include:</i> |                       |
|--|-----------------------|
| HVAC Systems   | Lockers               |
| Lighting   | Roof Replacement      |
| Electrical System  | Flooring              |
| Plumbing   | Painting              |
| Fire Alarm System  | Technology            |
| Security System  | Casework              |
| Telephone and Intercom Systems   | Doors / Hardware      |
| American Disability Act (ADA)  | Site Improvements     |
| Bleachers  | Title IX Improvements |
| Elementary School P.E. Space   | Clinic Improvements   |
| Secure Access Improvements   |                       |

## Budget – Renovations / Renewals

The School Division budgets for repairs and renewals using the National Building Research Board recommendations. This Board recommends that 2 to 4 % of current replacement value of facilities be budgeted annually for repairs and renewals. The current replacement value of schools is approximately \$2,336,912,000. Prince William County Schools has established an average annual renewal and repair target of 3% of the current replacement value of facilities with 1.5% for preventive maintenance and 1.5% for repairs and renewals. The amount targeted to be budgeted each year varies from approximately 2.2% to 3.4%, dependent upon the year of the Commonwealth of Virginia’s biennium funding. The target to be budgeted in FY 2016 for repairs, renovations, and maintenance is \$51,951,000 (2.2% value), with the estimated budget for renovations, renewals, technology, and energy improvements in FY 2016 at \$26,782,000.

## Major Maintenance

To improve and maintain current facilities, each school is evaluated at 7-year intervals and major maintenance repairs are scheduled. Major maintenance may include:

| <i>Typical Major Maintenance Activities</i>                 |  |
|---|--|
| <i>7-Year Cycle</i>   | <i>14-Year Cycle</i>   |
| Carpeting (Partial)   | Paint Exterior and Interior (Partial)                          |
| Paint Hallways, Offices, Exterior Doors, Kitchens (Partial) | Repave / Seal Coat Parking Lot, Paved Areas, and Tennis Courts |
| Seal Coat Paved Areas and Repaint                           | Re-key Interior and Exterior Doors                             |
| Minor HVAC Repairs  | Repair / Replace Fencing and Backstops                         |
| Repair Concrete Sidewalks and Curbs                         | Carpeting (Partial)  |
| Clean and Repair Storm Drains                               | Update Food Service Equipment (Partial)                        |
| Repair Fencing  | Minor Roof Repairs   |
| Electrical System Preventive Maintenance                    | Update Plumbing Fixtures                                       |
| Trim Trees / Landscaping                                    | Update Electrical Service                                      |
| Re-Lamp Interior and Exterior Light Fixtures                | Update HVAC Controls   |
|   | Minor Chiller Rebuilding                                       |
|   | Stage Lighting / Curtains                                      |

- *Based on restricted funding levels, many of these items will not be addressed*
- *Repairs are made on an “as-needed” basis until other funding sources become available*

## Schedule of Renovations and Renewals

| <i>Fiscal Year</i> | <i>Year Opened</i>                                 | <i>Project</i>   | <i>Proposed Funding</i>                             |
|--------------------|--|--|---|
| <b>2015</b>        | <b>1953</b>  | <b>Dumfries Elementary School - Renewal</b> (Partial Funding)            | <i>Previously<br/>Funded/Under<br/>Construction</i> |
|                    | <b>1985</b>  | <b>Henderson Elementary School - Renewal</b> (Funding Phase 1)           |   |
|                    | <b>1981</b>  | <b>King Elementary School - Renewal</b> (Funding Phase 1)                |   |
|                    | <b>1983</b>  | <b>Lake Ridge Elementary School - Renewal</b> (Funding Phase 1)          |   |
|                    | <b>1962</b>  | <b>Loch Lomond Elementary School - Renewal Phase 2</b> (Funding Phase 1) |   |
|                    | <b>1985</b>  | <b>Springwoods Elementary School - Renewal</b> (Funding Phase 1)         |   |
|                    |  | <b>Woodbridge MS - Window Wall Replacement</b> (Funding Phase 2)         |   |
|                    |  | <b>Osborn Park High School - HVAC Repair</b>                             |   |
|                    |  | <b>Stonewall Jackson High School - HVAC Repair</b>                       |   |
|                    |  | <b>Kitchen HVAC Upgrades - Phase 1 of 2</b>                              |   |
|                    |  | <b>Graham Park Middle School - Roof Replacement</b>                      |   |
|                    |  | <b>Saunders Middle School - Roof Replacement</b>                         |   |
|                    |  | <b>Transportation Bus Parking (TBD)</b>                                  |   |
|                    |  | <b>Kitchen - Upgrades</b>  |   |
|                    |  | <b>Energy Infrastructure Improvements</b>                                |   |
|                    | <b>HVAC Equipment and Controls - Upgrades</b>      |  |   |
|                    | <b>Title IX Improvements</b>                       |  |   |
|                    | <b>Technology Improvement Program - Upgrades</b>   |  |   |
| <b>2016</b>        |  | <b>Henderson Elementary School - Renewal</b> (Funding Phase 2)           | \$2,241,000   |
|                    |  | <b>King Elementary School - Renewal</b> (Funding Phase 2)                | \$2,241,000   |
|                    |  | <b>Lake Ridge Elementary School - Renewal</b> (Funding Phase 2)          | \$2,241,000   |
|                    |  | <b>Loch Lomond Elementary School - Renewal Phase 2</b> (Funding Phase 2) | \$1,870,000   |
|                    |  | <b>Springwoods Elementary School - Renewal</b> (Funding Phase 2)         | \$2,241,000   |
|                    |  | <b>Kitchen HVAC Upgrades - Phase 2 of 2</b>                              | \$1,116,000   |
|                    |  | <b>Hylton High School - Roof Replacement</b> (Funding Phase 1)           | \$2,800,000   |
|                    |  | <b>Lake Ridge Middle School - Roof Replacement</b>                       | \$2,800,000   |
|                    |  | <b>Kitchen - Upgrades *</b>  | \$650,000   |
|                    |  | <b>Energy Infrastructure Improvements</b>                                | \$1,000,000   |
|                    |  | <b>HVAC Equipment and Controls - Upgrades</b>                            | \$1,832,000   |
|                    |  | <b>Roof Replacements/Repairs (TBD)</b>                                   | \$1,000,000   |
|                    |  | <b>Title IX Improvements</b>   | \$250,000   |
|                    | <b>Technology Improvement Program - Upgrades**</b> | \$4,500,000  |   |
|                    | <b>Total - Fiscal Year 2016</b>                    | <b>\$26,782,000</b>  |   |

*\*Paid out of Food Services Fund*

*\*\*Funded at \$2,000,000 only*

## Schedule of Renovations and Renewals

| <i>Fiscal Year</i> | <i>Year Opened</i> | <i>Project</i>  | <i>Proposed Funding</i>  |             |
|--------------------|--------------------|---|--|-------------|
| <b>2017</b>        | <b>1990</b>        | <b>Antietam Elementary School - Renewal (Funding Phase 1)</b>   | \$7,300,000  |             |
|                    | <b>1989</b>        | <b>McAuliffe Elementary School - Renewal (Funding Phase 1)</b>  | \$7,300,000  |             |
|                    | <b>1990</b>        | <b>Mullen Elementary School - Renewal (Funding Phase 1)</b>     | \$7,300,000  |             |
|                    | <b>1989</b>        | <b>Westridge Elementary School - Renewal (Funding Phase 1)</b>  | \$7,300,000  |             |
|                    | <b>1989</b>        | <b>Lake Ridge Middle School - Renewal (Funding Phase 1)</b>     | \$8,000,000  |             |
|                    | <b>1988</b>        | <b>Saunders Middle School - Renewal (Funding Phase 1)</b>       | \$8,000,000  |             |
|                    |                    |   | <b>Gar-Field High School - Roof Replacement (Partial)</b>        | \$1,500,000 |
|                    |                    |   | <b>Hylton High School - Roof Replacement (Funding Phase + 2)</b> | \$2,150,000 |
|                    |                    |   | <b>Kitchen - Upgrades</b>  | \$730,000   |
|                    |                    |   | <b>Energy Infrastructure Improvements</b>                        | \$1,000,000 |
|                    |                    |   | <b>HVAC Equipment and Controls - Upgrades</b>                    | \$1,601,000 |
|                    |                    |   | <b>Roof Replacements/Repairs (TBD)</b>                           | \$1,100,000 |
|                    |                    |   | <b>Title IX Improvements</b>                                     | \$260,000   |
|                    |                    |   | <b>Technology Improvement Program - Upgrades</b>                 | \$4,500,000 |
|                    |                    | <b>Total - Fiscal Year 2017</b>                                 | <b>\$58,041,000</b>  |             |
| <b>2018</b>        |                    | <b>Antietam Elementary School - Renewal (Funding Phase 2)</b>   | \$2,000,000  |             |
|                    |                    | <b>McAuliffe Elementary School - Renewal (Funding Phase 2)</b>  | \$2,000,000  |             |
|                    |                    | <b>Mullen Elementary School - Renewal (Funding Phase 2)</b>     | \$2,000,000  |             |
|                    |                    | <b>Westridge Elementary School - Renewal (Funding Phase 2)</b>  | \$2,000,000  |             |
|                    |                    | <b>Lake Ridge Middle School - Renewal (Funding Phase 2)</b>     | \$2,600,000  |             |
|                    |                    | <b>Saunders Middle School - Renewal (Funding Phase 2)</b>       | \$2,600,000  |             |
|                    |                    | <b>River Oaks Elementary School - Renewal (Funding Phase 1)</b> | \$6,000,000  |             |
|                    |                    | <b>Beville Middle School - Roof Replacement</b>                 | \$2,700,000  |             |
|                    |                    | <b>Kitchen - Upgrades</b>                                       | \$362,000  |             |
|                    |                    | <b>Energy Infrastructure Improvements</b>                       | \$1,000,000  |             |
|                    |                    | <b>HVAC Equipment and Controls - Upgrades</b>                   | \$1,000,000  |             |
|                    |                    | <b>Roof Replacements/Repairs (TBD)</b>                          | \$605,000  |             |
|                    |                    | <b>Title IX Improvements</b>                                    | \$270,000  |             |
|                    |                    | <b>Technology Improvement Program - Upgrades</b>                | \$4,500,000  |             |
|                    |                    | <b>Total - Fiscal Year 2018</b>                                 | <b>\$29,637,000</b>  |             |



## Schedule of Renovations and Renewals

| <i>Fiscal<br/>Year</i> | <i>Year<br/>Opened</i>          | <i>Project</i>   | <i>Proposed<br/>Funding</i>                               |             |
|------------------------|---------------------------------|--|---|-------------|
| <b>2019</b>            |                                 | River Oaks Elementary School – Renewal (Funding Phase 2)     | \$3,300,000   |             |
|                        | <b>1996</b>                     | Bennett Elementary School - Renewal (Funding Phase 1)        | \$6,750,000   |             |
|                        | <b>1996</b>                     | Leesylvania Elementary School - Renewal (Funding Phase 1)    | \$6,750,000   |             |
|                        | <b>1994</b>                     | Marshall Elementary School - Renewal (Funding Phase 1)       | \$6,750,000   |             |
|                        | <b>1991</b>                     | Montclair Elementary School - Renewal (Funding Phase 1)      | \$6,750,000   |             |
|                        | <b>1995</b>                     | Mountain View Elementary School - Renewal (Funding Phase 1)  | \$6,750,000   |             |
|                        | <b>1995</b>                     | Old Bridge Elementary School - Renewal (Funding Phase 1)     | \$6,750,000   |             |
|                        | <b>1998</b>                     | Penn Elementary School - Renewal (Funding Phase 1)           | \$6,750,000   |             |
|                        |                                 | Benton Middle School - Roof Replacement (Funding Phase 1)    | \$2,500,000   |             |
|                        |                                 | Forest Park High School - Roof Replacement (Funding Phase 1) | \$2,500,000   |             |
|                        |                                 | Rippon Middle School - Fenestration Improvements - Phase 1   | \$1,055,000   |             |
|                        |                                 | Kitchen - Upgrades   | \$500,000   |             |
|                        |                                 | Energy Infrastructure Improvements                           | \$1,000,000   |             |
|                        |                                 | HVAC Equipment and Controls - Upgrades                       | \$1,200,000   |             |
|                        |                                 | Roof Replacements/Repairs (TBD)                              | \$1,100,000   |             |
|                        |                                 | Title IX Improvements  | \$280,000   |             |
|                        |                                 | Technology Improvement Program - Upgrades                    | \$4,500,000   |             |
|                        |                                 | <b>Total - Fiscal Year 2019</b>                              | <b>\$65,185,000</b>                                       |             |
|                        | <b>2020</b>                     |  | Bennett Elementary School - Renewal (Funding Phase 2)     | \$3,300,000 |
|                        |                                 |  | Leesylvania Elementary School - Renewal (Funding Phase 2) | \$3,300,000 |
|                        |                                 | Marshall Elementary School - Renewal (Funding Phase 2)       | \$3,300,000   |             |
|                        |                                 | Montclair Elementary School - Renewal (Funding Phase 2)      | \$3,300,000   |             |
|                        |                                 | Mountain View Elementary School - Renewal (Funding Phase 2)  | \$3,300,000   |             |
|                        |                                 | Old Bridge Elementary School - Renewal (Funding Phase 2)     | \$3,300,000   |             |
|                        |                                 | Penn Elementary School - Renewal (Funding Phase 2)           | \$3,300,000   |             |
|                        |                                 | Benton Middle School - Roof Replacement (Funding Phase 2)    | \$1,000,000   |             |
|                        |                                 | Forest Park High School - Roof Replacement (Funding Phase 2) | \$1,000,000   |             |
|                        |                                 | Energy Infrastructure Improvements                           | \$1,000,000   |             |
|                        |                                 | HVAC Equipment and Controls - Upgrades                       | \$1,100,000   |             |
|                        |                                 | Roof Replacements/Repairs (TBD)                              | \$988,000   |             |
|                        |                                 | Title IX Improvements  | \$290,000   |             |
|                        |                                 | Technology Improvement Program - Upgrades                    | \$4,500,000   |             |
|                        | <b>Total - Fiscal Year 2020</b> | <b>\$32,978,000</b>  |   |             |

## Schedule of Renovations and Renewals

| <i>Fiscal<br/>Year</i> | <i>Year<br/>Opened</i> | <i>Project</i>   | <i>Proposed<br/>Funding</i>                                       |                            |
|------------------------|------------------------|--|---|----------------------------|
| <i>2021</i>            | <i>1998</i>            | <b>Bristow Run Elementary School - Renewal (Funding Phase 1)</b> | \$8,000,000   |                            |
|                        | <i>2000</i>            | <b>Signal Hill Elementary School - Renewal (Funding Phase 1)</b> | \$8,000,000   |                            |
|                        | <i>2000</i>            | <b>Benton Middle School - Renewal (Funding Phase 1)</b>          | \$9,000,000   |                            |
|                        | <i>1991</i>            | <b>Beville Middle School - Renewal (Funding Phase 1)</b>         | \$9,000,000   |                            |
|                        | <i>2000</i>            | <b>Forest Park High School - Renewal (Funding Phase 1)</b>       | \$12,500,000  |                            |
|                        | <i>1991</i>            | <b>Hylton High School - Renewal (Funding Phase 1)</b>            | \$12,500,000  |                            |
|                        |                        |  | <b>Rippon Middle School - Fenestration Improvements - Phase 2</b> | \$1,300,000                |
|                        |                        |  | <b>Transportation Bus Parking (TBD)</b>                           | \$1,600,000                |
|                        |                        |  | <b>Kitchen - Upgrades</b>   | \$800,000                  |
|                        |                        |  | <b>Energy Infrastructure Improvements</b>                         | \$1,000,000                |
|                        |                        |  | <b>HVAC Equipment and Controls - Upgrades</b>                     | \$1,400,000                |
|                        |                        |  | <b>Roof Replacements/Repairs (TBD)</b>                            | \$3,681,000                |
|                        |                        |  | <b>Title IX Improvements</b>                                      | \$300,000                  |
|                        |                        |  | <b>Technology Improvement Program - Upgrades</b>                  | \$4,500,000                |
|                        |                        |  | <b>Total - Fiscal Year 2021</b>                                   | <b><i>\$73,581,000</i></b> |
| <i>2022</i>            |                        | <b>Bristow Run Elementary School - Renewal (Funding Phase 2)</b> | \$3,100,000   |                            |
|                        |                        | <b>Signal Hill Elementary School - Renewal (Funding Phase 2)</b> | \$3,100,000   |                            |
|                        |                        | <b>Benton Middle School - Renewal (Funding Phase 2)</b>          | \$3,200,000   |                            |
|                        |                        | <b>Beville Middle School - Renewal (Funding Phase 2)</b>         | \$3,200,000   |                            |
|                        |                        | <b>Forest Park High School - Renewal (Funding Phase 2)</b>       | \$4,953,000   |                            |
|                        |                        | <b>Hylton High School - Renewal (Funding Phase 2)</b>            | \$4,953,000   |                            |
|                        |                        | <b>Fenestration Improvements (TBD)</b>                           | \$2,000,000   |                            |
|                        |                        | <b>Kitchen - Upgrades</b>  | \$800,000   |                            |
|                        |                        | <b>Energy Infrastructure Improvements</b>                        | \$1,000,000   |                            |
|                        |                        | <b>HVAC Equipment and Controls - Upgrades</b>                    | \$2,000,000   |                            |
|                        |                        | <b>Roof Replacements/Repairs (TBD)</b>                           | \$4,000,000   |                            |
|                        |                        | <b>Title IX Improvements</b>                                     | \$310,000   |                            |
|                        |                        | <b>Technology Improvement Program - Upgrades</b>                 | \$4,500,000   |                            |
|                        |                        | <b>Total - Fiscal Year 2022</b>                                  | <b><i>\$37,116,000</i></b>  |                            |

## Schedule of Renovations and Renewals

| <i>Fiscal Year</i>          | <i>Year Opened</i>              | <i>Project</i>  | <i>Proposed Funding</i> |
|-----------------------------|---------------------------------|---|-------------------------|
| <b>2023</b>                 |                                 | <b>Renewals - Ashland ES, Cedar Point ES, Swans Creek ES, Marsteller MS (Funding Phase 1)</b> | \$69,994,000            |
|                             |                                 | <b>Kitchen - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Energy Infrastructure Improvements</b>   | \$1,000,000             |
|                             |                                 | <b>HVAC Equipment and Controls - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Roof Replacements/Repairs (TBD)</b>  | \$4,322,000             |
|                             |                                 | <b>Title IX Improvements</b>  | \$320,000               |
|                             |                                 | <b>Technology Improvement Program - Upgrades</b>  | \$4,500,000             |
|                             |                                 | <b>Total - Fiscal Year 2023</b>   | <b>\$84,136,000</b>     |
| <b>2024</b>                 |                                 | <b>Renewals - Ashland ES, Cedar Point ES, Swans Creek ES, Marsteller MS (Funding Phase 2)</b> | \$24,225,000            |
|                             |                                 | <b>Fenestration Improvements (TBD)</b>  | \$2,000,000             |
|                             |                                 | <b>Kitchen - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Energy Infrastructure Improvements</b>   | \$1,000,000             |
|                             |                                 | <b>HVAC Equipment and Controls - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Roof Replacements/Repairs (TBD)</b>  | \$6,000,000             |
|                             |                                 | <b>Title IX Improvements</b>  | \$330,000               |
|                             |                                 | <b>Technology Improvement Program - Upgrades</b>  | \$4,500,000             |
|                             | <b>Total - Fiscal Year 2024</b> | <b>\$42,055,000</b>   |                         |
| <b>2025</b>                 |                                 | <b>Renewals - Alvey ES, Ellis ES, Bull Run MS, HS TBD, McCuin Transportation Center</b>       | \$79,281,000            |
|                             |                                 | <b>Fenestration Improvements (TBD)</b>  | \$2,000,000             |
|                             |                                 | <b>Kitchen - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Energy Infrastructure Improvements</b>   | \$1,000,000             |
|                             |                                 | <b>HVAC Equipment and Controls - Upgrades</b>   | \$2,000,000             |
|                             |                                 | <b>Roof Replacements/Repairs (TBD)</b>  | \$6,000,000             |
|                             |                                 | <b>Title IX Improvements</b>  | \$340,000               |
|                             |                                 | <b>Technology Improvement Program - Upgrades</b>  | \$4,500,000             |
|                             | <b>Total - Fiscal Year 2025</b> | <b>\$97,121,000</b>   |                         |
| <b>TOTAL (FY 2016-2025)</b> |                                 |   | <b>\$546,632,000</b>    |

## Middle School Turf Field Conversion

Prince William County Board of Supervisors has directed the Department of Parks and Recreation to provide artificial turf fields with lights at five (5) Prince William County middle schools. Facilities Services is coordinating the design and construction of the turf field conversions. The Board of County Supervisors' approved budget is providing the funding for the field conversions.

The construction projects were bid in March 2015. Construction is to be completed during the 2015 summer for field use in September. The turf fields will primarily be used and programmed by the Department of Parks and Recreation. Middle School students will have use of the fields during the school day.

| <i>School</i>             | <i>Field to be Converted</i> | <i>Project Costs</i> |
|---------------------------|------------------------------|----------------------|
| Benton Middle School      | Practice Field               | \$2,218,000          |
| Godwin Middle School      | Stadium Field                |                      |
| Graham Park Middle School | Stadium Field                | \$3,610,000          |
| Lake Ridge Middle School  | Stadium Field                |                      |
| Woodbridge Middle School  | Stadium Field                |                      |
| <b>TOTAL</b>              |                              | <b>\$5,828,000</b>   |

## Technology Improvements Program

| <i>Technology</i>                         | <i>FY 2016</i>     | <i>FY 2017</i>     | <i>FY 2018</i>     | <i>FY 2019</i>     | <i>FY 2020</i>     |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| VoIP phones 6 HS                          | 1,477,074          |                    |                    |                    |                    |
| VoIP phones 8 MS                          | 831,552            |                    |                    |                    |                    |
| VoIP phones 6 MS                          |                    | 623,664            |                    |                    |                    |
| VoIP phones 35 ES                         |                    | 1,973,965          |                    |                    |                    |
| VoIP phones 4 ES                          |                    |                    | 225,596            |                    |                    |
| VoIP Upgrades                             |                    |                    |                    |                    | 700,000            |
| Network Security Upgrade                  | 550,000            |                    |                    |                    |                    |
| Data Center Firewall Upgrades             | 600,000            |                    |                    |                    |                    |
| Network Switching Infrastructure Upgrades | 921,374            | 975,398            | 372,247            | 468,450            | 461,429            |
| Network Perimeter Upgrades                |                    | 595,000            | 320,000            |                    |                    |
| Proxy Upgrade                             |                    | 331,973            | 331,973            |                    |                    |
| Internal Firewall/VPN Upgrade             |                    |                    | 30,000             |                    |                    |
| External Firewall Upgrade                 |                    |                    |                    | 280,000            |                    |
| Application Whistling Software            | 120,000            |                    |                    |                    |                    |
| Server Upgrades                           |                    |                    |                    |                    | 1,257,385          |
| Wireless 8 HS                             |                    |                    | 1,445,376          |                    |                    |
| Wireless 14 MS                            |                    |                    | 1,774,808          |                    |                    |
| Wireless 50 ES                            |                    |                    |                    | 3,751,550          |                    |
| Wireless 6 ES                             |                    |                    |                    |                    | 450,186            |
| Radios                                    |                    |                    |                    |                    | 600,000            |
| Interactive Projectors                    |                    |                    |                    |                    | 1,031,000          |
| <b>TOTAL</b>                              | <b>\$4,500,000</b> | <b>\$4,500,000</b> | <b>\$4,500,000</b> | <b>\$4,500,000</b> | <b>\$4,500,000</b> |

## Summary

|   |   |                        |
|---|---|------------------------|
| • | Projected Growth in Students, Fiscal Years 2016-25 .....        | 18,702                 |
| • | Current Portable Classrooms .....                               | 200                    |
| • | Additional School Facilities.....                               | 15                     |
|   | New Elementary Schools .....                                    | 7                      |
|   | New Middle Schools.....   | 3                      |
|   | New High Schools.....   | 3                      |
|   | Replacement Schools ( <i>PACE East, Kilby Elementary</i> )..... | 2                      |
| • | Additional Classrooms (9 Schools).....                          | 87                     |
|   | Elementary School Classroom Additions (6 Schools).....          | 48                     |
|   | Middle School Classroom Additions (3 School).....               | 39                     |
| • | Total Additional Capacity .....                                 | 19,479                 |
| • | New Schools, Additions, and Other Bond-Funded Projects          |                        |
|   | Construction of New Facilities and Additions.....               | \$ 989,235,000         |
|   | Site Acquisition .....  | \$ 3,000,000           |
| • | Renovations and Renewals  |                        |
|   | Renewals .....  | \$ 488,682,000         |
|   | Title IX Improvements .....                                     | \$ 2,950,000           |
|   | Technology Improvements Program .....                           | \$ 45,000,000          |
|   | Energy Infrastructure Improvements .....                        | \$ 10,000,000          |
|   | <b>TOTAL CAPITAL IMPROVEMENTS PROGRAM.....</b>                  | <b>\$1,538,867,000</b> |

| Capital Projects Funded<br>Fiscal Year 2016 |  |
|---|--|
| o   | Construction of new schools:   |
|   | * Ferlazzo Elementary School   |
|   | * 12 <sup>th</sup> High School   |
|   | * Rippon Middle School Addition  |
|   | * Maintenance Facility   |
|   | * Kilby Elementary School Replacement  |
| o   | Renewals & Repairs:  |
|   | * Phase 2 Funding - Henderson ES, King ES, Lake Ridge ES, Loch Lomond ES, Springwoods ES |
| o   | HVAC upgrades/repairs, Roof repairs/replacement, Kitchen upgrades                        |
| o   | Continue Title IX Improvements and Energy Improvements                                   |
| o   | Technology Improvements Plan   |

# *APPENDIX A*

## *School Facility Information*





## School Facility Information

- School Facility Data by School Type
  - Elementary, Middle, High, Special, Alternative, and Other
  - School Name
  - Planning Capacity
  - Portable Classrooms 2014-15
  - Regular Class-rooms
  - Year Opened
  - Year of Last and Next School Renovation
  - Year of School Addition(s)
  - Building Square Feet
  - Site Acres

# School Facility Information

## Prince William County Schools

| School Name               | Planning Capacity | Portable Classrooms 2014-15 | Regular Classrooms | Year Opened | School Renovation |      | School Addition(s) |               |      |               | Building Square Feet | Site Acres      |
|---------------------------|-------------------|-----------------------------|--------------------|-------------|-------------------|------|--------------------|---------------|------|---------------|----------------------|-----------------|
|                           |                   |                             |                    |             | Next              | Last | Year               | # Class-rooms | Year | # Class-rooms |                      |                 |
| Alvey Elementary          | 780               |                             | 41                 | 2003        | FY 25             |      |                    |               |      |               | 83,084               | 20.17           |
| Antietam Elementary       | 616               | 1                           | 31                 | 1990        | FY 17             |      |                    |               |      |               | 62,334               | 14.85           |
| Ashland Elementary        | 900               |                             | 46                 | 2002        | FY 23             |      | 2008               | 5             |      |               | 98,461               | 18.05           |
| Bel Air Elementary        | 568               | 6                           | 28                 | 1968        |                   | 2008 | 2008               | 8             |      |               | 54,748               | 15.00           |
| Belmont Elementary        | 462               | 2                           | 25                 | 1967        |                   | 2006 | 2006               | 4             | 2017 | 4             | 45,790               | 14.28           |
| Bennett Elementary        | 780               |                             | 40                 | 1996        | FY 19             |      | 2000               | 8             |      |               | 85,728               | 15.29           |
| Bristow Run Elementary    | 780               |                             | 40                 | 1998        | FY 21             |      | 2004               | 8             |      |               | 85,728               | 21.69           |
| Buckland Mills Elementary | 852               |                             | 43                 | 2006        |                   |      |                    |               |      |               | 89,900               | 15.00           |
| Cedar Point Elementary    | 780               |                             | 41                 | 2001        | FY 23             |      |                    |               |      |               | 83,084               | 15.48           |
| Coles Elementary          | 472               | 3                           | 25                 | 1968        |                   | 2009 |                    |               |      |               | 52,745               | 17.04           |
| Dale City Elementary      | 496               | 5                           | 25                 | 1967        |                   | 2006 | 2001               | 4             |      |               | 45,264               | 14.83           |
| Dumfries Elementary       | 520               | 6                           | 27                 | 1918        |                   | 2014 | 1989               | 8             |      |               | 44,925               | 10.00           |
| Ellis Elementary          | 626               | 1                           | 32                 | 2004        | FY 25             |      |                    |               |      |               | 76,700               | 10.47           |
| Enterprise Elementary     | 520               | 2                           | 26                 | 1978        |                   | 2009 |                    |               |      |               | 51,260               | 14.97           |
| Featherstone Elementary   | 462               | 7                           | 23                 | 1961        |                   | 2001 | 2015               | 6             |      |               | 37,366               | 12.00           |
| Fitzgerald Elementary     | 852               |                             | 46                 | 2008        |                   |      |                    |               |      |               | 106,170              | 11.18           |
| Glenkirk Elementary       | 780               | 4                           | 41                 | 2005        |                   |      |                    |               |      |               | 83,084               | 15.57           |
| Gravely Elementary        | 852               |                             | 43                 | 2008        |                   |      |                    |               |      |               | 95,074               | 17.99           |
| Haymarket Elementary      | 948               |                             | 44                 | 2014        |                   |      |                    |               |      |               | 98,736               | 24.31           |
| Henderson Elementary      | 592               | 2                           | 29                 | 1985        |                   | 2015 |                    |               |      |               | 55,962               | 14.92           |
| Kerrydale Elementary      | 496               | 5                           | 24                 | 1973        |                   | 2007 |                    |               |      |               | 46,300               | 15.41           |
| Kilby Elementary          | 414               | 3                           | 24                 | 1959        |                   | 2001 | 2017               | 13            |      |               | 39,412               | 12.78           |
| King Elementary           | 520               | 2                           | 26                 | 1981        |                   | 2015 |                    |               |      |               | 51,260               | 15.19           |
| Lake Ridge Elementary     | 544               | 5                           | 27                 | 1983        |                   | 2015 |                    |               |      |               | 53,400               | 15.07           |
| Leesylvania Elementary    | 804               | 2                           | 41                 | 1996        | FY 19             |      |                    |               |      |               | 83,084               | 16.29           |
| Loch Lomond Elementary    | 616               |                             | 30                 | 1962        |                   | 2015 | 2013               | 4             |      |               | 58,278               | 10.70           |
| Marshall Elementary       | 698               |                             | 35                 | 1994        | FY 19             |      | 1999               | 4             |      |               | 62,700               | 24.16           |
| Marumsco Hills Elementary | 650               | 11                          | 35                 | 1966        |                   | 2006 | 2006               | 2             | 2009 | 4             | 52,797               | 12.20           |
| McAuliffe Elementary      | 568               | 1                           | 28                 | 1989        | FY 17             |      | 2017               | 10            |      |               | 59,517               | 15.05           |
| Minnieville Elementary    | 544               | 5                           | 28                 | 1972        |                   | 2005 |                    |               |      |               | 53,028               | 15.24           |
| Montclair Elementary      | 698               |                             | 35                 | 1991        | FY 19             |      | 2008               | 4             |      |               | 70,928               | 15.85           |
| Mountain View Elementary  | 698               |                             | 35                 | 1995        | FY 19             |      | 2002               | 4             |      |               | 67,815               | 29.95           |
| Mullen Elementary         | 876               |                             | 43                 | 1990        | FY 17             |      | 1999               | 4             | 2013 | 6             | 82,219               | 15.00           |
| Neabsco Elementary        | 626               | 4                           | 33                 | 1969        |                   | 2009 |                    |               |      |               | 58,354               | 12.79           |
| Nokesville School, The    | 592               |                             | 32                 | 2014        |                   |      |                    |               |      |               | 141,832              | 48.20           |
| Occoquan Elementary       | 520               | 6                           | 26                 | 1927        |                   | 2002 | 2003               | 5             |      |               | 55,225               | 10.10           |
| Old Bridge Elementary     | 626               |                             | 32                 | 1995        | FY 19             |      |                    |               |      |               | 74,433               | 17.85           |
| Parks Elementary          | 780               |                             | 41                 | 2006        |                   |      |                    |               |      |               | 83,084               | 15.20           |
| Pattie Elementary         | 698               |                             | 36                 | 1978        |                   | 2013 |                    |               |      |               | 53,767               | 15.00           |
| Penn Elementary           | 780               |                             | 39                 | 1998        | FY 19             |      | 2013               | 7             |      |               | 87,542               | 16.93           |
| Pennington Traditional    | 648               |                             | 31                 | 1969        |                   |      |                    |               |      |               | 56,330               | 15.00           |
| Piney Branch Elementary   | 924               |                             | 44                 | 2011        |                   | 2005 |                    |               |      |               | 104,958              | 20.97           |
| Porter Traditional        | 672               |                             | 32                 | 2004        | FY 18             |      |                    |               |      |               | 71,245               | 16.93           |
| Potomac View Elementary   | 746               | 8                           | 37                 | 1964        |                   | 2005 | 2005               | 4             | 2009 | 4             | 60,756               | 12.38           |
| River Oaks Elementary     | 780               | 2                           | 38                 | 1990        | FY 18             |      | 2014               | 7             |      |               | 86,700               | 15.18           |
| Rockledge Elementary      | 650               | 1                           | 31                 | 1972        |                   | 2007 | 2009               | 7             |      |               | 64,769               | 16.15           |
| Signal Hill Elementary    | 780               |                             | 41                 | 2000        | FY 21             |      |                    |               |      |               | 83,084               | 24.45           |
| Sinclair Elementary       | 876               |                             | 42                 | 1968        |                   | 2009 | 2001               | 6             | 2013 | 11            | 76,760               | 15.00           |
| Springwoods Elementary    | 592               | 3                           | 28                 | 1985        |                   | 2015 |                    |               |      |               | 57,530               | 15.11           |
| Sudley Elementary         | 876               | 4                           | 38                 | 1972        |                   | 2004 | 2013               | 10            |      |               | 73,959               | 14.00           |
| Swans Creek Elementary    | 770               |                             | 38                 | 2001        | FY 23             |      | 2012               | 6             |      |               | 86,934               | 18.49           |
| Triangle Elementary       | 924               |                             | 44                 | 2010        |                   |      |                    |               |      |               | 103,679              | 18.87           |
| Tyler Elementary          | 568               |                             | 28                 | 1968        |                   | 2007 | 2007               | 4             |      |               | 56,014               | 25.49           |
| Vaughan Elementary        | 698               | 5                           | 36                 | 1964        |                   | 2005 | 2001               | 4             | 2009 | 9             | 61,204               | 13.55           |
| Victory Elementary        | 852               | 4                           | 43                 | 2005        |                   |      |                    |               |      |               | 89,911               | 21.23           |
| West Gate Elementary      | 770               | 5                           | 36                 | 1964        |                   | 2009 | 2013               | 4             |      |               | 62,727               | 12.11           |
| Westridge Elementary      | 712               |                             | 34                 | 1989        | FY 17             |      | 2012               | 6             |      |               | 69,212               | 15.00           |
| Williams Elementary       | 780               | 3                           | 41                 | 2004        |                   |      |                    |               |      |               | 83,084               | 13.56           |
| Wood Elementary           | 924               | 1                           | 44                 | 2011        |                   |      |                    |               |      |               | 104,958              | 33.75           |
| Yorkshire Elementary      | 948               | 2                           | 46                 | 2009        |                   |      |                    |               |      |               | 106,614              | 13.28           |
| <b>Total</b>              | <b>41,876</b>     | <b>121</b>                  | <b>2,098</b>       |             |                   |      |                    |               |      |               | <b>4,331,546</b>     | <b>1,012.56</b> |

## School Facility Information

### Prince William County Schools

| School Name            | Planning Capacity | Portable Classrooms 2014-15 | Regular Class-rooms | Year Opened | School Renovation |      | School Addition(s) |               |      |               | Building Square Feet | Site Acres    |
|------------------------|-------------------|-----------------------------|---------------------|-------------|-------------------|------|--------------------|---------------|------|---------------|----------------------|---------------|
|                        |                   |                             |                     |             | Next              | Last | Year               | # Class-rooms | Year | # Class-rooms |                      |               |
| Benton Middle          | 1,464             |                             | 76                  | 2000        | FY 21             |      | 2013               | 11            |      |               | 151,130              | 48.15         |
| Beville Middle         | 1,191             |                             | 65                  | 1991        | FY 21             | 1998 |                    |               |      |               | 134,140              | 42.13         |
| Bull Run Middle        | 1,233             |                             | 65                  | 2002        | FY 25             |      |                    |               |      |               | 135,309              | 39.35         |
| Gainesville Middle     | 1,233             | 5                           | 65                  | 2007        |                   |      |                    |               |      |               | 135,309              | 39.42         |
| Godwin Middle          | 982               |                             | 54                  | 1970        |                   | 2010 | 2002               | 8             |      |               | 125,232              | 29.98         |
| Graham Park Middle     | 867               | 4                           | 47                  | 1963        |                   | 2001 | 2001               | 4             |      |               | 110,514              | 21.88         |
| Lake Ridge Middle      | 1,191             |                             | 65                  | 1989        | FY 17             |      |                    |               |      |               | 132,258              | 34.09         |
| Lynn Middle            | 1,170             |                             | 64                  | 1964        |                   | 2001 |                    |               |      |               | 131,974              | 28.56         |
| Marsteller Middle      | 1,233             | 5                           | 65                  | 2002        | FY 23             |      |                    |               |      |               | 135,309              | 36.41         |
| Nokesville School, The | 439               |                             | 23                  | 2014        |                   |      |                    |               |      |               |                      |               |
| Parkside Middle        | 1,453             |                             | 74                  | 1963        |                   | 2000 | 2014               | 15            |      |               | 127,959              | 30.03         |
| Potomac Middle         | 1,464             |                             | 76                  | 2006        |                   |      | 2013               | 11            |      |               | 151,130              | 36.43         |
| Reagan Middle          | 1,233             |                             | 65                  | 2012        |                   |      |                    |               |      |               | 135,309              | 41.88         |
| Rippon Middle          | 1,139             |                             | 63                  | 1967        |                   | 2010 | 2016               | 8             |      |               | 132,607              | 30.23         |
| Saunders Middle        | 1,212             |                             | 64                  | 1988        | FY 17             |      |                    |               |      |               | 137,088              | 29.54         |
| Stonewall Middle       | 1,003             | 5                           | 52                  | 1964        |                   | 2002 |                    |               |      |               | 127,673              | 32.22         |
| Woodbridge Middle      | 1,066             | 3                           | 56                  | 1964        |                   | 2003 |                    |               |      |               | 124,511              | 37.36         |
| <b>Total</b>           | <b>19,573</b>     | <b>22</b>                   | <b>1,039</b>        |             |                   |      |                    |               |      |               | <b>2,127,452</b>     | <b>557.66</b> |

|                        |               |           |              |      |       |      |      |    |      |  |                  |               |
|------------------------|---------------|-----------|--------------|------|-------|------|------|----|------|--|------------------|---------------|
| Battlefield High       | 2,053         | 6         | 101          | 2004 |       |      |      |    |      |  | 285,086          | 78.82         |
| Brentsville High       | 1,110         |           | 53           | 1965 |       | 2000 | 2000 | 9  | 1980 |  | 163,066          | 29.02         |
| Forest Park High       | 2,053         | 3         | 101          | 2000 | FY 21 |      |      |    |      |  | 283,268          | 79.06         |
| Freedom High           | 2,053         |           | 101          | 2004 |       |      |      |    |      |  | 285,886          | 80.70         |
| Gar-Field High         | 2,839         |           | 128          | 1972 |       | 2003 |      |    |      |  | 353,742          | 91.53         |
| Hylton High            | 2,053         | 5         | 101          | 1991 | FY 21 |      |      |    |      |  | 282,346          | 74.82         |
| Osborn Park High       | 2,430         | 3         | 115          | 1975 |       | 2006 |      |    |      |  | 328,386          | 56.06         |
| Patriot High           | 2,053         | 20        | 101          | 2011 |       |      |      |    |      |  | 320,837          | 60.00         |
| Potomac High           | 2,357         |           | 113          | 1981 |       | 2012 | 2013 | 30 |      |  | 273,329          | 75.09         |
| Stonewall Jackson High | 2,409         |           | 117          | 1973 |       | 2005 |      |    |      |  | 328,540          | 56.61         |
| Woodbridge High        | 2,734         |           | 125          | 1974 |       | 2004 |      |    |      |  | 352,497          | 52.70         |
| <b>Total</b>           | <b>24,144</b> | <b>37</b> | <b>1,156</b> |      |       |      |      |    |      |  | <b>3,256,983</b> | <b>734.41</b> |

|                            |  |           |           |      |  |      |  |  |  |  |                |              |
|----------------------------|--|-----------|-----------|------|--|------|--|--|--|--|----------------|--------------|
| Independent Hill Special   |  | 8         | 20        | 1967 |  |      |  |  |  |  | 49,204         | 10.00        |
| PACE West Special          |  |           | 21        | 2012 |  |      |  |  |  |  | 39,998         | 13.47        |
| Woodbine Preschool         |  | 1         | 4         | 1953 |  | 1990 |  |  |  |  | 8,320          | 1.91         |
| New Directions Alternative |  |           | 13        | 2004 |  |      |  |  |  |  | 20,245         |              |
| New Dominion Alternative   |  | 11        | 5         | 1975 |  | 1993 |  |  |  |  | 14,749         | 5.00         |
| <b>Total</b>               |  | <b>20</b> | <b>63</b> |      |  |      |  |  |  |  | <b>132,516</b> | <b>30.38</b> |

|                       |  |  |          |      |  |      |  |  |  |  |               |              |
|-----------------------|--|--|----------|------|--|------|--|--|--|--|---------------|--------------|
| Ann Ludwig Center     |  |  |          | 1975 |  |      |  |  |  |  | 14,220        | 4.77         |
| Washington-Reid Annex |  |  | 9        | 1951 |  | 2013 |  |  |  |  | 24,953        | 9.21         |
| <b>Total</b>          |  |  | <b>9</b> |      |  |      |  |  |  |  | <b>39,173</b> | <b>13.98</b> |

|                       |               |            |              |  |  |  |  |  |  |  |                  |                 |
|-----------------------|---------------|------------|--------------|--|--|--|--|--|--|--|------------------|-----------------|
| <b>Division Total</b> | <b>85,593</b> | <b>200</b> | <b>4,365</b> |  |  |  |  |  |  |  | <b>9,887,670</b> | <b>2,348.98</b> |
|-----------------------|---------------|------------|--------------|--|--|--|--|--|--|--|------------------|-----------------|



## *APPENDIX B*

### *Student Enrollment & Housing Data*



## Student Enrollment & Housing Data

- Student Enrollment Forecasting
  - Housing Unit Method
  - Grade Progression Ratio Method
- Alternative Solutions to School Overcrowding
- Student Enrollment Data: Current and Projected Enrollment
  - by School (Elementary, Middle, High, and Special/Alternative Education), School Years 2014-24
- Housing Units in Residential Development
  - by School (Elementary, Middle, and High)
- Historical and Projected Enrollment Data (B-13)
- Student Enrollment Projections - Error Rate Analysis
- Portable Classrooms
- Various Charts and Graphs
- Geographic Areas – Map and Table

### *Student Enrollment Forecasting*

Most forecasts share common features. They tend to be an extrapolation of the past, involve some level of judgment, and are inherently not perfect predictors of the future. These features contribute to why it's indispensable to continually evaluate the forecasting methods used and the accuracy of their projections. The primary goal in the enrollment forecasting process is to reduce statistical error so that the projections can become better predictors of future student enrollments, resulting in the ability to place greater confidence in them when planning future capital improvements. The forecasts rely on spatial and aspatial data that are manipulated and processed by Geographic Information System (GIS) software and statistical software packages, respectively. The methods used to produce student enrollment forecasts in PWCS are discussed in greater detail and communicated through flow charts in the following pages.

#### **Methodology**

The student enrollment forecasts are calculated combining two widely-used techniques in projecting student enrollment that are commonly referred to as the **Housing-Unit Method** and the **Grade Progression Method**. One caveat is that judgmental adjustments, which are common in forecasting, are often used to fine-tune the enrollment forecasts. The combination of statistical methods was chosen for two primary reasons. First, the model produced by them is supported by industry best practices and scholarly literature. Second, it is relatively inexpensive to produce. Each primary method is now discussed more extensively.

### Housing-Unit Method

The Housing-Unit Method establishes a relationship between housing units and student enrollment. The relationship is calculated for a specific geography in PWC by dividing the number of students residing in the geographic region by the number of existing housing units. In PWCS, the resulting value is referred to as a Student Generation Factor. It can be interpreted as the number of students on average that housing units generated in a specific region. Factors are calculated at varying geographies (e.g., county-wide, elementary school attendance area, and Planning Zone) and for each housing unit type (e.g., single-family detached, townhouse, and multifamily). For future years, the projected ratio of students per housing unit, in concert with moving these ratios forward in time via the Grade Progression Ratio Method, is multiplied by the number of predicted housing units by year to produce the forecasts of total students in Prince William County Schools.

### Grade Progression Ratio Method

The Grade Progression Ratio Method used in PWCS, is the weighted average of historical grade progression ratios. The calculated ratio for each grade level is multiplied by its corresponding grade level cohort for a particular year to project the subsequent year's enrollment. An example below is provided to help explain the method.

Below is a table that tabulates the historical record of total sixth and seventh grade students for the current year (i.e., Year<sub>(0)</sub>) and the previous three years. Beneath the table is Grade Progression Ratio Method used with the provided data. For the sake of simplicity, no weighting is included in the example calculation, although more recent years are weighted more significantly in the actual projections used in PWCS. Averaging progression ratios for multiple years in the progression ratio calculation lessens the effect of any given year on the forecast, effectively smoothing the historical data. The forecaster can adjust the number of years used to calculate the progression ratio with the intent of attempting to control for outliers and to include the previous years that are believed to most closely represent the years being forecasted.

| Grade           | Year <sub>(-3)</sub> | Year <sub>(-2)</sub> | Year <sub>(-1)</sub> | Year <sub>(0)</sub> | Progression Ratio | Year <sub>(+1)</sub> |
|-----------------|----------------------|----------------------|----------------------|---------------------|-------------------|----------------------|
| 6 <sup>th</sup> | 3,888                | 4,066                | 4,348                | 4,581               |                   |                      |
| 7 <sup>th</sup> | N/A                  | 4,024                | 4,184                | 4,525               | 1.0350            | 4,741                |

1. **Progression Ratio** =  $(7^{\text{th}} \text{Year}_{(-2)} + 7^{\text{th}} \text{Year}_{(-1)} + 7^{\text{th}} \text{Year}_{(0)}) / (6^{\text{th}} \text{Year}_{(-3)} + 6^{\text{th}} \text{Year}_{(-2)} + 6^{\text{th}} \text{Year}_{(-1)})$   
 $7^{\text{th}} \text{Year}_{(0)}$  indicates the 7<sup>th</sup> grade cohort of Current Year.
2. **Progression Ratio** =  $(4,024 + 4,184 + 4,525) / (3,888 + 4,066 + 4,348) = 1.0350$
3. **Forecasted 7<sup>th</sup> Year<sub>(+1)</sub> Student Enrollment** =  $4,581 \times 1.0350 = 4,741$

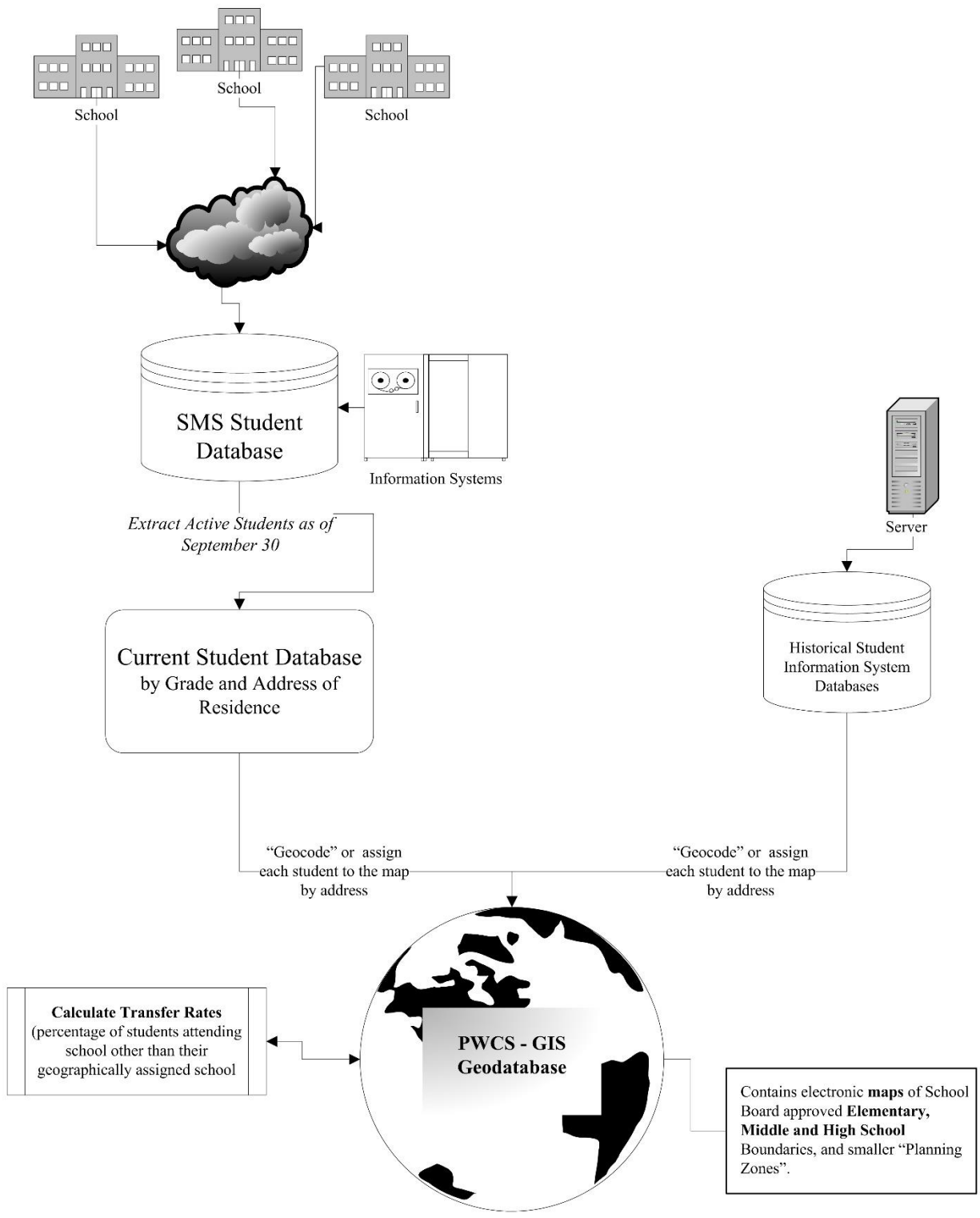
### Student Enrollment Forecast Accuracy

The model used to project student enrollment in PWCS is effective, and with accurate data and correctly forecasted parameters, can provide reasonably accurate forecasts of future. Historically, it has yielded smaller errors at larger geographies. An average error of approximately 0.5% has been associated with the countywide projections since the mid-1990s. Success at the school level, a relatively smaller geography, has varied by school. Forecasts calculated in 2013 for the 2014-15 school year included four projections for schools that were under- or over-projected by one student, 29 projections that differed from the

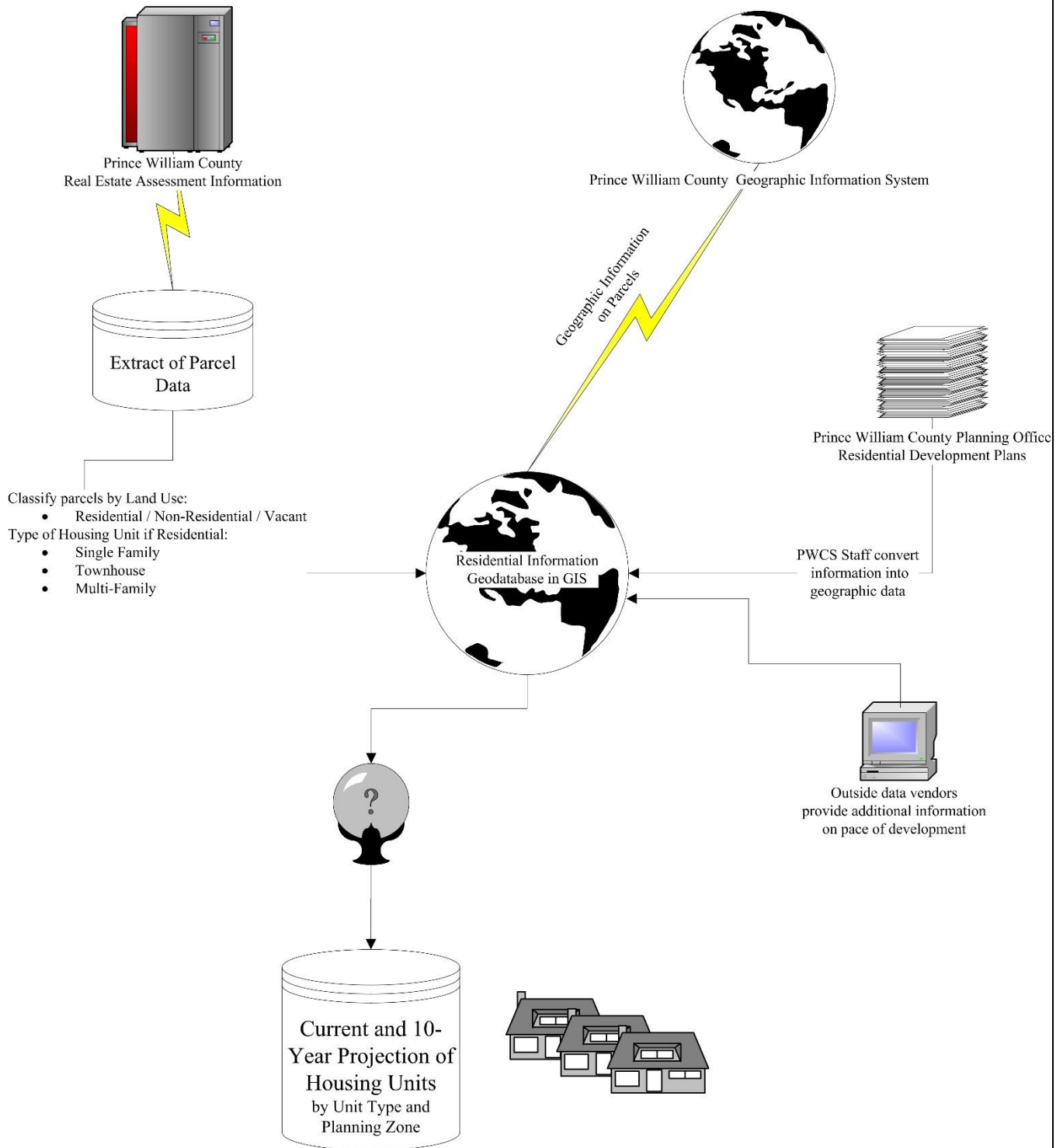
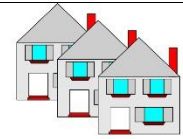


observed number of students by 10 or fewer students, and 54 were within 20 students of projection. The average projection error for all schools was 27 students.

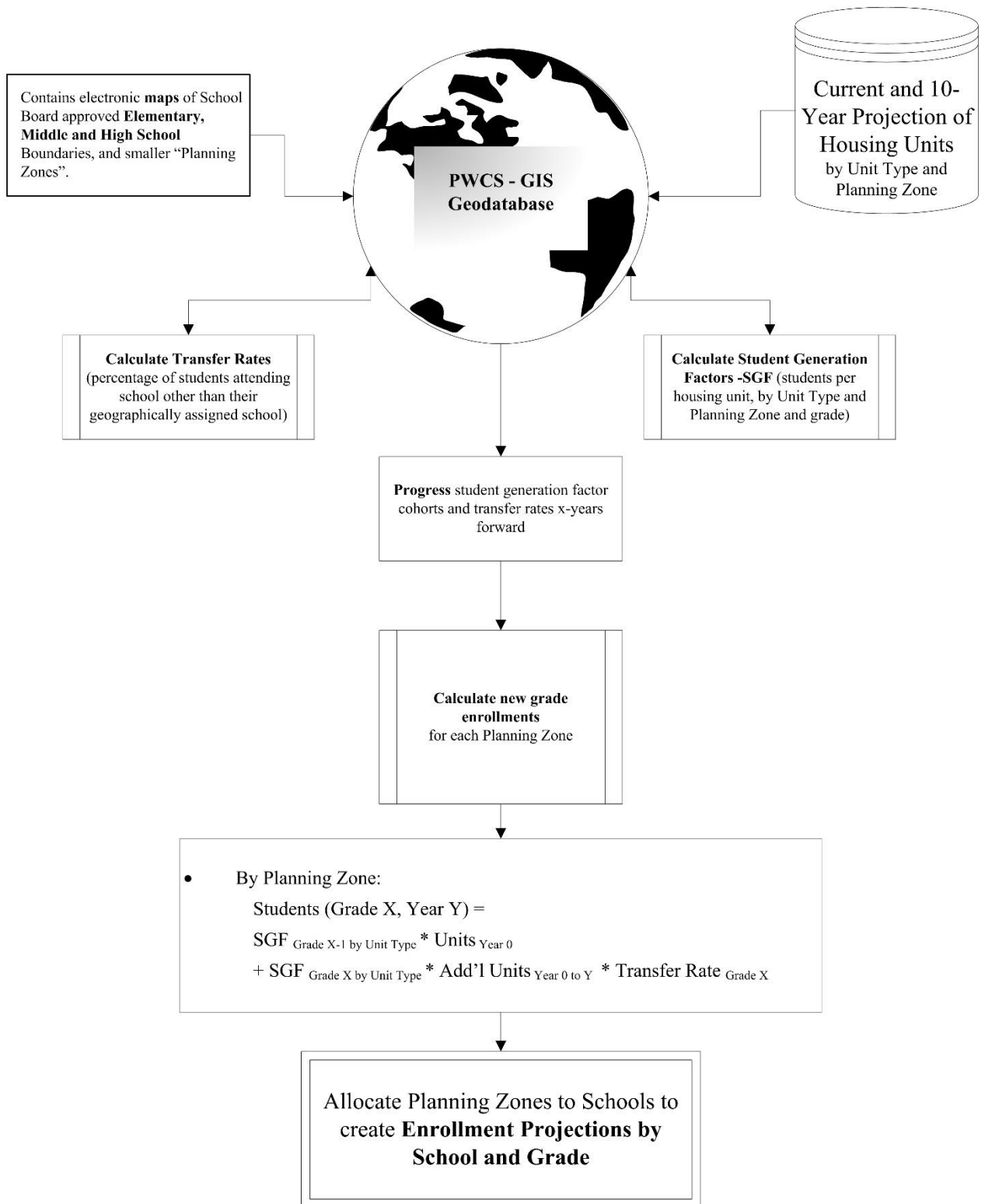
# Analysis of Student Information



# Analysis of Housing Unit Information



# Preparation of Student Enrollment Forecasts



## **Alternative Solutions to School Overcrowding**

There are several general methods that have been considered to alleviate overcrowding in schools.

- Boundary changes - For the opening of new schools or to shift student populations
- Optimization of boundaries so all available space in the county will be used
- Placement of portable classrooms
- New construction
- Freezing transfers
- Program changes – Examples:
  - Shifting eighth grade to a high school with unused space;
  - Moving PK Special Education programs;
  - Increasing pupil/teacher ratio;
  - Split shift.
- Year-Round Schooling

The method chosen for relieving overcrowding at a given school is determined by several criteria. These criteria include continuity and quality of educational program; maintenance of contiguous communities; transportation considerations; using centerline on divided highways when possible; and topographical features.



Student Enrollment Data: Current and Projected Enrollment  
 Elementary Schools – Additional Space to be Constructed  
 SY 2014-15 to SY 2024-25

| Elementary School                                      | 2014-15  |       |        | 2015-16  |       |        | 2019-20  |       |        | 2024-25  |       |        |
|--|----------|-------|--------|----------|-------|--------|----------|-------|--------|----------|-------|--------|
|  | Students | +/-   | % Util | Students | +/-   | % Util | Students | +/-   | % Util | Students | +/-   | % Util |
| <b>2015</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>Featherstone Elementary Addition (6 rooms)</i>      |          |       |        |          | 144   |        |          | 144   |        |          | 144   |        |
| <b>2016</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>School/IHS (East - Ferlazzo)</i>                    |          |       |        |          |       |        |          | 924   |        |          | 924   |        |
| <b>2017</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>Belmont Elementary Addition (10 rooms)</i>          |          |       |        |          |       |        |          | 240   |        |          | 240   |        |
| <i>Kilby Elementary School Replacement</i>             |          |       |        |          |       |        |          | 510   |        |          | 510   |        |
| <i>Neabsco Elementary Addition (8 rooms)</i>           |          |       |        |          |       |        |          | 192   |        |          | 192   |        |
| <i>Elementary School (East - Potomac Shores)</i>       |          |       |        |          |       |        |          | 924   |        |          | 924   |        |
| <b>2019</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>Henderson Elementary School Addition (10 rooms)</i> |          |       |        |          |       |        |          | 240   |        |          | 240   |        |
| <i>Elementary School (East - Lake Ridge Area)</i>      |          |       |        |          |       |        |          | 924   |        |          | 924   |        |
| <i>Leesylvania Elementary Addition (4 rooms)</i>       |          |       |        |          |       |        |          | 96    |        |          | 96    |        |
| <i>Pattie Elementary Addition (10 rooms)</i>           |          |       |        |          |       |        |          | 240   |        |          | 240   |        |
| <b>2021</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>Elementary School (East - Cherry Hill Area)</i>     |          |       |        |          |       |        |          |       |        |          | 924   |        |
| <i>Haymarket Area Addition (6 rooms)</i>               |          |       |        |          |       |        |          |       |        |          | 144   |        |
| <b>2023</b>  |          |       |        |          |       |        |          |       |        |          |       |        |
| <i>Elementary School (Stonewall Area)</i>              |          |       |        |          |       |        |          |       |        |          | 924   |        |
| <i>Elementary School (Vint Hill Road ES)</i>           |          |       |        |          |       |        |          |       |        |          | 924   |        |
| <i>Sum of Additional Seats</i>                         |          |       |        |          | 144   |        |          | 4,434 |        |          | 7,350 |        |
| <b>Total</b>   | 39,920   | 1,461 | 96.5%  | 40,241   | 2,208 | 94.8%  | 42,358   | 4,381 | 90.6%  | 48,983   | 672   | 98.6%  |

Student Enrollment Data: Current and Projected Enrollment  
Middle Schools  
SY 2014-15 to SY 2024-25

| Middle School   | Available Space |                     | 2014-15       |            |              | 2015-16       |           |              | 2019-20       |               |               | 2024-25       |               |               |
|---|-----------------|---------------------|---------------|------------|--------------|---------------|-----------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | Capacity        | Portable Classrooms | Students      | +/-        | % Util       | Students      | +/-       | % Util       | Students      | +/-           | % Util        | Students      | +/-           | % Util        |
| Benton  | 1,464           |                     | 1,332         | 132        | 91.0%        | 1,292         | 172       | 88.3%        | 1,093         | 371           | 75.0%         | 1,091         | 373           | 75.0%         |
| Beville   | 1,191           |                     | 1,111         | 80         | 93.3%        | 1,109         | 82        | 93.1%        | 1,210         | -19           | 102.0%        | 1,282         | -91           | 108.0%        |
| Bull Run  | 1,233           |                     | 1,199         | 34         | 97.2%        | 1,204         | 29        | 97.6%        | 1,199         | 34            | 97.0%         | 1,394         | -161          | 113.0%        |
| Gainesville   | 1,233           | 5                   | 1,297         | -64        | 105.2%       | 1,360         | -127      | 110.3%       | 1,352         | -119          | 110.0%        | 1,731         | -498          | 140.0%        |
| Godwin  | 982             |                     | 1,072         | -90        | 109.2%       | 1,096         | -114      | 111.6%       | 1,174         | -192          | 120.0%        | 1,234         | -252          | 126.0%        |
| Graham Park   | 867             | 4                   | 1,006         | -139       | 116.0%       | 1,011         | -144      | 116.6%       | 967           | -100          | 112.0%        | 1,086         | -219          | 125.0%        |
| Lake Ridge  | 1,191           |                     | 1,213         | -22        | 101.9%       | 1,224         | -33       | 102.8%       | 1,229         | -38           | 103.0%        | 1,312         | -121          | 110.0%        |
| Lynn  | 1,170           |                     | 1,050         | 120        | 89.7%        | 981           | 189       | 83.9%        | 1,234         | -64           | 105.0%        | 1,410         | -240          | 121.0%        |
| Marsteller  | 1,233           | 5                   | 1,299         | -66        | 105.4%       | 1,341         | -108      | 108.7%       | 1,292         | -59           | 105.0%        | 1,341         | -108          | 109.0%        |
| Nokesville School, The                                  | 439             |                     | 313           | 126        | 71.3%        | 295           | 144       | 67.2%        | 304           | 135           | 69.0%         | 324           | 115           | 74.0%         |
| Parkside  | 1,453           |                     | 1,221         | 232        | 84.0%        | 1,229         | 224       | 84.6%        | 1,386         | 67            | 95.0%         | 1,615         | -162          | 111.0%        |
| Pennington  | 243             |                     | 238           | 5          | 97.9%        | 243           | 0         | 100.0%       | 243           | 0             | 100.0%        | 243           | 0             | 100.0%        |
| Porter  | 252             |                     | 266           | -14        | 105.6%       | 252           | 0         | 100.0%       | 252           | 0             | 100.0%        | 252           | 0             | 100.0%        |
| Potomac   | 1,464           |                     | 1,178         | 286        | 80.5%        | 1,187         | 277       | 81.1%        | 1,472         | -8            | 101.0%        | 1,816         | -352          | 124.0%        |
| Reagan  | 1,233           |                     | 1,256         | -23        | 101.9%       | 1,294         | -61       | 104.9%       | 1,290         | -57           | 105.0%        | 1,443         | -210          | 117.0%        |
| Rippon  | 1,139           |                     | 1,157         | -18        | 101.6%       | 1,216         | -77       | 106.8%       | 1,435         | -296          | 126.0%        | 1,506         | -367          | 132.0%        |
| Saunders  | 1,212           |                     | 1,089         | 123        | 89.9%        | 1,135         | 77        | 93.7%        | 1,127         | 85            | 93.0%         | 1,205         | 7             | 99.0%         |
| Stonewall   | 1,003           | 5                   | 1,176         | -173       | 117.2%       | 1,232         | -229      | 122.8%       | 1,427         | -424          | 142.0%        | 1,563         | -560          | 156.0%        |
| Woodbridge  | 1,066           | 3                   | 1,230         | -164       | 115.4%       | 1,310         | -244      | 122.9%       | 1,464         | -398          | 137.0%        | 1,522         | -456          | 143.0%        |
| <b>Total</b>  | <b>20,068</b>   | <b>22</b>           | <b>19,703</b> | <b>365</b> | <b>98.2%</b> | <b>20,011</b> | <b>57</b> | <b>99.7%</b> | <b>21,151</b> | <b>-1,083</b> | <b>105.4%</b> | <b>23,373</b> | <b>-3,305</b> | <b>116.5%</b> |
| <i>Rippon Middle/IHS West (8/1 room addition, 2016)</i> |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Lake Ridge MS Addition (13 rooms, 2018)</i>          |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Stonewall MS Addition (17 rooms, 2018)</i>           |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Middle School (Potomac Shores, 2021)</i>             |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Middle School (West - Linton Hall Area, 2023)</i>    |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Middle School (TBD, 2024)</i>                        |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <i>Sum of Additional Seats</i>                          |                 |                     |               |            |              |               |           |              |               |               |               |               |               |               |
| <b>Total</b>  | <b>20,068</b>   | <b>22</b>           | <b>19,703</b> | <b>365</b> | <b>98.2%</b> | <b>20,011</b> | <b>57</b> | <b>99.7%</b> | <b>21,151</b> | <b>-285</b>   | <b>101.4%</b> | <b>23,373</b> | <b>1,885</b>  | <b>92.5%</b>  |

Student Enrollment Data: Current and Projected Enrollment  
High Schools  
SY 2014-15 to SY 2024-25

| High School                           | Available Space           |                     | 2014-15       |                           |                           | 2015-16       |                           |                           | 2019-20       |               |               | 2024-25       |               |               |
|---------------------------------------|---------------------------|---------------------|---------------|---------------------------|---------------------------|---------------|---------------------------|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                       | Capacity                  | Portable Classrooms | Students      | +/-                       | % Util                    | Students      | +/-                       | % Util                    | Students      | +/-           | % Util        | Students      | +/-           | % Util        |
| 12th High School                      | 2,053                     |                     | 2,053         | 0                         | 100.0%                    | 2,053         | 0                         | 100.0%                    | 2,258         | -205          | 110.0%        | 2,119         | -66           | 103.2%        |
| Battlefield                           | 2,053                     | 6                   | 2,488         | -435                      | 121.2%                    | 2,676         | -623                      | 130.3%                    | 3,010         | -957          | 146.6%        | 3,114         | -1,061        | 151.7%        |
| Brentsville                           | 1,110                     |                     | 1,053         | 57                        | 94.9%                     | 1,064         | 46                        | 95.9%                     | 903           | 207           | 81.3%         | 894           | 216           | 80.6%         |
| Forest Park                           | 2,053                     | 3                   | 2,235         | -182                      | 108.9%                    | 2,252         | -199                      | 109.7%                    | 2,193         | -140          | 106.8%        | 1,958         | 95            | 95.4%         |
| Freedom                               | 2,053                     |                     | 2,035         | 18                        | 99.1%                     | 2,046         | 7                         | 99.7%                     | 2,368         | -315          | 115.4%        | 2,917         | -864          | 142.1%        |
| Gar-Field                             | 2,839                     |                     | 2,480         | 360                       | 87.3%                     | 2,490         | 349                       | 87.7%                     | 2,692         | 147           | 94.8%         | 3,093         | -254          | 108.9%        |
| Hylton                                | 2,053                     | 5                   | 2,418         | -365                      | 117.8%                    | 2,423         | -370                      | 118.0%                    | 1,863         | 190           | 90.7%         | 1,592         | 461           | 77.5%         |
| Osborn Park                           | 2,430                     | 3                   | 2,684         | -254                      | 110.4%                    | 2,779         | -349                      | 114.4%                    | 1,549         | 881           | 63.7%         | 1,728         | 702           | 71.1%         |
| Patriot                               | 2,053                     | 20                  | 2,822         | -769                      | 137.4%                    | 2,763         | -710                      | 134.6%                    | 2,777         | -724          | 135.3%        | 3,023         | -970          | 147.3%        |
| Potomac                               | 2,357                     |                     | 1,742         | 615                       | 73.9%                     | 1,872         | 485                       | 79.4%                     | 2,378         | -21           | 100.9%        | 3,384         | -1,027        | 143.6%        |
| Stonewall Jackson                     | 2,409                     |                     | 2,418         | -9                        | 100.4%                    | 2,549         | -140                      | 105.8%                    | 3,071         | -662          | 127.5%        | 4,088         | -1,679        | 169.7%        |
| Woodbridge                            | 2,734                     |                     | 2,875         | -141                      | 105.2%                    | 2,918         | -184                      | 106.7%                    | 3,017         | -283          | 110.3%        | 3,052         | -318          | 111.6%        |
| <b>Total</b>                          | <b>24,144<sup>1</sup></b> | <b>37</b>           | <b>25,249</b> | <b>-1,105<sup>3</sup></b> | <b>104.6%<sup>3</sup></b> | <b>25,832</b> | <b>-1,688<sup>3</sup></b> | <b>107.0%<sup>3</sup></b> | <b>28,079</b> | <b>-1,882</b> | <b>107.2%</b> | <b>30,963</b> | <b>-4,766</b> | <b>118.2%</b> |
| <i>13th High School - West (2020)</i> |                           |                     |               |                           |                           |               |                           |                           |               |               |               |               |               |               |
| <i>14th High School - East (2022)</i> |                           |                     |               |                           |                           |               |                           |                           |               |               |               |               |               |               |
| <i>Sum of Additional Seats</i>        |                           |                     |               |                           |                           |               |                           |                           |               |               |               |               |               |               |
| <b>Total</b>                          | <b>24,144<sup>1</sup></b> | <b>37</b>           | <b>25,249</b> | <b>-1,105<sup>3</sup></b> | <b>104.6%<sup>3</sup></b> | <b>25,832</b> | <b>-1,688<sup>3</sup></b> | <b>107.0%<sup>3</sup></b> | <b>28,079</b> | <b>-1,882</b> | <b>107.2%</b> | <b>30,963</b> | <b>-660</b>   | <b>102.2%</b> |
|                                       | <b>26,197<sup>2</sup></b> |                     |               |                           |                           |               |                           |                           |               |               |               |               |               |               |

**Note:**

- <sup>1</sup> Total high school capacity that excludes capacity of 12th HS
- <sup>2</sup> Total high school capacity that includes capacity of 12th HS
- <sup>3</sup> Figures are calculated based on the 2014 total high school capacity

Student Enrollment Data: Current Enrollment  
 Special Education and Alternative Schools  
 SY 2014-15

| Special Education and<br>Alternative School | 2014-15                |              |
|---|------------------------|--------------|
|   | Portable<br>Classrooms | Students     |
| Independent Hill SE                         | 8                      | 112          |
| PACE West SE                                | 0                      | 88           |
| Pre-School Child Find                       | 0                      | 93           |
| School Based Pre-K                          | 0                      | 365          |
| Woodbine SE                                 | 1                      | 63           |
| New Directions Alt                          | 0                      | 461          |
| New Dominion Alt                            | 11                     | 90           |
| TJHS Regional Magnet                        | 0                      | 65           |
| <b>Total</b>                                | <b>20</b>              | <b>1,337</b> |

|   |
|---|
| <i>Ferlazzo Elementary (IHS East -1 room addition, 2016)</i>    |
| <i>Rippon Middle Addition (IHS East -1 room addition, 2016)</i> |
| <i>12th HS (IHS 2 room addition, 2016)</i>                      |
| <i>PACE East Replacement, 2018</i>                              |



Housing Units in Residential Development  
By Elementary School Attendance Area and Stage of Development  
September 2014

| Elementary School      | Active       |            |              |              | Planned      |              |              |               | Rezoning Submitted |              |              |               | Total         |
|------------------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------------|--------------|--------------|---------------|---------------|
|                        | SF           | TH         | MF           | Total        | SF           | TH           | MF           | Total         | SF                 | TH           | MF           | Total         |               |
| Alvey ES               | 105          |            |              | 105          | 54           |              |              | 54            |                    |              |              |               | 159           |
| Ashland ES             | 108          |            |              | 108          | 12           |              |              | 12            | 71                 |              |              | 71            | 191           |
| Belmont ES             |              |            | 12           | 12           |              |              | 720          | 720           |                    |              | 670          | 670           | 1,402         |
| Bennett ES             | 13           |            |              | 13           | 57           | 505          |              | 562           | 69                 | 72           |              | 141           | 716           |
| Bristow Run ES         |              |            |              |              |              |              |              |               | 38                 | 39           |              | 77            | 77            |
| Buckland Mills ES      |              |            | 76           | 76           |              | 247          |              | 247           | 115                | 130          |              | 245           | 568           |
| Coles ES               | 32           |            |              | 32           | 27           |              |              | 27            | 43                 |              |              | 43            | 102           |
| Dale City ES           |              |            |              |              | 4            |              |              | 4             |                    |              |              |               | 4             |
| Dumfries ES            | 5            |            | 135          | 140          |              |              |              |               | 13                 |              |              | 13            | 153           |
| Featherstone ES        |              |            |              |              | 11           |              |              | 11            |                    |              |              |               | 11            |
| Fitzgerald ES          | 55           |            | 516          | 571          | 124          | 398          |              | 522           | 18                 |              |              | 18            | 1,111         |
| Glenkirk ES            | 77           |            |              | 77           |              |              |              |               |                    |              |              |               | 77            |
| Gravelly ES            | 270          |            |              | 270          | 158          |              |              | 158           |                    |              |              |               | 428           |
| Haymarket ES           |              |            | 22           | 22           | 361          | 261          | 316          | 938           |                    |              | 36           | 36            | 996           |
| Henderson ES           | 7            |            |              | 7            |              |              |              |               |                    |              |              |               | 7             |
| Kilby ES               |              |            |              |              |              |              | 148          | 148           |                    |              | 399          | 399           | 547           |
| King ES                | 7            |            |              | 7            | 61           |              |              | 61            |                    |              |              |               | 68            |
| Leesylvania ES         |              | 112        |              | 112          |              |              | 320          | 320           |                    |              |              |               | 432           |
| Loch Lomond ES         |              |            | 104          | 104          |              | 102          |              | 102           |                    |              |              |               | 206           |
| Marshall ES            |              |            |              |              | 22           |              |              | 22            | 23                 |              |              | 23            | 45            |
| Marumscos Hills ES     |              |            | 267          | 267          |              |              | 342          | 342           |                    |              |              |               | 609           |
| McAuliffe ES           |              | 4          |              | 4            |              |              |              |               |                    |              |              |               | 4             |
| Minnieville ES         |              |            | 92           | 92           |              | 30           | 163          | 193           |                    |              |              |               | 285           |
| Montclair ES           | 14           |            |              | 14           |              |              |              |               | 7                  |              |              | 7             | 21            |
| Mountain View ES       | 12           |            |              | 12           |              |              |              |               | 69                 |              |              | 69            | 81            |
| Mullen ES              |              |            |              |              |              |              | 20           | 20            |                    |              | 788          | 788           | 808           |
| Neabsco ES             |              |            | 68           | 68           |              |              |              |               |                    |              |              |               | 68            |
| Nokesville School, The | 368          |            |              | 368          | 127          |              |              | 127           | 326                |              |              | 326           | 821           |
| Occoquan ES            |              | 10         | 52           | 62           | 14           |              |              | 14            | 7                  |              |              | 7             | 83            |
| Old Bridge ES          |              |            |              |              | 4            |              |              | 4             |                    |              |              |               | 4             |
| Parks ES               | 34           |            |              | 34           | 11           |              |              | 11            | 10                 |              |              | 10            | 55            |
| Penn ES                | 63           | 12         |              | 75           | 272          |              |              | 272           | 30                 |              |              | 30            | 377           |
| Piney Branch ES        |              | 101        |              | 101          | 86           | 65           | 96           | 247           |                    | 775          | 80           | 855           | 1,203         |
| Potomac View ES        |              |            |              |              |              | 30           | 114          | 144           |                    | 25           |              | 25            | 169           |
| Rockledge ES           |              |            | 72           | 72           |              |              |              |               |                    |              | 216          | 216           | 288           |
| Signal Hill ES         | 52           |            |              | 52           | 126          | 179          | 296          | 601           | 335                | 104          | 72           | 511           | 1,164         |
| Sinclair ES            |              |            |              |              |              |              |              |               |                    |              | 13           | 13            | 13            |
| Swans Creek ES         | 280          |            | 179          | 459          | 1,035        | 1,100        | 1,711        | 3,846         | 17                 |              |              | 17            | 4,322         |
| Triangle ES            |              |            |              |              | 92           | 12           |              | 104           | 26                 | 291          |              | 317           | 421           |
| Tyler ES               |              |            | 88           | 88           |              |              | 86           | 86            |                    | 102          | 120          | 222           | 396           |
| Vaughan ES             |              |            | 207          | 207          | 139          |              |              | 139           |                    |              |              |               | 346           |
| Victory ES             |              |            |              |              |              | 55           |              | 55            |                    |              |              |               | 55            |
| Westridge ES           | 27           |            |              | 27           |              |              |              |               |                    |              |              |               | 27            |
| Williams ES            | 117          |            |              | 117          |              |              |              |               |                    |              | 162          | 162           | 279           |
| Wood ES                | 21           |            |              | 21           |              |              |              |               |                    | 139          |              | 139           | 160           |
| Yorkshire ES           |              |            | 787          | 787          | 31           |              |              | 31            |                    |              |              |               | 818           |
| Yung ES                | 16           |            | 496          | 512          | 96           |              |              | 96            | 1,036              | 2,455        | 1,106        | 4,597         | 5,205         |
| <b>Total</b>           | <b>1,683</b> | <b>239</b> | <b>3,173</b> | <b>5,095</b> | <b>2,924</b> | <b>2,984</b> | <b>4,332</b> | <b>10,240</b> | <b>2,253</b>       | <b>4,132</b> | <b>3,662</b> | <b>10,047</b> | <b>25,382</b> |

**Note:**

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Rezoning Submitted = rezoning application submitted, CPA request submitted or initiated (if applicable), or no recent progress has occurred

**Housing Units in Residential Development**  
**By Middle School Attendance Area and Stage of Development**  
*September 2014*

| Middle School          | Active       |            |              |              | Planned      |              |              |               | Rezoning Submitted |              |              |               | Total         |
|------------------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------------|--------------|--------------|---------------|---------------|
|                        | SF           | TH         | MF           | Total        | SF           | TH           | MF           | Total         | SF                 | TH           | MF           | Total         |               |
| Benton MS              | 39           | 12         |              | 51           | 321          |              |              | 321           | 167                |              |              | 167           | 539           |
| Beville MS             | 70           |            |              | 70           | 61           |              |              | 61            |                    |              |              |               | 131           |
| Bull Run MS            | 23           |            | 88           | 111          |              |              | 86           | 86            | 230                | 1,357        | 426          | 2,013         | 2,210         |
| Gainesville MS         | 93           | 101        | 496          | 690          | 182          | 65           | 96           | 343           | 879                | 1,975        | 880          | 3,734         | 4,767         |
| Godwin MS              |              |            | 160          | 160          | 4            | 30           | 163          | 197           |                    |              |              |               | 357           |
| Graham Park MS         | 5            |            | 135          | 140          | 92           | 12           |              | 104           | 39                 | 291          |              |               | 574           |
| Lynn MS                |              | 10         | 64           | 74           | 14           | 30           | 982          | 1,026         | 7                  | 25           | 1,069        | 1,101         | 2,201         |
| Marsteller MS          | 21           |            |              | 21           |              | 55           | 20           | 75            | 34                 | 178          | 788          | 1,000         | 1,096         |
| Nokesville School, The | 368          |            |              | 368          | 127          |              |              | 127           | 326                |              |              |               | 821           |
| Parkside MS            | 65           |            | 891          | 956          | 214          | 786          | 296          | 1,296         | 404                | 176          | 72           | 652           | 2,904         |
| Potomac MS             | 397          | 112        | 179          | 688          | 1,035        | 1,100        | 1,711        | 3,846         | 17                 |              | 162          | 179           | 4,713         |
| Reagan MS              | 364          |            | 98           | 462          | 573          | 508          | 316          | 1,397         | 115                | 130          | 36           | 281           | 2,140         |
| Rippon MS              | 62           |            | 783          | 845          | 135          | 398          | 662          | 1,195         | 18                 |              |              | 18            | 2,058         |
| Saunders MS            | 156          | 4          |              | 160          | 23           |              |              | 23            | 17                 |              |              |               | 200           |
| Stonewall MS           |              |            |              |              |              |              |              |               |                    |              | 13           | 13            | 13            |
| Woodbridge MS          | 20           |            | 279          | 299          | 143          |              |              | 143           |                    |              | 216          | 216           | 658           |
| <b>Total</b>           | <b>1,683</b> | <b>239</b> | <b>3,173</b> | <b>5,095</b> | <b>2,924</b> | <b>2,984</b> | <b>4,332</b> | <b>10,240</b> | <b>2,253</b>       | <b>4,132</b> | <b>3,662</b> | <b>10,047</b> | <b>25,382</b> |

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**Housing Units in Residential Development**  
**By High School Attendance Area and Stage of Development**  
*September 2014*

| High School          | Active       |            |              |              | Planned      |              |              |               | Rezoning Submitted |              |              |               | Total         |
|----------------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------------|--------------|--------------|---------------|---------------|
|                      | SF           | TH         | MF           | Total        | SF           | TH           | MF           | Total         | SF                 | TH           | MF           | Total         |               |
| 12th HS              | 217          | 12         |              | 229          | 394          |              |              | 394           | 137                |              |              | 137           | 760           |
| Battlefield HS       | 387          |            | 110          | 497          | 573          | 332          | 402          | 1,307         | 184                | 1,102        | 156          | 1,442         | 3,246         |
| Brentsville HS       | 368          |            |              | 368          | 154          |              |              | 154           | 337                |              |              | 337           | 859           |
| Forest Park HS       | 19           |            | 135          | 154          | 10           | 12           |              | 22            | 13                 | 291          |              | 304           | 480           |
| Freedom HS           |              |            | 1,002        | 1,002        | 11           | 428          | 1,644        | 2,083         | 18                 | 25           | 670          | 713           | 3,798         |
| Gar-Field HS         | 20           |            | 160          | 180          | 147          | 30           | 163          | 340           | 7                  |              |              | 7             | 527           |
| Hylton HS            | 34           | 4          |              | 38           | 11           |              |              | 11            | 10                 |              |              | 10            | 59            |
| Osborn Park HS       | 65           |            | 787          | 852          | 187          | 684          | 296          | 1,167         | 423                | 176          | 72           | 671           | 2,690         |
| Patriot HS           | 98           |            | 76           | 174          | 8            | 176          |              | 184           | 38                 | 308          | 80           | 426           | 784           |
| Potomac HS           | 459          | 112        | 179          | 750          | 1,241        | 1,100        | 1,711        | 4,052         | 43                 |              | 162          | 205           | 5,007         |
| Stonewall Jackson HS | 16           | 101        | 600          | 717          | 174          | 222          | 116          | 512           | 1,036              | 2,230        | 1,907        | 5,173         | 6,402         |
| Woodbridge HS        |              | 10         | 124          | 134          | 14           |              |              | 14            | 7                  |              | 615          | 622           | 770           |
| <b>Total</b>         | <b>1,683</b> | <b>239</b> | <b>3,173</b> | <b>5,095</b> | <b>2,924</b> | <b>2,984</b> | <b>4,332</b> | <b>10,240</b> | <b>2,253</b>       | <b>4,132</b> | <b>3,662</b> | <b>10,047</b> | <b>25,382</b> |

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## Student Enrollment Data: Historical and Projected 1966-2024

| Year | School Type |        |        |                   | Total   | Annual Change |            |
|------|-------------|--------|--------|-------------------|---------|---------------|------------|
|      | Elementary  | Middle | High   | Special Education |         | Number        | Percentage |
| 1966 | 11,361      | 5,242  | 4,511  | 133               | 21,247  |               |            |
| 1967 | 11,782      | 5,843  | 4,991  | 83                | 22,699  | 1,452         | 6.8%       |
| 1968 | 13,083      | 6,488  | 5,641  | 97                | 25,309  | 2,610         | 11.5%      |
| 1969 | 14,266      | 7,164  | 6,496  | 97                | 28,023  | 2,714         | 10.7%      |
| 1970 | 15,377      | 7,873  | 7,008  | 106               | 30,364  | 2,341         | 8.4%       |
| 1971 | 15,794      | 8,368  | 8,053  | 107               | 32,322  | 1,958         | 6.4%       |
| 1972 | 15,975      | 8,738  | 8,741  | 107               | 33,561  | 1,239         | 3.8%       |
| 1973 | 16,583      | 9,498  | 9,464  | 80                | 35,625  | 2,064         | 6.1%       |
| 1974 | 19,462      | 9,865  | 10,338 | 148               | 39,813  | 4,188         | 11.8%      |
| 1975 | 19,538      | 10,261 | 10,800 | 201               | 40,800  | 987           | 2.5%       |
| 1976 | 18,693      | 9,799  | 10,277 | 238               | 39,007  | -1,793        | -4.4%      |
| 1977 | 16,626      | 9,041  | 10,463 | 309               | 36,439  | -2,568        | -6.6%      |
| 1978 | 15,378      | 8,466  | 10,729 | 273               | 34,846  | -1,593        | -4.4%      |
| 1979 | 16,166      | 8,344  | 10,918 | 286               | 35,714  | 868           | 2.5%       |
| 1980 | 15,385      | 8,465  | 10,993 | 310               | 35,153  | -561          | -1.6%      |
| 1981 | 15,429      | 8,757  | 11,031 | 367               | 35,584  | 431           | 1.2%       |
| 1982 | 15,141      | 8,775  | 10,927 | 382               | 35,225  | -359          | -1.0%      |
| 1983 | 15,334      | 8,701  | 11,128 | 401               | 35,564  | 339           | 1.0%       |
| 1984 | 15,598      | 8,438  | 11,464 | 383               | 35,883  | 319           | 0.9%       |
| 1985 | 16,326      | 8,273  | 11,844 | 447               | 36,890  | 1,007         | 2.8%       |
| 1986 | 17,130      | 8,414  | 11,850 | 526               | 37,920  | 1,030         | 2.8%       |
| 1987 | 18,143      | 8,460  | 12,010 | 611               | 39,224  | 1,304         | 3.4%       |
| 1988 | 19,334      | 8,730  | 11,883 | 703               | 40,650  | 1,426         | 3.6%       |
| 1989 | 20,130      | 9,060  | 11,652 | 692               | 41,534  | 884           | 2.2%       |
| 1990 | 20,702      | 9,320  | 11,638 | 686               | 42,346  | 812           | 2.0%       |
| 1991 | 20,984      | 9,861  | 11,846 | 709               | 43,400  | 1,054         | 2.5%       |
| 1992 | 21,768      | 10,212 | 12,178 | 712               | 44,870  | 1,470         | 3.4%       |
| 1993 | 21,605      | 10,654 | 12,501 | 779               | 45,539  | 669           | 1.5%       |
| 1994 | 21,826      | 10,733 | 12,822 | 900               | 46,281  | 742           | 1.6%       |
| 1995 | 22,473      | 11,085 | 13,329 | 825               | 47,712  | 1,431         | 3.1%       |
| 1996 | 22,886      | 11,327 | 13,828 | 760               | 48,801  | 1,089         | 2.3%       |
| 1997 | 23,529      | 11,636 | 14,366 | 751               | 50,282  | 1,481         | 3.0%       |
| 1998 | 24,044      | 11,744 | 14,839 | 994               | 51,621  | 1,339         | 2.7%       |
| 1999 | 24,690      | 12,212 | 15,292 | 868               | 53,062  | 1,441         | 2.8%       |
| 2000 | 25,653      | 12,774 | 16,079 | 633               | 55,139  | 2,077         | 3.9%       |
| 2001 | 26,814      | 13,445 | 16,881 | 683               | 57,823  | 2,684         | 4.9%       |
| 2002 | 27,717      | 14,256 | 17,558 | 698               | 60,229  | 2,406         | 4.2%       |
| 2003 | 28,820      | 15,035 | 18,525 | 719               | 63,099  | 2,870         | 4.8%       |
| 2004 | 30,101      | 15,580 | 19,652 | 760               | 66,093  | 2,994         | 4.7%       |
| 2005 | 31,286      | 15,623 | 20,448 | 877               | 68,234  | 2,141         | 3.2%       |
| 2006 | 32,704      | 15,748 | 21,228 | 1,003             | 70,683  | 2,449         | 3.6%       |
| 2007 | 33,858      | 16,040 | 21,792 | 964               | 72,654  | 1,971         | 2.8%       |
| 2008 | 34,428      | 16,273 | 21,930 | 1,027             | 73,657  | 1,003         | 1.4%       |
| 2009 | 36,055      | 17,034 | 22,328 | 1,239             | 76,656  | 2,999         | 4.1%       |
| 2010 | 37,261      | 17,700 | 22,857 | 1,298             | 79,115  | 2,459         | 3.2%       |
| 2011 | 38,436      | 18,351 | 23,500 | 1,348             | 81,635  | 2,520         | 3.2%       |
| 2012 | 39,269      | 18,902 | 24,015 | 1,365             | 83,551  | 1,916         | 2.3%       |
| 2013 | 39,538      | 19,473 | 24,665 | 1,379             | 85,055  | 1,504         | 1.8%       |
| 2014 | 39,920      | 19,703 | 25,249 | 1,337             | 86,209  | 1,154         | 1.4%       |
| 2015 | 40,271      | 20,036 | 25,833 | 1,360             | 87,500  | 1,291         | 1.5%       |
| 2016 | 40,700      | 19,966 | 26,734 | 1,377             | 88,777  | 1,277         | 1.5%       |
| 2017 | 40,935      | 20,550 | 27,187 | 1,391             | 90,064  | 1,286         | 1.4%       |
| 2018 | 41,420      | 20,957 | 27,711 | 1,408             | 91,496  | 1,433         | 1.6%       |
| 2019 | 42,389      | 21,172 | 28,070 | 1,426             | 93,057  | 1,561         | 1.7%       |
| 2020 | 43,435      | 21,140 | 28,668 | 1,447             | 94,691  | 1,633         | 1.8%       |
| 2021 | 44,752      | 21,346 | 29,621 | 1,469             | 97,188  | 2,498         | 2.6%       |
| 2022 | 45,958      | 21,936 | 29,854 | 1,490             | 99,237  | 2,049         | 2.1%       |
| 2023 | 47,389      | 22,619 | 30,484 | 1,513             | 102,005 | 2,767         | 2.8%       |
| 2024 | 49,016      | 23,395 | 30,962 | 1,538             | 104,911 | 2,906         | 2.8%       |

## Student Enrollment Projections Error Rate Analysis

| School Year                           | Actual Student Enrollment | Student Enrollment Projections |            |           |                  |           |                   |           |                   |           |  |
|---------------------------------------|---------------------------|--------------------------------|------------|-----------|------------------|-----------|-------------------|-----------|-------------------|-----------|--|
|                                       |                           | One Year Before                |            |           | Two Years Before |           | Four Years Before |           | Five Years Before |           |  |
|                                       |                           | Projection                     | Difference | % Error * | Projection       | % Error * | Projection        | % Error * | Projection        | % Error * |  |
| 1995-96                               | 47,712                    | 47,162                         | (550)      | 1.17%     | 47,255           | 0.97%     | 50,589            | -5.69%    | 49,543            | -3.70%    |  |
| 1996-97                               | 48,041                    | 47,991                         | (50)       | 0.10%     | 46,928           | 2.37%     | 49,765            | -3.46%    | 50,738            | -5.32%    |  |
| 1997-98                               | 49,531                    | 48,939                         | (592)      | 1.21%     | 49,033           | 1.02%     | 54,650            | -9.37%    | 52,475            | -5.61%    |  |
| 1998-99                               | 50,627                    | 50,785                         | 158        | -0.31%    | 49,865           | 1.53%     | 48,731            | 3.89%     | 50,746            | -0.23%    |  |
| 1999-00                               | 53,062                    | 52,546                         | (516)      | 0.98%     | 53,102           | -0.08%    | 52,567            | 0.94%     | 51,330            | 3.37%     |  |
| 2000-01                               | 55,139                    | 54,269                         | (870)      | 1.60%     | 53,352           | 3.35%     | 53,038            | 3.96%     | 53,831            | 2.43%     |  |
| 2001-02                               | 57,823                    | 57,026                         | (797)      | 1.40%     | 55,763           | 3.69%     | 54,788            | 5.54%     | 54,930            | 5.27%     |  |
| 2002-03                               | 60,229                    | 59,916                         | (313)      | 0.52%     | 58,829           | 2.38%     | 55,688            | 8.15%     | 57,231            | 5.24%     |  |
| 2003-04                               | 63,109                    | 62,391                         | (718)      | 1.15%     | 61,962           | 1.85%     | 58,059            | 8.70%     | 57,541            | 9.68%     |  |
| 2004-05                               | 66,093                    | 65,721                         | (372)      | 0.57%     | 64,321           | 2.75%     | 62,185            | 6.28%     | 59,639            | 10.82%    |  |
| 2005-06                               | 68,234                    | 68,988                         | 754        | -1.09%    | 68,181           | 0.08%     | 64,709            | 5.45%     | 63,717            | 7.09%     |  |
| 2006-07                               | 70,683                    | 70,211                         | (472)      | 0.67%     | 71,511           | -1.16%    | 67,804            | 4.25%     | 66,393            | 6.46%     |  |
| 2007-08                               | 72,654                    | 72,187                         | (467)      | 0.65%     | 71,866           | 1.10%     | 71,555            | 1.54%     | 69,488            | 4.56%     |  |
| 2008-09                               | 73,657                    | 73,321                         | (336)      | 0.46%     | 73,592           | 0.09%     | 75,914            | -2.97%    | 74,270            | -0.83%    |  |
| 2009-10                               | 76,656                    | 74,736                         | (1,920)    | 2.57%     | 75,393           | 1.68%     | 74,840            | 2.43%     | 77,888            | -1.58%    |  |
| 2010-11                               | 79,115                    | 78,308                         | (807)      | 1.03%     | 75,996           | 4.10%     | 75,226            | 5.17%     | 75,433            | 4.88%     |  |
| 2011-12                               | 81,635                    | 81,070                         | (565)      | 0.70%     | 79,866           | 2.21%     | 77,238            | 5.69%     | 76,766            | 6.34%     |  |
| 2012-13                               | 83,551                    | 83,837                         | 286        | -0.34%    | 82,941           | 0.74%     | 79,079            | 5.66%     | 80,203            | 4.17%     |  |
| 2013-14                               | 85,055                    | 85,926                         | 871        | -1.01%    | 86,191           | -1.32%    | 83,659            | 1.67%     | 80,801            | 5.26%     |  |
| 2014-15                               | 86,209                    | 87,108                         | 899        | -1.03%    | 88,420           | -2.50%    | 86,614            | -0.47%    | 85,436            | 0.90%     |  |
| (MPE) Mean Percentage Error           |                           |                                |            | 0.45%     |                  | 0.97%     |                   | 2.01%     |                   | 2.78%     |  |
| (MAPE) Mean Absolute Percentage Error |                           |                                |            | 0.85%     |                  | 2.03%     |                   | 4.26%     |                   | 4.66%     |  |

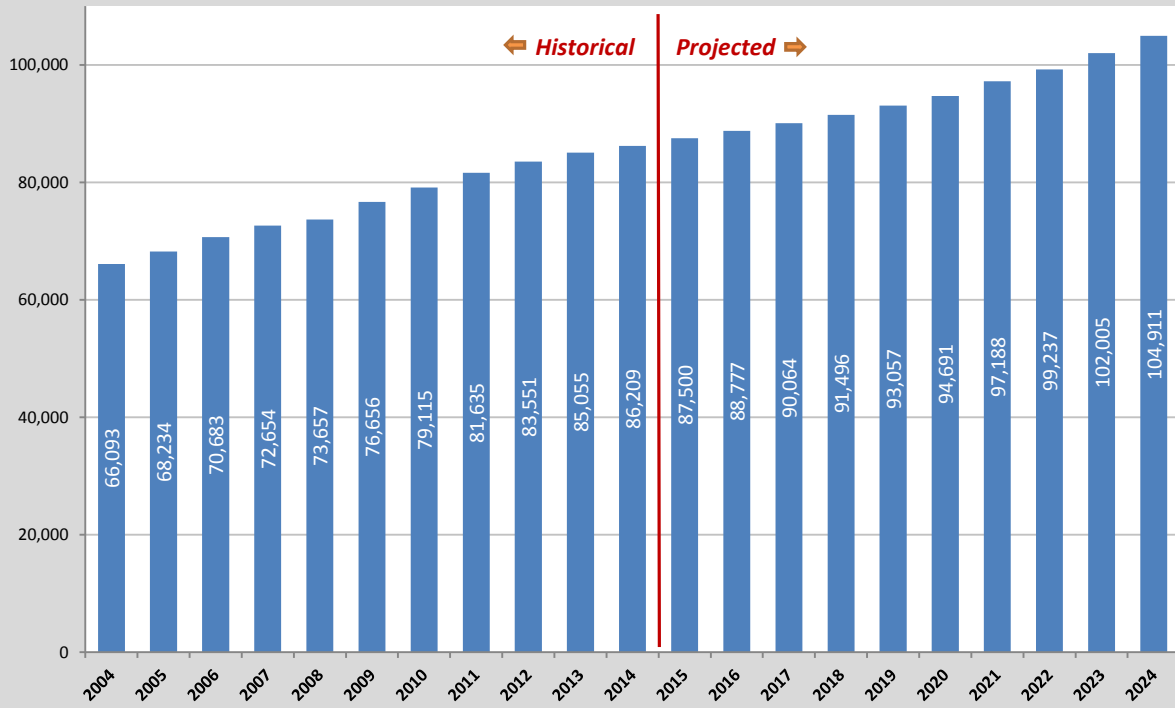
\*A negative forecast error indicates that the projection was greater than the actual value.

## Portable Classrooms: Current and Historical Totals By School Type, 1998 to 2014

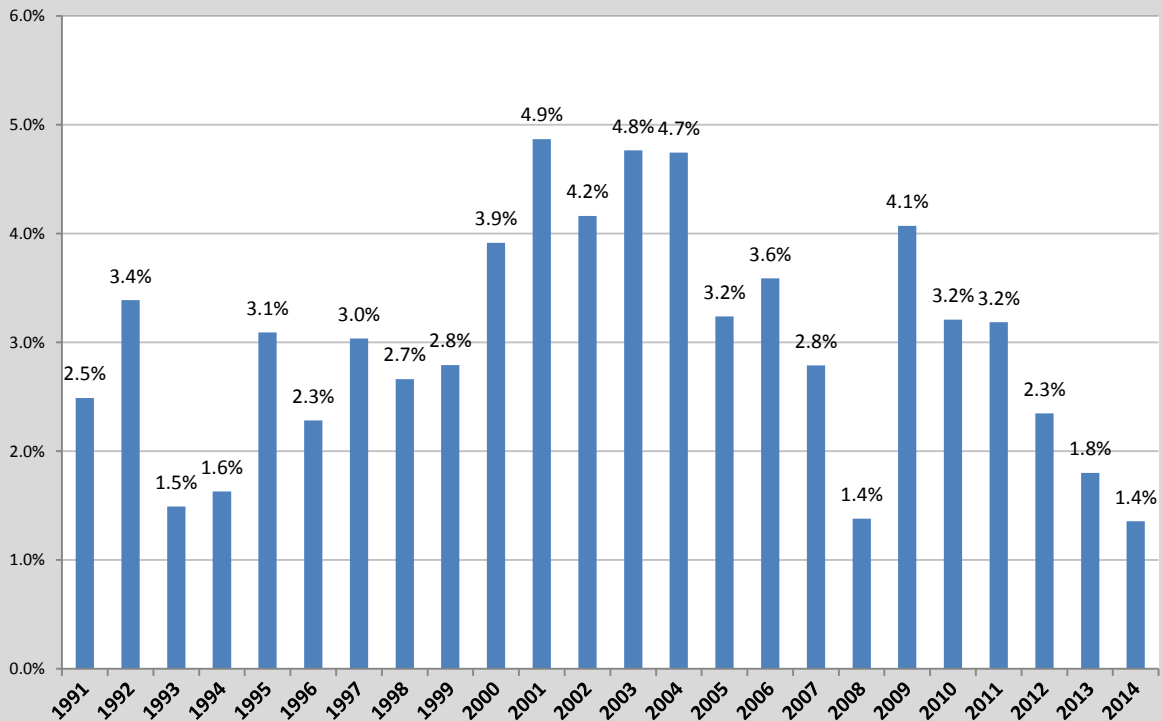
| Year | Elementary | Middle | High | Alternative | Special Education | Total |
|------|------------|--------|------|-------------|-------------------|-------|
| 1998 | 101        | 21     | 28   | 0           | 5                 | 155   |
| 1999 | 109        | 25     | 25   | 0           | 5                 | 164   |
| 2000 | 118        | 31     | 5    | 10          | 5                 | 169   |
| 2001 | 122        | 37     | 2    | 10          | 5                 | 176   |
| 2002 | 130        | 26     | 2    | 10          | 5                 | 173   |
| 2003 | 141        | 16     | 2    | 10          | 5                 | 174   |
| 2004 | 168        | 19     | 2    | 10          | 5                 | 204   |
| 2005 | 185        | 40     | 5    | 10          | 5                 | 245   |
| 2006 | 179        | 27     | 8    | 10          | 5                 | 229   |
| 2007 | 184        | 20     | 14   | 10          | 10                | 238   |
| 2008 | 171        | 20     | 21   | 10          | 10                | 232   |
| 2009 | 150        | 21     | 36   | 10          | 7                 | 224   |
| 2010 | 145        | 21     | 37   | 10          | 10                | 223   |
| 2011 | 132        | 31     | 21   | 10          | 10                | 204   |
| 2012 | 136        | 29     | 18   | 10          | 9                 | 202   |
| 2013 | 126        | 23     | 30   | 11          | 9                 | 199   |
| 2014 | 121        | 22     | 37   | 11          | 9                 | 200   |

Note: Includes portable classrooms used for instructional purposes.

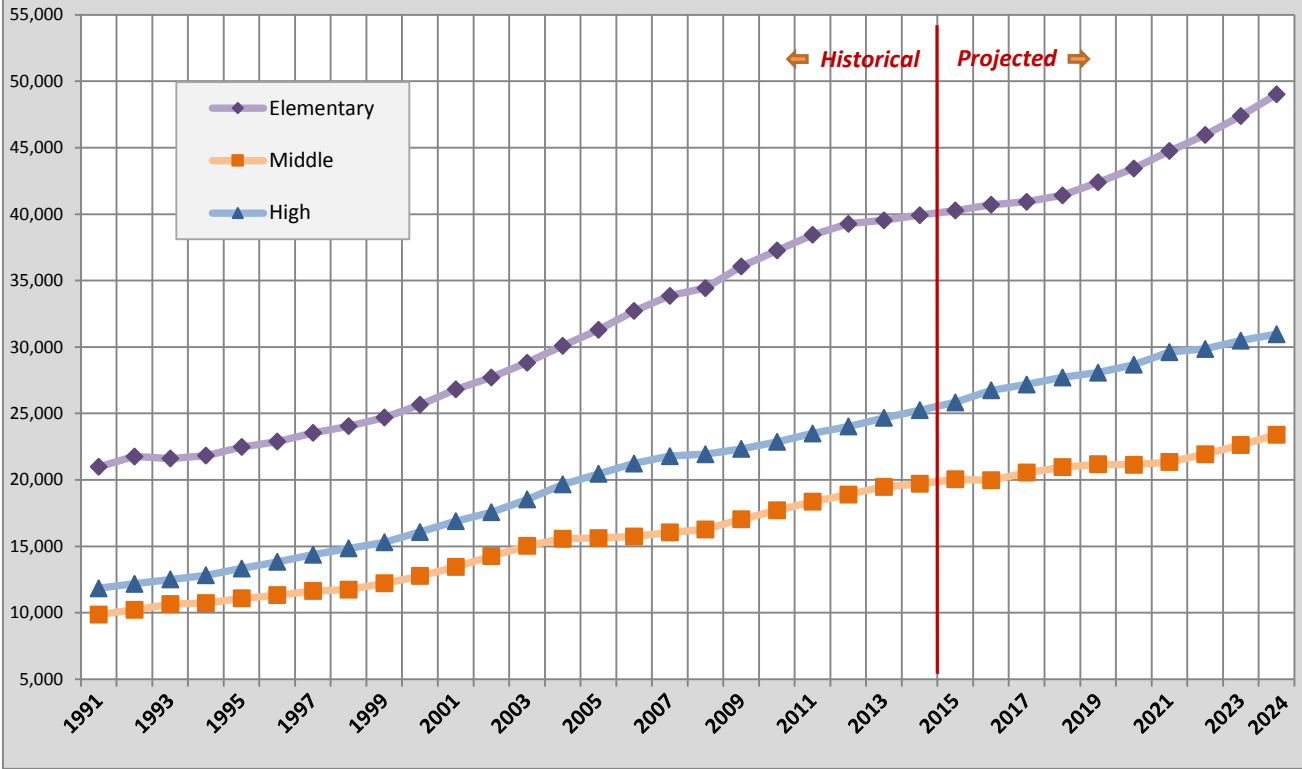
## Prince William County Public Schools Historical and Projected Enrollment



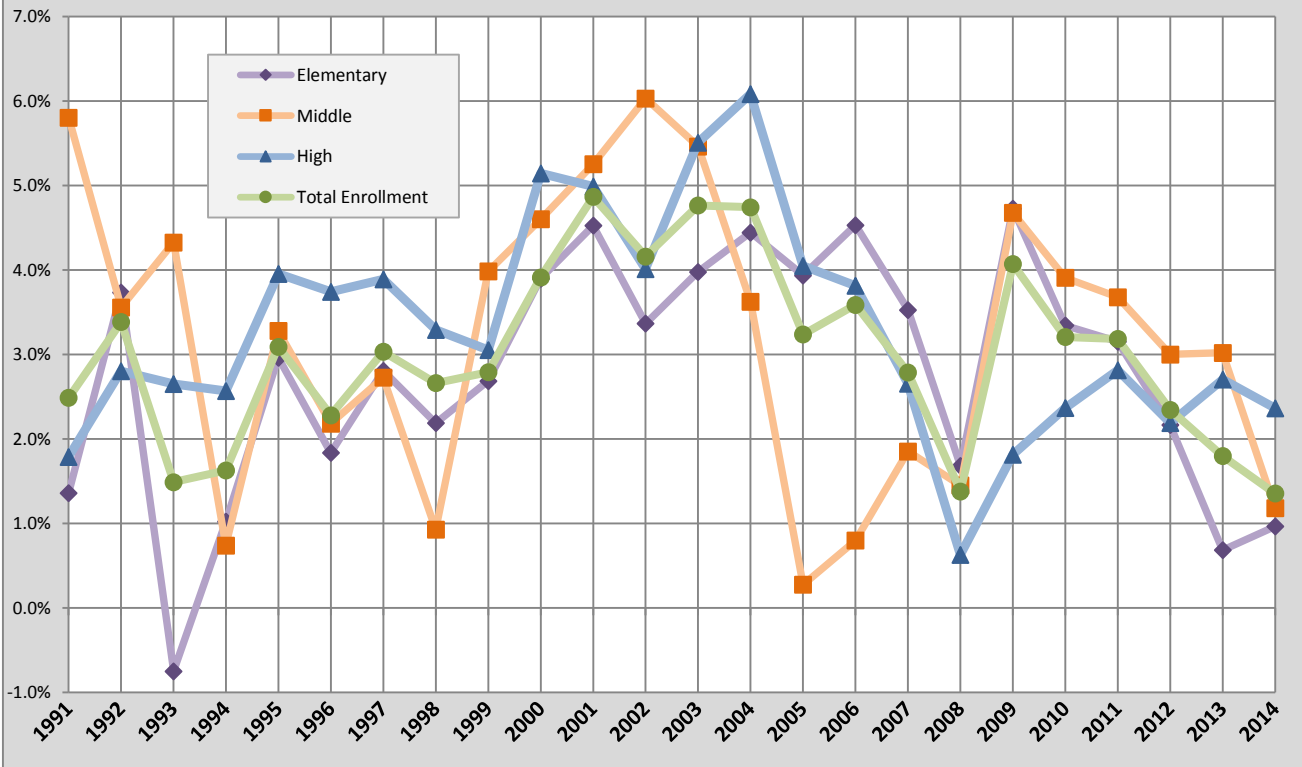
## Prince William County Public Schools Annual Percentage Change in Enrollment



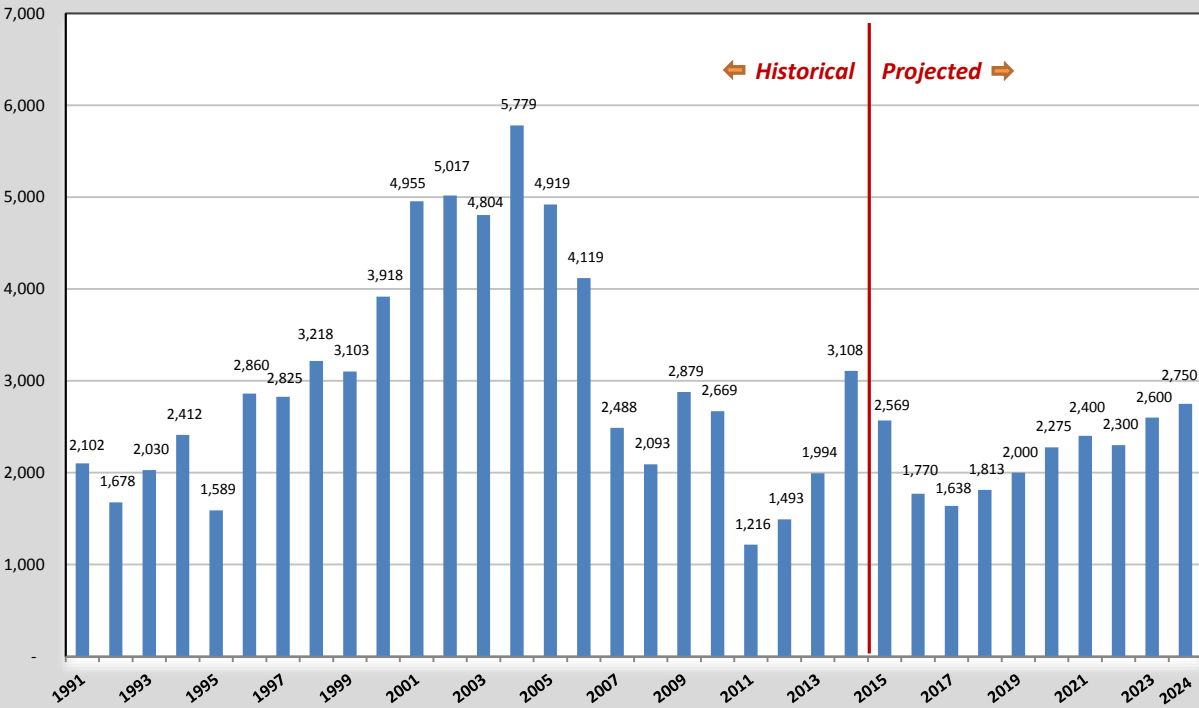
### Prince William County Public Schools Historical and Projected Enrollment by School Level



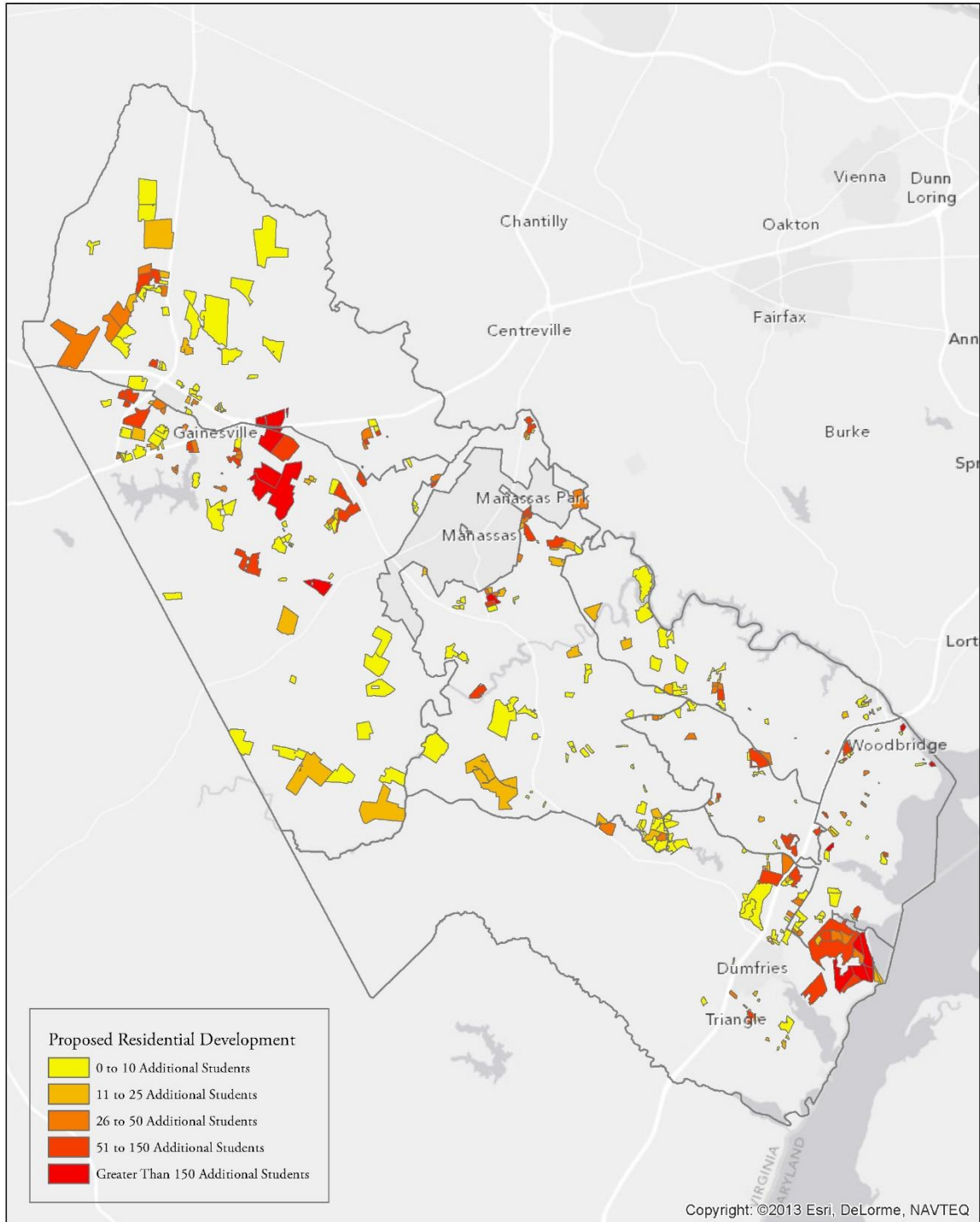
### Prince William County Public Schools Annual Percentage Change in Enrollment by School Level



## Prince William County Historical and Projected Annual Housing Unit Change

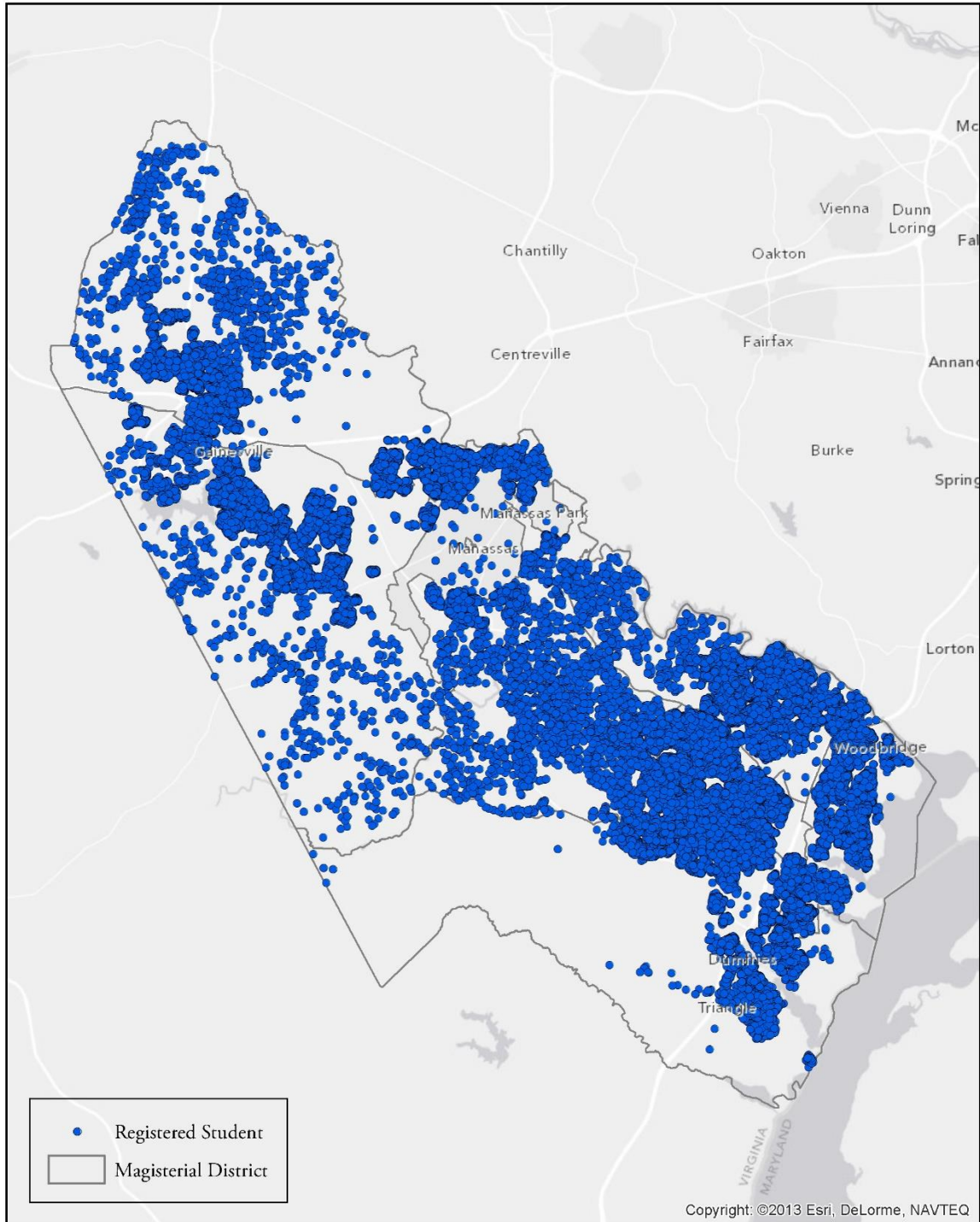


## Additional Students Generated by Residential Development (2015-24)



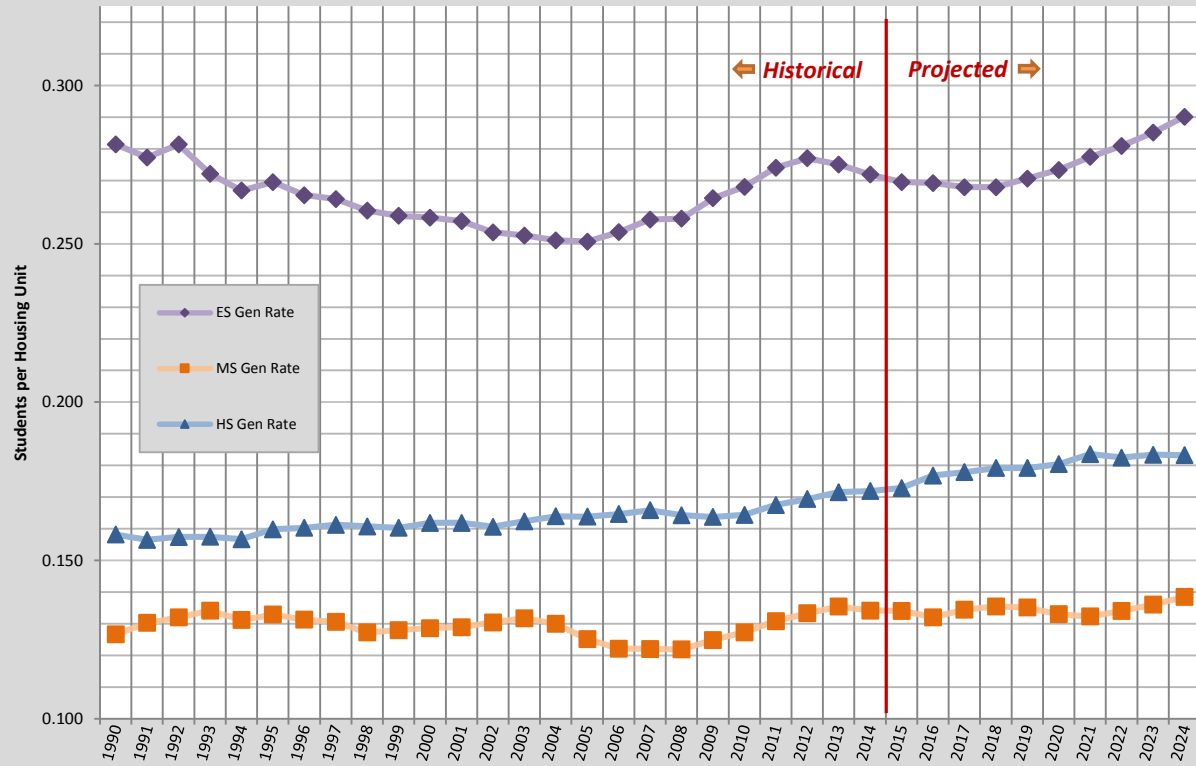
Office of Facilities Services / Created by Matt Cartlidge, Ph.D. / December 2014



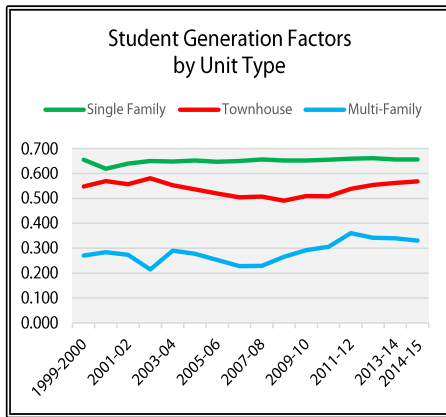


Office of Facilities Services / Created by Matt Cartlidge, Ph.D. / December 2014

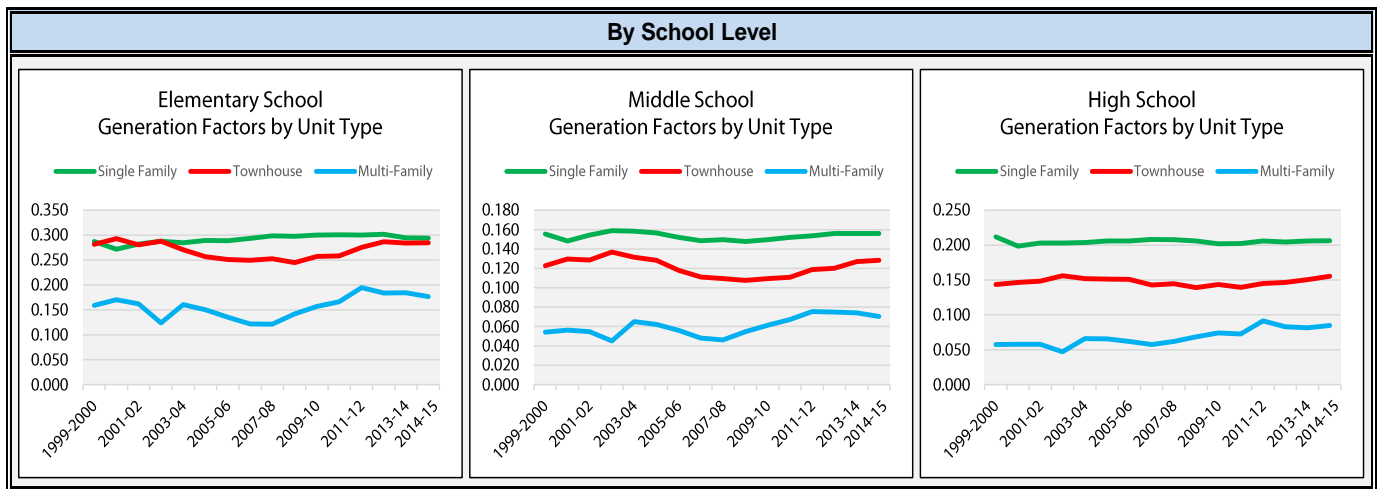
## Prince William County Public Schools Student Generation Rates



## Student Generation Factors by School Level and Housing Unit Type



| 2014-15      |               |              |              |              |
|--------------|---------------|--------------|--------------|--------------|
| School Type  | Unit Type     |              |              | Total        |
|              | Single Family | Townhouse    | Multi-Family |              |
| Elementary   | 0.294         | 0.285        | 0.176        | 0.272        |
| Middle       | 0.156         | 0.128        | 0.070        | 0.134        |
| High         | 0.206         | 0.155        | 0.085        | 0.172        |
| <b>Total</b> | <b>0.656</b>  | <b>0.569</b> | <b>0.331</b> | <b>0.578</b> |



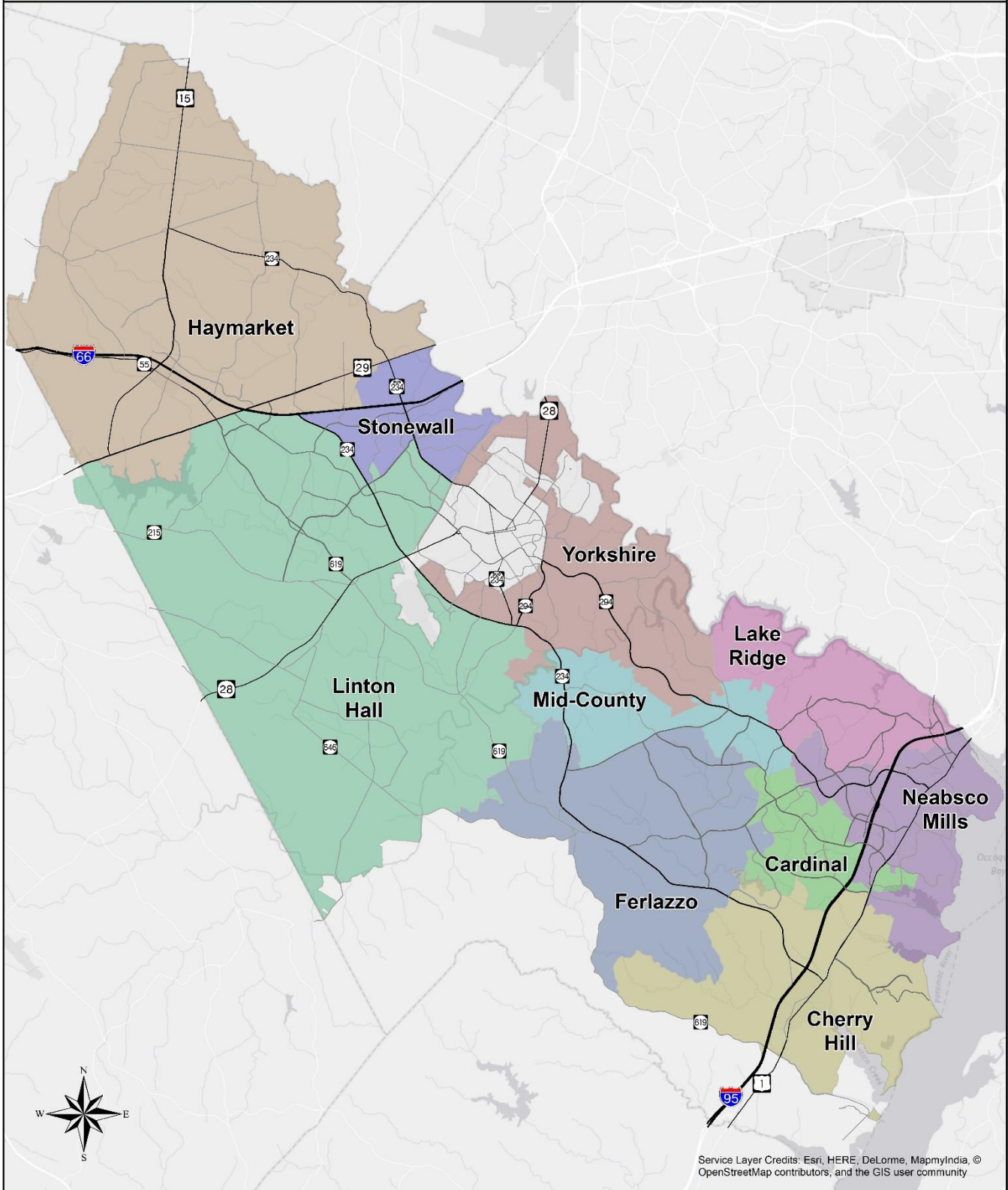
### Historical Data

| Year      | School Type  | Unit Type     |              |              | Total        |
|-----------|--------------|---------------|--------------|--------------|--------------|
|           |              | Single Family | Townhouse    | Multi-Family |              |
| 2013-14   | Elementary   | 0.294         | 0.284        | 0.185        | 0.275        |
|           | Middle       | 0.156         | 0.127        | 0.074        | 0.135        |
|           | High         | 0.206         | 0.151        | 0.082        | 0.172        |
|           | <b>Total</b> | <b>0.656</b>  | <b>0.562</b> | <b>0.340</b> | <b>0.582</b> |
| 2010-11   | Elementary   | 0.301         | 0.258        | 0.167        | 0.268        |
|           | Middle       | 0.152         | 0.111        | 0.067        | 0.127        |
|           | High         | 0.202         | 0.139        | 0.072        | 0.164        |
|           | <b>Total</b> | <b>0.655</b>  | <b>0.509</b> | <b>0.306</b> | <b>0.560</b> |
| 2012-13   | Elementary   | 0.302         | 0.287        | 0.184        | 0.279        |
|           | Middle       | 0.156         | 0.120        | 0.075        | 0.133        |
|           | High         | 0.205         | 0.147        | 0.083        | 0.169        |
|           | <b>Total</b> | <b>0.662</b>  | <b>0.554</b> | <b>0.342</b> | <b>0.582</b> |
| 2005-06   | Elementary   | 0.289         | 0.251        | 0.135        | 0.252        |
|           | Middle       | 0.152         | 0.118        | 0.056        | 0.127        |
|           | High         | 0.206         | 0.151        | 0.062        | 0.167        |
|           | <b>Total</b> | <b>0.647</b>  | <b>0.520</b> | <b>0.253</b> | <b>0.546</b> |
| 2011-12   | Elementary   | 0.300         | 0.275        | 0.195        | 0.277        |
|           | Middle       | 0.154         | 0.119        | 0.075        | 0.132        |
|           | High         | 0.206         | 0.145        | 0.092        | 0.171        |
|           | <b>Total</b> | <b>0.660</b>  | <b>0.539</b> | <b>0.361</b> | <b>0.580</b> |
| 1999-2000 | Elementary   | 0.287         | 0.282        | 0.159        | 0.265        |
|           | Middle       | 0.156         | 0.123        | 0.054        | 0.130        |
|           | High         | 0.212         | 0.143        | 0.057        | 0.168        |
|           | <b>Total</b> | <b>0.655</b>  | <b>0.548</b> | <b>0.270</b> | <b>0.563</b> |

**Note:** The 'Student Generation Factor' is a mathematical representation of the relationship between housing units in Prince William County and the number of students enrolled in Prince William County Public Schools on September 30 of each year. In other words, it is the number of enrolled students per total number of housing units by type.



# CIP Geographic Areas



Service Layer Credits: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

DATA SOURCES  
 PWCS: CIP\_Geor\_Area\_2015  
 PWC: Road Centerlines (April 2015)



Prepared By Robert D Boyd, GIS Analyst I  
 Prince William County Schools  
 Office of Facilities Services  
 April 2015

Elementary Schools  
By Geographic Area

| Geographic Area  | Schools                |
|------------------|------------------------|
| Cardinal Area    | Bel Air ES             |
|                  | Dale City ES           |
|                  | Fitzgerald ES          |
|                  | Henderson ES           |
|                  | Minnieville ES         |
|                  | Neabsco ES             |
| Cherry Hill Area | Dumfries ES            |
|                  | Pattie ES              |
|                  | River Oaks ES          |
|                  | Swans Creek ES         |
|                  | Triangle ES            |
|                  | Williams ES            |
|                  |                        |
| Ferlazzo Area    | Ashland ES             |
|                  | Coles ES               |
|                  | Enterprise ES          |
|                  | King ES                |
|                  | McAuliffe ES           |
|                  | Montclair ES           |
|                  | Parks ES               |
|                  |                        |
| Haymarket Area   | Alvey ES               |
|                  | Buckland Mills ES      |
|                  | Gravelly ES            |
|                  | Haymarket ES           |
|                  | Mountain View ES       |
|                  | Tyler ES               |
| Lake Ridge Area  | Antietam ES            |
|                  | Lake Ridge ES          |
|                  | Occoquan ES            |
|                  | Old Bridge ES          |
|                  | Rockledge ES           |
|                  | Springwoods ES         |
|                  | Westridge ES           |
| Linton Hall Area | Bristow Run ES         |
|                  | Cedar Point ES         |
|                  | Ellis ES               |
|                  | Glenkirk ES            |
|                  | Nokesville School, The |
|                  | Piney Branch ES        |
|                  | Victory ES             |
|                  | Wood ES                |
| Yung ES          |                        |

| Geographic Area                  | Schools            |
|----------------------------------|--------------------|
| Mid-County Area                  | Kerrydale ES       |
|                                  | Marshall ES        |
|                                  | Penn ES            |
| Neabsco Mills / Northern Route 1 | Belmont ES         |
|                                  | Featherstone ES    |
|                                  | Kilby ES           |
|                                  | Leesylvania ES     |
|                                  | Marumscos Hills ES |
|                                  | Potomac View ES    |
|                                  | Vaughan ES         |
| Stonewall Area                   | Mullen ES          |
|                                  | Sinclair ES        |
|                                  | Sudley ES          |
|                                  | West Gate ES       |
| Yorkshire Area                   | Bennett ES         |
|                                  | Loch Lomond ES     |
|                                  | Signal Hill ES     |
|                                  | Yorkshire ES       |



## *APPENDIX C*

### *Identified Capital Improvement Sites*





## Identified Capital Improvement Sites

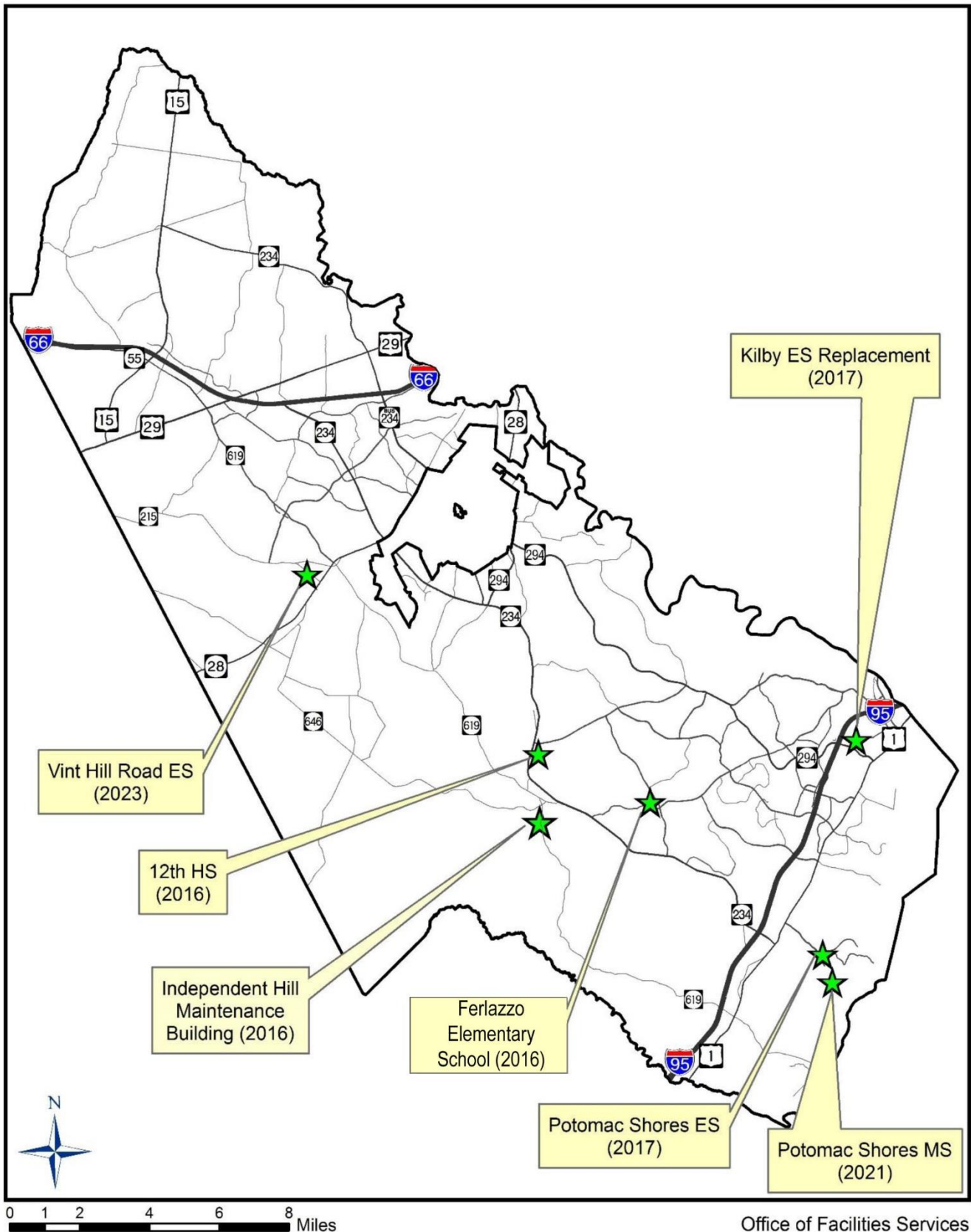
- Overall Map of PWCS Sites Identified in the Capital Improvements Program
  - Ferlazzo Elementary School (2016)
  - 12<sup>th</sup> High School (2016)
  - Maintenance Building at Independent Hill Site (2016)
  - Potomac Shores Elementary School (2017)
  - Kilby Elementary School Replacement (2017)
  - Potomac Shores Middle School (2021)
  - Vint Hill Road Elementary School (2023)

### *School Site Maps*

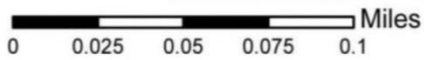
Appendix C details the sites that have been acquired by the School Division for future use. Some of them are programmed to be utilized for new school facilities within this Capital Improvements Program document, while others are intended to serve as support centers for the Division. The year in which the facility is planned for construction is shown on the accompanying maps.



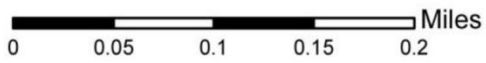
## New School Facilities Identified in the Capital Improvements Program (CIP)



Office of Facilities Services



Office of Facilities Services

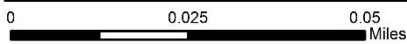
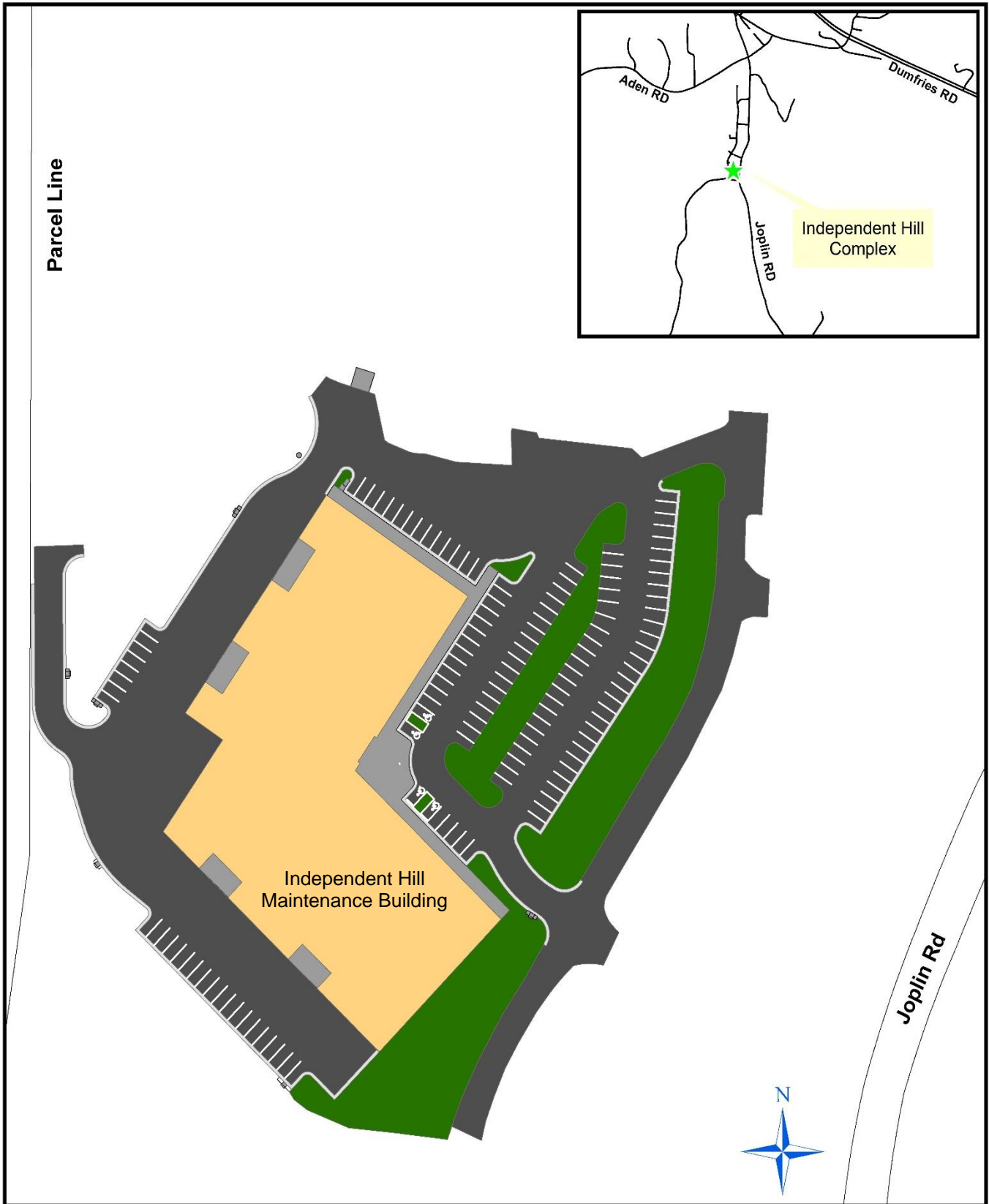


Office of Facilities Services



# Independent Hill Maintenance Building

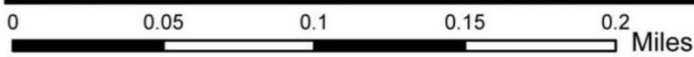
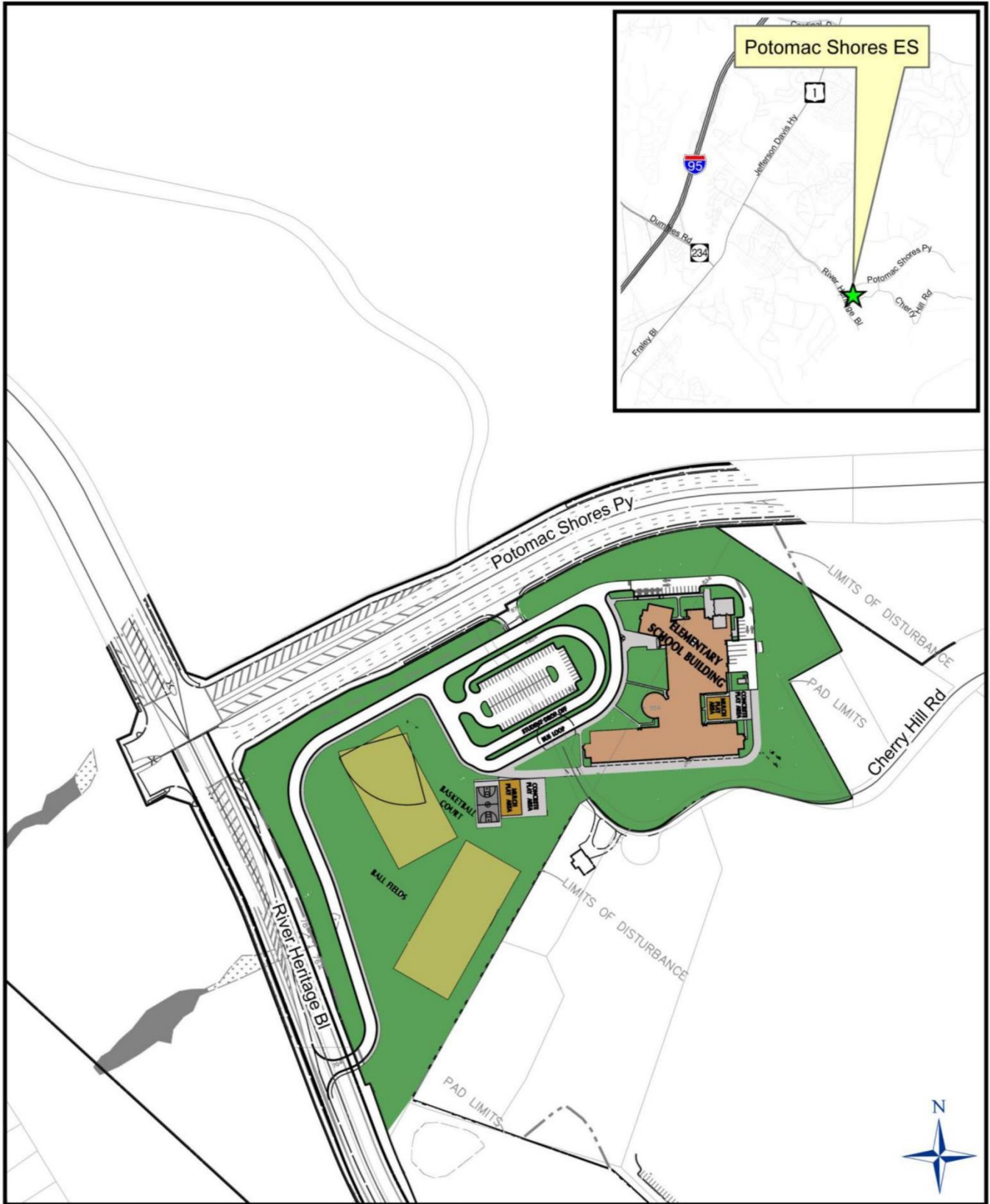
Opens 2016



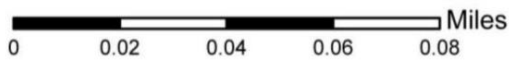
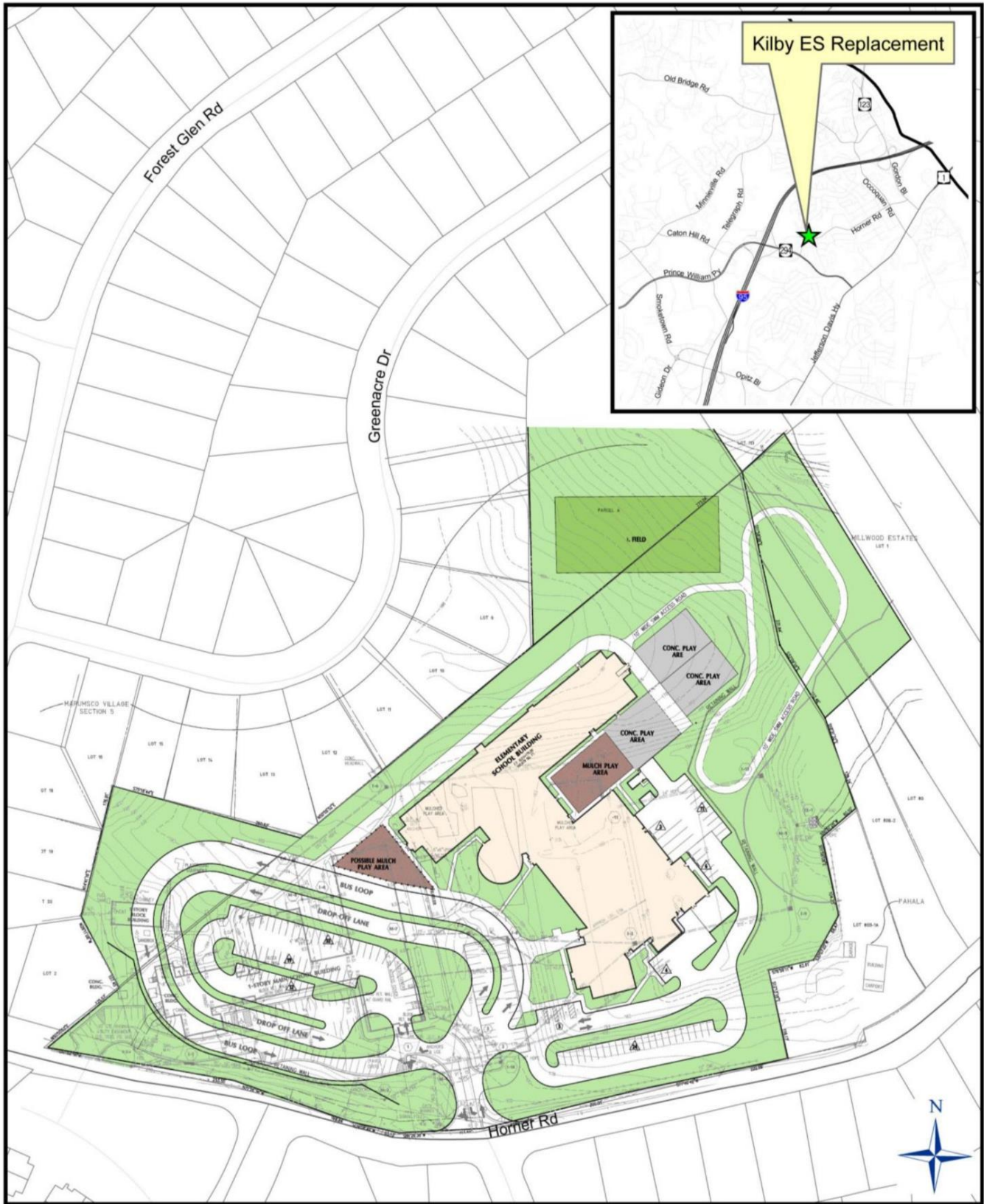
Office of Facilities Services

# Potomac Shores Elementary School

Opens September 2017



Office of Facilities Services

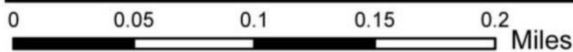


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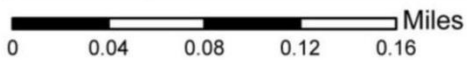


# Potomac Shores Middle School

Opens September 2021



Office of Facilities Services



Office of Facilities Services

## *APPENDIX D*

### *School Construction Financial Data*



## School Construction Financial Data

- School Construction Projects by Types of Expenditures
- Report of Bond Expenditures
- Commonwealth of Virginia Comparative School Construction Cost Data
  - New Elementary Schools
  - New Middle Schools
  - New High Schools
- Elementary School Construction Cost Comparatives



## School Construction Projects by Types of Expenditures

### School Construction Projects Types of Expenditures FY2012 to FY2016

| PWCS Project Name       | Opening Date | CIP Construction Project Budget | Construction Expenditures              |   |                                  |                                   |                                      |  |  | Total Construction Expenditures | Operating Fund / Start Up Costs <sup>7</sup> | Site Acquisition Costs <sup>8</sup> | Total Project Costs |
|-------------------------|--------------|---------------------------------|--|---|----------------------------------|-----------------------------------|--------------------------------------|--|--|---------------------------------|--|-------------------------------------|---------------------|
|                         |              |                                 | Construction Contract Bid <sup>1</sup> | Project Costs Outside of Construction Contract        |                                  |                                   |                                      |  | Total Project Costs Outside of Construction Contract |                                 |  |                                     |                     |
|                         |              |                                 |  | Construction Contract Change Order Costs <sup>2</sup> | Temporary Employees <sup>3</sup> | Engineering Services <sup>4</sup> | Furnishings & Equipment <sup>5</sup> | Other Non-Construction Contract Costs <sup>6</sup> |  |                                 |  |                                     |                     |
| Kilby Elementary Repl   | Sep-17       | \$ 31,476,000                   | \$ 21,888,000                          |   |                                  |                                   |                                      |  |  |                                 |  | \$ 135,398                          |                     |
| Ferlazzo Elementary     | Sep-16       | \$ 28,534,000                   | \$ 20,753,000                          |   |                                  |                                   |                                      |  |  |                                 |  | \$ -                                |                     |
| Maintenance Facility    | Sep-16       | \$ 11,444,000                   | \$ 8,074,000                           |   |                                  |                                   |                                      |  |  |                                 |  |                                     |                     |
| 12th High School        | Sep-16       | \$ 110,943,000                  | \$ 97,907,000                          | \$ -  | \$ 160,995                       | \$ 4,605,458                      | \$ -                                 | \$ 1,063,599                                       | \$ 5,830,052   | \$ 103,737,052                  |  | \$ 8,785,796                        |                     |
| Devlin Road Elementary  | Sep-15       | \$ 25,987,000                   | \$ 20,286,000                          | \$ 213,356  | \$ 87,961                        | \$ 893,111                        | \$ 4,991                             | \$ 425,417   | \$ 1,624,836   | \$ 21,910,836                   |  | \$ 3,345,844                        |                     |
| Haymarket Elementary    | Sep-14       | \$ 27,663,000                   | \$ 18,788,000                          | \$ 39,514   | \$ 131,591                       | \$ 1,131,812                      | \$ 1,119,614                         | \$ 973,054   | \$ 3,395,585   | \$ 22,183,585                   | \$ 339,295                                   | \$ 16,679                           |                     |
| Nokesville School, The  | Sep-14       | \$ 31,000,000                   | \$ 28,402,000                          | \$ 149,976  | \$ 124,920                       | \$ 2,252,698                      | \$ 1,316,651                         | \$ 2,190,965                                       | \$ 6,035,210   | \$ 34,437,210                   | \$ 230,000                                   | \$ 236,665                          |                     |
| PACE West Special       | Sep-12       | \$ 11,526,000                   | \$ 7,698,000                           | \$ 265,453  | \$ 154,054                       | \$ 755,007                        | \$ 644,474                           | \$ 686,834   | \$ 2,505,821   | \$ 10,203,821                   | \$ -   | \$ 93,537                           | \$ 10,297,358       |
| Reagan Middle           | Sep-12       | \$ 26,382,000                   | \$ 18,914,000                          | \$ 500,381  | \$ 188,871                       | \$ 1,018,825                      | \$ 2,178,833                         | \$ 1,138,259                                       | \$ 5,025,169   | \$ 23,939,169                   | \$ 719,000                                   | \$ 4,261                            | \$ 24,662,430       |
| Patriot High            | Sep-11       | \$ 84,110,000                   | \$ 70,699,000                          | \$ 1,683,390  | \$ 288,976                       | \$ 4,334,084                      | \$ 3,892,000                         | \$ 2,667,044                                       | \$ 12,865,494  | \$ 83,564,494                   | \$ 1,640,000                                 | \$ 7,391,771                        | \$ 92,596,265       |
| T. Clay Wood Elementary | Sep-11       | \$ 18,494,000                   | \$ 13,859,000                          | \$ 456,286  | \$ 169,805                       | \$ 996,299                        | \$ 1,243,359                         | \$ 213,240   | \$ 3,078,989   | \$ 16,937,989                   | \$ 302,000                                   | \$ -                                | \$ 17,239,989       |
| Piney Branch Elementary | Sep-11       | \$ 21,224,000                   | \$ 15,799,000                          | \$ 416,944  | \$ 112,149                       | \$ 1,088,068                      | \$ 1,246,023                         | \$ 571,677   | \$ 3,434,861   | \$ 19,233,861                   | \$ 302,000                                   | \$ 4,252,663                        | \$ 23,788,524       |

<sup>1</sup> Construction contract to build the facility; may include site preparation work, road improvements, and other construction items as specified in the bid documents

<sup>2</sup> Change orders include errors and omissions, charges initiated by the owner, inspection outcomes, school-based staff generated changes, and unanticipated site conditions

<sup>3</sup> On-site construction project managers, custodial services

<sup>4</sup> Architectural and Engineering Services, traffic analyses, environmental analyses, archeological studies

<sup>5</sup> Outfitting costs for desks, smart-boards, office furniture, computers, servers, athletic and PE equipment, lab equipment, and other equipment that is not part of the physical structure of the building

<sup>6</sup> Utility Fees, easements, traffic signalization, inspection services, stormwater fees, wetlands mitigation and monitoring, erosion controls, and other unclassified expenses

<sup>7</sup> Expendable Equipment and Materials to include: instructional supplies, office supplies, instruction kits, textbooks, library books, glassware, P.E. equipment, uniforms for athletics / music programs, etc., as well as the salaries of the principal and bookkeeper during the initial startup period

<sup>8</sup> Purchase of properties, easements, rights of way, and associated settlement and title fees

## Bond Expenditure Data

### Bond Issuance: Virginia Public School Authority 2015 (V15A)

| Bond Issuance | Project Name                             | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|--|------------------------------------|----------------------|----------------------|--------------------------|
|               |  | Original Bond Disbursement         |                      |                      |                          |
| V15A          | 12th High School                         | \$ 49,971,500                      |                      |                      | \$ 49,971,500            |
| V15A          | Elementary School - Ferlazzo             | \$ 27,534,000                      |                      |                      | \$ 27,534,000            |
| V15A          | Independent Hill Maintenance Facility    | \$ 10,000,000                      |                      |                      | \$ 10,000,000            |
| V15A          | Rippon Middle Addition                   | \$ 7,110,000                       |                      |                      | \$ 7,110,000             |
| V15A          | Kilby ES Replacement                     | \$ 6,000,000                       |                      |                      | \$ 6,000,000             |
| V15A          | PACE East Replacement                    | \$ 2,000,000                       |                      |                      | \$ 2,000,000             |
| V15A          | Elementary School - Potomac Shores - A/E | \$ 2,000,000                       |                      |                      | \$ 2,000,000             |
| V15A          | Henderson ES Addition - A/E              | \$ 400,000                         |                      |                      | \$ 400,000               |
| V15A          | Belmont ES Addition - A/E                | \$ 400,000                         |                      |                      | \$ 400,000               |
| V15A          | Neabsco ES Addition - A/E                | \$ 400,000                         |                      |                      | \$ 400,000               |
| <b>Total</b>  |  | \$ 105,815,500                     | \$ -                 | \$ -                 | \$ 105,815,500           |

### Bond Issuance: Virginia Public School Authority 2014 (V14A)

| Bond Issuance | Project Name                               | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|--|------------------------------------|----------------------|----------------------|--------------------------|
|               |  | Original Bond Disbursement         |                      |                      |                          |
| V14A          | Elementary School - Devlin Road            | \$ 25,937,000                      |                      |                      | \$ 25,937,000            |
| V14A          | Featherstone Elementary Addition (6 rooms) | \$ 8,531,000                       |                      |                      | \$ 8,531,000             |
| V14A          | 12th High School/IHS (Mid-County)          | \$ 49,971,500                      | \$ (3,000,000)       |                      | \$ 46,971,500            |
| V14A          | Elementary School/IHS (East - Ferlazzo)    | \$ 2,000,000                       | \$ (850,000)         |                      | \$ 1,150,000             |
| V14A          | Rippon Middle Addition/IHS East (9 rooms)  | \$ 350,000                         |                      |                      | \$ 350,000               |
| V14A          | Maintenance Facility                       | \$ 1,444,000                       |                      |                      | \$ 1,444,000             |
| V14A          | Kilby Elementary School Replacement        | \$ 1,000,000                       |                      |                      | \$ 1,000,000             |
| V14A          | Kerrydale ES - Activity Room               | \$ -                               | \$ 1,500,000         | \$ -                 | \$ 1,500,000             |
| V14A          | Enterprise ES - Activity Room              | \$ -                               | \$ 1,500,000         | \$ -                 | \$ 1,500,000             |
| V14A          | Potomac Shores MS - site                   | \$ -                               | \$ 850,000           | \$ -                 | \$ 850,000               |
| <b>Total</b>  |  | \$ 89,233,500                      | \$ -                 | \$ -                 | \$ 89,233,500            |



**Bond Issuance:  
Virginia Public School Authority 2013 (V13A)**

| Bond Issuance | Project Name                           | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|--|------------------------------------|----------------------|----------------------|--------------------------|
|               |  | Original Bond Disbursement         |                      |                      |                          |
| V13A          | Nokesville School, The - Building, New | \$ 11,000,000                      |                      |                      | \$ 11,000,000            |
| V13A          | Haymarket ES - Building, New           | \$ 27,663,000                      | \$ (1,320,000)       | \$ (3,454,000)       | \$ 22,889,000            |
| V13A          | Dumfries ES - Renewal                  | \$ 3,825,000                       |                      | \$ 684,000           | \$ 4,509,000             |
| V13A          | River Oaks ES - Addition               | \$ 5,913,000                       | \$ 700,000           | \$ (470,000)         | \$ 6,143,000             |
| V13A          | Parkside MS - Addition                 | \$ 10,559,000                      |                      |                      | \$ 10,559,000            |
| V13A          | 12th HS Site - Building, New           | \$ 8,000,000                       | \$ 570,000           | \$ 3,000,000         | \$ 11,570,000            |
| V13A          | Featherstone ES - A/E, Addition        | \$ 300,000                         | \$ 50,000            |                      | \$ 350,000               |
| V13A          | Kerrydale ES - Activity Room           | \$ -                               | \$ -                 | \$ 80,000            | \$ 80,000                |
| V13A          | Enterprise ES - Activity Room          | \$ -                               | \$ -                 | \$ 80,000            | \$ 80,000                |
| V13A          | Tyler ES - Activity Room               | \$ -                               | \$ -                 | \$ 80,000            | \$ 80,000                |
| <b>Total</b>  |  | \$ 67,260,000                      | \$ -                 | \$ -                 | \$ 67,260,000            |

**Bond Issuance:  
Virginia Public School Authority 2012 (V12A)**

| Bond Issuance | Project Name                        | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|-------------------------------------|------------------------------------|----------------------|----------------------|--------------------------|
|               |                                     | Original Bond Disbursement         |                      |                      |                          |
| V12A          | Potomac HS - Renewal/Addition       | \$ 7,655,000                       | \$ 500,000           |                      | \$ 8,155,000             |
| V12A          | Pattie ES - Renewal                 | \$ 3,806,000                       | \$ (36,000)          | \$ (100,000)         | \$ 3,670,000             |
| V12A          | Loch Lomond ES - Addition           | \$ 5,950,000                       | \$ 871,000           | \$ (350,000)         | \$ 6,471,000             |
| V12A          | Mullen ES - Addition                | \$ 5,700,000                       | \$ 302,000           | \$ (600,000)         | \$ 5,402,000             |
| V12A          | Nokesville K-8 - Building, New      | \$ 14,000,000                      | \$ 3,630,000         |                      | \$ 17,630,000            |
| V12A          | Penn ES - Addition                  | \$ 5,817,000                       | \$ (971,000)         | \$ (550,000)         | \$ 4,296,000             |
| V12A          | River Oaks ES - A/E, Addition       | \$ 300,000                         | \$ 36,000            | \$ (26,000)          | \$ 310,000               |
| V12A          | Sinclair ES - Addition              | \$ 6,260,000                       | \$ (33,000)          |                      | \$ 6,227,000             |
| V12A          | Sudley ES - Addition                | \$ 6,100,000                       | \$ (118,000)         | \$ (174,000)         | \$ 5,808,000             |
| V12A          | West Gate ES - Addition             | \$ 3,140,000                       | \$ 1,002,000         |                      | \$ 4,142,000             |
| V12A          | Benton MS - Addition                | \$ 7,247,000                       | \$ (2,635,000)       |                      | \$ 4,612,000             |
| V12A          | Parkside MS - A/E, Addition         | \$ 500,000                         |                      |                      | \$ 500,000               |
| V12A          | Potomac MS - Addition               | \$ 7,770,000                       | \$ (2,548,000)       |                      | \$ 5,222,000             |
| V12A          | 12th site - A/E                     | \$ 3,000,000                       |                      |                      | \$ 3,000,000             |
| V12A          | Loch Lomond ES - Renewal, A/E       |                                    |                      | \$ 350,000           | \$ 350,000               |
| V12A          | Henderson ES - Renewal, A/E         |                                    |                      | \$ 350,000           | \$ 350,000               |
| V12A          | King ES - Renewal, A/E              |                                    |                      | \$ 350,000           | \$ 350,000               |
| V12A          | Lake Ridge ES - Renewal, A/E        |                                    |                      | \$ 350,000           | \$ 350,000               |
| V12A          | Springwoods ES - Renewal, A/E       |                                    |                      | \$ 350,000           | \$ 350,000               |
| V12A          | Devlin Road ES - Building, New, A/E |                                    |                      | \$ 50,000            | \$ 50,000                |
| <b>Total</b>  |                                     | \$ 77,245,000                      | \$ -                 | \$ -                 | \$ 77,245,000            |

**Bond Issuance:  
Virginia Public School Authority 2011 (V11A)**

| Bond Issuance | Project Name   | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|--|------------------------------------|----------------------|----------------------|--------------------------|
|               |  | Original Bond Disbursement         |                      |                      |                          |
| V11A          | A&E Mullen, Sinclair, Sudley, West Gate, Loch Lomond | \$ 1,500,000                       | \$ 100,000           |                      | \$ 1,600,000             |
| V11A          | Bus Parking (Gar-Field HS)                           | \$ 1,009,000                       |                      |                      | \$ 1,009,000             |
| V11A          | PACE West SE   | \$ 8,026,000                       |                      | \$ (20,000)          | \$ 8,006,000             |
| V11A          | Piney Branch Elementary                              | \$ 5,000,000                       | \$ (1,750,000)       | \$ (730,000)         | \$ 2,520,000             |
| V11A          | Potomac HS Addition                                  | \$ 7,655,000                       |                      |                      | \$ 7,655,000             |
| V11A          | Reagan Middle  | \$ 12,150,000                      |                      | \$ (1,900,000)       | \$ 10,250,000            |
| V11A          | Swans Creek  | \$ 4,765,000                       | \$ (450,000)         | \$ (1,365,925)       | \$ 2,949,075             |
| V11A          | T. Clay Wood Elementary                              | \$ 4,000,000                       | \$ (450,000)         | \$ (850,000)         | \$ 2,700,000             |
| V11A          | Westridge ES Addition                                | \$ 4,130,000                       | \$ 450,000           |                      | \$ 4,580,000             |
| V11A          | Nokesville K-8 School (A&E)                          |                                    | \$ 500,000           | \$ (203,053)         | \$ 296,947               |
| V11A          | Penn Elementary School Addition (A&E)                |                                    | \$ 350,000           |                      | \$ 350,000               |
| V11A          | Benton Middle School Addition (A&E)                  |                                    | \$ 450,000           |                      | \$ 450,000               |
| V11A          | Potomac Middle School Addition (A&E)                 |                                    | \$ 350,000           |                      | \$ 350,000               |
| V11A          | Parkside Middle School Addition (A&E)                |                                    | \$ 450,000           | \$ (65,075)          | \$ 384,925               |
| V11A          | Devlin Road Elementary Site (A&E)                    |                                    |                      | \$ 750,000           | \$ 750,000               |
| V11A          | Haymarket Drive ES Site (A&E)                        |                                    |                      | \$ 100,000           | \$ 100,000               |
| V11A          | Occoquan ES Activity Room (A&E)                      |                                    |                      | \$ 100,000           | \$ 100,000               |
| V11A          | Dumfries ES Renewal (A&E)                            |                                    |                      | \$ 300,000           | \$ 300,000               |
| V11A          | Potomac HS Renewal / Addition                        |                                    |                      | \$ 2,931,000         | \$ 2,931,000             |
| V11A          | Occoquan ES Activity Room                            |                                    |                      | \$ 953,053           | \$ 953,053               |
|               | <b>Total</b>   | \$ 48,235,000                      | \$ -                 | \$ -                 | \$ 48,235,000            |

**Bond Issuance:  
Virginia Public School Authority 2010 (V10A)**

| Bond Issuance | Project Name                           | Anticipated /Estimated Cost in CIP | Adjustments - Year 1 | Adjustments - Year 2 | Resulting Project Amount |
|---------------|--|------------------------------------|----------------------|----------------------|--------------------------|
|               |  | Original Bond Disbursement         |                      |                      |                          |
| V10A          | Linton Hall Road Elementary            | \$ 16,224,000                      | \$ (200,000)         | \$ (100,000)         | \$ 15,924,000            |
| V10A          | Patriot High School                    | \$ 37,285,000                      |                      | \$ (500,000)         | \$ 36,785,000            |
| V10A          | Reagan Middle                          | \$ 14,232,000                      | \$ (500,000)         | \$ 46,960            | \$ 13,778,960            |
| V10A          | T. Clay Wood Elementary                | \$ 14,494,000                      | \$ (200,000)         | \$ (350,000)         | \$ 13,944,000            |
| V10A          | Haymarket Drive Elementary (A&E)       |                                    | \$ 900,000           | \$ (141,275)         | \$ 758,725               |
| V10A          | Patriot High School (A&E)              |                                    |                      | \$ 44,315            | \$ 44,315                |
| V10A          | Potomac High School - Renewal/Addition |                                    |                      | \$ 1,000,000         | \$ 1,000,000             |
|               | <b>Total</b>                           | \$ 82,235,000                      | \$ -                 | \$ -                 | \$ 82,235,000            |

*Commonwealth of Virginia  
Comparative School Construction Cost Data*

**New Elementary Schools  
2008-09 through 2014-15**

| Year    | Project # | Name                               | Grades | Division              | Contract Award Date | Maximum <sup>1</sup> Operating Capacity | Building Cost | Site Cost   | Total <sup>2</sup> Cost | Total Sq Ft | Sq Ft/ Pupil | Total Cost/ Sq Ft | Building Only Cost/Sq Ft | Total Cost/ Pupil |
|---------|-----------|------------------------------------|--------|-----------------------|---------------------|---|---------------|-------------|-------------------------|-------------|--------------|-------------------|--------------------------|-------------------|
| 2014-15 | 137-139   | New Lexington Elementary           | PK-5   | Lexington City        | Aug-14              | 480                                     | \$12,500,000  | \$1,605,000 | \$14,105,000            | 53,804      | 112          | \$262.16          | \$232.32                 | \$29,385          |
|         | 053-103   | ES-27                              | K-5    | Loudoun County        | Apr-15              | 1,012                                   | \$18,903,548  | \$4,491,800 | \$23,395,348            | 105,757     | 105          | \$221.22          | \$178.75                 | \$23,118          |
|         | 117-13    | Magruder Elementary Repl           | K-5    | Newport News City     | Jul-14              | 916                                     | \$20,371,304  | \$2,444,695 | \$22,815,999            | 97,612      | 107          | \$233.74          | \$208.70                 | \$24,908          |
|         | 075-111   | Ferlazzo Elementary                | K-5    | Prince William County | Mar-15              | 921                                     | \$16,753,000  | \$4,000,000 | \$20,753,000            | 106,354     | 115          | \$195.13          | \$157.52                 | \$22,533          |
|         | 132-09    | John Kerr Elementary               | PK-5   | Winchester City       | Apr-14              | 853                                     | \$15,030,000  | \$1,565,000 | \$16,595,000            | 94,000      | 110          | \$176.54          | \$159.89                 | \$19,455          |
| 2013-14 | 075-110   | Devlin Road Elementary             | K-5    | Prince William Co     | Dec-13              | 905                                     | \$16,186,000  | \$4,100,000 | \$20,286,000            | 107,273     | 119          | \$189.11          | \$150.89                 | \$22,415          |
| 2012-13 | 075-108   | Haymarket Elementary               | K-5    | Prince William Co     | Feb-13              | 868                                     | \$14,396,000  | \$4,392,000 | \$18,788,000            | 99,135      | 114          | \$189.52          | \$145.22                 | \$21,645          |
|         | 139-58    | South Salem                        | K-5    | Salem City            | Apr-12              | 600                                     | \$13,235,950  | \$1,667,250 | \$14,903,200            | 90,913      | 152          | \$163.93          | \$145.59                 | \$24,839          |
|         | 086-76    | New Elementary <sup>3</sup>        | PK-5   | Smyth Co              | Nov-11              | 603                                     | \$11,122,199  | \$4,078,016 | \$15,200,215            | 83,717      | 139          | \$181.57          | \$132.85                 | \$25,208          |
| 2011-12 | 043-97    | West Area ES #9                    | K-5    | Henrico Co            | Jun-11              | 788                                     | \$11,394,069  | \$1,473,256 | \$12,867,325            | 78,400      | 99           | \$164.12          | \$145.33                 | \$16,329          |
|         | 053-38    | Moorefield Station                 | K-5    | Loudoun Co            | Apr-12              | 988                                     | \$15,393,220  | \$3,449,571 | \$18,842,791            | 105,951     | 107          | \$177.84          | \$145.29                 | \$19,072          |
|         | 053-100   | Discovery                          | K-5    | Loudoun Co            | Apr-12              | 988                                     | \$14,951,844  | \$3,954,311 | \$18,906,155            | 105,951     | 107          | \$178.44          | \$141.12                 | \$19,136          |
|         | 123-50    | Oak Grove <sup>4</sup>             | K-5    | Richmond City         | Sep-11              | 704                                     | \$14,857,440  | \$2,103,216 | \$16,960,656            | 90,810      | 129          | \$186.77          | \$163.61                 | \$24,092          |
|         | 123-110   | Broad Rock/Bellemeade <sup>5</sup> | K-5    | Richmond City         | Sep-11              | 704                                     | \$16,849,512  | \$2,495,489 | \$19,345,001            | 90,810      | 129          | \$213.03          | \$185.55                 | \$27,479          |
| 2010-11 | 029-78    | Lacey                              | K-6    | Fairfax Co            | Jul-10              | 935                                     | \$11,880,100  | \$1,868,900 | \$13,749,000            | 98,590      | 105          | \$139.46          | \$120.50                 | \$14,705          |
|         | 029-99    | Graham Road                        | PK-6   | Fairfax Co            | Sep-10              | 400                                     | \$10,121,565  | \$369,435   | \$10,491,000            | 81,354      | 203          | \$128.95          | \$124.41                 | \$26,228          |
|         | 053-53    | Frederick Douglass                 | K-5    | Loudoun Co            | Apr-11              | 940                                     | \$16,685,000  | \$5,206,000 | \$21,891,000            | 100,477     | 107          | \$217.87          | \$166.06                 | \$23,288          |
| 2009-10 | 121-148   | Simondale                          | PK-5   | Portsmouth City       | Nov-09              | 780                                     | \$11,066,000  | \$3,100,000 | \$14,166,000            | 80,000      | 103          | \$177.08          | \$138.33                 | \$18,162          |
|         | 128-72    | College Park <sup>6</sup>          | K-5    | Va Beach City         | Jan-10              | 616                                     | \$14,738,600  | \$3,184,000 | \$17,922,600            | 94,231      | 153          | \$190.20          | \$156.41                 | \$29,095          |
|         | 80-53     | Mason Cove                         | PK-5   | Roanoke Co            | Dec-09              | 336                                     | \$7,763,717   | \$2,073,341 | \$9,837,058             | 52,530      | 156          | \$187.27          | \$147.80                 | \$29,277          |
|         | 60-2      | Prices' Fork                       | PK-5   | Montgomery Co         | Jan-10              | 838                                     | \$13,666,750  | \$1,933,250 | \$15,600,000            | 106,300     | 127          | \$146.75          | \$128.57                 | \$18,616          |
|         | 75-104    | Kettle Run                         | K-5    | Prince William Co     | Mar-10              | 889                                     | \$12,476,000  | \$1,383,000 | \$13,859,000            | 104,829     | 118          | \$132.21          | \$119.01                 | \$15,589          |
|         | 75-105    | Linton Hall                        | K-5    | Prince William Co     | May-10              | 889                                     | \$13,281,981  | \$2,527,726 | \$15,809,707            | 104,829     | 118          | \$150.81          | \$126.70                 | \$17,784          |
| 2008-09 | 5A-8A     | Moss Knuckols <sup>7</sup>         | PK-5   | Louisa Co             | Sep-08              | 792                                     | \$10,569,784  | \$2,822,216 | \$13,392,000            | 85,620      | 108          | \$156.41          | \$123.45                 | \$16,909          |
|         | 131-19A   | 9th Elementary <sup>8</sup>        | PK-5   | Williamsburg/JC Co    | Nov-08              | 730                                     | \$15,958,569  | \$1,882,650 | \$17,841,219            | 93,247      | 128          | \$191.33          | \$171.14                 | \$24,440          |
|         | 60-3A     | Elliston Shawsville <sup>9</sup>   | PK-5   | Montgomery Co         | Nov-08              | 838                                     | \$15,920,182  | \$2,685,818 | \$18,606,000            | 106,300     | 127          | \$175.03          | \$149.77                 | \$22,203          |
|         | 53-45A    | Buffalo Trail <sup>10</sup>        | K-5    | Loudoun Co            | Jan-09              | 989                                     | \$10,714,000  | \$5,639,290 | \$16,353,290            | 102,141     | 103          | \$160.11          | \$104.89                 | \$16,535          |

\* The final report for 2013-14 will be generated after June 30, 2014.

1 - Division operating capacity may differ from SOL maximum capacity. Pre-kindergarten classrooms counted at 16 students, grades K-3 classrooms counted at 24:1, grades 4-5 classrooms counted at 25:1.

2 - Usually includes construction, site development, water system, sewage disposal, built-in equipment and demolition. A&E fees, value engineering, construction management fees, cost of site, loose equipment, and furniture are excluded.

3 - Site cost include \$270,000 for egress road and \$924,000 for off site utilities.

4 - Excludes cost of community center, and includes cost for the demolition of the existing building.

5 - Includes cost of demolition of old school building.

6 - Site cost includes \$135,000 for demolition of existing school and abatement work.

7 - Includes on-site sewage treatment plant and on-site water system.

8 - Site cost was split proportionally with new middle school being built on same site.

9 - Includes \$321,690 for off-site sewer, force main and pump station.

10 - Includes off-site developer cost for \$1,931,290 which is in the general contract.

## New Middle Schools 2008-09 through 2014-15

| Year    | Project # | Name                            | Grades | Division           | Contract Award Date | Maximum <sup>1</sup> Operating Capacity | Building Cost | Site Cost   | Total <sup>2</sup> Cost | Total Sq Ft | Sq Ft/ Pupil | Total Cost/ Sq Ft | Building Only Cost/Sq Ft | Total Cost/ Pupil |
|---------|-----------|---------------------------------|--------|--------------------|---------------------|---|---------------|-------------|-------------------------|-------------|--------------|-------------------|--------------------------|-------------------|
| 2014-15 | 034-53    | Frederick County Middle         | 6-8    | Frederick County   | Nov-15              | 921                                     | \$35,592,328  | \$5,907,672 | \$41,500,000            | 186,163     | 202          | \$222.92          | \$191.19                 | \$45,060          |
|         | 036-802   | New Page Middle                 | 6-8    | Gloucester County  | Sep-15              | 738                                     | \$18,931,000  | \$3,922,763 | \$22,853,763            | 118,237     | 160          | \$193.29          | \$160.11                 | \$30,967          |
| 2013-14 | 101-09    | Jefferson-Houston               | PK-8   | Alexandria City    | Jun-13              | 805                                     | \$31,961,348  | \$4,695,397 | \$36,656,745            | 124,500     | 155          | \$294.43          | \$256.72                 | \$45,536          |
| 2012-13 | 053-104   | Trailside                       | 6-8    | Loudoun Co         | Jun-12              | 1,154                                   | \$26,874,012  | \$3,221,898 | \$30,095,910            | 175,064     | 152          | \$171.91          | \$153.51                 | \$26,080          |
|         | 123-77    | Martin Luther King <sup>3</sup> | 6-8    | Richmond City      | Apr-12              | 847                                     | \$27,306,636  | \$2,835,518 | \$30,142,154            | 149,600     | 177          | \$201.48          | \$182.53                 | \$35,587          |
| 2011-12 | 075-107   | Nokesville K-8 School           | K-8    | Prince William Co  | Jun-12              | 924                                     | \$22,602,000  | \$5,800,000 | \$28,402,000            | 141,832     | 153          | \$200.25          | \$159.36                 | \$30,738          |
| 2010-11 |           | <i>No Projects Reported</i>     |        |                    |                     |   |               |             |                         |             |              |                   |                          |                   |
| 2009-10 | 75-103A   | Ronald Reagan Middle            | 6-8    | Prince William Co  | Feb-10              | 1,102                                   | \$15,265,478  | \$3,648,522 | \$18,914,000            | 133,480     | 121          | \$141.70          | \$114.37                 | \$17,163          |
|         | 29-231A   | South County                    | 6-8    | Fairfax Co         | Mar-10              | 1,172                                   | \$19,293,100  | \$2,656,900 | \$21,950,000            | 176,021     | 150          | \$124.70          | \$109.61                 | \$18,729          |
|         | 53-58A    | J. Michael Lunsford             | 6-8    | Loudoun Co         | Jan-10              | 1,351                                   | \$24,145,000  | \$4,281,000 | \$28,426,000            | 177,880     | 132          | \$159.80          | \$135.74                 | \$21,041          |
| 2008-09 | 43-95A    | West Area <sup>4</sup>          | 6-8    | Henrico Co         | Aug-08              | 1,000                                   | \$19,715,150  | \$3,500,000 | \$23,215,150            | 120,024     | 120          | \$193.42          | \$164.26                 | \$23,215          |
|         | 131-19.1  | 4th Middle School <sup>5</sup>  | 6-8    | Williamsburg/JC Co | Nov-09              | 830                                     | \$26,031,431  | \$3,822,350 | \$29,853,781            | 145,458     | 175          | \$205.24          | \$178.96                 | \$35,968          |
|         | 128-43A   | Great Neck <sup>6</sup>         | 6-8    | Va Beach City      | Jul-09              | 1,212                                   | \$28,706,998  | \$6,320,002 | \$35,027,000            | 223,260     | 184          | \$156.89          | \$128.58                 | \$28,900          |
|         | 68-4A     | Orange <sup>7</sup>             | 6-8    | Orange Co          | Feb-09              | 1,295                                   | \$24,947,000  | \$5,460,000 | \$30,407,000            | 169,320     | 131          | \$179.58          | \$147.34                 | \$23,480          |

\* The final report for 2013-14 will be generated after June 30, 2014.

1 - Division operating capacity may differ from SOL maximum capacity. State SOL capacity based on a pupil teacher ratio of 25:1 in core classrooms.

2 - Usually includes construction, site development, water system, sewage disposal, built-in equipment and demolition. A&E fees, value engineering, construction management fees, cost of site, loose equipment, and furniture are excluded.

3 - Cost include \$400,000 for site and building demolition, and a 2,835 square foot auxiliary gym.

4 - Building cost includes technology system and storage shed. Site cost includes \$185,000 traffic signal.

5 - Site cost split proportionally with new elementary school being built on the same site.

6 - Site cost includes \$611,420 for demolition of existing middle school building and asbestos abatement.

7 - Site cost includes \$2,060,000 for water, sewer, water tank, and road widening.

## New High Schools 2008-09 through 2014-15

| Year    | Project # | Name                              | Grades | Division              | Contract Award Date | Maximum <sup>1</sup> Operating Capacity | Building Cost | Site Cost    | Total <sup>2</sup> Cost | Total Sq Ft | Sq Ft/<br>Pupil | Total Cost/<br>Sq Ft | Building Only<br>Cost/Sq Ft | Total Cost/<br>Pupil |
|---------|-----------|-----------------------------------|--------|-----------------------|---------------------|---|---------------|--------------|-------------------------|-------------|-----------------|----------------------|-----------------------------|----------------------|
| 2014-15 | 115-13    | New Heritage High                 | 9-12   | Lynchburg City        | Apr-14              | 1,452                                   | \$42,544,428  | \$20,879,572 | \$63,424,000            | 266,151     | 183             | \$238.30             | \$159.85                    | \$43,680             |
|         | 096-101   | Union High School                 | 9-12   | Wise County           | Nov-11              | 863                                     | \$23,562,210  | \$943,772    | \$24,505,982            | 126,508     | 147             | \$193.71             | \$186.25                    | \$28,396             |
|         | 096-103   | Central High School               | 9-12   | Wise County           | Nov-11              | 863                                     | \$25,082,622  | \$411,396    | \$25,494,018            | 126,508     | 147             | \$201.52             | \$198.27                    | \$29,541             |
| 2013-14 | 054-60    | Louisa County High School         | 9-12   | Louisa County         | Jul-13              | 2,011                                   | \$46,473,432  | \$2,059,570  | \$48,533,002            | 272,834     | 136             | \$177.88             | \$170.34                    | \$24,134             |
|         | 053-106   | Twelfth High School               | 9-12   | Prince William County | Dec-13              | 2,140                                   | \$78,907,000  | \$19,000,000 | \$97,907,000            | 425,176     | 199             | \$230.27             | \$185.59                    | \$45,751             |
|         | 053-106   | New Huguenot High School          | 9-12   | Richmond City         | Jun-12              | 1,574                                   | \$51,991,220  | \$10,283,262 | \$62,274,482            | 253,821     | 161             | \$245.35             | \$204.83                    | \$39,564             |
|         | 053-106   | Stafford High School Repl         | 9-12   | Stafford County       | Jun-13              | 2,102                                   | \$50,715,200  | \$9,106,800  | \$59,822,000            | 281,653     | 134             | \$212.40             | \$180.06                    | \$28,460             |
| 2012-13 | 053-106   | HS-6 at Loudoun Valley Estates II | 9-12   | Loudoun County        | Feb-13              | 1,949                                   | \$56,548,276  | \$6,971,776  | \$63,520,052            | 283,422     | 145             | \$224.12             | \$199.52                    | \$32,591             |
|         | 060-83    | Blacksburg High School            | 9-12   | Montgomery County     | Jul-11              | 1,650                                   | \$47,258,625  | \$7,621,578  | \$54,880,203            | 293,286     | 178             | \$187.12             | \$161.13                    | \$33,261             |
|         | 060-65    | New Auburn High School            | 9-12   | Montgomery County     | Jul-11              | 853                                     | \$27,985,261  | \$4,261,737  | \$32,246,998            | 180,940     | 212             | \$178.22             | \$154.67                    | \$37,804             |
| 2011-12 | 128-107   | Kellum Replacement <sup>3</sup>   | 9-12   | Va Beach City         | Aug-11              | 2,000                                   | \$58,909,096  | \$15,013,694 | \$73,922,790            | 350,952     | 175             | \$210.64             | \$167.86                    | \$36,961             |
| 2010-11 | 007-45    | Wakefield                         | 9-12   | Arlington Co          | May-11              | 2,173                                   | \$77,389,376  | \$11,000,623 | \$88,389,999            | 382,102     | 176             | \$231.33             | \$202.54                    | \$40,676             |
|         | 022-31    | NEW Clarke County                 | 9-12   | Clarke Co             | Jul-10              | 884                                     | \$19,550,000  | \$3,750,000  | \$23,300,000            | 162,050     | 183             | \$143.78             | \$120.64                    | \$26,357             |
|         | 053-37    | John Champe <sup>4</sup>          | 9-12   | Loudoun Co            | Jan-11              | 1,955                                   | \$40,996,000  | \$19,766,000 | \$60,762,000            | 275,574     | 141             | \$220.49             | \$148.77                    | \$31,080             |
| 2009-10 |           | <i>No Projects Reported</i>       |        |                       |                     |   |               |              |                         |             |                 |                      |                             |                      |
| 2008-09 | 43-96A    | Henrico #1 <sup>5</sup>           | 9-12   | Henrico Co            | Oct-08              | 1,868                                   | \$50,700,000  | \$7,133,623  | \$57,833,623            | 255,000     | 137             | \$226.80             | \$198.82                    | \$30,960             |
|         | 53-20A    | Tuscarora <sup>6</sup>            | 9-12   | Loudoun Co            | Dec-08              | 1,895                                   | \$45,071,040  | \$11,000,000 | \$56,071,040            | 279,426     | 147             | \$200.67             | \$161.30                    | \$29,589             |
|         | 53-59A    | Woodgrove <sup>7</sup>            | 9-12   | Loudoun Co            | Jan-09              | 1,651                                   | \$44,375,000  | \$9,500,000  | \$53,875,000            | 251,915     | 153             | \$213.86             | \$176.15                    | \$32,632             |
|         | 32-20A    | Fluvanna <sup>8</sup>             | 9-12   | Fluvanna Co           | Mar-09              | 1,633                                   | \$44,379,363  | \$12,486,637 | \$56,866,000            | 314,389     | 193             | \$180.88             | \$141.16                    | \$34,823             |
|         | 75-102A   | 11th High School                  | 9-12   | Prince William Co     | Jan-09              | 2,041                                   | \$58,655,600  | \$12,043,400 | \$70,699,000            | 312,067     | 153             | \$226.55             | \$187.96                    | \$34,639             |

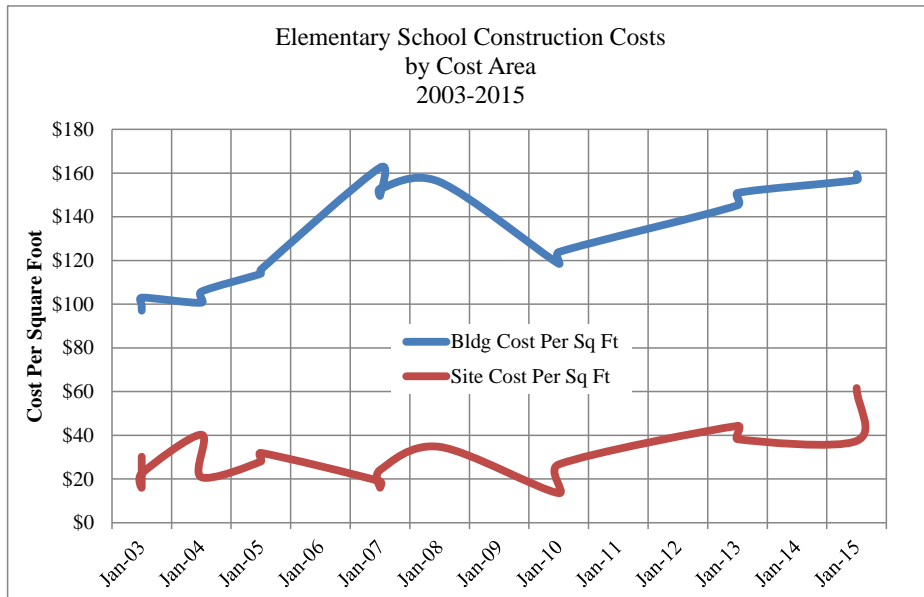
- 1 - Division operating capacity may differ from SOL maximum capacity. State operating capacity is generally based on a pupil teacher ratio of 25:1 in all program areas, at 90 percent.
- 2 - Usually includes construction, site development, water system, sewage disposal, built-in equipment and demolition. A&E fees, value engineering, construction management fees, cost of site, loose equipment, and furniture are excluded.
- 3 - Project cost includes required road widening, new turning lanes, football stadium, track, play fields, and other outside practice facilities.
- 4 - \$3,250,000 for required off-site road improvements.
- 5 - Total cost includes field house at \$1,480,000 and terrazzo flooring at \$300,500.
- 6 - Heavy grading, rock removal, as well as environmental issues increased site cost.
- 7 - On-site water and sewer systems were additional site costs.
- 8 - The base high school capacity is 1,633 students. The building includes spaces for career, technical and vocational programs for 100 additional students and core support facilities were sized for an additional 250 students.

## Elementary School Construction Cost Data

### Prince William County Schools 2003-04 through 2014-15

| Elementary School       | Building Square Footage | School Construction Contract |                    |                         | Building Cost   |                     | Site Cost       |                     |
|-------------------------|-------------------------|------------------------------|--------------------|-------------------------|-----------------|---------------------|-----------------|---------------------|
|                         |                         | Bid Date                     | Bid Contract Total | Contract Cost Per Sq Ft | Bldg Cost Total | Bldg Cost Per Sq Ft | Site Cost Total | Site Cost Per Sq Ft |
| Kilby ES Repl.          | 98,976                  | Mar-15                       | \$21,888,000       | \$221.14                | \$15,788,000    | \$159.51            | \$6,100,000     | \$61.63             |
| Ferlazzo                | 106,854                 | Feb-15                       | \$20,753,000       | \$194.22                | \$16,753,000    | \$156.78            | \$4,000,000     | \$37.43             |
| Devlin Road             | 107,273                 | Dec-13                       | \$20,286,000       | \$189.11                | \$16,186,000    | \$150.89            | \$4,100,000     | \$38.22             |
| Haymarket <sup>5</sup>  | 99,135                  | Jan-13                       | \$18,788,000       | \$189.52                | \$14,396,000    | \$145.22            | \$4,392,000     | \$44.30             |
| Wood <sup>4</sup>       | 104,958                 | Feb-10                       | \$13,859,000       | \$132.04                | \$12,437,000    | \$118.50            | \$1,422,000     | \$13.55             |
| Piney Branch            | 104,958                 | Feb-10                       | \$15,799,000       | \$150.53                | \$12,999,000    | \$123.85            | \$2,800,000     | \$26.68             |
| Triangle                | 103,679                 | Feb-08                       | \$19,769,000       | \$190.68                | \$16,169,000    | \$155.95            | \$3,600,000     | \$34.72             |
| Yorkshire               | 106,614                 | Jun-07                       | \$18,863,000       | \$176.93                | \$16,292,000    | \$152.81            | \$2,571,000     | \$24.12             |
| Gravely                 | 95,074                  | Feb-07                       | \$17,250,000       | \$181.44                | \$15,449,000    | \$162.49            | \$1,801,000     | \$18.94             |
| Fitzgerald <sup>3</sup> | 106,170                 | Feb-07                       | \$17,580,000       | \$165.58                | \$15,880,000    | \$149.57            | \$1,700,000     | \$16.01             |
| Buckland Mills          | 89,911                  | Feb-05                       | \$12,765,000       | \$141.97                | \$10,245,000    | \$113.95            | \$2,520,000     | \$28.03             |
| Parks                   | 83,084                  | Feb-05                       | \$12,277,000       | \$147.77                | \$9,622,000     | \$115.81            | \$2,655,000     | \$31.96             |
| Glenkirk                | 83,084                  | Feb-04                       | \$11,711,000       | \$140.95                | \$8,364,000     | \$100.67            | \$3,347,000     | \$40.28             |
| Victory <sup>2</sup>    | 89,911                  | Feb-04                       | \$11,380,000       | \$126.57                | \$9,505,000     | \$105.72            | \$1,875,000     | \$20.85             |
| Williams <sup>1</sup>   | 83,084                  | Feb-03                       | \$10,570,000       | \$127.22                | \$8,061,000     | \$97.02             | \$2,509,000     | \$30.20             |
| Ellis                   | 76,724                  | Feb-03                       | \$8,869,000        | \$115.60                | \$7,638,000     | \$99.55             | \$1,231,000     | \$16.04             |
| Porter                  | 71,245                  | Feb-03                       | \$8,945,000        | \$125.55                | \$7,338,000     | \$103.00            | \$1,607,000     | \$22.56             |

- 1 Actual bid was 12.570. Approximately 2.0 million is for site work associated with adjacent middle school. For project comparison purposes bid amount and site sq. ft. amounts have been adjusted accordingly.  
 2 This site was pre-graded by the developer, value approximately 1.2 million. For project comparison purposes add 13.35 to project sq. ft. cost and to site sq. ft. cost.  
 3 This site was pre-graded by the developer, value approximately 700K. For project comparison purposes add 6.59 to project sq. ft. cost and to site sq. ft. cost.  
 4 This site was pre-graded which included partial utilities infrastructure and bus loop as part of the adjacent high school project, value approximately 650K. For project comparison purposes add 6.19 to project sq. ft. cost and to site sq. ft. cost.  
 5 This site was heavily wooded and contained \$845k in offsite utility / roadwork cost.



## *APPENDIX E*

# *Energy Management*



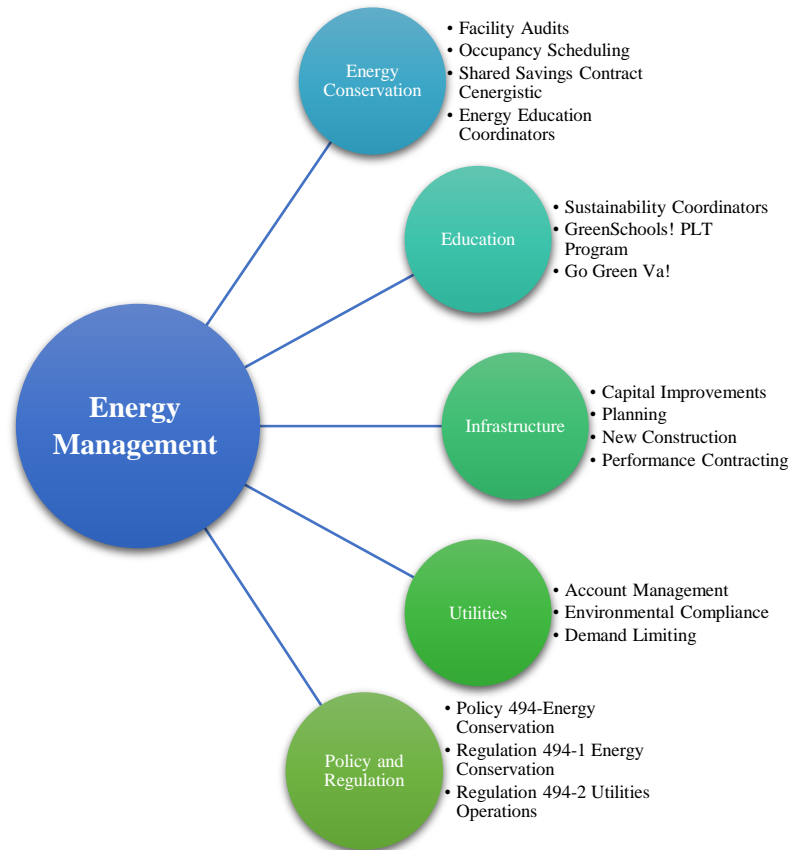


# Energy Management

Energy Management in Prince William County Public Schools (PWCS) utilizes a multifaceted approach to stewardship and conservation. Policy 494 states that the School Board will embrace energy conservation and believes it to be the responsibility of the School Board to conserve energy and natural resources. Support and program oversight are the responsibility of the Office of Facilities Services, however, each school or facility shall designate a site administrator who will be accountable for energy conservation.

Implementation of the energy conservation program shall be through a team led by the Office of Facilities Services' Administrative Coordinator, Energy Management, and Energy Education Coordinator(s), in accordance with Regulation 494-1. All decisions related to the implementation of this policy shall be firmly grounded in common sense.

Accurate records of energy consumption and cost will be maintained by the Office of Facilities Services for each site to provide verifiable performance results on the goals and progress of the energy conservation program.



## Energy Conservation

### Energy Education Coordinators

Energy Education Coordinators work to establish accountability for energy consumption at every level in the organization. These individuals are responsible for developing and monitoring the organization's energy management program, under School Board approved policies and regulations, for the purpose of reducing utility consumption.

Basic areas of responsibility include: administration and recordkeeping, accountability, reporting, program implementation, promoting organizational employee involvement, and validating energy management system compliance to the energy policy and guidelines. Energy Education Coordinators use EnergyCAP software to monitor energy usage trends.

The role of the Energy Education Coordinators is instrumental in the success of the energy conservation program and helping retain funds where they are most important – in the classroom.

## Facility Audits

Sites within PWCS will be visited by an Energy Education Coordinator regularly. Audits conducted during the normal school week will assess the ability of staff to interpret and apply Policy 494 and Regulation 494-1. Audits will primarily be conducted after hours and during periods of low occupancy. Each site will also be reviewed during holiday periods, Code Red, and Code Green closings as well as extended shutdown periods such as the winter break, spring break, and summer vacation.

## Facility Occupancy Scheduling

Facility use and scheduling is a critical component of energy management in PWCS. Each facility is assessed for its occupancy and use patterns in order to identify periods of inactivity and low usage. Mechanical systems are then programmed through automated building control systems to reduce mechanical operation and therefore energy consumption during periods of low usage. Schedules are reviewed regularly with site based administrators and adjusted for seasonal patterns and system performance. School locations conducting events scheduled before or after normal school hours are required to enter these activities into “FacilityDirect” software. Per Regulation 494-1, “Energy Conservation”, HVAC settings will revert to those designated for an unoccupied state after hours, during weekends and on holidays. If heating or air conditioning is needed for a scheduled activity, staff is required to check the HVAC box to indicate as such in the request. Failure to do so will result in no available HVAC service. Events are entered no later than a week in advance, so that the service can be scheduled in a timely manner.

## Cenergistic, Inc.

In June 2012, PWCS entered into a shared savings contract with Cenergistic, Inc. to generate savings based on behavioral changes and operational strategic planning. The contractor has assisted with staffing recommendations, EnergyCAP software integration, and program methodology. The term of this contract is five years and will expire in 2017. Savings shared through this agreement are compared to a baseline of utility expenses from the 2011-2012 school year. PWCS retains 65% of the savings attributable to this program.

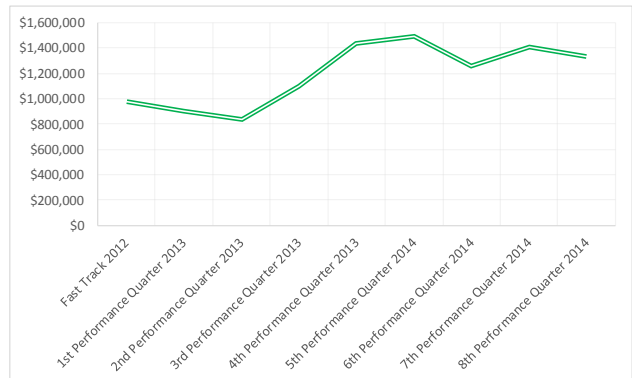
### Energy Conservation Savings

July 2012 – January 2015

| Period                       | Month     | Savings             |              | Period Totals |
|------------------------------|-----------|---------------------|--------------|---------------|
|                              |           | \$                  | %            |               |
| Fast Track 2012              | July      | \$107,942           | 6.7%         | \$975,066     |
|                              | August    | \$116,683           | 6.8%         |               |
|                              | September | \$115,129           | 6.4%         |               |
|                              | October   | \$201,803           | 11.7%        |               |
|                              | November  | \$228,397           | 12.3%        |               |
|                              | December  | \$205,112           | 11.5%        |               |
| 1st Performance Quarter 2013 | January   | \$241,398           | 12.7%        | \$902,547     |
|                              | February  | \$257,124           | 13.9%        |               |
|                              | March     | \$404,025           | 22.3%        |               |
| 2nd Performance Quarter 2013 | April     | \$283,823           | 16.8%        | \$841,568     |
|                              | May       | \$290,204           | 15.7%        |               |
|                              | June      | \$267,541           | 15.9%        |               |
| 3rd Performance Quarter 2013 | July      | \$419,415           | 23.9%        | \$1,096,077   |
|                              | August    | \$383,781           | 20.9%        |               |
|                              | September | \$292,881           | 15.5%        |               |
| 4th Performance Quarter 2013 | October   | \$316,583           | 17.4%        | \$1,440,784   |
|                              | November  | \$529,088           | 25.8%        |               |
|                              | December  | \$595,113           | 26.8%        |               |
| 5th Performance Quarter 2014 | January   | \$542,022           | 23.4%        | \$1,491,593   |
|                              | February  | \$452,753           | 20.7%        |               |
|                              | March     | \$496,818           | 24.5%        |               |
| 6th Performance Quarter 2014 | April     | \$513,491           | 26.9%        | \$1,257,901   |
|                              | May       | \$389,869           | 20.1%        |               |
|                              | June      | \$354,541           | 17.9%        |               |
| 7th Performance Quarter 2014 | July      | \$564,087           | 30.7%        | \$1,406,486   |
|                              | Aug       | \$455,058           | 23.7%        |               |
|                              | September | \$387,341           | 16.7%        |               |
| 8th Performance Quarter 2014 | October   | \$392,627           | 20.8%        | \$1,331,879   |
|                              | November  | \$433,888           | 21.3%        |               |
|                              | December  | \$505,364           | 23.0%        |               |
| 9th Performance Quarter 2015 | January   | \$415,955           | 18.4%        | \$415,955     |
|                              | February  |                     |              |               |
|                              | March     |                     |              |               |
| <b>Total Program Savings</b> |           | <b>\$11,159,856</b> | <b>18.8%</b> |               |

### Energy Conservation Savings

July 2012 – January 2015



### **Sustainability Coordinators**

Sustainability is the dedicated effort of an organization, working together, to reduce the use of finite resources. By evaluating everything from the materials used in the construction of our new schools and renovations, to enhanced storm water management, sustainable purchasing, energy efficiency and environmental literacy in the classroom, we as a group can decrease the negative impact our activities have on our world, starting today.

The role of a Sustainability Coordinator is not an intense one, but it is very important. Sustainability Coordinators function as ambassadors on behalf of the Energy Management division, conveying our collective message of environmental leadership to each individual site. Each coordinator will be encouraged to create opportunities for discussions about sustainability and energy conservation. The Office of Facilities Services will provide tools for the development of a sustainable culture within each school. Volunteers requiring recertification points could potentially earn up to 5 hours for participation as a site based Sustainability Coordinator.

### **Project Learning Tree**

The Office of Facilities Services incorporates education into the overall strategic plan for the School Division. Energy Management staff support the development and implementation of GreenSchools! modules that focus on Energy, Water, Waste and Recycling, and Environmental Quality. Modules are registered with the Office of Student Learning and the Professional Learning Catalog under SCI 706. Participants requiring recertification points receive 5 hours for participation in the annual training workshop.

GreenSchools! investigations bolster science, technology, engineering, and math (STEM) education while promoting sustainable schools. They provide students with opportunities to actively engage in scientific inquiry as they solve real-world environmental issues at their school. PLT GreenSchools! is a program of the American Forest Foundation, in partnership with the 50-state PLT network, the U.S. Forest Service, the Corporation for National and Community Service, and many other national, state, and local partners.

### **Go Green Va.!**

The Go Green Va.! program is sponsored by the Virginia School Board Association. The program requires annual documentation and planning for issues relating to environmental stewardship, energy management, indoor air quality and education of students in the classroom regarding sustainable strategies. PWCS has participated since 2009 earning both the Certified Green School Division award and the Silver Green School certification.

**Account Management**

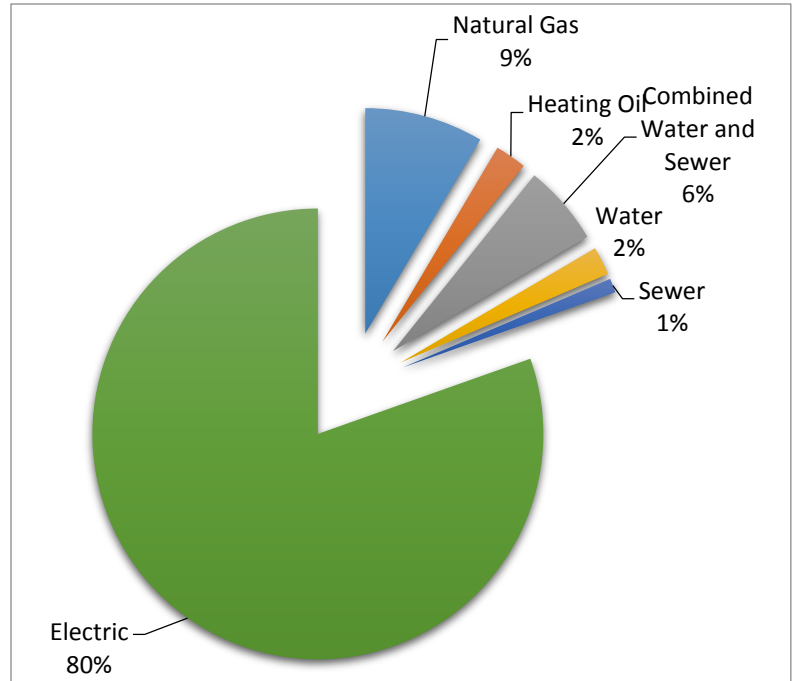
Regulation 494-2 establishes responsibilities and operating procedures for the management of utilities by the Office of Facilities Services. It is the responsibility of staff to provide operating utilities and technical services supporting the proper maintenance and operation of school facilities. All utility invoices are processed using customized software called "UtilityDirect." The Administrative Coordinator, Energy Management functions as the liaison for third party contracts and utilities provided by private corporations and companies.

Utilities covered by this provision include:

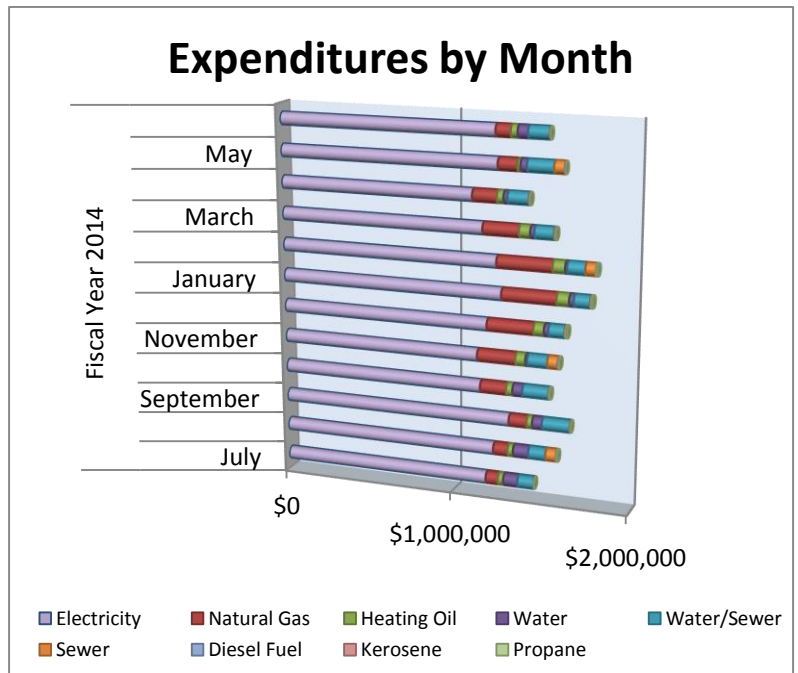
- Heating Fuels
- Electrical Services
- Water and Sewer Services
- Motorized Fuels

Utility bill data for all PWCS sites is now available for access by the public through the PWCS Energy Management website.

**Monthly Utility Expenditures  
By Commodity**  
*Fiscal Year 2014*



**Expenditures by Month**



## **Environmental Compliance**

Prior to procurement, delivery or payment of any heating and/or motorized fuels, the Administrative Coordinator, Energy Management ensures coordination with the Administrative Coordinator, Environmental Services, to verify proper delivery techniques, inspect spill control methods, and verify quantity delivered.

## **Demand Limiting**

Due to the constraints of available electrical utility capacity and required demand, it has become essential for utility providers at times to control the distribution of electricity. Demand limiting engages customers to reduce their personal or corporate consumption when possible, during critical times, so as not to overload the electrical grid. Utilities sub-contract the administration of demand limiting programs. Enrollment in such programs means utility customers may be notified of a critical period and subsequently, voluntarily, curtail usage where possible. A rebate is provided based on the extent of curtailment pursued. These peak periods are generally during the summer.

Over summer break, demand limiting presents a great opportunity for Prince William County Schools to pursue the benefits of demand limiting as a potential revenue source. Our facilities currently operate on a reduced schedule during these times.

## Facility Infrastructure Improvements

### Facility Infrastructure Fund

The PWCS Capital Improvement Program calls for a portion of the anticipated energy conservation savings to be directed towards continued investment in infrastructure improvements capable of generating

### Anticipated Energy Infrastructure Funding Priorities Fiscal Years 2016-2020

| Energy Infrastructure Improvement Project                                   | Fiscal Year        |                    |                    |                    |                    |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
|   | 2016               | 2017               | 2018               | 2019               | 2020               |
| Building Automation Improvements  | \$ 150,000         | \$ 150,000         | \$ 150,000         | \$ 150,000         | \$ 150,000         |
| Boiler Fuel Conversions   | \$ 200,000         | \$ 200,000         | \$ 200,000         | \$ 200,000         | \$ 200,000         |
| Lighting Control Systems  | \$ 150,000         | \$ 150,000         | \$ 150,000         | \$ 50,000          | \$ 50,000          |
| Mechanical Infrastructure (Supplemental Heating, Cooling, Dehumidification) | \$ 300,000         | \$ 300,000         | \$ 300,000         | \$ 400,000         | \$ 400,000         |
| Building Envelope/Thermal Insulation  | \$ 200,000         | \$ 200,000         | \$ 200,000         | \$ 100,000         | \$ 100,000         |
| Third-Party Energy Audits   |                    |                    |                    | \$ 100,000         | \$ 100,000         |
| <b>Total</b>  | <b>\$1,000,000</b> | <b>\$1,000,000</b> | <b>\$1,000,000</b> | <b>\$1,000,000</b> | <b>\$1,000,000</b> |

additional savings and greater efficiency. Utilizing Energy Infrastructure Improvement funding allocated in the CIP creates sustainable facility improvements that serve a wide range of priorities within the Office of Facilities Services while creating measureable Return on Investment (ROI).

The Energy Management division has endeavored to work with a variety of stakeholders from throughout the School Division to identify priorities.

Applicable infrastructure improvements include:

- Conversion of heating systems from fuel oil to natural gas to reduce point of use cost.
- Building management control system installation, upgrades and modernization
- Lighting control systems.
- Lifecycle modernization/replacement of inefficient and poorly performing mechanical systems.
- Building envelope improvements for better insulated entry points, windows and exterior cladding.
- Sustainability focused enhancements designed to maximize educational opportunities derived directly from school facility sites (e.g. activity trails, ecological studies, civil engineering/ land survey training, renewable energy).

**Energy Infrastructure Improvement Projects  
Fiscal Years 2015 and 2016**

| <b>FY 2015</b>                                    |   |
|---|---|
| <b>Location</b>                                   | <b>Project Scope</b>  |
| <b>All Sites</b>                                  | Commission and Calibrate BAS systems, sensors and scheduling.<br>Upgrade programmable thermostats.  |
| <b>Central Transportation</b>                     | Veeder Root Upgrades for tracking Transportation Fuels  |
| <b>Mountain View ES / Marshall ES</b>             | Design upgrade HVAC System  |
| <b>Brentsville HS</b>                             | Evaluate and replace where needed, failed pipe insulation on cooling plant. Phase 1-FY2014; Phase 2- FY2015   |
| <b>Replace 256 School BAS Systems</b>             | Bring all systems to current standard   |
| <b>Replace Lighting at Hooe Rd Transportation</b> | T12 conversion to T8  |
| <b>Building Envelope Maintenance</b>              | Weather-stripping, Doors and Hardware   |
| <b>Water Tank Replacements</b>                    | Gar-Field HS, Woodbridge HS and Rippon MS require a combined electrical demand of 1,200,000 watts/4,092,000 BTUs. They would be replaced with heaters equaling a combined 360,000 watts max/1,227,600 BTUs. The sizing of the new heaters is based on actual usage recorded at each location. |

| <b>FY 2016</b>                       |   |
|--------------------------------------|---|
| <b>Location</b>                      | <b>Project Scope</b>  |
| <b>All Sites</b>                     | Expand Interval and Demand Management Program with Enernoc to enable more real time data analysis |
| <b>Mountain View Elementary</b>      | Install Natural Gas and Decommission Fuel Oil Storage System                                      |
| <b>Mountain View Elementary</b>      | Replace Domestic Hot Water Heaters and Boilers  |
| <b>Bel Air</b>                       | Lighting Upgrade to Energy Efficient T8   |
| <b>Occoquan Elementary</b>           | DX Based Cooling system with Variable Flow Refrigerant System                                     |
| <b>Brentsville HS</b>                | Evaluate GeoThermal HVAC Potential  |
| <b>Building 51</b>                   | Windows   |
| <b>Mountain View Elementary</b>      | Demand Defrost as Opposed to Timed  |
| <b>Hylton High School</b>            | Dishwasher Replacement  |
| <b>Building Envelope Maintenance</b> | Weather-stripping, Doors and Hardware   |

**Performance Contracting**

PWCS has endeavored to utilize all available tools at our disposal in our efforts to reduce facility operating costs. Executive Order 48, issued by the Governor of Virginia in 2008, created a contract that all state and public bodies may use for the assessment and improvement of energy consuming infrastructure. This arrangement aids in the reduction of lengthy competition as the contractors on the approved contract have been pre-qualified at the state level. Performance Contracting is specifically appropriate for aiding jurisdictions in lifecycle cost analysis and payback analysis. These two formulary tools are used in the study of a construction projects' anticipated financial performance. Performance Contractors can thereby propose to provide financing on behalf of Owners by allocating future savings toward the cost of the project.

In 2008, PWCS began utilizing the state Performance Contract through the use of federal ARRA funding. Currently, Hylton High School is still under a performance agreement whereby stipulated future savings may be shared between the Owner and the contractor.

## **New Construction**

The Office of Facilities Services is committed to the construction of energy efficient, highly performing facilities. Energy Management team members regularly review all energy consuming systems during the design and development of any building construction, renovation or alteration.

The Administrative Coordinator, Energy Management provides final coordination with the Supervisor of Construction for energy management related specifications and construction details.

The Energy Management Division is committed to year round advocacy for conservation efforts in PWCS.



