

CAPITAL IMPROVEMENTS PROGRAM

Fiscal Years
2019-28



Prince William County

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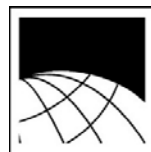
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Prince William County Public Schools

Capital Improvements Program Fiscal Years 2019-28

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CAPITAL IMPROVEMENTS PROGRAM

Overview - Fiscal Years 2019-28

Prince William County Schools (PWCS) is the second largest of 132 school divisions in the Commonwealth of Virginia and the 35th largest school division in the country. The School Division provides services to over seven percent of the state's student enrollment.

The total 2017-18 enrollment is 89,861 students with permanent capacity for 88,567 students. This capacity is supplemented with 207 instructional portable classrooms. Capital needs are determined through the development of the Capital Improvements Program (CIP) which is annually updated to maintain a ten-year projection of the School Division's capital needs based upon student population growth and needed school facility renovations and renewals. Permanent capacity is set to increase by 17,606 seats over the next ten years with completion of the school facility construction identified within this CIP.

PWCS is organized to focus on meeting the needs of its students and employees while managing 96 schools, along with administrative and support facilities. The CIP serves as a tool for planning and implementing the capital improvement projects needed to house these students and employees adequately.

Since it is difficult, if not impossible, to address all county and School Division needs in a single year, a long-term approach to balance expenditures with anticipated revenues must occur. Therefore, the CIP 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. Title IX improvements and Energy Infrastructure improvements are also elements of the CIP.

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 and/or additions, as well as renovations 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 2019) combined with a more general planning schedule for four additional years (FY 2020-23) and then an estimate of projects needed for FY 2024-28.

The projects designated for the first two years of the plan are the highest priority needs. Working cooperatively, the Prince William County School Board and the Prince William County Board of Supervisors, develop and implement a budget plan to address these needs.

Strategic Plan

The Prince William County Schools' Strategic Plan provides administrators and School Board members a vehicle to measure progress. All schools and departments are aligned with the same goals, objectives, and measures. With the comprehensive strategic plan as a road-map, it allows PWCS to focus on critical areas.

The CIP must meet the following goal and objective of the Strategic Plan:

GOAL 2: *The teaching, learning, and working environment is safe, caring, healthy, and values human diversity.*

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

2.3.1 *All School Division facilities will pass compliance audits and meet building code regulations.*

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 nine additions have been constructed, costing over \$443 million and adding capacity for 8,773 additional students. The new schools included four elementary schools, one high school, the PACE West School and Kilby Elementary School replacements, and the Nokesville K-8 school. The new Independence Nontraditional School transitioned the PACE East students in April 2018, with completion scheduled for summer 2018. The 54,323 square-foot maintenance facility was completed at the Independent Hill complex.

The new Covington-Harper Elementary School opened in September 2017, adding 750 student elementary seats in eastern Prince William County. The additions at Belmont Elementary School, Neabsco Elementary School, and Henderson Elementary School were completed and opened in September 2017, adding 28 classrooms.

Major renewals of 13 schools were completed in the last five years at a cost of over \$166 million. The renewals included Title IX improvements and energy infrastructure improvements.

Considerable progress has been made in adding activity rooms to elementary schools with renewals. To date, 73% of elementary and combined schools have activity rooms. By 2025, with renewals that include activity rooms, 90.5% of elementary and combined schools will have activity rooms.

Nursing suites and secure entrances have been added to schools with renovations. Music rooms have now been added to middle school renewals.

Additionally, the School Division continues 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.

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, 2017, is 89,861 students. From 2016 to 2017, total enrollment grew by 941 students, or 1.1 percent growth rate. This is compared to growth from 2015 to 2016 of 1,667 students, or 1.9 percent.

Predicting future enrollment is important for long-range planning, budgeting, staffing, and predicting future building and capital needs. The forecasting methodology used to predict the number of students who will be enrolling in PWCS for the next 10 years is a combination of cohort progression method and student generation factors method, along with judgmental adjustment to fine-tune the forecasts. This combination of methods provides for very accurate forecasts and at the same time is relatively inexpensive to produce.

2018-19 enrollment is projected to be 91,054 students, an increase of 1,193 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 Schools will encounter in the course of the current planning period.

Annually, the status of student housing is assessed for the next ten 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 1.8 percent. This will result in about 6,205 additional students during this period. Projected enrollments beyond 2018-19 allows for long range capital planning, such as planning for new school facilities and additions to existing school facilities. Where possible, additions are utilized as cost-effective alternatives to the construction of new facilities.

Program Capacity vs. Planning Capacity

The *Planning Capacity* of a school facility provides an estimate of the number of students who can be housed in a school based on averaged educational program need and staffing. The capacity for middle and high schools remains as Planning Capacity.

The *Program Capacity* of a school facility provides an estimate of the number of students who can be housed in a school based on the specific educational program currently utilized at the school facility. It is a more accurate and representative means of calculating an elementary school facility’s capacity, based on the actual “program” in place at the school. It is a calculation of current programs housed at a specific elementary school, including the effect of K-3 Class Size Reduction Grant (based on three-year average of free lunch eligibility percentage), special education program needs, gifted education program needs, and Pre-kindergarten program needs.

The 2017 enrollment capacities and projections are utilizing the Program Capacity figures at the elementary level for the CIP and boundary planning and will be updated annually to recalculate program capacities.

Major Changes from the 2018-27 CIP

New Construction Changes

- Middle School at Potomac Shores delayed one year to 2021 (Site Preparation Delay)
- Elementary School (Cherry Hill Area) delayed two years to 2023 (new Enrollment Projections)
- Elementary School (Yorkshire Area) delayed two years to 2024 (new Enrollment Projections)
- Elementary School (Stonewall Area) moved forward two years to 2022 (new Enrollment Projections)
- 14th High School (Mid-County) delayed one year to 2024 (new Enrollment Projections)
- 15th High School (TBD) delayed two years to 2027 (new Enrollment Projections)
- KLC Addition/Renewal (Admin Space Addition) removed from 2027
- Occoquan Elementary School Replacement added to 2028 (Evaluation of Facility Condition and anticipation of Renewal Date)

Renewal/Renovation Changes

- Artificial Turf Fields at Stonewall Jackson High School and Woodbridge High School added to FY2019, to be completed September 2020
- Middle School Music Rooms (TBD) added to renewal plans (Design Change)
- Municipal Separate Storm Sewer System added to the renovation schedule (Stronger DEQ and EPA Regulations)
- Rippon Middle School Fenestration Improvements (Funding Phase 2) moved forward one year to 2020 (Bid project phases together)
- Beville Middle School Renewal (Funding Phases 1 and 2) moved forward one year to 2020 and 2021 (Prioritization/Reevaluation of Facility needs)
- Bennett Elementary School Renewal (Funding Phases 1 and 2) delayed one year to 2021 and 2022 (Prioritization/Reevaluation of Facility needs)
- Penn Elementary School Renewal (Funding Phases 1 and 2) delayed one year to 2021 and 2022 (Prioritization/Reevaluation of Facility needs)
- Parkside Middle School Renewal (Funding Phases 1 and 2) added to 2022 and 2023 (Prioritization/Reevaluation of Facility needs)
- Benton Middle School Renewal (Funding Phases 1 and 2) delayed 2 years to 2024 and 2025 (Prioritization/Reevaluation of Facility needs)
- Brentsville High School Renewal (Funding Phases 1 and 2) added 2023 and 2024 (Prioritization/Reevaluation of Facility needs)
- Featherstone Elementary School Renewal (Funding Phases 1 and 2) added to 2024 and 2025 (Prioritization/Reevaluation of Facility needs)
- Forest Park High School Renewal (Funding Phase 1) delayed (Prioritization/Reevaluation of Facility needs)
- Ashland Elementary School Renewal (Funding Phases 1 and 2) delayed (Prioritization/Reevaluation of Facility needs)
- Marsteller Middle School Renewal (Funding Phases 1 and 2) delayed (Prioritization/Reevaluation of Facility needs)

Funding

This CIP is presented by the Superintendent as part of the annual 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. Once the budget is adopted by the Board of County Supervisors, it becomes the basis for the CIP during the fiscal year.

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. Future enrollment projections is the long-term approach and is important for long-range planning, budgeting, staffing, and predicting future building capital needs. Projects are carefully evaluated and prioritized to optimize the use of limited capital funds and to meet operational and facility needs. 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.

Funds from "Proffered," monetary contributions have also provided 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 Changes

As of July 1, 2016, the Virginia General Assembly passed SB 549, which amends the Virginia Code relating to conditional zoning for residential rezonings and proffer amendments. Prince William County's Policy Guide for Monetary Contributions could be determined to be inconsistent with SB 549, therefore, the Board of County Supervisors repealed the residential portion of the Policy Guide for Monetary Contributions effective July 1, 2016.

All residential rezoning applications accepted after July 1, 2016 must provide methodology and justification for all proffers proposed for residential rezoning. Proposed proffers need to address an impact that is specifically attributable to a proposed new residential development.

Each new residential development rezoning submitted after July 1, 2016 must address an impact to an off-site public facility such that:

- the new residential development creates a need for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning and,
- new residential development receives a direct and material benefit from a proffer made with response to any such public facility improvement.

The School Division will no longer be receiving monetary contributions based on the number and type of residential units to be constructed. The School Division will still collect monetary contributions on rezonings filed prior to July 1, 2016.

New Schools/Additions/School Facilities (Bond-Funded)

Scheduled Completion	Project	Cost
September 2018	Lake Ridge Middle School Addition (13 rooms)	<i>Previously Funded/Under Construction</i>
	Independence Nontraditional School ²	
	Eastern Area Intake/ELL Relocation from Ann Ludwig ³	
	Pattie Elementary School Addition (10 rooms) - Consolidation /Building Renovation @ Washington-Reid	
	River Oaks Elementary School - Renewal (Funding Phase 1)	
	Saunders Middle School - Renewal (Funding Phase 2)	
	Lake Ridge Middle School - Renewal (Funding Phase 2)	
	Westridge Elementary School - Renewal (Funding Phase 2b)	
	Site Acquisition Funds - 14th High School	
September 2019	PW Parkway Elementary School	\$32,685,000
	Antietam Elementary School Addition (13 rooms)	\$10,384,000
	Lake Ridge Elementary School Addition (13 rooms)	\$10,884,000
	Springwoods Elementary School Addition (13 rooms)	\$11,884,000
	Leesylvania Elementary School Addition (4 rooms)	\$6,900,000
	Minnieville Elementary School Addition (10 rooms)	\$12,043,000
	Special Needs Transportation Center @ New Dominion	\$2,000,000
	Stonewall Middle School Addition (17 rooms)	\$17,130,000
	Western Transportation Facility	\$12,500,000
	Site Acquisition Funds - 15th High School	\$15,000,000
	Leesylvania Elementary School - Renewal (Funding Phase 1)	\$7,685,000
	Marshall Elementary School - Renewal (Funding Phase 1a)	\$5,811,000
	Montclair Elementary School - Renewal (Funding Phase 1a)	\$3,866,000
	Old Bridge Elementary School - Renewal (Funding Phase 1a)	\$1,866,000
Total	\$150,638,000	
September 2020	Beville Middle School - Renewal (Funding Phase 1a)	\$6,901,400
	Mountain View Elementary - Renewal (Funding Phase 1a)	\$3,450,700
	Total	\$10,352,100

New Schools/Additions/School Facilities (Bond-Funded)

Scheduled Completion	Project	Cost
September 2021	Middle School at Potomac Shores	\$64,119,000
	13th High School (Hunter) (2,557 capacity)	\$127,400,000
	Renewal of Various Schools (Bond-Funded portion)	\$27,658,300
	Total	\$219,177,300
September 2022	Elementary School (Stonewall Area) ¹	\$37,156,000
	Total	\$37,156,000
September 2023	Elementary School (Occoquan/Woodbridge Area) ¹	\$39,018,000
	Elementary School (Cherry Hill Area) ¹	\$39,018,000
	Renewal of Various Schools (Bond-Funded portion)	\$21,207,000
	Total	\$99,243,000
September 2024	Elementary School (Yorkshire Area) ¹	\$40,973,000
	Middle School (West - Linton Hall Area)	\$74,238,000
	14th High School (Mid-County) ¹ (2,557 capacity)	\$148,826,000
	Renewal of Various Schools (Bond-Funded portion)	\$25,000,000
	Total	\$289,037,000
September 2025	Renewal of Various Schools (Bond-Funded portion)	\$25,000,000
	Total	\$25,000,000
September 2026	Middle School (TBD) ¹	\$81,855,000
	Renewal of Various Schools (Bond-Funded portion)	\$25,000,000
	Total	\$106,855,000
September 2027	15th High School (TBD) ¹ (2,557 capacity)	\$165,279,000
	Renewal of Various Schools (Bond-Funded portion)	\$25,000,000
	Total	\$190,279,000
September 2028	Occoquan Elementary School Replacement	\$49,821,000
	Renewal of Various Schools (Bond-Funded portion)	\$25,000,000
	Total	\$74,821,000
New Schools, Additions, and Other Projects TOTAL		\$1,202,558,400

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

Note 2 – Independence Nontraditional School

Summer 2018 – Complete construction and move New Dominion and New Directions in Facility

Note 3 - Eastern Area Intake/ELL Relocation

Summer 2018 - Relocate Eastern Area Intake/ELL staff from Ann Ludwig

Note 4 – Middle School Music Rooms added to renewal plans (TBD)

School Facility Totals

<i>School Type</i>	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Elementary Schools	57	57	57	57	58	59	60
Combined Schools	2	2	2	3	3	3	3
Middle Schools	15	16	16	16	16	16	16
High Schools	11	11	11	11	11	12	12
<i>Total (Regular Education)</i>	85	86	86	87	88	90	91
Special Education	3	3	3	3	3	3	3
Alternative Education	2	2	2	2	2	2	2
<i>TOTAL</i>	90	91	91	92	93	95	96

The School Division is finishing the final construction stages of the Independence Nontraditional School to replace the current facilities now housing the students at Independent Hill School, PACE East, New Dominion, and New Directions. PACE East students moved into the Independence Nontraditional School in January 2018 and New Dominion and New Direction students will move into the new facility in the summer of 2018. The Independent Hill students have shifted to appropriate elementary, middle, and high schools allowing the students of Independent Hill School to be educated in the least restrictive environment.

Property Acquisition

<i>School Facility</i>	<i>Acres</i>	<i>Date Acquired</i>	<i>Purchase Price</i>
Western Transportation Facility	16.70	11/16	\$3,757,833
PW Parkway Elementary School	15.06	6/17	\$7,874,400
13th High School	101.50	6/17	\$16,565,582
<i>Property Acquisition TOTAL</i>			<i>\$28,197,815</i>

Site Acquisition

Land acquisition for school sites is challenging as prime undeveloped land is purchased or optioned by developers for high-profit future residential, commercial, and industrial development. Real estate costs continue to escalate, therefore PWCS must look further into the future and acquire sites now or pay higher premiums later.

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.

Potential school sites are evaluated and should satisfy the following criteria:

- Located proximate to geographic location of projected student population to be served
- Access to transportation network
- Educational program requirements
- Availability of utilities
- State and local size requirements
- Soil and topographic conditions
- Grading and drainage conditions

Land acquisition will continue to figure prominently in this and future capital improvement budgets. Funding for school site acquisition comes from a combination of rezoning “proffered” funds or sites, bond funds, and the operating budget. “Proffered” funds contributions to the School Division have helped to offset the impact of new residential development on schools. As of July 1, 2016 though, the Board of County Supervisors repealed the residential portion of the Policy Guide for Monetary Contributions. However, monetary contributions on rezonings filed prior to July 1, 2016 will still be collected by the School Division.

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.

Sixteen school sites have been acquired by proffers since 2000, with an estimated value of \$63,800,000. The School Division purchased 13 school sites and facilities since 2000, spending almost \$70,000,000. Site acquisition funding for the 14th and 15th high schools are included in the PWCS Budget via bond funding.

The 16.7 acre Western Transportation Facility was acquired in November 2016. The PW Parkway Elementary School site and the 13th High School site were both purchased in June 2017.

Even with purchased and proffered sites, there are still six school sites needed by 2028. If previously proffered school sites are not used, an additional middle school site will need to be acquired.

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.

School Site Needs - Planned

<i>Year to Open</i>	<i>Year to Acquire</i>	<i>Planned School Facility</i>	<i>Property Status</i>	<i>Estimated Funds Required</i>
2019	NA	PW Parkway ES	Purchased; PWCS Owned	NA
	NA	Special Needs Trans. Center @ New Dominion	PWCS Owned	NA
	NA	Western Transportation Facility	Purchased, PWCS Owned	NA
2021	NA	MS @ Potomac Shores	Proffered	NA
	2017	13 th High School (2,557 capacity)	Purchased; PWCS Owned	NA
2022	2019	ES (Stonewall Area)	PWC Site Identified	NA
2023	2020	ES (Occoquan/Woodbridge Area)	Site Needed	\$6,000,000 (\$2.65m BOCS)
	2020	ES (Cherry Hill Area)	Site Needed	\$6,000,000
2024	2020	ES (Yorkshire Area)	Site Needed	\$6,000,000
	2019	MS West (Linton Hall Area)	Proffered-Avendale	\$0
			Otherwise Site Needed	\$7,200,000
	2018-19	14 th High School (2,557 capacity)	Site Needed	FY18 Bond Funding
2026	2022	MS (TBD)	Site Needed	\$7,500,000
2027	2021-22	15 th High School (2,557 capacity)	Site Needed	FY19 Bond Funding
2028	2024	Occoquan ES Replacement	PWCS Owned	NA
Total Estimated Cost of School Site Needs				\$32,700,000

Joint CIP Planning Committee

The Joint Capital Improvements Program (CIP) Committee is comprised of School Board and Board of County Supervisor members. Vice-Chairman Lillie Jessie (Occoquan), Gil Trenum (Brentsville), and Loree Williams (Woodbridge) are the School Board members on the Joint CIP Committee.

Based on efforts of the Joint CIP Committee, both Boards, (School Board and Board of County Supervisors) have committed to developing a shared process for land acquisition, directing staff to work together to help efficiently acquire school sites.

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.

Fifty-three of the Division's 96 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 the 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 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 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, energy infrastructure improvements, HVAC equipment and controls upgrades, Title IX and technology improvements, portable classroom relocations, and asphalt upgrades. The list of capital projects identified provides a clear statement of school facility requirements that have been categorized within the limitation of projected funding.

Considerable progress has been made in adding Activity Rooms to elementary school with renewals with 73 percent of elementary and combined schools now having activity rooms. By 2025, with renewals that include activity rooms, 90.5 percent of elementary and combined schools will have activity rooms.

Music Rooms have been added to middle school renewals.

Municipal Separate Storm Sewer Systems (MS4) funds have been added to the annual renovations schedule due to stronger DEQ and EPA regulations.

Infrastructure Task Force

As new school facilities are constructed, differences exist between the new school facilities and those previously constructed. It is important to review the features provided in new school facilities versus those available in existing schools in order to ensure consistency of educational opportunities provided within the School Division.

The School Board has established an Infrastructure Task Force to examine, evaluate, recommend, and prioritize a long-term plan for resolving facility inequities amongst school facilities. The Task Force prioritized potential improvements including security-related improvements, additional specialty instruction spaces, and additional on-site parking.

The School Board approved a one-time budget expenditure of \$742,000 for the Infrastructure Task Force Elementary School Security-related recommendation.

Budget - Renovations/Renewals

The School Division budgets for repairs and renewals using the National Building Research Board recommendations. The School 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 \$2,815,161,000.

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 2019 for repairs, renovations, and maintenance is \$84,455,000 (3.0% of value), with the estimated budget for maintenance renovations, renewals, technology, and energy improvements in FY 2019 at \$69,431,000 (2.5% of value); of which \$19,866,000 will be bond funded.

<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. Spaces	Clinic Improvements
Secure Access Improvements	

A School Facility Renewal Prioritization List has been prepared by the Facilities Services Office. The list is based on the year the school was built or year of last renewal.

Major Maintenance

To improve and maintain current facilities, each school is evaluated at 7-year intervals and major maintenance repairs are scheduled. Major maintenance work extends the useful life of the School facilities by improving, exchanging or replacing building components that are at or near the end of their useful life.

Based on restricted funding levels, many of the following major maintenance items will not be addressed. Repairs are made on an ‘as need’ basis until other funding sources become available.

<i>Typical Major Maintenance Activities</i>	
<i>7-Year Cycle</i>	<i>14-Year Cycle</i>
Carpeting	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
Stage Lighting/Curtains	Minor Chiller Rebuilding

The FY19 Budget includes funding of two high school turf fields:

<i>Artificial Turf Fields</i>	
Stonewall Jackson High School (Funded FY 19, complete Sept. 2019)	\$1,500,000
Woodbridge High School (Funded FY 19, complete Sept. 2019)	\$1,500,000
<i>TOTAL</i>	<i>\$3,000,000</i>

Schedule of Renovations and Renewals

Fiscal Year	Project	Proposed Funding
2018	Antietam Elementary School - Renewal (Funding Phase 2)	<i>Previously Funded</i>
	McAuliffe Elementary School - Renewal (Funding Phase 2)	
	Mullen Elementary School - Renewal (Funding Phase 2)	
	Westridge Elementary School - Renewal (Funding Phase 2)	
	Minnieville Elementary School - Partial Roof Replacement	
	Sudley Elementary School - Partial Roof Replacement	
	Fred Lynn Middle School - Partial Roof Replacement	
	Woodbine Special School - Roof Replacement	
	Kitchen - Upgrades/Asphalt - Upgrades	
	Portable Classroom Relocation	
	Energy Infrastructure Improvements	
	HVAC Equipment and Controls - Upgrades	
	Title IX Improvements	
	Technology Improvement Program - Upgrades	
2019	River Oaks Elementary School - Renewal (Funding Phase 2)	\$2,130,000
	Leesylvania Elementary School - Renewal (Funding Phase 1b) [Bond funded-\$7.685M]	\$7,685,000
	Marshall Elementary School - Renewal (Funding Phase 1b) [Bond funded-\$5.811M]	\$7,685,000
	Montclair Elementary School - Renewal (Funding Phase 1b) [Bond funded-\$3.866M]	\$7,685,000
	Old Bridge Elementary School - Renewal (Funding Phase 1b) [Bond funded-\$1.866M]	\$7,685,000
	Beville Middle School - Roof Replacement	\$2,100,000
	Parkside Middle School - Partial Roof Replacement	\$2,900,000
	Roof Replacements/Repairs (TBD)	\$850,000
	HVAC Equipment and Controls - Upgrades	\$850,000
	Rippon Middle School - Fenestration Improvements - (Funding Phase 1)	\$1,057,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Kitchen - Upgrades	\$500,000
	Asphalt - Upgrades	\$600,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$280,000
	Technology Improvement Program - Upgrades	\$3,500,000
	Total - Fiscal Year 2019	

Schedule of Renovations and Renewals

2020	Leesylvania Elementary School - Renewal (Funding Phase 2)	\$3,600,000
	Marshall Elementary School - Renewal (Funding Phase 2)	\$3,421,000
	Montclair Elementary School - Renewal (Funding Phase 2)	\$3,421,000
	Old Bridge Elementary School - Renewal (Funding Phase 2)	\$3,600,000
	Mountain View Elementary School - Renewal (Funding Phase 1) [Bond Funded \$3.4507M]	\$8,135,000
	Beville Middle School - Renewal (Funding Phase 1) [Bond Funded \$6.9014M]	\$16,870,000
	Rippon Middle School - Fenestration Improvements - (Funding Phase 2)	\$1,500,000
	Potomac View Elementary School - Roof Replacement	\$1,150,000
	Belmont Elementary School - Partial Roof Replacement	\$772,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$900,000
	HVAC Equipment and Controls - Upgrades	\$850,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$290,000
	Technology Improvement Program - Upgrades	\$4,000,000
	<i>Total - Fiscal Year 2020</i>	<i>\$50,509,000</i>
2021	Beville Middle School - Renewal (Funding Phase 2)	\$769,047
	Hylton High School - Renewal (Funding Phase 1)	\$18,500,000
	Bennett Elementary School - Renewal (Funding Phase 1)	\$9,134,143
	Mountain View Elementary School - Renewal (Funding Phase 2)	\$3,308,667
	Penn Elementary School - Renewal (Funding Phase 1)	\$9,134,143
	Transportation Bus Parking (TBD)	\$1,000,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$2,300,000
	HVAC Equipment and Controls - Upgrades	\$1,200,000
	Kitchen - Upgrades	\$609,000
	Asphalt - Upgrades	\$1,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$300,000
	Technology Improvement Program - Upgrades	\$4,500,000
<i>Total - Fiscal Year 2021</i>	<i>\$53,755,000</i>	

Schedule of Renovations and Renewals

2022	Hylton High School - Renewal (Funding Phase 2)	\$5,666,000
	Bristow Run Elementary School - Renewal (Funding Phase 1)	\$8,810,000
	Signal Hill Elementary School - Renewal (Funding Phase 1)	\$8,810,000
	Bennett Elementary School - Renewal (Funding Phase 2)	\$3,050,500
	Penn Elementary School - Renewal (Funding Phase 2)	\$3,050,500
	Parkside Middle School - Renewal (Funding Phase 1)	\$12,560,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$2,856,000
	HVAC Equipment and Controls - Upgrades	\$1,900,000
	Fenestration Improvements (TBD)	\$1,900,000
	Kitchen - Upgrades	\$700,000
	Asphalt - Upgrades	\$1,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$310,000
	Technology Improvement Program - Upgrades	\$5,000,000
	<i>Total - Fiscal Year 2022</i>	<i>\$57,613,000</i>
2023	Cedar Point Elementary School - Renewal (Funding Phase 1)	\$7,980,000
	Swans Creek Elementary School - Renewal (Funding Phase 1)	\$7,900,000
	Brentsville High School - Renewal (Funding Phase 1)	\$17,600,000
	Bristow Run Elementary School - Renewal (Funding Phase 2)	\$4,100,000
	Signal Hill Elementary School - Renewal (Funding Phase 2)	\$4,100,000
	Parkside Middle School - Renewal (Funding Phase 2)	\$5,273,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$2,900,000
	HVAC Equipment and Controls - Upgrades	\$1,900,000
	Kitchen - Upgrades	\$900,000
	Asphalt - Upgrades	\$1,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$320,000
Technology Improvement Program - Upgrades	\$5,500,000	
<i>Total - Fiscal Year 2023</i>	<i>\$61,473,000</i>	

Schedule of Renovations and Renewals

	Renewals:	
2024	Cedar Point Elementary School (Funding Phase 2)	\$5,891,000
	Swans Creek Elementary School (Funding Phase 2)	\$5,891,000
	Brentsville High School - Renewal (Funding Phase 2)	\$8,745,000
	Featherstone Elementary School (Funding Phase 1)	\$9,615,000
	Benton Middle School (Funding Phase 1)	\$17,157,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$4,274,000
	HVAC Equipment and Controls - Upgrades	\$1,900,000
	Fenestration Improvements (TBD)	\$1,900,000
	Kitchen - Upgrades	\$1,000,000
	Asphalt - Upgrades	\$1,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$330,000
	Technology Improvement Program - Upgrades	\$6,000,000
	Total - Fiscal Year 2024	\$65,703,000
2025	Featherstone Elementary School (Funding Phase 2)	\$4,851,000
	Benton Middle School (Funding Phase 2)	\$3,404,000
	Renewal of Various Schools (based on age, condition, and availability of funds). <i>See School Facility Renewal Prioritization List</i>	\$43,093,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$4,000,000
	HVAC Equipment and Controls - Upgrades	\$2,000,000
	Fenestration Improvements (TBD)	\$1,700,000
	Kitchen - Upgrades	\$1,000,000
	Asphalt - Upgrades	\$1,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$340,000
	Technology Improvement Program - Upgrades	\$6,500,000
	Total - Fiscal Year 2025	\$69,888,000

Schedule of Renovations and Renewals

2026	Renewal of Various Schools (based on age, condition, and availability of funds) <i>See School Facility Renewal Prioritization List</i>	\$51,209,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$6,000,000
	HVAC Equipment and Controls - Upgrades	\$2,000,000
	Fenestration Improvements (TBD)	\$2,000,000
	Kitchen - Upgrades	\$2,000,000
	Asphalt - Upgrades	\$2,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$350,000
	Technology Improvement Program - Upgrades	\$7,000,000
	Total - Fiscal Year 2026	\$74,559,000
2027	Renewal of Various Schools (based on age, condition, and availability of funds) <i>See School Facility Renewal Prioritization List</i>	\$55,645,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$6,000,000
	HVAC Equipment and Controls - Upgrades	\$2,000,000
	Fenestration Improvements (TBD)	\$2,000,000
	Kitchen - Upgrades	\$2,000,000
	Asphalt - Upgrades	\$2,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$360,000
	Technology Improvement Program - Upgrades	\$7,500,000
	Total - Fiscal Year 2027	\$79,505,000

Schedule of Renovations and Renewals

2028	Renewal of Various Schools <i>(based on age, condition, and availability of funds) See School Facility Renewal Prioritization List</i>	\$60,265,000
	Municipal Separate Storm Sewer Systems (MS4)	\$500,000
	Roof Replacements/Repairs (TBD)	\$6,000,000
	HVAC Equipment and Controls - Upgrades	\$2,000,000
	Fenestration Improvements (TBD)	\$2,000,000
	Kitchen - Upgrades	\$2,000,000
	Asphalt - Upgrades	\$2,000,000
	Portable Classroom Relocation	\$500,000
	Energy Infrastructure Improvements	\$1,000,000
	Title IX Improvements	\$370,000
	Technology Improvement Program - Upgrades	\$8,000,000
	Total - Fiscal Year 2028	\$84,635,000
	Renovations and Renewals TOTAL	

<i>Year Opened</i>	<i>List of Potential Upcoming Schools and Facilities for Renewal (based on Prioritization List)</i>
<i>2003</i>	Alvey Elementary School
<i>2004</i>	Ellis Elementary School
<i>2002</i>	Bull Run Middle School
	Transportation Center (TBD)
<i>2004</i>	Williams Elementary School
<i>2004</i>	Porter Traditional School
<i>2004</i>	Freedom and Battlefield High Schools
<i>2005</i>	Glenkirk Elementary School
<i>2005</i>	Victory Elementary School

School Facility Renewal Prioritization List

Based on Year Built or Last Renewal

School Facility Name	Year Opened	Effective Facility Age <i>Not including effect of scheduled renewals</i>	Facility Renewal Date	
			Most Recent Previous Renewal	Next Scheduled Renewal <i>per Approved CIP</i>
Woodbine SE	1953	65		
Ann Ludwig	1975	43		
New Dominion Alt	1975	43		
Transportation Center, Main (Hooe Rd)	1979	39		
Admin Building (B-51)	1985	33		
Saunders MS	1988	30		2018
Lake Ridge MS	1989	29		2018
River Oaks ES	1990	28		2019
Montclair ES	1991	27		2020
Beville MS	1991	27		2022
Hylton HS	1991	27		2022
Marshall ES	1994	24		2020
Old Bridge ES	1995	23		2020
Mountain View ES	1995	23		2021
Leesylvania ES	1996	22		2020
Bennett ES	1996	22		2021
Penn ES	1998	20		2021
Bristow Run ES	1998	20		2023
Parkside MS	1963	18	2000	2023
Signal Hill ES	2000	18		2023
Brentsville HS	1965	18	2000	2024
Benton MS	2000	18		2025
Forest Park HS	2000	18		
Cedar Point ES	2001	17		2024
Swans Creek ES	2001	17		2024
Featherstone ES	1961	17	2001	2025
Graham Park MS	1963	17	2001	
Lynn MS	1964	17	2001	
Occoquan ES	1927	16	2002	
Stonewall MS	1964	16	2002	
Ashland ES	2002	16		
Bull Run MS	2002	16		
Marsteller MS	2002	16		
Transportation Center, East (Potomac)	2002	16		
Transportation Center, West (McCuin)	2002	16		
Gar-Field HS	1972	15	2003	

School Facility Renewal Prioritization List

Based on Year Built or Last Renewal

<i>School Facility Name</i>	<i>Year Opened</i>	<i>Effective Facility Age Not including effect of scheduled renewals</i>	<i>Facility Renewal Date</i>	
			<i>Most Recent Previous Renewal</i>	<i>Next Scheduled Renewal per Approved CIP</i>
Woodbridge MS	1964	15	2003	
Alvey ES	2003	15		
Sudley ES	1972	14	2004	
Woodbridge HS	1974	14	2004	
Battlefield HS	2004	14		
Ellis ES	2004	14		
Freedom HS	2004	14		
New Directions Alt	2004	14		
Porter (Combined)	2004	14		
Williams ES	2004	14		
Minnieville ES	1972	13	2005	
Potomac View ES	1964	13	2005	
Stonewall Jackson HS	1973	13	2005	
Vaughan ES	1964	13	2005	
Glenkirk ES	2005	13		
Transportation Center, Central	2005	13		
Victory ES	2005	13		
Belmont ES	1967	12	2006	
Dale City ES	1967	12	2006	
Marumscos Hills ES	1966	12	2006	
Osborn Park HS	1975	12	2006	
Buckland Mills ES	2006	12		
Parks ES	2006	12		
Potomac MS	2006	12		
Kerrydale ES	1973	11	2007	
Rockledge ES	1972	11	2007	
Tyler ES	1968	11	2007	
Gainesville MS	2007	11		
Bel Air ES	1968	10	2008	
Fitzgerald ES	2008	10		
Gravelly ES	2008	10		
Kelly Leadership Center	2008	10		
Coles ES	1968	9	2009	
Enterprise ES	1978	9	2009	
Neabsco ES	1969	9	2009	

School Facility Renewal Prioritization List

Based on Year Built or Last Renewal

<i>School Facility Name</i>	<i>Year Opened</i>	<i>Effective Facility Age Not including effect of scheduled renewals</i>	<i>Facility Renewal Date</i>	
			<i>Most Recent Previous Renewal</i>	<i>Next Scheduled Renewal per Approved CIP</i>
Sinclair ES	1968	9	2009	
West Gate ES	1964	9	2009	
Yorkshire ES	2009	9		
Hampton MS	1970	8	2010	
Rippon MS	1967	8	2010	
Triangle ES	2010	8		
Patriot HS	2011	7		
Piney Branch ES	2011	7		
Wood ES	2011	7		
Pennington (Combined)	1969	6	2012	
Potomac HS	1981	6	2012	
PACE West SE	2012	6		
Reagan MS	2012	6		
Pattie ES	1978	5	2013	
Washington-Reid ES	1951	5	2013	
Dumfries ES	1939	4	2014	
Haymarket ES	2014	4		
Nokesville School, The (Combined)	2014	4		
Yung ES	2015	3		
Henderson ES	1985	2	2016	
King ES	1981	2	2016	
Lake Ridge ES	1983	2	2016	
Loch Lomond ES	1962	2	2016	
Springwoods ES	1985	2	2016	
Colgan HS	2016	2		
Wilson ES	2016	2		
Antietam ES	1990	1	2017	
McAuliffe ES	1989	1	2017	
Mullen ES	1990	1	2017	
Westridge ES	1989	1	2017	
Covington-Harper ES	2017	1		
Kilby ES	2017	1		
Independence Nontraditional	2018	0		

Summary

<i>Existing Conditions</i>	
Projected Growth in Students (2017-2028)	14,060
Student Enrollment (2017-2018)	89,861
Student Enrollment (2027-2028)	103,921
Current Student Capacity	88,567
Current Portable Classrooms in Use	207

<i>Proposed Capital Improvements Program</i>	
New School Facilities	12
New Elementary Schools	5
New Middle Schools	3
New High Schools	3
Replacement Elementary School	1
School Additions (Classrooms)	70
Elementary School Additions (5 Schools)	53
Middle School Additions (1 School)	17
High School Additions	-----
Support Facilities	2
Western Transportation Center	1
New Dominion – Special Needs Transportation	1
Proposed Capacity to be Constructed	17,606
Proposed Costs	
New School Facilities	\$912,888,000
Classroom Additions	\$89,225,000
Renewals	\$645,147,000
Site Acquisition	\$15,000,000

Key Highlights of Fiscal Year 2019 Budget - Capital Projects Funded

- Construction of:
 - PW Parkway Elementary School, Western Transportation Facility
- Construction of Additions at:
 - Antietam ES, Lake Ridge ES, Springwoods ES, Leesylvania ES, Minnieville ES, Stonewall MS
- Phase 1 Renovations/Renewals at:
 - Leesylvania ES, Marshall ES, Montclair ES, Old Bridge ES
- Acquisition Funds for 14th High School
- Washington-Reid building conversion to a preschool center

APPENDIX A

School Facility Information

School Facility Data by School Type

- Elementary, Middle, High, Special, Alternative, and Other
- School Name
- Planning Capacity
- Portable Classrooms
- Regular Classrooms
- 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

Elementary School	Program Capacity	Portable Classrooms 2017-18	Regular Classrooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Alvey ES	857		41	2003							83,084	20.2
Antietam ES	569	1	31	1990		2018	2019	13			62,334	14.9
Ashland ES	979		46	2002			2008	5			98,461	18.1
Bel Air ES	449	1	28	1968		2008	2008	8			53,712	15.0
Belmont ES	540	1	36	1967		2006	2006	4	2017	10	74,332	14.3
Bennett ES	847		40	1996	FY 2022		2000	8			83,969	15.3
Bristow Run ES	795		40	1998	FY 2023		2004	8			83,885	21.7
Buckland Mills ES	938		43	2006							89,936	15.0
Cedar Point ES	874		41	2001	FY 2024						83,084	15.5
Coles ES	469	3	25	1968		2009					52,745	17.0
Covington-Harper ES	750		45	2017							101,288	21.4
Dale City ES	347	4	25	1967		2006	2001	4			44,333	14.8
Dumfries ES	419	4	27	1939		2014	1989	8			44,925	10.0
Ellis ES	481	3	32	2004							76,724	10.5
Enterprise ES	444	1	26	1978		2009					51,260	15.0
Featherstone ES	425	3	29	1961		2001	2015	6			56,246	12.0
Fitzgerald ES	776	2	46	2008							106,170	11.2
Glenkirk ES	839		41	2005							83,084	15.6
Gravelly ES	955		43	2008							95,314	18.0
Haymarket ES	946		44	2014							98,736	24.3
Henderson ES	808	0	42	1985		2016	2017	10			76,077	14.9
Kerrydale ES	345	6	24	1973		2007					46,300	15.4
Kilby ES	646	0	45	2017							98,615	12.8
King ES	431		26	1981		2016					57,546	15.2
Lake Ridge ES	535	7	27	1983		2016	2019	13			59,904	15.1
Leesylvania ES	631	2	41	1996	FY 2020						83,084	16.3
Loch Lomond ES	433	6	30	1962		2016	2013	4			58,278	10.7
Marshall ES	770		35	1994	FY 2020		1999	4			62,700	24.2
Marumscott Hills ES	589	5	35	1966		2006	2006	2	2009	4	56,651	12.2
McAuliffe ES	436		28	1989		2018					59,517	15.1
Minnieville ES	447	1	28	1972		2005					53,028	15.2
Montclair ES	735		35	1991	FY 2020		2008	4			70,928	15.9
Mountain View ES	722		35	1995	FY 2021		2002	4			67,815	30.0
Mullen ES	707		43	1990		2018	1999	4	2013	6	82,219	15.0
Neabsco ES	679	12	43	1969		2009	2017	8			72,295	12.8
Occoquan ES	419	6	26	1927		2002	2003	5			55,225	10.1
Old Bridge ES	553	1	32	1995	FY 2020						74,433	17.9
Parks ES	853		41	2006							83,084	15.2
Pattie ES	795		36	1978		2013	2018	10			69,478	15.0
Penn ES	797	3	39	1998	FY 2022		2013	7			87,542	16.9
Piney Branch ES	965		44	2011							104,448	21.0
Potomac View ES	529	10	37	1964		2005	2005	4	2009	4	60,756	12.4
River Oaks ES	633	2	38	1990	FY 2019		2014	7			80,618	15.2
Rockledge ES	522	3	31	1972		2007	2009	7			64,769	16.2
Signal Hill ES	803	1	41	2000	FY 2023						83,084	24.5
Sinclair ES	682		42	1968		2009	2001	6	2013	11	75,698	15.0
Springwoods ES	593	7	28	1985		2016	2019	13			58,221	15.1
Sudley ES	640	1	38	1972		2004	2013	10			73,457	14.0
Swans Creek ES	653	1	38	2001	FY 2024		2012	6			86,934	18.5
Triangle ES	743		44	2010							103,679	18.9
Tyler ES	558		28	1968		2007	2007	4			56,014	25.5
Vaughan ES	607	3	36	1964		2005	2001	4	2009	9	58,967	13.6
Victory ES	935		43	2005							89,911	21.2
West Gate ES	516	1	36	1964		2009	2013	4			59,727	12.1
Westridge ES	710	2	34	1989		2018	2012	6			70,559	15.0
Williams ES	707	4	41	2004							83,084	13.6
Wilson ES	997		49	2016							106,345	19.5
Wood ES	998		44	2011							104,448	33.8
Yorkshire ES	793	3	46	2009							106,614	13.3
Yung ES	1,041		46	2015							107,273	20.8
Total	40,655	110	2,204					210		44	4,532,947	994.1

School Facility Information

Prince William County Schools

Combined School	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Nokesville School, The	1,098		55	2014							141,832	48.2
Pennington Traditional	608		31	1969		2012					56,330	15.0
Porter Traditional	627		32	2004							71,245	16.9
Total	2,333		118								269,407	80.1

Middle School	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Benton MS	1,464		76	2000	FY 2025			2013	11		151,130	48.2
Beville MS	1,191		65	1991	FY 2021						134,140	42.1
Bull Run MS	1,233		65	2002							135,309	39.4
Gainesville MS	1,233	7	65	2007							135,309	39.4
Graham Park MS	867	8	47	1963		2001	2001		4		110,514	21.9
Hampton MS	982	2	54	1970		2010	2002		8		124,610	30.0
Lake Ridge MS	1,191		65	1989		2018	2018		13		158,900	34.1
Lynn MS	1,170		64	1964		2001					131,974	28.6
Marsteller MS	1,233	5	65	2002							135,309	36.4
Parkside MS	1,453		74	1963	FY 2023	2000	2014		15		145,677	30.0
Potomac MS	1,464		76	2006			2013		11		151,130	36.4
Reagan MS	1,233		65	2012							134,765	41.9
Rippon MS	1,390		63	1967		2010	2016		8		156,094	30.2
Saunders MS	1,212		64	1988	FY 2018						137,088	29.5
Stonewall MS	1,003	5	52	1964		2002					127,673	32.2
Woodbridge MS	1,066	9	56	1964		2003					124,511	37.4
Total	19,385	36	1,016						70	0	2,194,133	557.7

High School	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Battlefield HS	2,053	16	101	2004							285,086	78.8
Brentsville HS	1,110		53	1965	FY 2024	2000	2000		9	1980	163,066	29.0
Colgan HS	2,095		102	2016							371,381	109.2
Forest Park HS	2,053		101	2000							283,268	79.1
Freedom HS	2,053	6	101	2004							285,886	80.7
Gar-Field HS	2,839		128	1972		2003					353,742	91.5
Hylton HS	2,053		101	1991	FY 2022						282,346	74.8
Osborn Park HS	2,430		115	1975		2006					328,386	56.1
Patriot HS	2,053	20	101	2011							320,124	60.0
Potomac HS	2,357		113	1981		2012	2013		30		273,329	75.1
Stonewall Jackson HS	2,409	7	117	1973		2005					328,540	56.6
Woodbridge HS	2,734		125	1974		2004					352,497	52.7
Total	26,239	49	1,258						39	0	3,627,651	843.6

Special School	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Independent Hill SE / PACE East			20	1967							49,204	
PACE West SE			21	2012							39,998	13.5
Woodbine SE		1	4	1953							8,320	1.9
Total	0	1	45						0	0	97,522	15.4

Alternative School	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
New Directions Alt			13	2004							20,245	
New Dominion Alt		11	5	1975							14,749	9.3
Total	0	11	18						0	0	34,994	9.3

School Facility Information

Prince William County Schools

Administrative	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Ann Ludwig				1975							14,220	4.8
Independent Hill Complex				1968							139,947	37.6
Kelly Leadership Center				2008							145,747	20.3
Total	0	0	0					0		0	299,914	62.6

Transportation	Planning Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
McCuin Transportation Cntr				2002							8,400	11.5
Transportation Center Central				2005							14,934	29.9
Transportation Center East				2002							15,565	16.8
Transportation Cntr (Hooe Rd)				1979							28,028	20.0
Total	0	0	0					0		0	66,927	78.2

All Facilities	School Capacity	Portable Classrooms 2017-18	Regular Class-rooms	Year Opened	School Renovation		School Addition(s)				Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year	# Class-rooms		
Total	88,612	207	4,659					319		44	11,123,495	2,641.0

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 2017-27
- Housing Units in Residential Development
 - by School (Elementary, Middle, and High)
- Historical and Projected Enrollment Data
- 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₍₀₎) 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.

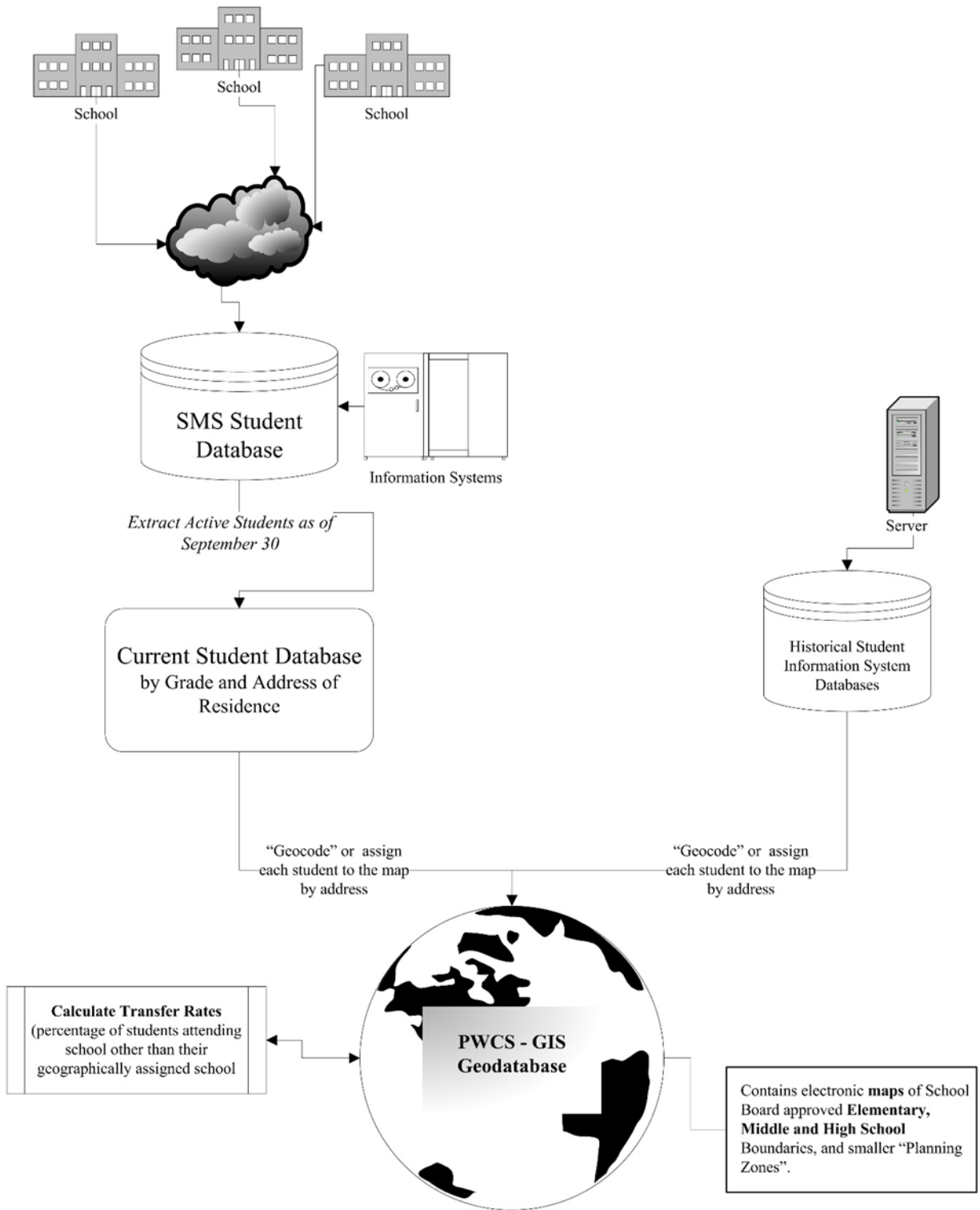
Grade	Year ₍₋₃₎	Year ₍₋₂₎	Year ₍₋₁₎	Year ₍₀₎	Progression Ratio	Year ₍₊₁₎
6 th	3,888	4,066	4,348	4,581		
7 th	N/A	4,024	4,184	4,525	1.0350	4,741

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

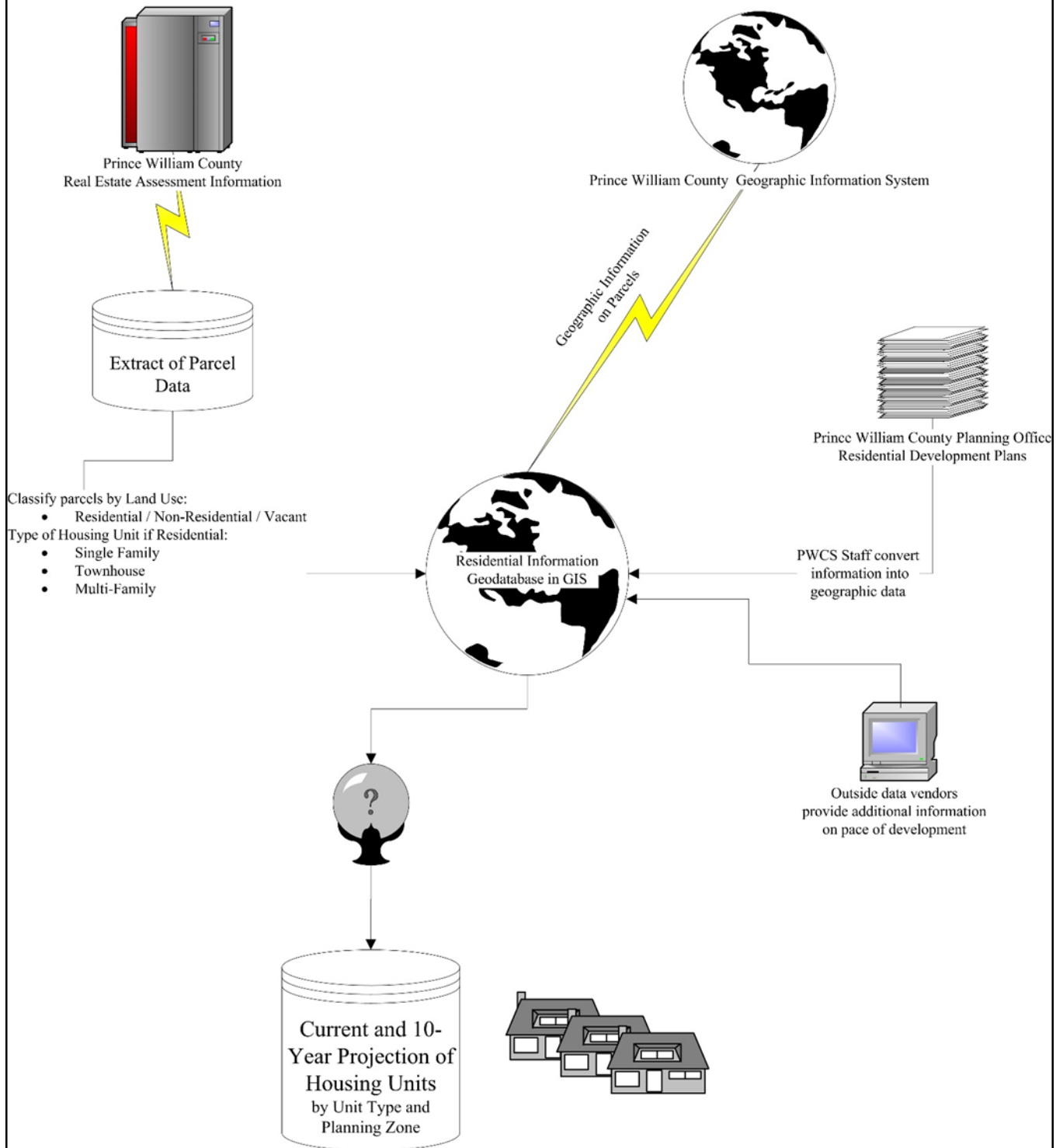
Student Enrollment Forecast Accuracy

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 less than 1% has been associated with the Divisionwide one-year projections since the mid-1990s. Success at the school level, a relatively smaller geography, has varied by school. See charts on page B-16 and B-17 for historical error rates.

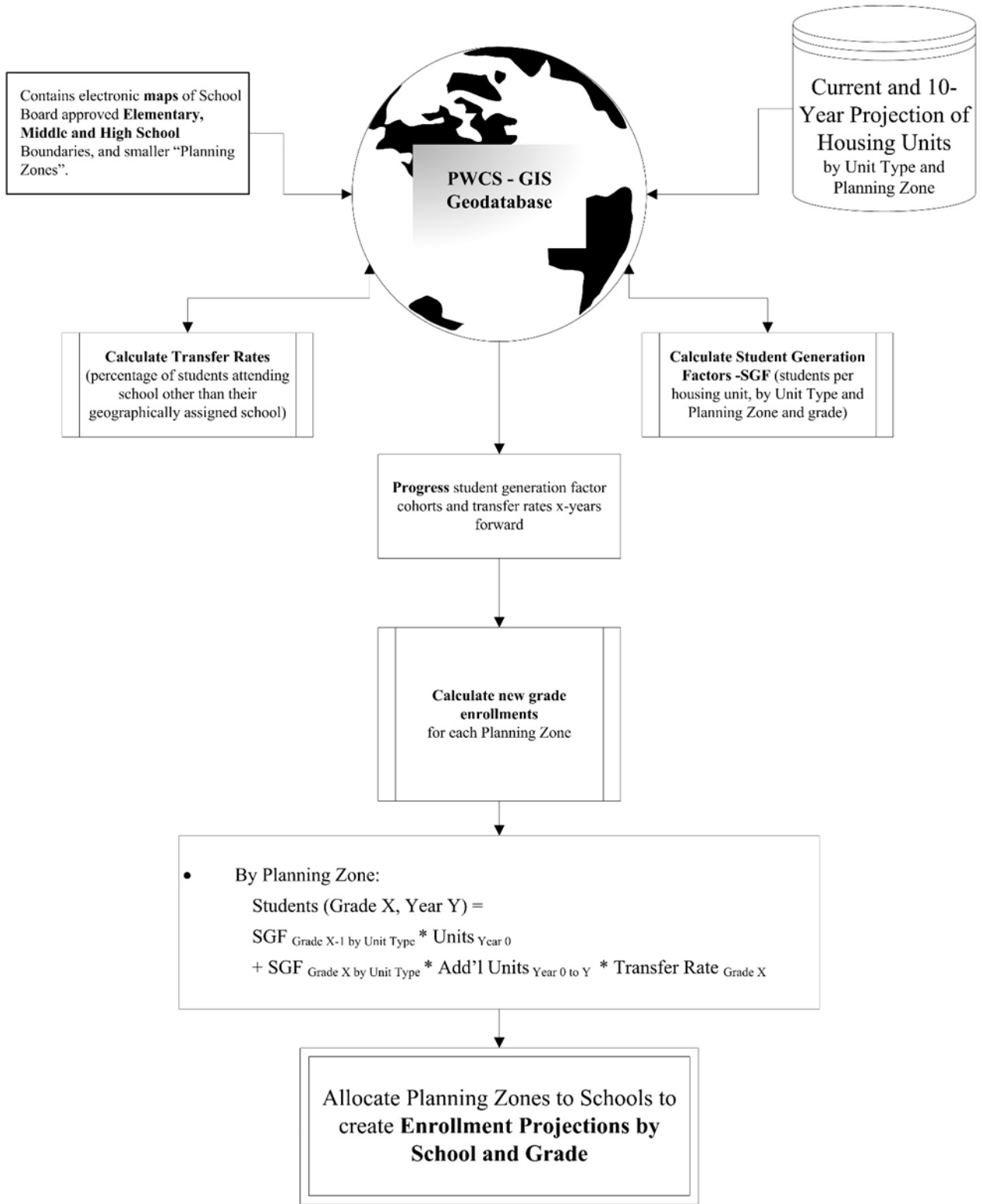
Analysis of Student Information



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
SY 2017-18 to SY 2027-28

Elementary School	Available Space		2017-18			2018-19			2022-23			2027-28		
	Program Capacity	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
Alvey	857		688	169	80.3%	653	204	76.2%	702	155	81.9%	730	127	85.2%
Antietam	569	1	660	-91	116.0%	660	-91	116.0%	669	-100	117.6%	694	-125	122.0%
Ashland	979		780	199	79.7%	779	200	79.6%	798	181	81.5%	828	151	84.6%
Bel Air	449	1	400	49	89.1%	391	58	87.0%	408	41	90.8%	423	26	94.2%
Belmont	540	1	447	93	82.8%	457	83	84.6%	518	22	95.9%	619	-79	114.6%
Bennett	847		668	179	78.9%	666	181	78.6%	726	121	85.7%	780	67	92.1%
Bristow Run	795		663	132	83.4%	636	159	80.0%	681	114	85.6%	714	81	89.7%
Buckland Mills	938		651	287	69.4%	659	279	70.3%	706	232	75.3%	843	95	89.9%
Cedar Point	874		569	305	65.1%	532	342	60.9%	539	335	61.6%	559	315	63.9%
Coles	469	3	419	50	89.3%	401	68	85.5%	406	63	86.5%	423	46	90.3%
Covington-Harper	750		543	207	72.4%	626	124	83.5%	1,137	-387	151.6%	1,524	-774	203.2%
Dale City	347	4	446	-99	128.5%	446	-99	128.6%	434	-87	125.0%	451	-104	130.0%
Dumfries	419	4	439	-20	104.8%	438	-19	104.6%	450	-31	107.4%	472	-53	112.5%
Ellis	481	3	565	-84	117.5%	571	-90	118.7%	576	-95	119.7%	835	-354	173.5%
Enterprise	444	1	422	22	95.0%	425	19	95.7%	430	14	96.9%	446	-2	100.5%
Featherstone	425	3	505	-80	118.8%	538	-113	126.5%	550	-125	129.3%	570	-145	134.2%
Fitzgerald	776	2	810	-34	104.4%	828	-52	106.7%	939	-163	121.1%	999	-223	128.7%
Glenkirk	839		760	79	90.6%	757	82	90.3%	777	62	92.6%	806	33	96.1%
Gravelly	955		779	176	81.6%	771	184	80.8%	854	101	89.4%	895	60	93.7%
Haymarket	946		825	121	87.2%	818	128	86.5%	904	42	95.6%	1,005	-59	106.2%
Henderson	808		813	-5	100.6%	831	-23	102.8%	874	-66	108.2%	907	-99	112.3%
Herrydale	345	6	469	-124	135.9%	447	-102	129.7%	467	-122	135.4%	484	-139	140.4%
Kilby	646		709	-63	109.8%	727	-81	112.5%	738	-92	114.3%	865	-219	134.0%
King	431		400	31	92.8%	389	42	90.3%	419	12	97.1%	442	-11	102.6%
Lake Ridge	535	7	588	-53	109.9%	589	-54	110.1%	600	-65	112.2%	623	-88	116.4%
Leesylvania	631	2	779	-148	123.5%	776	-145	123.1%	839	-208	132.9%	905	-274	143.4%
Loch Lomond	433	6	544	-111	125.6%	545	-112	126.0%	562	-129	129.7%	583	-150	134.6%
Marshall	770		648	122	84.2%	655	115	85.1%	667	103	86.6%	696	74	90.4%
Marumscow Hills	589	5	636	-47	108.0%	637	-48	108.1%	664	-75	112.7%	693	-104	117.6%
McAuliffe	436		443	-7	101.6%	428	8	98.3%	435	1	99.8%	451	-15	103.5%
Minnieville	447	1	509	-62	113.9%	513	-66	114.8%	508	-61	113.5%	533	-86	119.3%
Montclair*	735		589	146	80.1%	639	96	86.9%	631	104	85.9%	656	79	89.2%
Mountain View	722		584	138	80.9%	546	176	75.6%	555	167	76.9%	625	97	86.6%
Mullen	707		754	-47	106.6%	789	-82	111.6%	788	-81	111.5%	900	-193	127.3%
Neabsco*	679	12	808	-129	119.0%	659	20	97.0%	688	-9	101.3%	718	-39	105.7%
Nokesville School, The	659		619	40	93.9%	617	42	93.6%	669	-10	101.5%	747	-88	113.3%
Occoquan	419	6	631	-212	150.6%	655	-236	156.4%	662	-243	158.1%	690	-271	164.7%
Old Bridge	553	1	735	-182	132.9%	727	-174	131.4%	724	-171	130.9%	752	-199	136.0%
Parks	853		717	136	84.1%	682	171	80.0%	723	130	84.7%	751	102	88.0%
Pattie	795		705	90	88.7%	695	100	87.4%	723	72	91.0%	750	45	94.4%
Penn	797	3	854	-57	107.2%	878	-81	110.2%	929	-132	116.5%	972	-175	122.0%
Pennington	365		408	-43	111.8%	405	-40	111.0%	405	-40	111.0%	405	-40	111.0%
Piney Branch	965		810	155	83.9%	803	162	83.2%	828	137	85.8%	862	103	89.3%
Porter	375		419	-44	111.7%	420	-45	112.0%	420	-45	112.0%	420	-45	112.0%
Potomac View	529	10	693	-164	131.0%	706	-177	133.5%	722	-193	136.6%	749	-220	141.6%
River Oaks	633	2	686	-53	108.4%	721	-88	113.9%	708	-75	111.9%	752	-119	118.8%
Rockledge	522	3	630	-108	120.7%	663	-141	127.1%	668	-146	127.9%	695	-173	133.1%
Signal Hill	803	1	744	59	92.7%	755	48	94.0%	848	-45	105.6%	1,019	-216	126.9%
Sinclair	682		728	-46	106.7%	694	-12	101.7%	703	-21	103.0%	729	-47	106.9%
Springwoods	593	7	709	-116	119.6%	707	-114	119.3%	714	-121	120.4%	741	-148	124.9%
Sudley	640	1	687	-47	107.3%	670	-30	104.7%	660	-20	103.1%	685	-45	107.0%
Swans Creek	653	1	673	-20	103.1%	671	-18	102.8%	679	-26	104.0%	731	-78	111.9%
Triangle	743		779	-36	104.8%	799	-56	107.5%	819	-76	110.2%	860	-117	115.8%
Tyler	558		502	56	90.0%	465	93	83.2%	508	50	91.1%	542	16	97.1%
Vaughan	607	3	627	-20	103.3%	606	1	99.9%	650	-43	107.0%	684	-77	112.7%
Victory	935		686	249	73.4%	796	139	85.1%	842	93	90.1%	874	61	93.5%
West Gate	516	1	522	-6	101.2%	530	-14	102.8%	535	-19	103.6%	586	-70	113.5%
Westridge	710	2	746	-36	105.1%	750	-40	105.6%	737	-27	103.8%	765	-55	107.7%
Williams	707	4	747	-40	105.7%	735	-28	104.0%	767	-60	108.5%	802	-95	113.5%
Wilson*	997		742	255	74.4%	861	136	86.3%	904	93	90.7%	954	43	95.7%
Wood	998		900	98	90.2%	888	110	89.0%	917	81	91.9%	965	33	96.7%
Yorkshire	793	3	821	-28	103.5%	856	-63	108.0%	895	-102	112.9%	930	-137	117.3%
Yung	1,041		650	391	62.4%	650	391	62.4%	834	207	80.1%	1,543	-502	148.2%
Total	42,051	110	40,482	1,569	96.3%	40,646	1,405	96.7%	42,849	-798	101.9%	46,669	-4,618	111.0%

Note:

* Forecasts have been adjusted for the boundary changes taking effect in the 2018-19 SY.

Student Enrollment Data: Current and Projected Enrollment
Elementary Schools – Additional Space to be Constructed
SY 2017-18 to SY 2027-28

Elementary School	2017-18			2018-19			2022-23			2027-28		
	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
2018												
<i>Pattie Elementary Addition (10 rooms)</i> ¹												
2019												
<i>Antietam Elementary Addition (13 rooms)</i>								329			329	
<i>Elementary School (East - PW Parkway Area)</i>								710			710	
<i>Lake Ridge Elementary Addition (13 rooms)</i>								329			329	
<i>Leesylvania Elementary Addition (4 rooms)</i>								83			83	
<i>Minnieville Elementary Addition (10 rooms)</i>								187			187	
<i>Springwoods Elementary Addition (13 rooms)</i>								329			329	
2022												
<i>Elementary School (West - Stonewall Area)</i>								696			696	
2023												
<i>Elementary School (Cherry Hill Area)</i>											750	
<i>Elementary (Occoquan/Woodbridge Area)</i>											682	
2024												
<i>Elementary School (Yorkshire Area)</i>											829	
Sum of Additional Seats								2,663			4,924	
Total	40,482	1,569	96.3%	40,646	1,405	96.6%	42,849	1,865	95.8%	46,669	306	99.3%

¹ Consolidates campus from two buildings (Washington-Reid and Pattie) into Pattie ES. No additional space gained.

Student Enrollment Data: Current and Projected Enrollment
Middle Schools
SY 2017-18 to SY 2027-28

Middle School	Available Space		2017-18			2018-19			2022-23			2027-28		
	Capacity	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
Benton	1,464		1,425	39	97.3%	1,382	82	94.4%	1,173	291	80.1%	1,235	229	84.3%
Beville	1,191		1,121	70	94.1%	1,102	89	92.6%	1,069	122	89.7%	1,119	72	94.0%
Bull Run	1,233		1,166	67	94.6%	1,228	5	99.6%	1,183	50	96.0%	1,381	-148	112.0%
Gainesville	1,233	7	1,436	-203	116.5%	1,474	-241	119.5%	1,467	-234	119.0%	1,720	-487	139.5%
Graham Park	867	8	1,034	-167	119.3%	1,053	-186	121.4%	1,116	-249	128.7%	1,169	-302	134.9%
Hampton	982	2	1,087	-105	110.7%	1,118	-136	113.8%	1,157	-175	117.8%	1,215	-233	123.7%
Lake Ridge	1,191 ¹		1,275	-84	107.1%	1,407	57	96.1%	1,478	-14	101.0%	1,566	102	107.0%
	1,464 ²													
Lynn	1,170		1,080	90	92.3%	1,084	86	92.6%	1,220	-50	104.3%	1,379	-209	117.9%
Marsteller	1,233	5	1,344	-111	109.0%	1,312	-79	106.4%	1,134	99	92.0%	1,297	-64	105.2%
Nokesville School, The	439		368	71	83.8%	358	81	81.6%	347	92	79.1%	411	28	93.7%
Parkside	1,453		1,313	140	90.4%	1,400	53	96.3%	1,537	-84	105.8%	1,713	-260	117.9%
Pennington	243		235	8	96.7%	243	0	100.0%	243	0	100.0%	243	0	100.0%
Porter	252		264	-12	104.8%	252	0	100.0%	252	0	100.0%	252	0	100.0%
Potomac	1,464		1,253	211	85.6%	1,319	145	90.1%	1,553	-89	106.1%	1,831	-367	125.1%
Reagan	1,233		1,383	-150	112.2%	1,368	-135	110.9%	1,370	-137	111.1%	1,493	-260	121.1%
Rippon	1,390		1,289	101	92.7%	1,331	59	95.8%	1,543	-153	111.0%	1,691	-301	121.7%
Saunders	1,212		1,168	44	96.4%	1,178	34	97.2%	1,112	100	91.7%	1,160	52	95.7%
Stonewall	1,003	5	1,112	-109	110.9%	1,207	-204	120.4%	1,327	-324	132.3%	1,419	-416	141.5%
Woodbridge	1,066	9	1,360	-294	127.6%	1,343	-277	126.0%	1,354	-288	127.0%	1,422	-356	133.4%
Total	20,319 ¹		20,713	-394 ³	101.9% ³	21,169	-577	102.8%	21,645	-1,053	105.1%	23,724	-3,132	115.2%
	20,592 ²	36												
<i>Stonewall MS Addition (17 rooms, 2019)</i>														
<i>Middle School (East - Potomac Shores, 2021)</i>														
<i>Middle School (West - Linton Hall Area, 2024)</i>														
<i>Middle School (TBD, 2026)</i>														
Sum of Additional Seats														
	20,319 ¹								1,821				4,749	
Total	20,592 ²	36	20,713	-394 ³	101.9% ³	21,169	-577	102.8%	21,645	768	96.6%	23,724	1,617	93.6%

Note:

¹ Capacity on which available space is calculated for the 2017-18 school year.

² Capacity on which available space is calculated for the 2018-19 through 2027-28 school years. It reflects classroom addition opening for the 2018-19 school year.

³ Figures are calculated based on the 2017-18 total middle capacity.

Student Enrollment Data: Current and Projected Enrollment
High Schools
SY 2017-18 to SY 2027-28

High School	Available Space		2017-18			2018-19			2022-23			2027-28		
	Capacity	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
Battlefield	2,053	16	2,941	-888	143.3%	3,022	-969	147.2%	3,131	-1,078	152.5%	3,289	-1,236	160.2%
Brentsville	1,110		1,023	87	92.2%	1,021	89	92.0%	982	128	88.5%	976	134	87.9%
Colgan	2,053		2,250	-197	109.6%	2,503	-450	121.9%	2,578	-525	125.5%	2,278	-225	111.0%
Forest Park	2,053		2,165	-112	105.5%	2,138	-85	104.1%	2,116	-63	103.1%	1,884	169	91.8%
Freedom	2,053	6	2,258	-205	110.0%	2,225	-172	108.4%	2,571	-518	125.2%	3,234	-1,181	157.5%
Gar-Field	2,839		2,403	436	84.6%	2,373	466	83.6%	2,483	356	87.5%	2,995	-156	105.5%
Hylton	2,053		2,263	-210	110.2%	2,226	-173	108.4%	2,219	-166	108.1%	1,718	335	83.7%
Osborn Park	2,430		2,173	257	89.4%	2,316	114	95.3%	2,562	-132	105.4%	1,954	476	80.4%
Patriot	2,053	20	2,688	-635	130.9%	2,668	-615	130.0%	2,668	-615	129.9%	2,783	-730	135.5%
Potomac	2,357		1,961	397	83.2%	2,024	333	85.9%	2,534	-177	107.5%	3,402	-1,045	144.3%
Stonewall Jackson	2,409	7	2,554	-145	106.0%	2,671	-262	110.9%	3,273	-864	135.8%	4,328	-1,919	179.7%
Woodbridge	2,734		2,583	151	94.5%	2,690	44	98.4%	3,032	-298	110.9%	3,175	-441	116.1%
Total	26,197	49	27,261	-1,064	104.1%	27,879	-1,682	106.4%	30,148	-3,951	115.1%	32,016	-5,819	122.2%
<i>13th High School - (West 2021)</i>														
<i>14th High School - (Mid-County 2024)</i>														
<i>15th High School - (TBD 2027)</i>														
Sum of Additional Seats														
									2,557				2,557	
Total	26,197	49	27,261	-1,064	104.1%	27,879	-1,682	106.4%	30,148	-1,394	104.8%	32,016	1,852	94.5%

Student Enrollment Data: Current Enrollment
Special Education and Alternative Schools
SY 2017-18

Special Education and Alternative School	2017-18	
	Portable Classrooms	Students
PACE East SE		88
PACE West SE		82
Pre-School Child Find		92
School Based Pre-K		412
Special Ed. Private Facility		94
Woodbine SE	1	58
New Directions Alt		457
New Dominion Alt	11	47
TJHS Regional Magnet		75
Total	12	1,405
<i>Independence Nontraditional School (2018)</i>		

Portable Classrooms: Current and Historical Totals
By School Type, 1998 to 2017

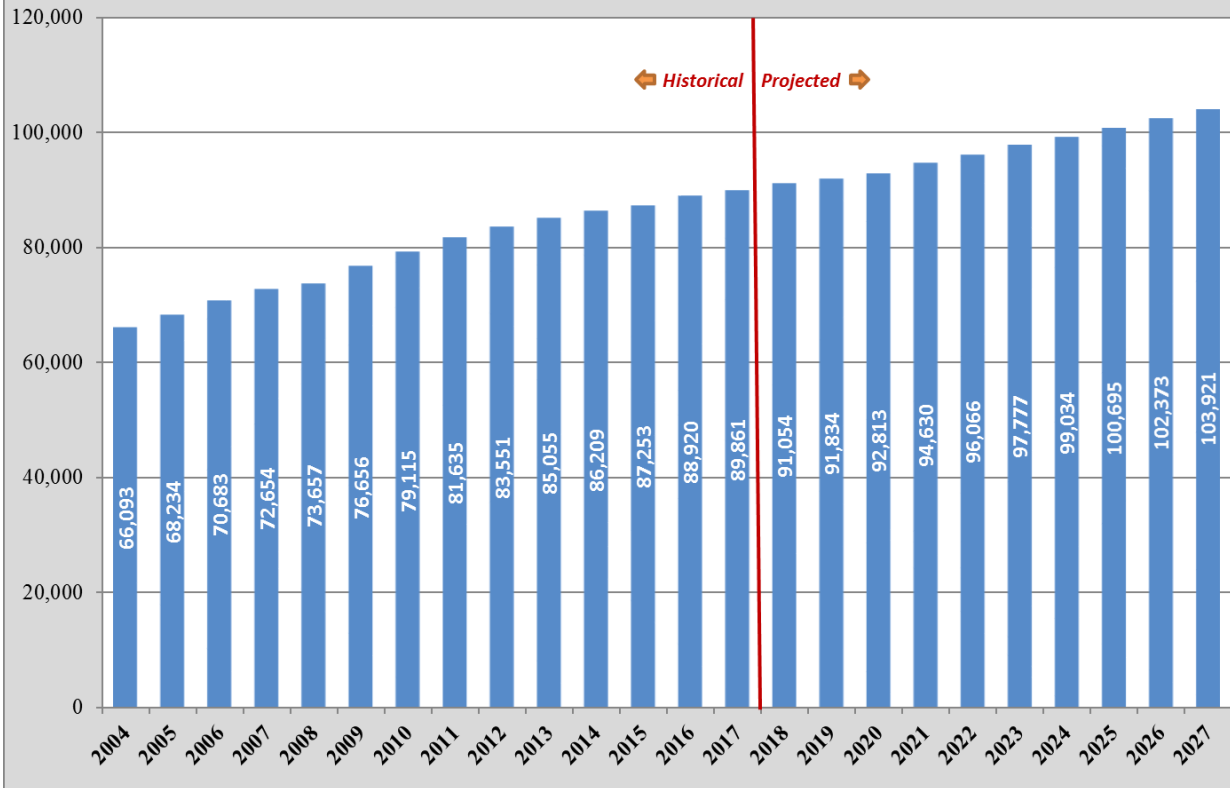
Year	Elementary	Middle	High	Alternative	Special Education	Total
1998	101	21	28	0	5	155
1999	109	25	25	0	5	164
2000	118	31	5	10	5	169
2001	122	37	2	10	5	176
2002	130	26	2	10	5	173
2003	141	16	2	10	5	174
2004	168	19	2	10	5	204
2005	185	40	5	10	5	245
2006	179	27	8	10	5	229
2007	184	20	14	10	10	238
2008	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
2015	122	27	46	11	9	215
2016	128	30	41	11	1	211
2017	110	36	49	11	1	207

Note: Portable classrooms used for instructional purposes.

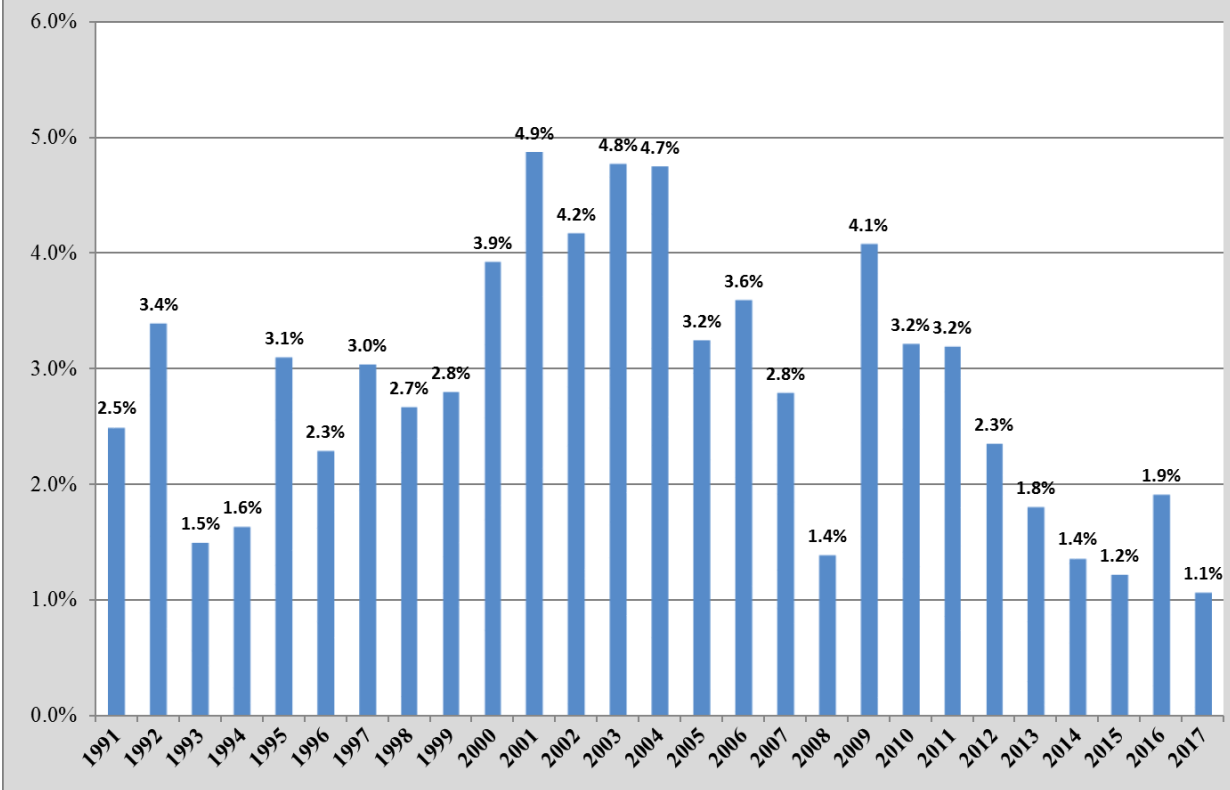
Student Enrollment Data: Historical and Projected 1966-2027

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	40,070	20,004	25,861	1,319	87,253	1,045	1.2%
2016	40,569	20,095	26,923	1,333	88,920	1,667	1.9%
2017	40,482	20,713	27,261	1,405	89,861	941	1.1%
2018	40,646	21,169	27,879	1,360	91,054	1,193	1.3%
2019	40,878	21,434	28,147	1,376	91,834	780	0.9%
2020	41,261	21,483	28,677	1,392	92,813	979	1.1%
2021	42,012	21,504	29,706	1,408	94,630	1,816	2.0%
2022	42,849	21,645	30,148	1,423	96,066	1,436	1.5%
2023	43,584	21,926	30,827	1,440	97,777	1,711	1.8%
2024	44,283	22,339	30,955	1,456	99,034	1,257	1.3%
2025	45,169	22,961	31,088	1,478	100,695	1,661	1.7%
2026	45,936	23,351	31,590	1,496	102,373	1,678	1.7%
2027	46,669	23,724	32,016	1,512	103,921	1,547	1.5%

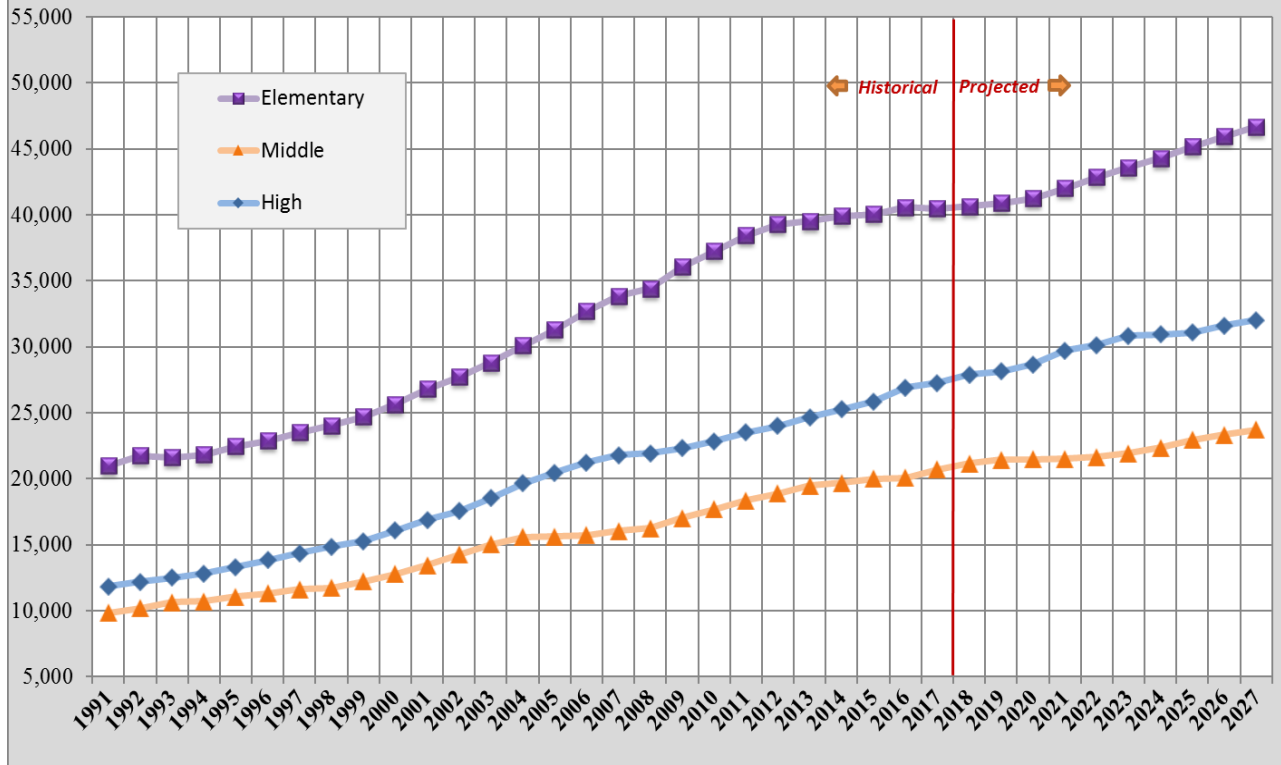
Prince William County Public Schools
Historical and Projected Enrollment



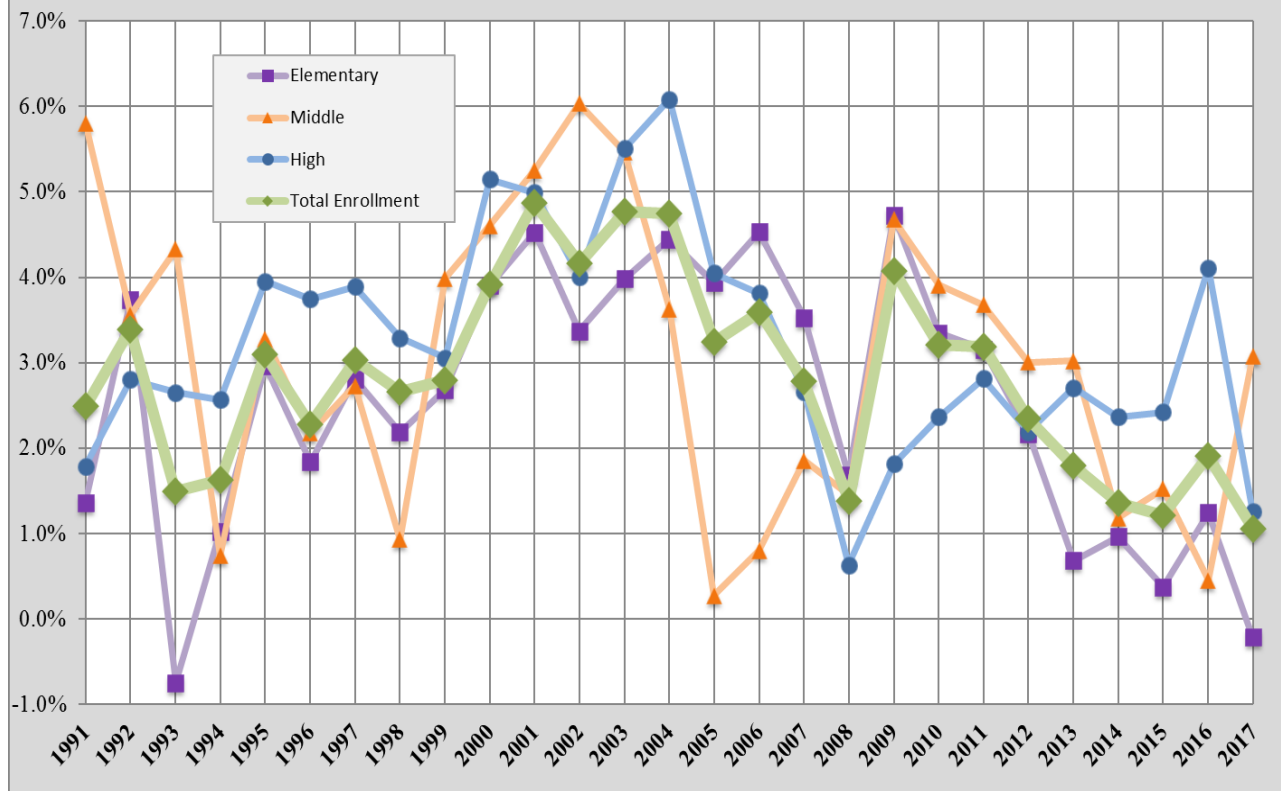
Prince William County Public Schools
Annual Percentage Change in Enrollment



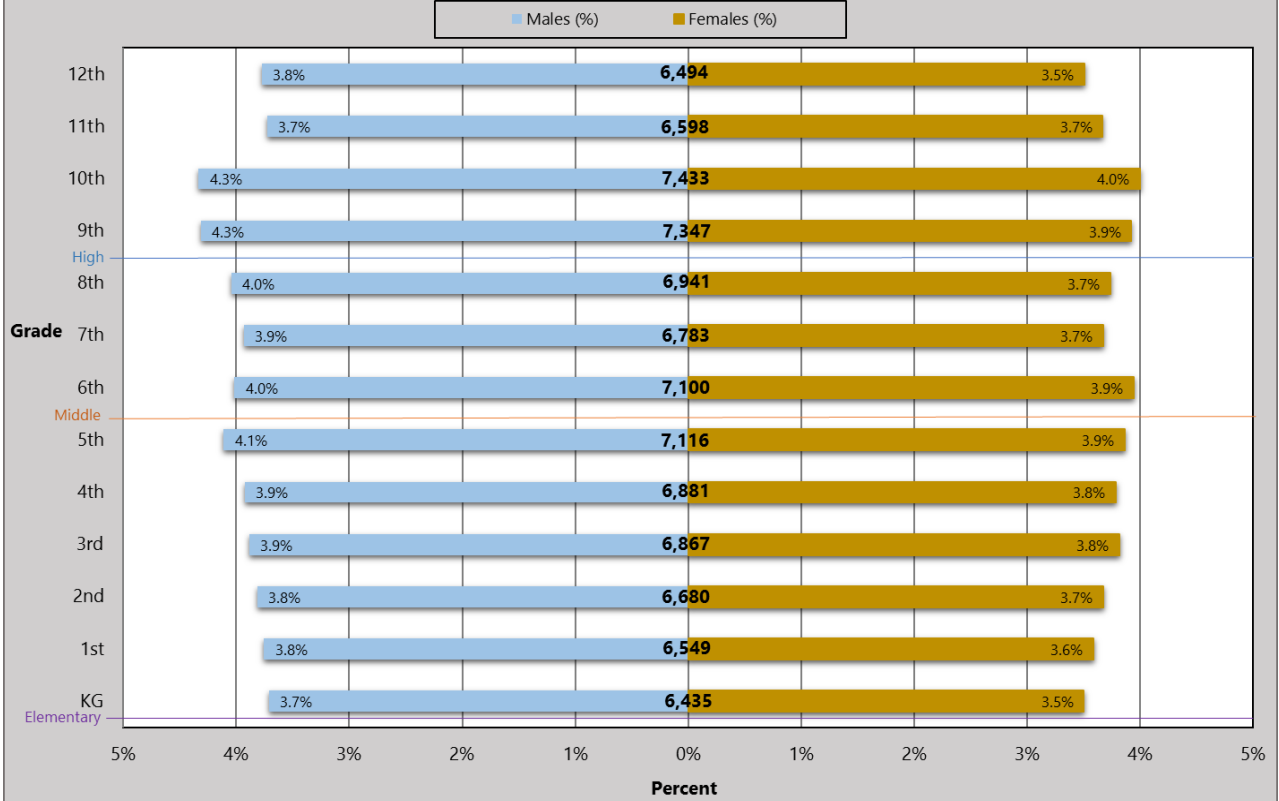
Prince William County Public Schools Historical and Projected Enrollment by School Level

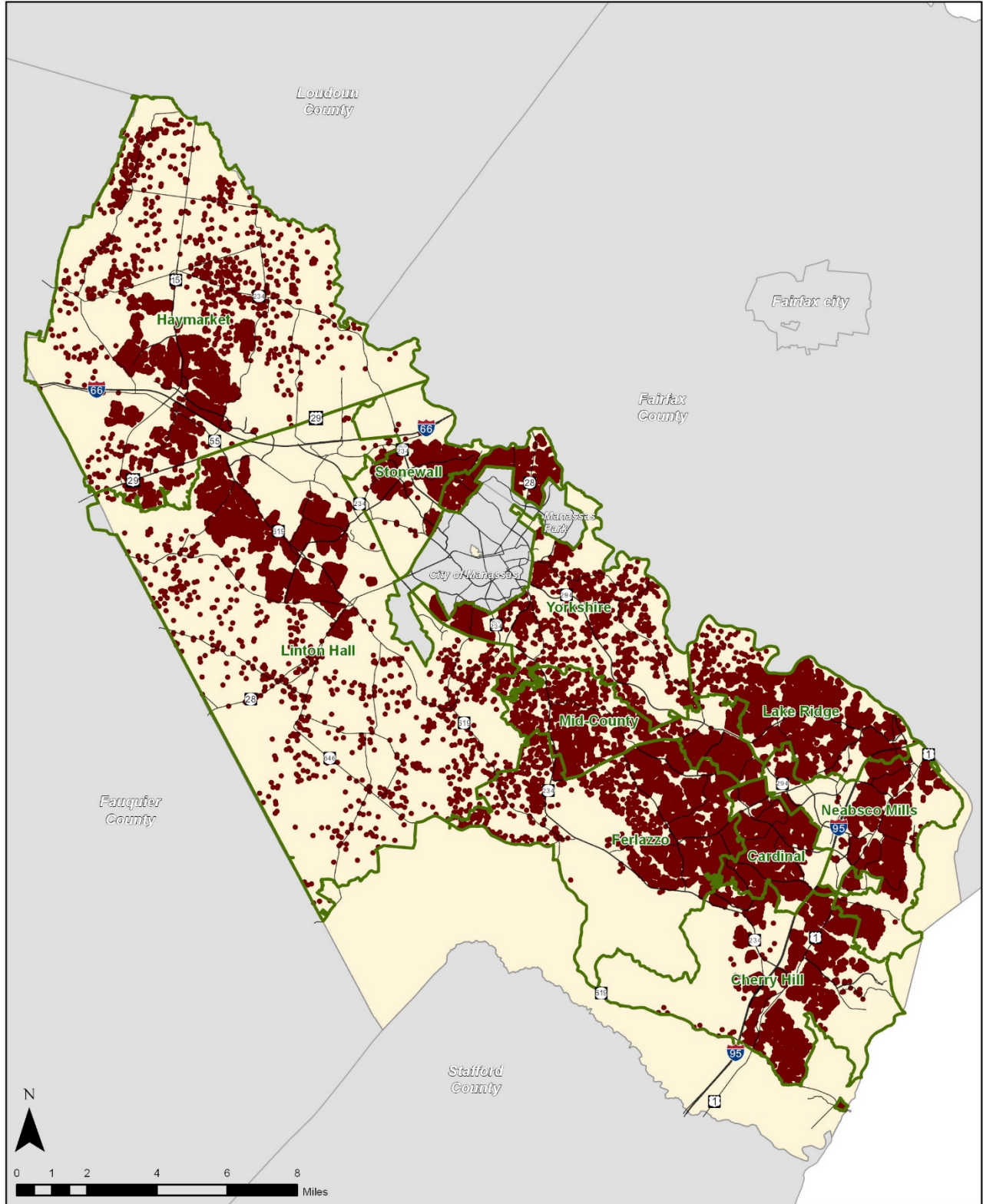


Prince William County Public Schools Annual Percentage Change in Enrollment by School Level



Prince William County Public Schools
Grade-Gender Distribution





March 2018

Office of Facilities Services

Student Enrollment Projections

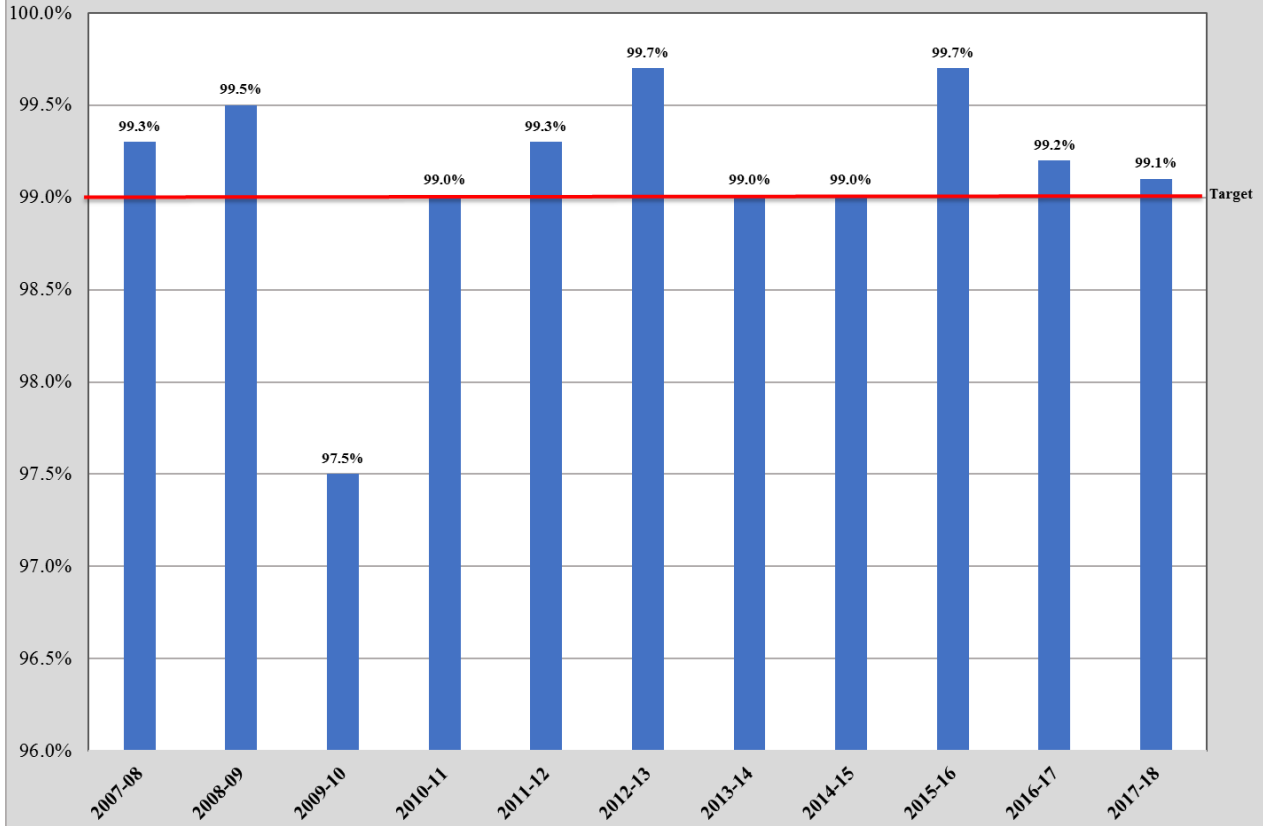
Error Rate Analysis

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 *
1984-85	35,864	36,046	182	-0.50%	35,215	1.84%	35,002	2.46%	34,672	3.44%
1985-86	36,836	36,250	(586)	1.62%	35,228	4.56%	35,570	3.56%	35,408	4.03%
1986-87	37,825	37,568	(257)	0.68%	36,713	3.03%	35,484	6.60%	35,977	5.14%
1987-88	39,106	38,830	(276)	0.71%	37,418	4.51%	37,056	5.53%	35,844	9.10%
1988-89	40,463	40,236	(227)	0.56%	39,586	2.22%	37,995	6.50%	37,669	7.42%
1989-90	41,673	42,059	386	-0.92%	41,511	0.39%	40,369	3.23%	38,836	7.31%
1990-91	42,176	42,268	92	-0.22%	42,984	-1.88%	42,565	-0.91%	41,163	2.46%
1991-92	43,400	42,769	(631)	1.48%	45,230	-4.05%	44,223	-1.86%	43,656	-0.59%
1992-93	44,868	44,697	(171)	0.38%	45,156	-0.64%	47,149	-4.84%	45,497	-1.38%
1993-94	45,539	45,762	223	-0.49%	45,618	-0.17%	46,839	-2.78%	47,980	-5.09%
1994-95	46,281	46,436	155	-0.33%	48,523	-4.62%	47,551	-2.67%	48,645	-4.86%
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%
2015-16	87,253	87,500	247	-0.28%	89,458	-2.46%	90,898	-4.01%	88,440	-1.34%
2016-17	88,920	88,216	(704)	0.80%	88,777	0.16%	92,957	-4.34%	93,026	-4.41%
2017-18	89,861	90,636	775	-0.86%	89,381	0.54%	93,460	-3.85%	94,793	-5.20%

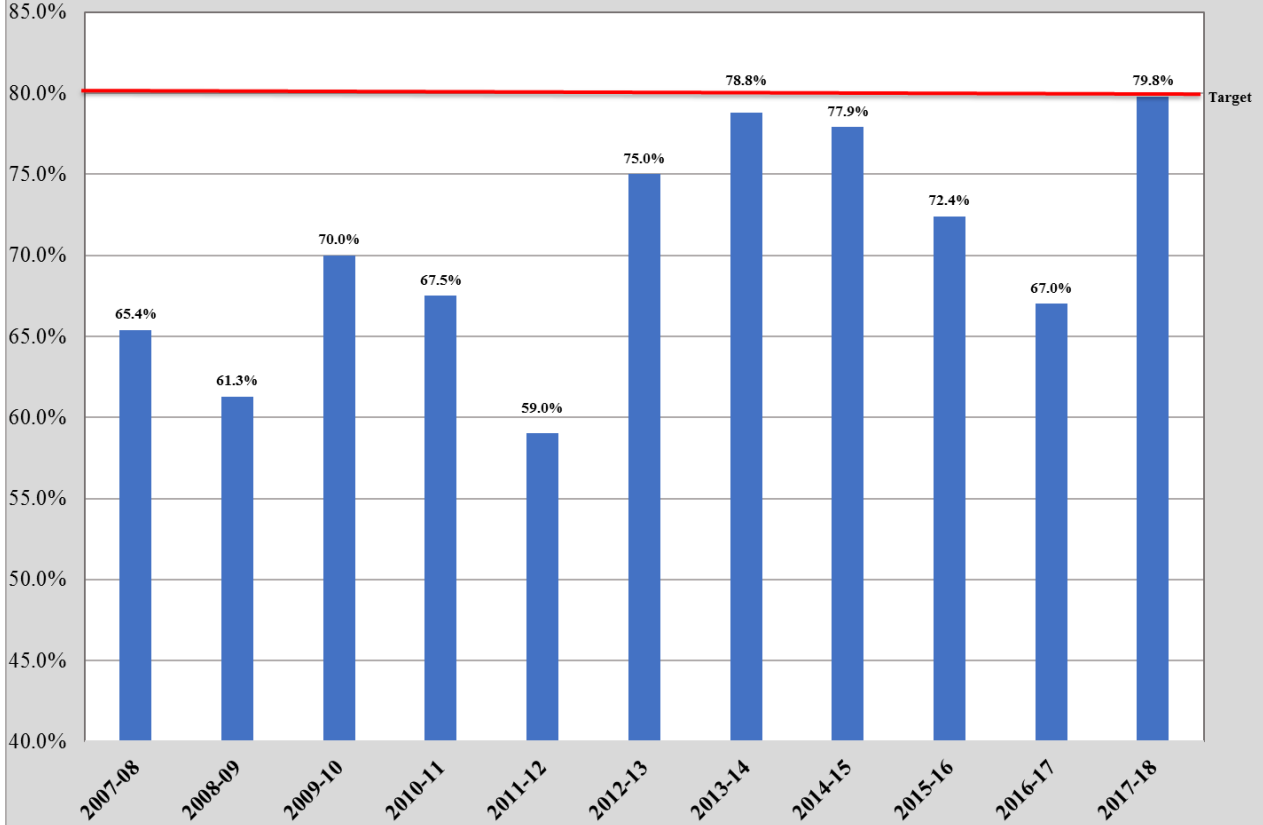
(MPE) Mean Percentage Error	0.40%		0.83%		1.47%		2.21%
(MAPE) Mean Absolute Percentage Error	0.84%		1.94%		4.25%		4.57%
10-Year (MPE) Mean Percentage Error	0.24%		0.39%		0.59%		1.16%
10-Year (MAPE) Mean Absolute Percentage Error	0.88%		1.54%		3.44%		3.59%

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

Prince William County Public Schools
Divisionwide Projection Accuracy



Prince William County Public Schools
Percentage of Schools Within 5% Error



Housing Units in Residential Development
By Elementary School Attendance Area and Stage of Development
September 2017

Elementary School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Alvey	141			141									141
Ashland	6			6	65			65					71
Belmont							720	720			1,522	1,522	2,242
Bennett		252		252	121	112		233					485
Bristow Run					4			4	34	39		73	77
Buckland Mills		105	11	116	25	106		131	389	130		519	766
Coles	25			25	21			21					46
Covington-Harper	356	263		619	596	752	1,550	2,898			170	170	3,687
Dale City					4			4					4
Dumfries	5		81	86					13			13	99
Ellis									270	365	1,601	2,236	2,236
Featherstone					11			11					11
Fitzgerald			241	241		398		398	18		192	210	849
Glenkirk	4			4									4
Gravelly	269			269	35			35					304
Haymarket	20	121	208	349	231			231		87	36	123	703
Henderson	143			143	38			38					181
Kilby							148	148		140	712	852	1,000
King	115			115									115
Leesylvania							550	550					550
Loch Lomond		34		34									34
Marshall	7			7	5			5	52			52	64
Marumsco Hills		5	43	48		25		25					73
McAuliffe		4		4									4
Minnieville											144	144	144
Montclair					52			52					52
Mountain View	11			11					299			299	310
Mullen							20	20			788	788	808
Neabsco		35		35									35
Nokesville School, The	261			261	107			107	534			534	902
Occoquan			4	4	21			21					25
Old Bridge					4			4					4
Parks					11			11	10			10	21
Pattie	54			54									54
Penn	167	12		179	15			15	12	157		169	363
Piney Branch	10	51	77	138							80	80	218
River Oaks										112		112	112
Rockledge							216	216					216
Signal Hill	38	7	296	341	245	180	54	479	368	265		633	1,453
Springwoods	4			4									4
Swans Creek			78	78			73	73	16		135	151	302
Triangle	42	12		54	49			49					103
Tyler		54	32	86						99	116	215	301
Vaughan			145	145	139			139	24			24	308
Victory			648	648									648
West Gate											228	228	228
Williams											162	162	162
Wilson	15			15	62	30	163	255					270
Wood	15			15					10	139		149	164
Yorkshire			404	404	12			12					416
Yung	61			61	177	255		432	650	2,200	1,106	3,956	4,449
Total	1,769	955	2,268	4,992	2,050	1,858	3,494	7,402	2,699	3,733	6,992	13,424	25,818

Note:

Active = Rezoning approved by Board of County Supervisors and site development permit issued
Planned = Rezoning approved by Board of County Supervisors and proposed plans submitted
Rezoning Submitted = rezoning application submitted, CPA request submitted or initiated (if applicable), or no recent progress has occurred
Schools without additional residential development within their respective attendance areas are omitted

Housing Units in Residential Development
By Middle School Attendance Area and Stage of Development
September 2017

Middle School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Benton	199	12		211	135			135	64			64	410
Beville	115			115						157		157	272
Bull Run	31	54	32	117	160	255		415	299	1,099	422	1,820	2,352
Gainesville	75	51	725	851	21			21	650	1,200	880	2,730	3,602
Graham Park	101	12	81	194	49			49	13			13	256
Hampton		35		35	4	30	163	197					232
Lynn		5	192	197	21	25	868	914		140	2,234	2,374	3,485
Marsteller	15			15			20	20	44	543	2,389	2,976	3,011
Nokesville School, The	261			261	107			107	534			534	902
Parkside	38	293	700	1,031	378	292	54	724	638	265		903	2,658
Potomac	356	263	78	697	596	752	1,623	2,971	16	112	467	595	4,263
Reagan	410	226	219	855	291	106		397	389	217	36	642	1,894
Rippon	143		241	384	49	398	550	997	18			192	1,591
Saunders	21	4		25	96			96	10			10	131
Stonewall											228	228	228
Woodbridge	4			4	143		216	359	24		144	168	531
Total	1,769	955	2,268	4,992	2,050	1,858	3,494	7,402	2,699	3,733	6,992	13,424	25,818

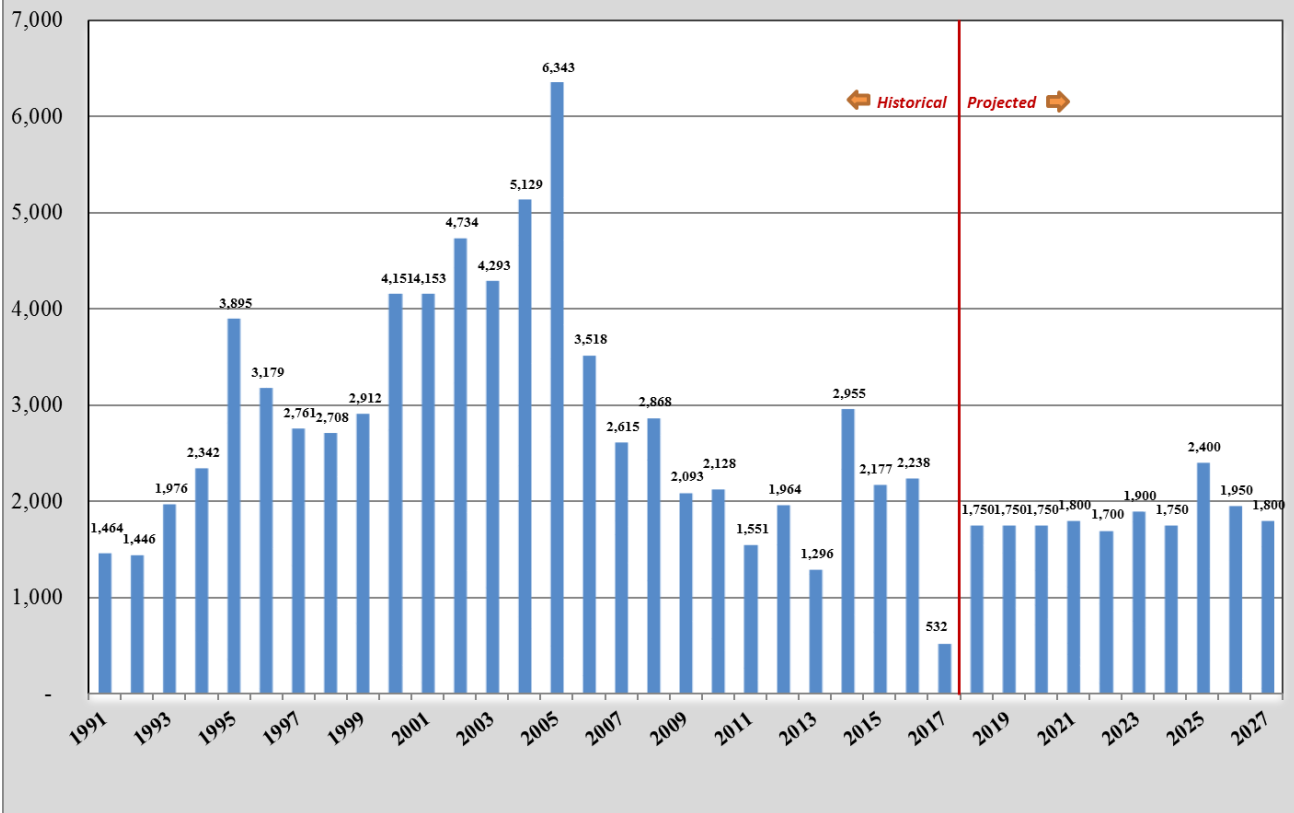
Note:
Active = Rezoning approved by Board of County Supervisors and site development permit issued
Planned = Rezoning approved by Board of County Supervisors and proposed plans submitted
Rezoning Submitted = rezoning application submitted, CPA request submitted or initiated (if applicable), or no recent progress has occurred
Schools without additional residential development within their respective attendance areas are omitted

Housing Units in Residential Development
By High School Attendance Area and Stage of Development
September 2017

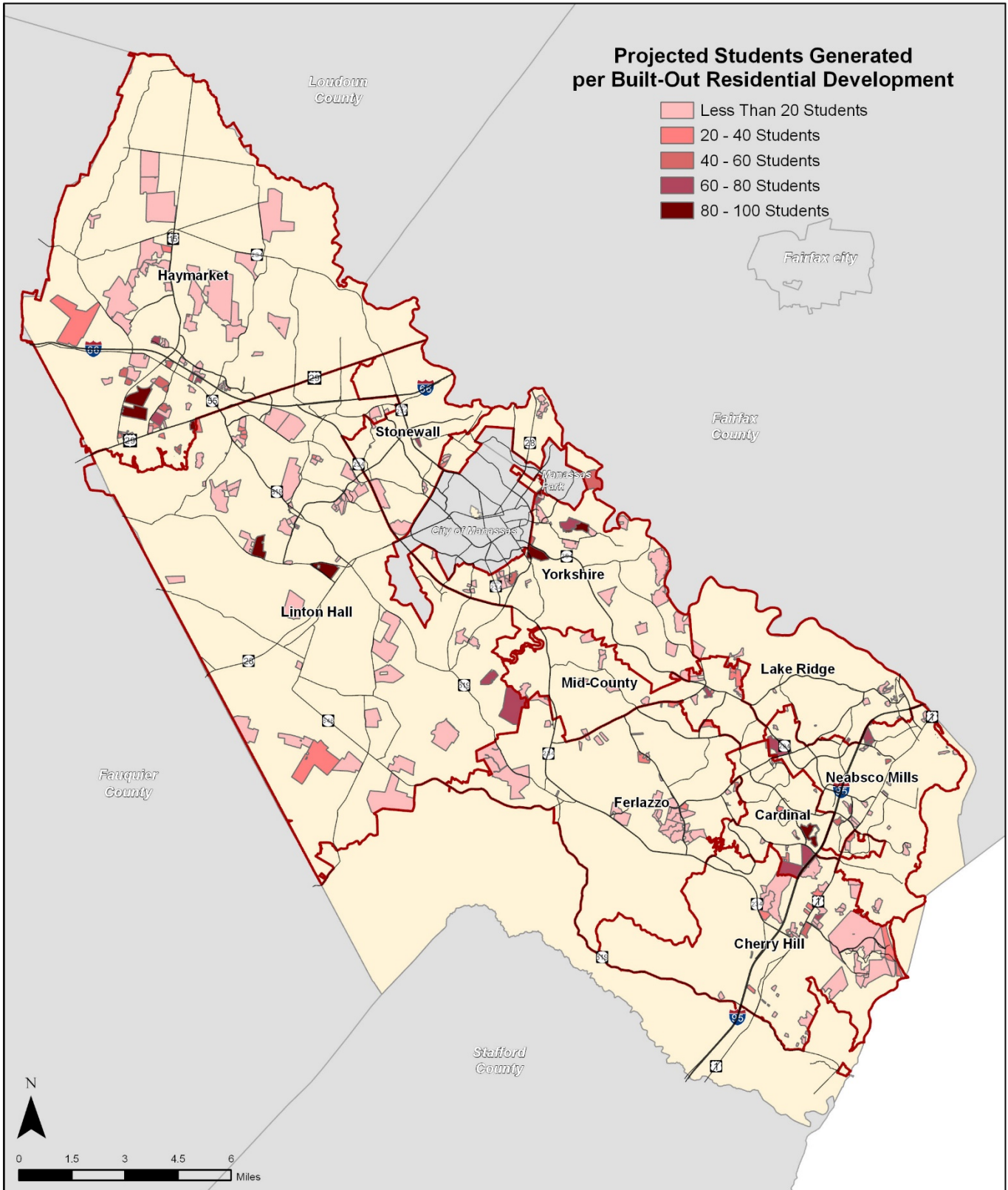
High School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Battlefield	441	227	240	908	291			291	688	1,186	152	2,026	3,225
Brentsville	261			261	144			144	534			534	939
Colgan	287	12		299	120			120	52	157		209	628
Forest Park	65	12	81	158	11			11	13			13	182
Freedom		5	429	434	11	423	1,418	1,852	18		1,714	1,732	4,018
Gar-Field	4	35		39	154	30	163	347	24		144	168	554
Hylton	42	4		46	89			89	10			10	145
Osborn Park	38	259	700	997	356	292	54	702	380	265		645	2,344
Patriot	19	53	11	83	4	106		110	44	308	80	432	625
Potomac	541	263	78	882	672	752	1,623	3,047	16	112	467	595	4,524
Stonewall Jackson	71	85	725	881	177	255	20	452	920	1,565	3,723	6,208	7,541
Woodbridge			4	4	21		216	237		140	712	852	1,093
Total	1,769	955	2,268	4,992	2,050	1,858	3,494	7,402	2,699	3,733	6,992	13,424	25,818

Note:
Active = Rezoning approved by Board of County Supervisors and site development permit issued
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Prince William County Historical and Projected Annual Housing Unit Change



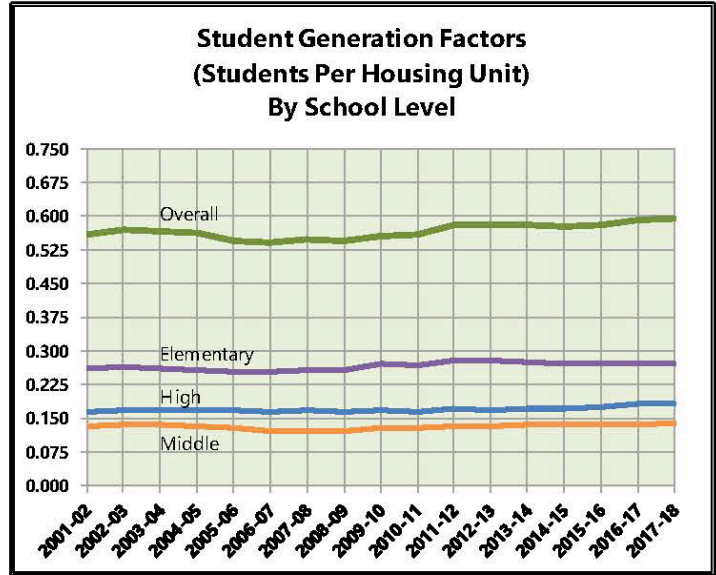
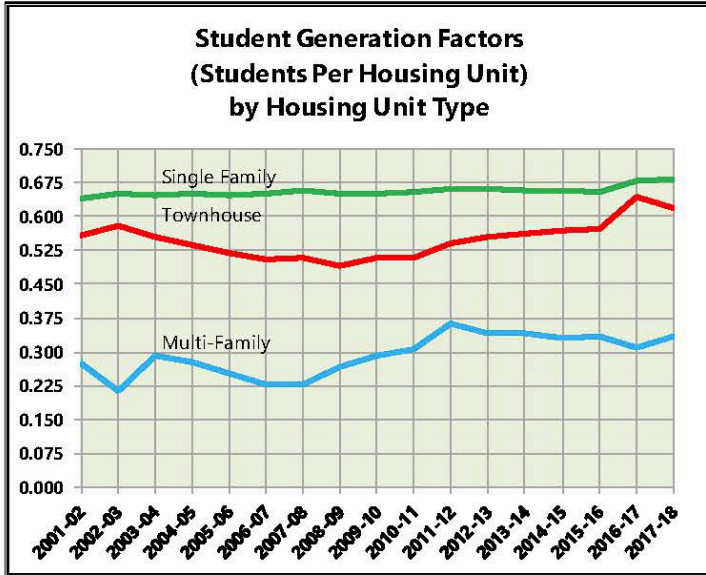
Additional Students Generated by Residential Development (2018-2027)



April 2018

Office of Facilities Services

Student Generation Factors By School Level and Housing Unit Type



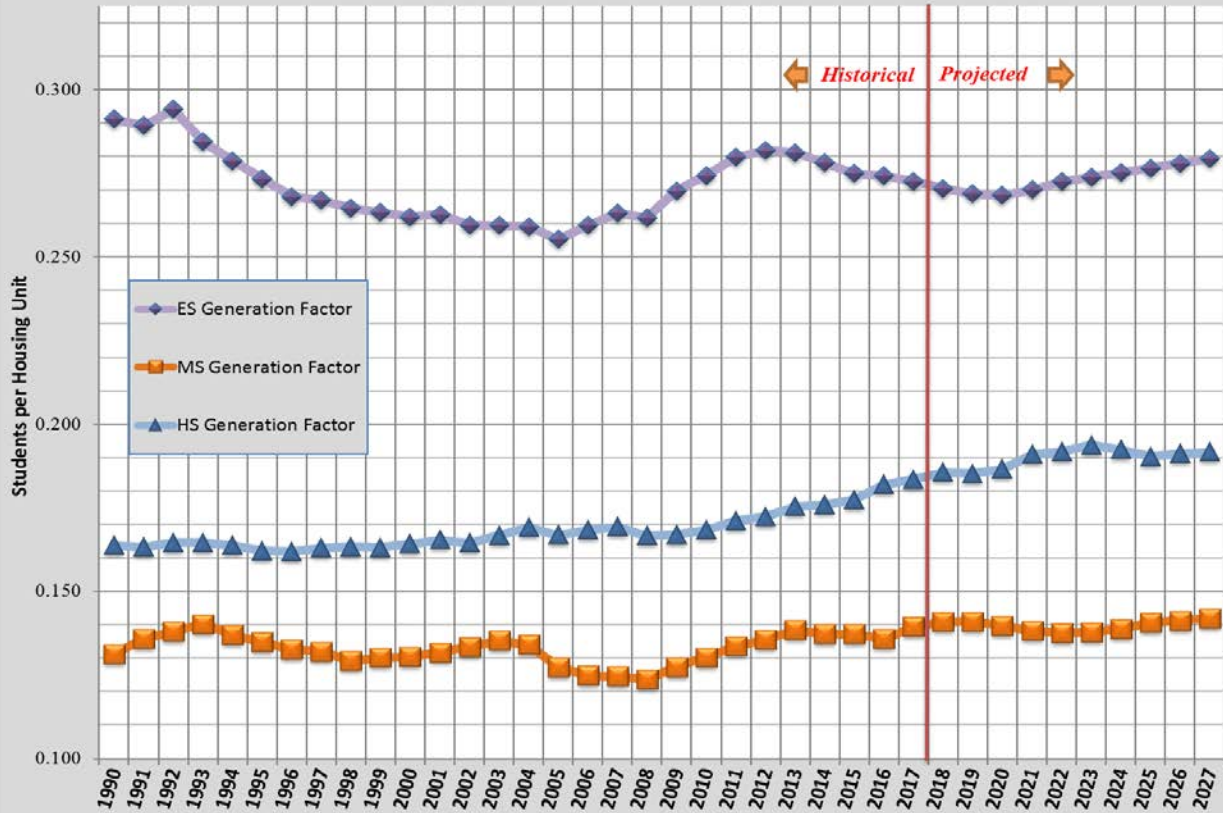
Historical Data					
	School Type	Unit Type			Total
		Single Family	Townhouse	Multi-Family	
2017-18	Elementary	0.297	0.299	0.174	0.273
	Middle	0.163	0.144	0.071	0.140
	High	0.222	0.177	0.090	0.184
	Total	0.682	0.619	0.335	0.596
2010-11	Elementary	0.301	0.258	0.167	0.268
	Middle	0.152	0.111	0.067	0.127
	High	0.202	0.139	0.072	0.164
	Total	0.655	0.509	0.306	0.560
2016-17	Elementary	0.300	0.313	0.163	0.273
	Middle	0.159	0.145	0.064	0.135
	High	0.220	0.184	0.082	0.181
	Total	0.679	0.642¹	0.309¹	0.590
2008-09	Elementary	0.298	0.245	0.142	0.258
	Middle	0.148	0.107	0.055	0.122
	High	0.206	0.139	0.069	0.166
	Total	0.652	0.491	0.265	0.546
2014-15	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
	Total	0.656	0.569	0.331	0.578
2006-07	Elementary	0.294	0.250	0.122	0.254
	Middle	0.148	0.111	0.048	0.122
	High	0.208	0.143	0.058	0.166
	Total	0.650	0.504	0.228	0.542
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
	Total	0.662	0.554	0.342	0.582
2004-05	Elementary	0.290	0.257	0.150	0.258
	Middle	0.157	0.128	0.062	0.134
	High	0.206	0.151	0.065	0.169
	Total	0.652	0.536	0.278	0.561

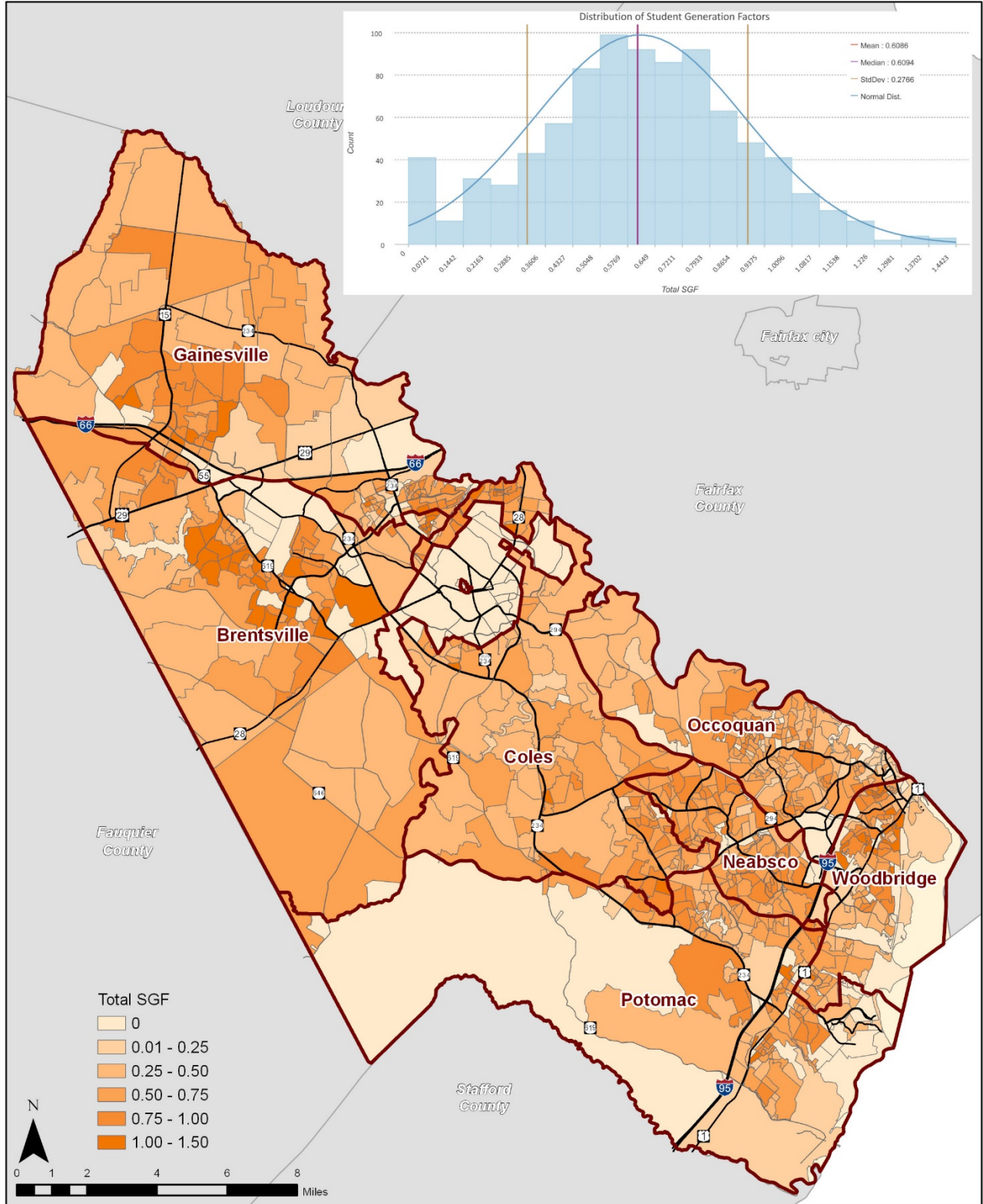
Note: 1) The 'Student Generation Factor' is a mathematical representation of the relationship between housing units in Prince William County and the number of students enrolled in Prince William County Public Schools on September 30 of each year. In other words, it is the number of enrolled students per total number of housing units by type.

2) Numbers are rounded up to the nearest thousandth; thus totals, may be affected because of rounding.

¹ In 2016-17, approximately 7,000 condo-style townhouses and 2-over-2 units were reclassified from townhouse to multi-family, thus contributing to a notable increase in student yields of townhouse units and a decrease in student yields of multi-family units.

Prince William County Public Schools
Student Generation Factors by School Level





March 2018

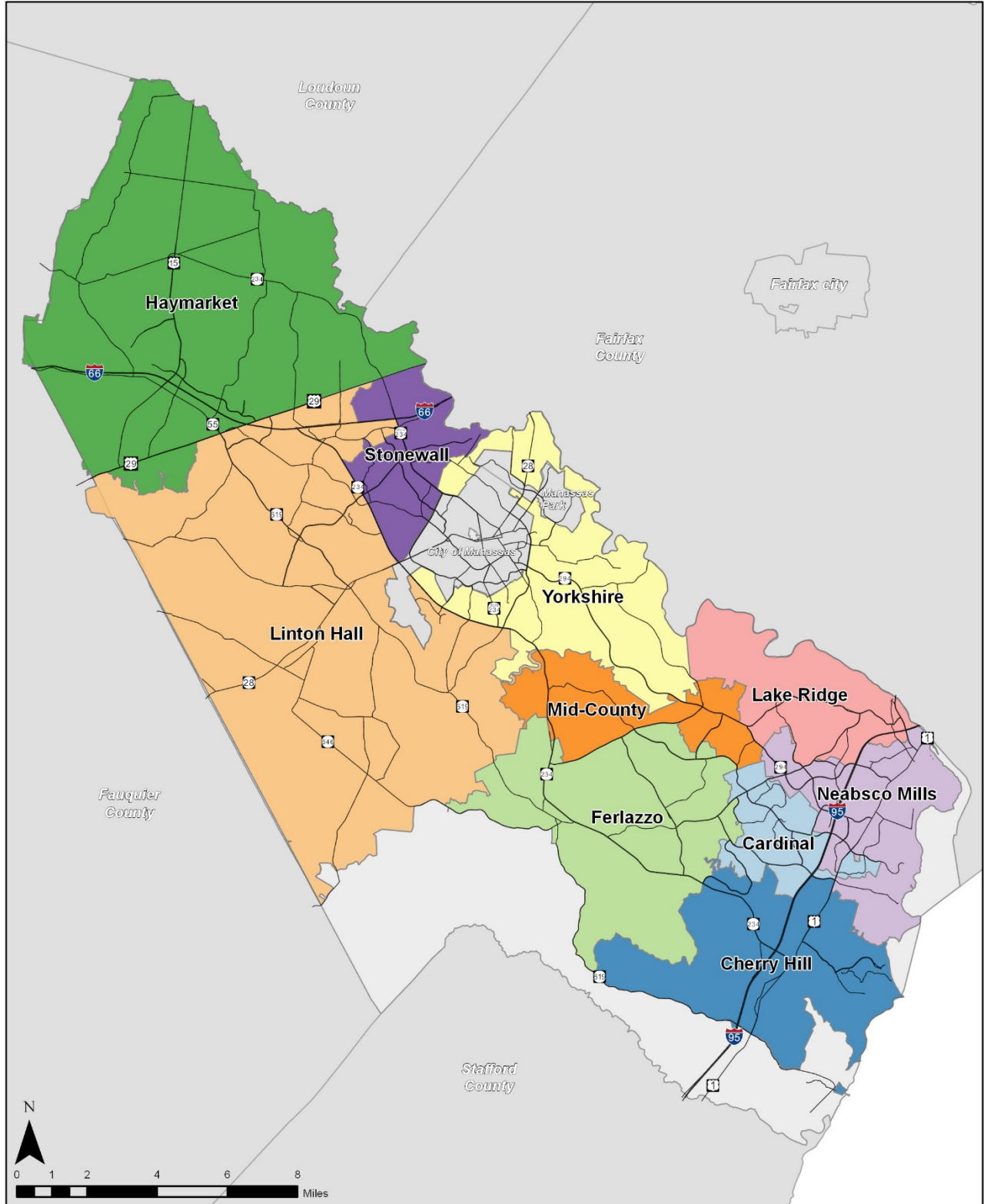
Office of Facilities Services

Elementary Schools
By CIP Geographic Areas

Geographic Area	Schools
Cardinal Area	Bel Air ES
	Dale City ES
	Fitzgerald ES
	Henderson ES
	Minnieville ES
	Neabsco ES
Cherry Hill Area	Covington-Harper ES
	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
	Wilson 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
	Marumsco Hills ES
	Potomac View ES
Stonewall Area	Vaughan ES
	Mullen ES
	Sinclair ES
	Sudley ES
Yorkshire Area	West Gate ES
	Bennett ES
	Loch Lomond ES
	Signal Hill ES
	Yorkshire ES

CIP Geographic Areas



March 2018

Office of Facilities Services

Fall Membership
By Virginia School Division

Division Name	Division Membership, PK- Grade 12						Change 2012 to 2017			
	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13	Number	Rank in Virginia	Percent	Rank in Virginia
Alexandria City Public Schools	15,802	15,418	14,857	14,359	13,723	13,256	2,546	5	19.2%	4
Arlington County Public Schools	26,975	26,176	25,365	24,561	23,500	22,544	4,431	4	19.7%	2
Charlottesville City Public Schools	4,529	4,478	4,382	4,356	4,340	4,236	293	21	6.9%	16
Chesapeake City Public Schools	40,656	40,192	39,944	39,715	39,750	39,644	1,012	11	2.6%	36
Chesterfield County Public Schools	60,976	60,103	59,705	59,754	59,214	58,886	2,090	6	3.5%	26
Culpeper County Public Schools	8,210	8,204	8,135	8,079	8,083	7,865	345	20	4.4%	23
Fairfax County Public Schools	188,591	187,510	185,856	185,563	183,438	180,634	7,957	2	4.4%	22
Falls Church City Public Schools	2,680	2,672	2,519	2,465	2,426	2,274	406	17	17.9%	6
Fauquier County Public Schools	11,144	11,078	11,155	11,167	11,147	11,068	76	35	0.7%	41
Fredericksburg City Public Schools	3,617	3,581	3,532	3,466	3,457	3,359	258	24	7.7%	12
Harrisonburg City Public Schools	6,301	6,188	5,924	5,635	5,392	5,212	1,089	10	20.9%	1
Henrico County Public Schools	51,625	51,425	51,534	50,972	50,569	50,083	1,542	8	3.1%	32
Loudoun County Public Schools	80,965	78,713	76,251	73,438	70,844	68,253	12,712	1	18.6%	5
Manassas City Public Schools	7,820	7,713	7,605	7,476	7,242	7,276	544	15	7.5%	14
Manassas Park City Public Schools	3,723	3,588	3,443	3,359	3,216	3,123	600	14	19.2%	3
Prince William County Public Schools	90,595	89,378	87,823	86,664	85,476	83,877	6,718	3	8.0%	11
Spotsylvania County Public Schools	23,808	23,617	23,731	23,887	23,838	23,768	40	40	0.2%	47
Stafford County Public Schools	29,113	28,679	28,098	27,807	27,461	27,475	1,638	7	6.0%	18
Virginia Beach City Public Schools	68,986	69,085	69,777	70,121	70,556	70,292	-1,306	132	-1.9%	61
State Totals	1,293,049	1,288,481	1,284,680	1,280,978	1,274,265	1,265,967	27,082		2.1%	

Source: Virginia Department of Education, Fall Membership Report.

Note: Excluded from the September 30 Fall Membership count are special education preschool pupils, pupils in hospitals, clinics or detention homes, and local programs, such as vocational and alternative education centers (i.e., centers or schools that receive, but do not officially enroll students).

APPENDIX C

Identified Capital Improvement Sites

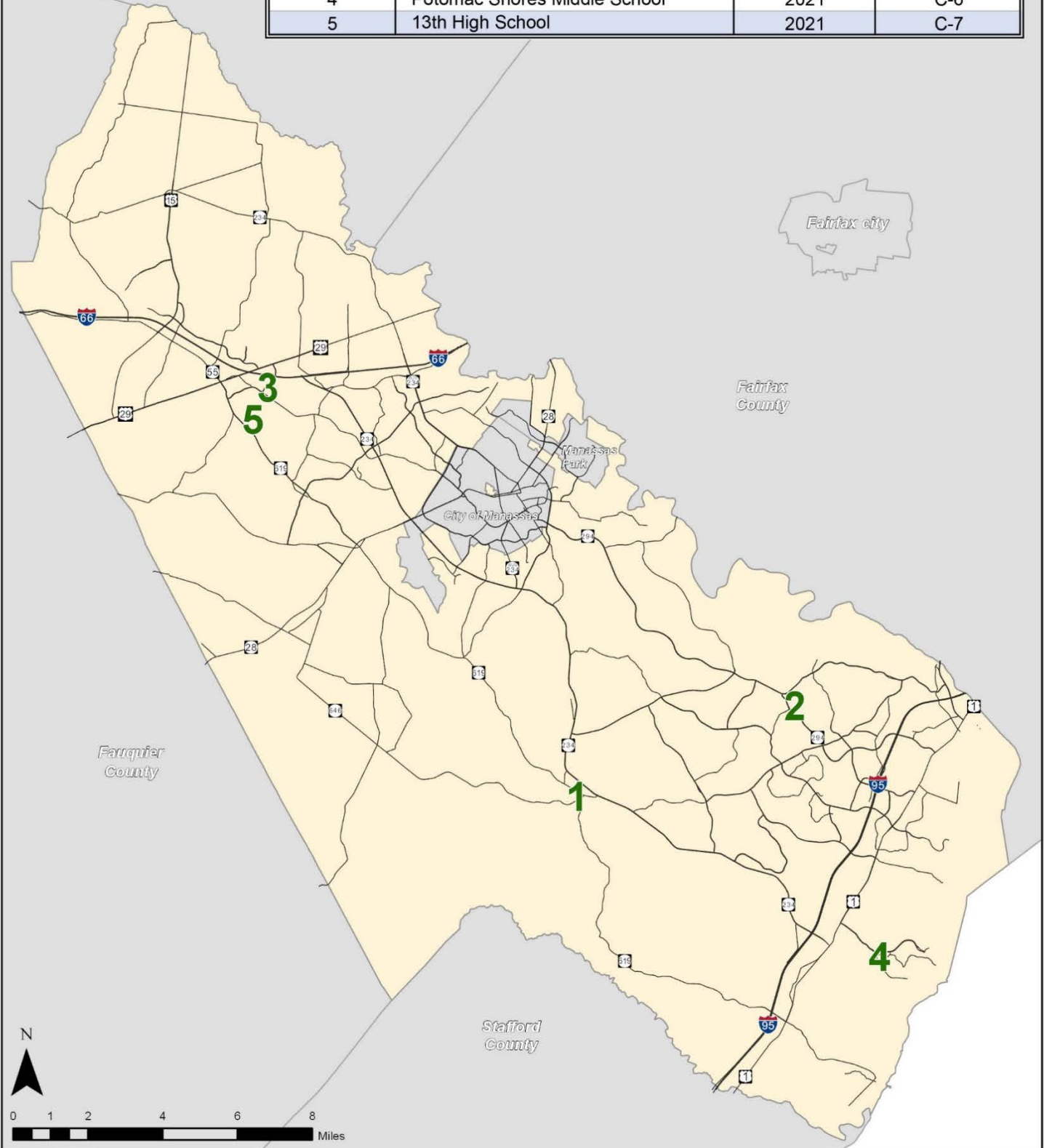
Identified Capital Improvement Sites

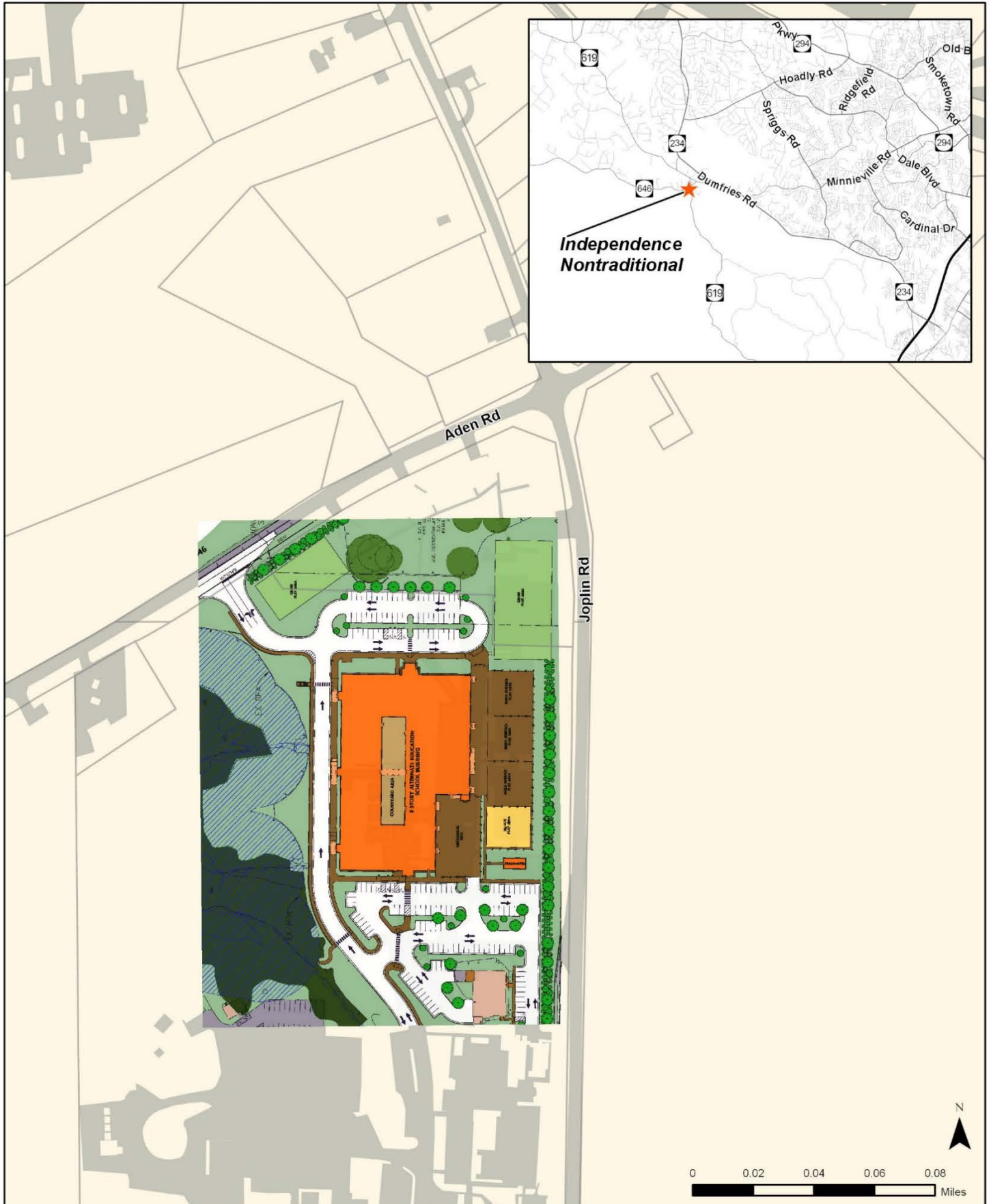
- Overall Map of Sites Identified in the Capital Improvements Program
 - Independence Nontraditional School (2018)
 - PW Parkway Elementary School (2019)
 - Western Transportation Center (2019)
 - Potomac Shores Middle School (2021)
 - 13th High School (2021)

Capital Improvement Site Maps

Appendix C details the Capital Improvement sites that have been acquired by the School Division. The year the facilities are scheduled to open at the identified site is shown on the site map and the overall map (C-2)

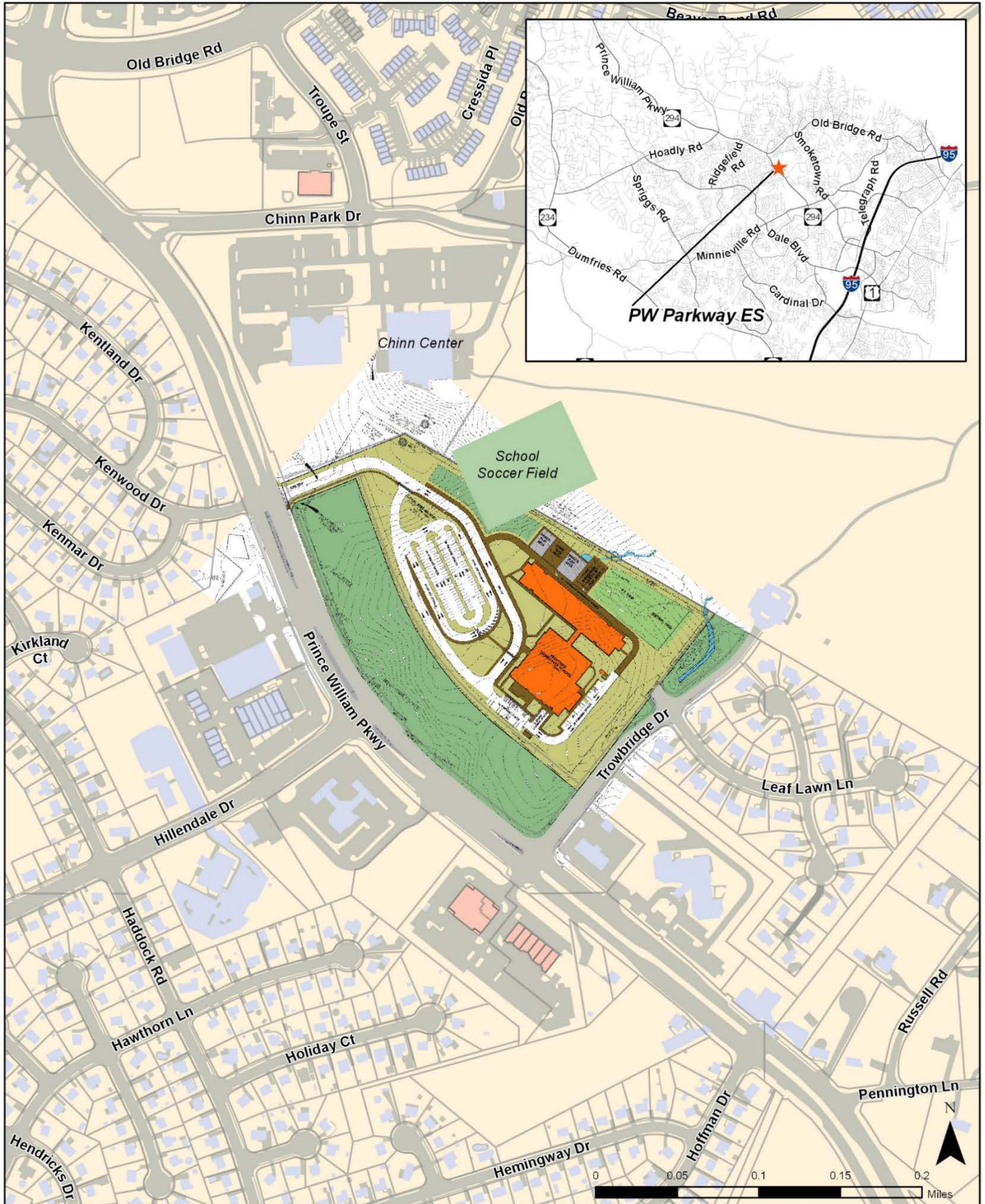
Site Number	Site Name	Year Opening	Site Map Page
1	Independence Nontraditional School	2018	C-3
2	PW Parkway Elementary School	2019	C-4
3	Western Transportation Center	2019	C-5
4	Potomac Shores Middle School	2021	C-6
5	13th High School	2021	C-7





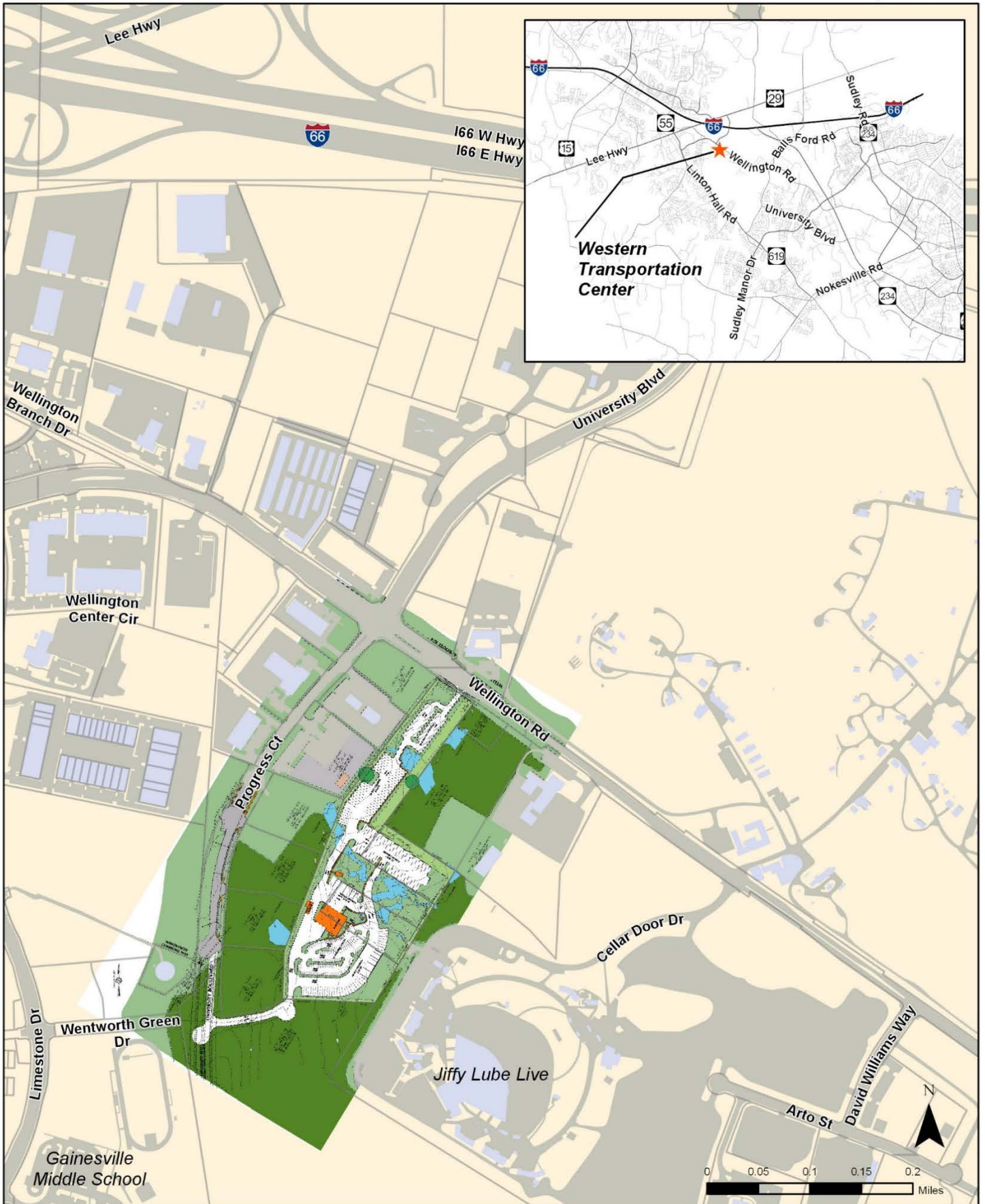
March 2018

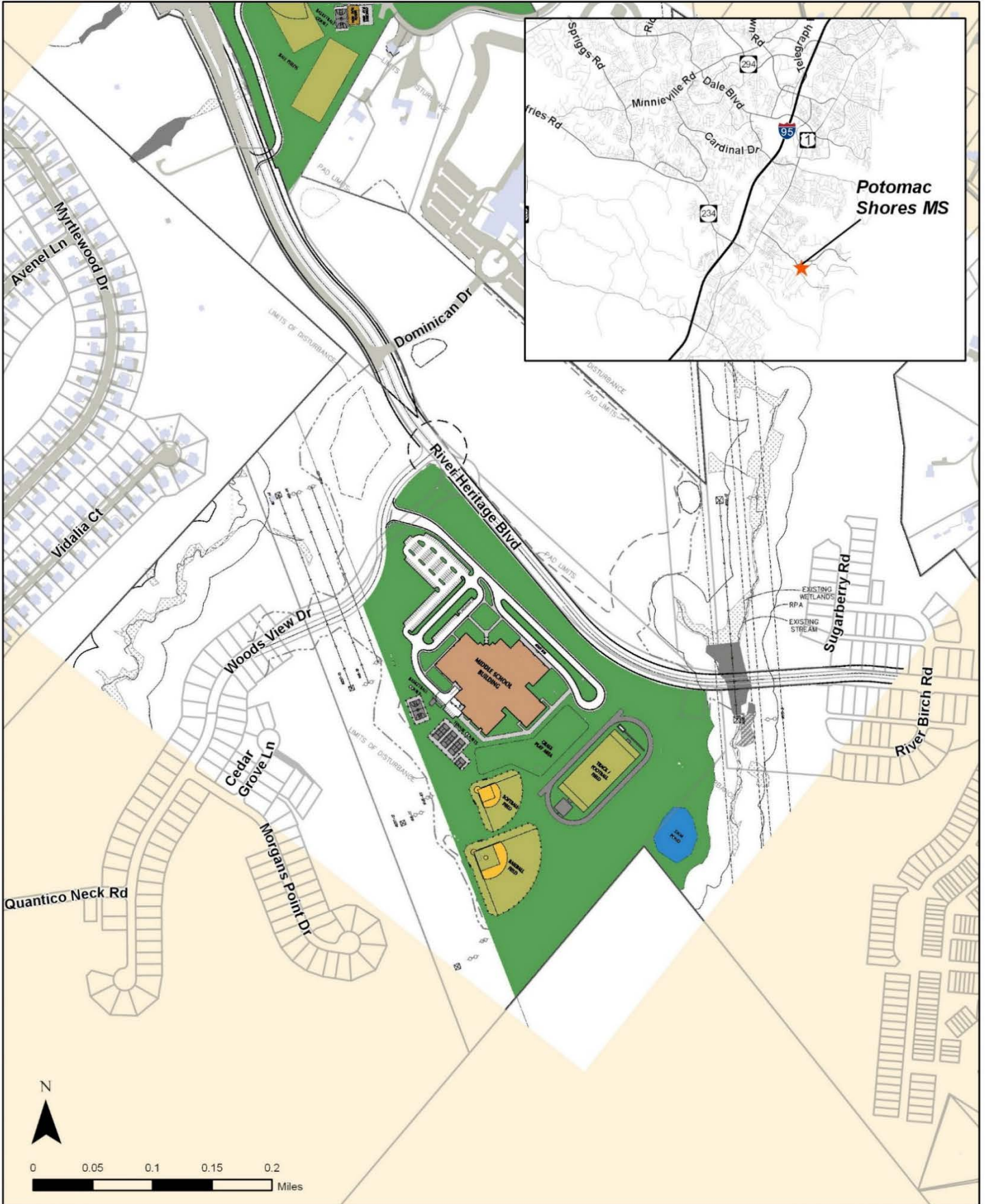
Office of Facilities Services



March 2018

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 FY2017

PWCS Project Name	Opening Date	CIP Construction Project Budget	Construction Expenditures							Total Construction Expenditures	Operating Fund / Start Up Costs ⁷	Site Acquisition Costs ⁸	Total Project Costs
			Construction Contract Bid ¹	Project Costs Outside of Construction Contract					Total Project Costs Outside of Construction Contract				
				Construction Contract Change Order Costs ²	Temporary Employees ³	Engineering Services ⁴	Furnishings & Equipment ⁵	Other Non-Construction Contract Costs ⁶					
Independence Non-Traditional	Sep-18	\$ 35,850,000	\$ 27,180,000	\$ 26,347	\$ 32,061	\$ 1,716,668		\$ 1,933,432	\$ 3,708,508	\$ 30,888,508		\$ -	
Covington-Harper Elementary	Sep-17	\$ 29,374,000	\$ 20,831,000			\$ 1,046,997		\$ 465,062	\$ 1,512,059	\$ 22,343,059	\$ 434,000	\$ -	
Kilby Elementary Replacement	Sep-17	\$ 31,476,000	\$ 21,888,000		\$ 165,122	\$ 1,352,999	\$ 1,439,634	\$ 502,486	\$ 3,460,240	\$ 25,348,240	\$ -	\$ 135,398	
Wilson Elementary	Sep-16	\$ 28,534,000	\$ 20,753,000		\$ 63,670	\$ 1,204,514	\$ 1,578,604	\$ 862,412	\$ 3,709,201	\$ 24,462,201	\$ 425,000	\$ -	\$ 24,887,201
Maintenance Facility	Sep-16	\$ 11,444,000	\$ 8,074,000	\$ 37,561	\$ 130,361	\$ 1,060,296	\$ 320,220	\$ 200,789	\$ 1,749,227	\$ 9,823,227	\$ -		\$ 9,823,227
Colgan High School	Sep-16	\$ 110,943,000	\$ 97,907,000	\$ 145,919	\$ 521,568	\$ 5,125,055	\$ 4,925,417	\$ (625,388)	\$ 10,092,571	\$ 107,999,571	\$ 1,988,547	\$ 8,785,796	\$ 118,773,914
Yung Elementary	Sep-15	\$ 25,987,000	\$ 20,286,000	\$ 54,809	\$ 197,660	\$ 1,004,729	\$ 1,561,177	\$ 770,928	\$ 3,589,302	\$ 23,875,302	\$ 419,000	\$ 3,345,844	\$ 27,640,146
Haymarket Elementary	Sep-14	\$ 27,663,000	\$ 18,788,000	\$ (262,583)	\$ 135,764	\$ 1,133,312	\$ 1,120,361	\$ 993,391	\$ 3,120,245	\$ 21,908,245	\$ 339,295	\$ 16,679	\$ 22,264,219
Nokesville School, The	Sep-14	\$ 31,000,000	\$ 28,402,000	\$ 174,854	\$ 124,920	\$ 2,252,698	\$ 1,363,551	\$ 2,213,724	\$ 6,129,747	\$ 34,531,747	\$ 230,000	\$ 236,665	\$ 34,998,412
PACE West Special	Sep-12	\$ 11,526,000	\$ 7,698,000	\$ 265,453	\$ 156,019	\$ 753,631	\$ 644,474	\$ 882,705	\$ 2,702,282	\$ 10,400,282	\$ -	\$ 93,537	\$ 10,493,819
Reagan Middle	Sep-12	\$ 26,382,000	\$ 18,914,000	\$ 196,592	\$ 188,871	\$ 1,017,882	\$ 2,178,833	\$ 1,442,048	\$ 5,024,226	\$ 23,938,226	\$ 719,000	\$ 4,261	\$ 24,661,487
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	\$ 997,612	\$ 1,243,359	\$ 538,566	\$ 3,405,627	\$ 17,264,627	\$ 302,000	\$ -	\$ 17,566,627
Piney Branch Elementary	Sep-11	\$ 21,224,000	\$ 15,799,000	\$ 416,944	\$ 112,149	\$ 1,089,081	\$ 1,246,023	\$ 572,321	\$ 3,436,517	\$ 19,235,517	\$ 302,000	\$ 4,252,663	\$ 23,790,180

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

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

³ On-site construction project managers, custodial services

⁴ Architectural and Engineering Services, traffic analyses, environmental analyses, archeological studies

⁵ 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

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

⁷ 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

⁸ Purchase of properties, easements, rights of way, and associated settlement and title fees

Bond Expenditure Data

Bond Issuance: Virginia Public School Authority 2018 (V18A)

Bond Issuance	Project Name	Func	Anticipated /Estimated Cost in CIP	Adjustments - Year 1	Adjustments - Year 2	Resulting Project Amount
			Original Bond Disbursement			
V18A	13th High School (West)	513A	\$ 8,000,000			\$ 8,000,000
V18A	Antietam Elementary School Addition (13 rooms)	376C	\$ 8,784,000			\$ 8,784,000
V18A	Elementary School East - PW Parkway	319A	\$ 27,685,000			\$ 27,685,000
V18A	Lake Ridge Elementary School Addition (13 rooms)	318C	\$ 9,284,000			\$ 9,284,000
V18A	Lake Ridge Middle School Addition (13 rooms)	472E	\$ 1,500,000			\$ 1,500,000
V18A	Leesylvania Elementary School - Renewal (Funding Phase 1)	383E	\$ 7,685,000			\$ 7,685,000
V18A	Leesylvania Elementary School Addition (4 rooms)	383E	\$ 5,800,000			\$ 5,800,000
V18A	Marshall Elementary School - Renewal (Funding Phase 1a)	379F	\$ 3,945,000			\$ 3,945,000
V18A	Minnieville Elementary School Addition (10 rooms)	303M	\$ 11,043,000			\$ 11,043,000
V18A	Montclair Elementary School - Renewal (Funding Phase 1a)	380D	\$ 2,000,000			\$ 2,000,000
V18A	New Alternative Education School	201Z	\$ 3,000,000			\$ 3,000,000
V18A	Pattie Elementary School Addition (10 rooms) - Consolidation / Building Renovation @ Washington-Reid	313D	\$ 3,000,000			\$ 3,000,000
V18A	Springwoods Elementary School Addition (13 rooms)	332D	\$ 10,184,000			\$ 10,184,000
V18A	Stonewall Middle School Addition (17 rooms)	448K	\$ 14,630,000			\$ 14,630,000
V18A	Western Bus Facility	043M	\$ 10,000,000			\$ 10,000,000
Total			\$ 126,540,000	\$ -	\$ -	\$ 126,540,000

Bond Issuance:
Virginia Public School Authority 2017 (V17A)

Bond Issuance	Project Name	Func	Anticipated /Estimated Cost in CIP	Adjustments - Year 1	Adjustments - Year 2	Resulting Project Amount
			Original Bond Disbursement			
V17A	Alternative Education School - New Construction	201Z	\$ 25,850,000	\$(11,138,578)		\$ 14,711,422
V17A	Lake Ridge Middle School - Addition (13 rooms)	472E	\$ 10,437,000	\$ (4,350,000)		\$ 6,087,000
V17A	Pattie Elementary School - Addition (10 rooms)	313D	\$ 8,300,000	\$ (3,570,000)		\$ 4,730,000
V17A	Special Needs Transportation Center @ New Dominion	043K	\$ 1,700,000	\$ 270,257		\$ 1,970,257
V17A	Site Acquisition Funding	517A	\$ 14,000,000	\$(14,000,000)		\$ -
V17A	Antietam Elementary School - Addition (13 rooms) A&E	376C	\$ 600,000	\$ 85,000		\$ 685,000
V17A	Lake Ridge Elementary School - Addition (13 rooms)	318C	\$ 600,000	\$ 75,000		\$ 675,000
V17A	Springwoods Elementary School - Addition (13 rooms)	332D	\$ 600,000	\$ 45,000		\$ 645,000
V17A	Elementary School East (PW Parkway) - New Construction	319A	\$ 2,000,000	\$ 7,250,000		\$ 9,250,000
V17A	Leesylvania Elementary School - Addition (4 rooms) A&E	383E	\$ 500,000	\$ 615,000		\$ 1,115,000
V17A	Stonewall Middle School - Addition (17 rooms) A&E	448K	\$ 1,000,000	\$ -		\$ 1,000,000
V17A	Western Bus Facility - New Construction A&E	043M	\$ 1,500,000	\$ 1,850,000		\$ 3,350,000
V17A	Middle School at Potomac Shores - New Construction	414A	\$ 2,000,000	\$ 1,195,924		\$ 3,195,924
V17A	13th High School (West) - New Construction A&E	513A	\$ 3,000,000	\$ 239,635		\$ 3,239,635
V17A	River Oaks Elementary School - Renewal (Funding Phase 1)	375C	\$ 6,000,000	\$ -		\$ 6,000,000
V17A	Saunders Middle School - Renewal (Funding Phase 2)	438F	\$ 2,600,000	\$ -		\$ 2,600,000
V17A	Lake Ridge Middle School - Renewal (Funding Phase 2)	472E	\$ 2,600,000	\$ -		\$ 2,600,000
V17A	Westridge Elementary School - Renewal (Funding Phase)	374C	\$ 98,000	\$ -		\$ 98,000
V17A	Potomac Shores ES site - Building, New	309A	\$ -	\$ 200,000		\$ 200,000
V17A	Benton MS - Music Room Addition	488F	\$ -	\$ 3,200,000		\$ 3,200,000
V17A	Freedom HS - Turf Fields	530E	\$ -	\$ 1,849,177		\$ 1,849,177
V17A	Independent Hill Complex - New Maintenance Facility	603H	\$ -	\$ 572,315		\$ 572,315
V17A	Division Wide - Site Acquisition	0370	\$ -	\$ 15,611,270		\$ 15,611,270
Total			\$ 83,385,000	\$ -	\$ -	\$ 83,385,000

Bond Issuance:
Virginia Public School Authority 2016 (V16A)

Bond Issuance	Project Name	Func	Anticipated /Estimated Cost in CIP	Adjustments - Year 1	Adjustments - Year 2	Resulting Project Amount
			Original Bond Disbursement			
V16A	Kilby Elementary School Replacement	344B	\$ 24,476,000	\$ (5,000,000)	\$ (4,040,588)	\$ 15,435,412
V16A	Elementary School (Potomac Shores)	309A	\$ 27,374,000	\$ (8,800,000)	\$ (3,630,240)	\$ 14,943,760
V16A	Belmont Elementary Addition (10 rooms)	360G	\$ 8,267,000		\$ (584,686)	\$ 7,682,314
V16A	Henderson Elementary School Addition (10 rooms)	333E	\$ 8,918,000		\$ (2,008,170)	\$ 6,909,830
V16A	Neabsco Elementary School Addition (8 rooms)	370D	\$ 7,504,000		\$ (2,134,171)	\$ 5,369,829
V16A	13th High School -- Site Acquisition Funds	513A	\$ 13,500,000		\$ (13,500,000)	\$ -
V16A	Elementary School - Site Acquisition Funds	319A	\$ 2,000,000	\$ (2,000,000)	\$ -	\$ -
V16A	Antietam Elementary School - Renewal	376B	\$ 5,000,000	\$ 2,800,000	\$ 310,970	\$ 8,110,970
V16A	McAuliffe Elementary School - Renewal	373C	\$ 5,000,000	\$ 2,120,000	\$ 746,118	\$ 7,866,118
V16A	Mullen Elementary School - Renewal	377D	\$ 5,000,000	\$ 880,000	\$ (247,629)	\$ 5,632,371
V16A	Westridge Elementary School - Renewal	374C	\$ 5,000,000	\$ 1,000,000	\$ 124,039	\$ 6,124,039
V16A	Lake Ridge Middle School - Renewal	472E	\$ 5,000,000		\$ (5,000,000)	\$ -
V16A	Saunders Middle School - Renewal	438F	\$ 6,175,000	\$ 5,800,000	\$ (3,584)	\$ 11,971,416
V16A	Lake Ridge Middle School Addition (13 rooms) - A&E	472E	\$ 1,000,000	\$ 1,200,000	\$ 6,859,162	\$ 9,059,162
V16A	PACE East Replacement/Multi-Space - A&E and initial construction	201Z	\$ 5,000,000		\$ 7,905,330	\$ 12,905,330
V16A	Pattie Elementary School Addition (10 rooms) - Consolidation / Building Renovation @ Washington-Reid - A&E	313D	\$ 900,000		\$ -	\$ 900,000
V16A	Special Needs Transportation Center @ New Dominion - A&E	043K	\$ 300,000		\$ (270,257)	\$ 29,743
V16A	Middle School (Potomac Shores) - A&E	414A	\$ 3,000,000		\$ (1,195,924)	\$ 1,804,076
V16A	13th High School (West) - A&E	513A	\$ 2,000,000	\$ 1,000	\$ (239,635)	\$ 1,761,365
V16A	Division Wide - Site Acquisition	0370	\$ -	\$ 2,000,000	\$ 11,888,730	\$ 13,888,730
V16A	Minnieville ES - Activity Room	303J	\$ -		\$ 1,598,080	\$ 1,598,080
V16A	Minnieville ES - Addition	303M	\$ -		\$ 101,196	\$ 101,196
V16A	Dale City ES - Activity Room	361H	\$ -		\$ 1,451,995	\$ 1,451,995
V16A	Marshall ES - Renewal	379F	\$ -		\$ 362,770	\$ 362,770
V16A	Montclair ES - Renewal	380D	\$ -		\$ 316,426	\$ 316,426
V16A	Old Bridge ES - Renewal/Addition	382D	\$ -		\$ 484,567	\$ 484,567
V16A	Freedom HS - Turf Fields	530E	\$ -		\$ 700,823	\$ 700,823
V16A	Independent Hill Complex - New Maintenance Facility	603H	\$ -		\$ 4,678	\$ 4,678
Total			\$ 135,414,000	\$ 1,000	\$ -	\$ 135,415,000

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

Bond Issuance	Project Name	Func	Anticipated /Estimated Cost in CIP	Adjustments - Year 1	Adjustments - Year 2	Resulting Project Amount
			Original Bond Disbursement			
V15A	12th High School	501A	\$ 49,971,500		\$ (5,822,119)	\$ 44,149,381
V15A	Elementary School - Ferlazzo	306A	\$ 27,534,000	\$ (1,000,000)	\$ (10,500,000)	\$ 16,034,000
V15A	Independent Hill Maintenance Facility	603H	\$ 10,000,000			\$ 10,000,000
V15A	Rippon Middle Addition	459K	\$ 7,110,000			\$ 7,110,000
V15A	Kilby ES Replacement	344B	\$ 6,000,000			\$ 6,000,000
V15A	PACE East Replacement	201Z	\$ 2,000,000		\$ 5,200,000	\$ 7,200,000
V15A	Elementary School - Potomac Shores - A/E	309A	\$ 2,000,000			\$ 2,000,000
V15A	Henderson ES - Addition A/E	333E	\$ 400,000			\$ 400,000
V15A	Belmont ES Addition - A/E	360G	\$ 400,000			\$ 400,000
V15A	Neabsco ES Addition - A/E	370D	\$ 400,000			\$ 400,000
V15A	Site Acquisition	0370		\$ 1,000,000		\$ 1,000,000
V15A	Henderson ES Addition - A/E	333D			\$ 1,332,206	\$ 1,332,206
V15A	King ES - Renewal	316D			\$ 1,919,055	\$ 1,919,055
V15A	Lake Ridge ES - Renewal	318B			\$ 1,500,000	\$ 1,500,000
V15A	Occoquan ES - HVAC	326G			\$ 290,187	\$ 290,187
V15A	Springwoods ES - Renewal	332C			\$ 1,500,000	\$ 1,500,000
V15A	Featherstone ES - Roof Repl	345F			\$ 258,278	\$ 258,278
V15A	Tyler ES - Activity Room	363F			\$ 1,000,000	\$ 1,000,000
V15A	McAuliffe ES - Renewal	373C			\$ 391,117	\$ 391,117
V15A	Antietam ES - Renewal	376B			\$ 389,318	\$ 389,318
V15A	Mullen ES - Renewal	377D			\$ 321,453	\$ 321,453
V15A	Marshall ES - HVAC	379E			\$ 260,063	\$ 260,063
V15A	Saunders MS - Renewal	438F			\$ 438,992	\$ 438,992
V15A	Hylton HS - Roof	571H			\$ 1,521,450	\$ 1,521,450
Total			\$ 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		\$ (300,000)	\$ 25,637,000
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
V14A	Dale City ES - Activity Room	\$ -		\$ 150,000	\$ 150,000
V14A	Minnieville ES - Activity Room	\$ -		\$ 150,000	\$ 150,000
Total		\$ 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
Total		\$ 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
Total		\$ 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
	Total	\$ 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
	Total	\$ 82,235,000	\$ -	\$ -	\$ 82,235,000

*Commonwealth of Virginia
Comparative School Construction Cost Data*

New Elementary Schools

2008-09 through 2017-18

Year	Name	Grades	Division	Contract Award Date	Maximum Operating Capacity	Building Cost	Site Cost	Total ² Cost	Total Sq Ft	Total Cost/ Sq Ft	Building Only Cost/Sq Ft	Total Cost/ Pupil
2017-18	Great Bridge Primary Repl	PK-2	Chesapeake City	Oct-17	636	\$14,841,235	\$3,509,765	\$18,351,000	90,936	\$201.80	\$163.21	\$28,854
	New Enon Elementary	K-5	Chesterfield County	May-17	794	\$17,963,384	\$3,157,635	\$21,121,019	91,276	\$231.40	\$196.80	\$26,601
	New Beulah Elementary	K-5	Chesterfield County	Apr-17	940	\$18,897,528	\$5,402,472	\$24,300,000	99,921	\$243.19	\$189.12	\$25,851
	Camp Allen Elementary Repl	PK-5	Norfolk City	Mar-16	645	\$21,639,187	\$2,998,327	\$24,637,514	97,492	\$252.71	\$221.96	\$38,198
	Parkway Elementary	K-5	Prince William County	Feb-18	860	\$19,624,164	\$7,584,836	\$27,209,000	100,264	\$271.37	\$195.72	\$31,638
	Fallon Park Elementary	PK-5	Roanoke City	Jan-18	930	\$18,810,000	\$2,830,000	\$21,640,000	112,616	\$192.16	\$167.03	\$23,269
	New Moncure Elementary	PK-5	Stafford County	Jul-16	984	\$24,097,476	\$4,150,000	\$28,247,476	108,794	\$259.64	\$221.50	\$28,707
2016-17	Colonial Beach	PK-7	Colonial Beach	Jul-16	442	\$7,160,934	\$766,066	\$7,927,000	50,079	\$158.29	\$142.99	\$17,934
	Fort Belvoir Elementary School II	PK-6	Fairfax County	Apr-15	576	\$17,330,700	\$4,840,320	\$22,171,020	95,341	\$232.54	\$181.78	\$38,491
	New Harrisonburg Elementary	K-5	Harrisonburg City	Mar-16	916	\$21,414,376	\$4,496,390	\$25,910,766	103,703	\$249.86	\$206.50	\$28,287
	Meadow View Elementary	PK-5	Henry County	Jul-16	776	\$19,691,800	\$963,900	\$20,655,700	96,000	\$215.16	\$205.12	\$26,618
	Loudoun Elementary-ES 28	K-5	Loudoun County	Feb-17	988	\$24,310,000	\$4,000,000	\$28,310,000	136,200	\$207.86	\$178.49	\$28,654
	Covington-Harper ES	K-5	Prince William County	Mar-16	889	\$16,646,000	\$4,185,000	\$20,831,000	101,246	\$205.75	\$164.41	\$23,432
Northern Suffolk Elementary (Bowser Repl)	PK-5	Suffolk City	Jun-16	984	\$18,190,000	\$2,630,000	\$20,820,000	114,881	\$181.23	\$158.34	\$21,159	
2015-16	Hugh Cassell Elementary	PK-5	Augusta County	Dec-15	930	\$15,462,984	\$3,016,691	\$18,479,675	94,500	\$195.55	\$163.63	\$19,871
	Riverheads Elementary	PK-5	Augusta County	Dec-15	930	\$16,593,846	\$2,339,205	\$18,933,051	94,500	\$200.35	\$175.60	\$20,358
	Bowling Elementary	PK-5	Norfolk City	Dec-14	780	\$15,898,428	\$2,474,221	\$18,372,649	101,060	\$181.80	\$157.32	\$23,555
	New Ocean View Elementary Repl	K-5	Norfolk City	Dec-14	808	\$15,577,911	\$3,059,275	\$18,637,186	92,286	\$201.95	\$168.80	\$23,066
	New Larchmont Elementary Repl	K-5	Norfolk City	Dec-14	778	\$15,823,153	\$3,221,874	\$19,045,027	92,655	\$205.55	\$170.77	\$24,479
	Martin Luther King Pre-K	PK	Richmond City	Jun-14	260	\$4,879,986	\$454,818	\$5,334,804	22,097	\$241.43	\$220.84	\$20,518
2014-15	New Lexington Elementary	PK-5	Lexington City	Aug-14	480	\$12,500,000	\$1,605,000	\$14,105,000	53,804	\$262.16	\$232.32	\$29,385
	ES-27	K-5	Loudoun County	Apr-15	1,012	\$18,903,548	\$4,491,800	\$23,395,348	105,757	\$221.22	\$178.75	\$23,118
	Baldwin Elementary/Int	PK-6	Manassas City	Mar-15	1,019	\$29,746,448	\$2,839,553	\$32,586,001	139,114	\$234.24	\$213.83	\$31,978
	Magruder Elementary Repl	K-5	Newport News City	Jul-14	916	\$20,371,304	\$2,444,695	\$22,815,999	97,612	\$233.74	\$208.70	\$24,908
	Wilson Elementary	K-5	Prince William County	Mar-15	921	\$16,753,000	\$4,000,000	\$20,753,000	106,354	\$195.13	\$157.52	\$22,533
	Kilby Elementary Repl	K-5	Prince William County	Apr-15	876	\$15,506,000	\$6,382,000	\$21,888,000	98,615	\$221.95	\$157.24	\$24,986
	John Kerr Elementary	PK-5	Winchester City	Apr-14	853	\$15,030,000	\$1,565,000	\$16,595,000	94,000	\$176.54	\$159.89	\$19,455
2013-14	Arlington Elementary No.1	PK-5	Arlington County	Mar-14	684	\$28,199,928	\$4,105,880	\$32,305,808	97,588	\$331.04	\$288.97	\$47,231
	Yung Elementary	K-5	Prince William County	Dec-13	905	\$16,186,000	\$4,100,000	\$20,286,000	107,273	\$189.11	\$150.89	\$22,415
2012-13	Haymarket Elementary	K-5	Prince William County	Feb-13	868	\$14,396,000	\$4,392,000	\$18,788,000	99,135	\$189.52	\$145.22	\$21,645
	South Salem	K-5	Salem City	Apr-12	600	\$13,235,950	\$1,667,250	\$14,903,200	90,913	\$163.93	\$145.59	\$24,839
	New Elementary ³	PK-5	Smyth County	Nov-11	603	\$11,122,199	\$4,078,016	\$15,200,215	83,717	\$181.57	\$132.85	\$25,208
2011-12	West Area ES #9	K-5	Henrico County	Jun-11	788	\$11,394,069	\$1,473,256	\$12,867,325	78,400	\$164.12	\$145.33	\$16,329
	Moorefield Station	K-5	Loudoun County	Apr-12	988	\$15,393,220	\$3,449,571	\$18,842,791	105,951	\$177.84	\$145.29	\$19,072
	Discovery	K-5	Loudoun County	Apr-12	988	\$14,951,844	\$3,954,311	\$18,906,155	105,951	\$178.44	\$141.12	\$19,136
	Oak Grove ⁴	K-5	Richmond City	Sep-11	704	\$14,857,440	\$2,103,216	\$16,960,656	90,810	\$186.77	\$163.61	\$24,092
	Broad Rock/Bellemeade ⁵	K-5	Richmond City	Sep-11	704	\$16,849,512	\$2,495,489	\$19,345,001	90,810	\$213.03	\$185.55	\$27,479
2010-11	Lacey	K-6	Fairfax County	Jul-10	935	\$11,880,100	\$1,868,900	\$13,749,000	98,590	\$139.46	\$120.50	\$14,705
	Graham Road	PK-6	Fairfax County	Sep-10	400	\$10,121,565	\$369,435	\$10,491,000	81,354	\$128.95	\$124.41	\$26,228
	Frederick Douglass	K-5	Loudoun County	Apr-11	940	\$16,685,000	\$5,206,000	\$21,891,000	100,477	\$217.87	\$166.06	\$23,288
2009-10	Simondale	PK-5	Portsmouth City	Nov-09	780	\$11,066,000	\$3,100,000	\$14,166,000	80,000	\$177.08	\$138.33	\$18,162
	College Park ⁶	K-5	Va Beach City	Jan-10	616	\$14,738,600	\$3,184,000	\$17,922,600	94,231	\$190.20	\$156.41	\$29,095
	Mason Cove	PK-5	Roanoke County	Dec-09	336	\$7,763,717	\$2,073,341	\$9,837,058	52,530	\$187.27	\$147.80	\$29,277
	Prices' Fork	PK-5	Montgomery County	Jan-10	838	\$13,666,750	\$1,933,250	\$15,600,000	106,300	\$146.75	\$128.57	\$18,616
	Kettle Run	K-5	Prince William County	Mar-10	889	\$12,476,000	\$1,383,000	\$13,859,000	104,829	\$132.21	\$119.01	\$15,589
	Linton Hall	K-5	Prince William County	May-10	889	\$13,281,981	\$2,527,726	\$15,809,707	104,829	\$150.81	\$126.70	\$17,784
2008-09	Moss Knuckles ⁷	PK-5	Louisa County	Sep-08	792	\$10,569,784	\$2,822,216	\$13,392,000	85,620	\$156.41	\$123.45	\$16,909
	9th Elementary ⁸	PK-5	Williamsburg/JC County	Nov-08	730	\$15,958,569	\$1,882,650	\$17,841,219	93,247	\$191.33	\$171.14	\$24,440
	Elliston Shawsville ⁹	PK-5	Montgomery County	Nov-08	838	\$15,920,182	\$2,685,818	\$18,606,000	106,300	\$175.03	\$149.77	\$22,203
	Buffalo Trail ¹⁰	K-5	Loudoun County	Jan-09	989	\$10,714,000	\$5,639,290	\$16,353,290	102,141	\$160.11	\$104.89	\$16,535

* The final report for 2017-18 will be generated after June 30, 2018.

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 2017-18

Year	Name	Grades	Division	Contract Award Date	Maximum ¹ Operating Capacity	Building Cost	Site Cost	Total ² Cost	Total Sq Ft	Total Cost/ Sq Ft	Building Only Cost/Sq Ft	Total Cost/ Pupil
2017-18	<i>No Projects Reported</i>											
2016-17	New Bedford Middle	6-8	Bedford County	Nov-16	754	\$23,098,130	\$5,701,235	\$28,799,365	123,822	\$232.59	\$186.54	\$38,195
	MS-7	6-8	Loudoun County	Feb-17	1,354	\$44,126,500	\$6,938,500	\$51,065,000	185,251	\$275.65	\$238.20	\$37,714
	Northern Suffolk Middle	6-8	Suffolk City	Jun-16	779	\$22,460,000	\$2,715,000	\$25,175,000	125,220	\$201.05	\$179.36	\$32,317
	James Blair Middle	6-8	Williamsburg James City	Sep-16	605	\$20,137,000	\$1,877,735	\$22,014,735	110,871	\$198.56	\$181.63	\$36,388
	Academies of Loudoun	9-12	Loudoun County	Oct-15	1,250	\$77,000,000	\$9,500,000	\$86,500,000	319,000	\$271.16	\$241.38	\$69,200
	Independence Nontraditional	1-12	Prince William County	Jun-16	480	\$23,383,520	\$3,796,418	\$27,179,938	122,659	\$221.59	\$190.64	\$56,625
	Dayton Learning Center	6-12	Rockingham County	Feb-17	180	\$4,095,912	\$727,388	\$4,823,300	19,544	\$246.79	\$209.57	\$26,796
2015-16	MS-9	6-8	Loudoun County	Aug-15	1,354	\$40,081,400	\$9,262,600	\$49,344,000	184,593	\$267.31	\$217.13	\$36,443
	Happy Creek Middle	6-8	Warren County	Jul-15	915	\$27,878,940	\$5,041,310	\$32,920,250	158,457	\$207.76	\$175.94	\$35,978
	Campostella STEM School	K-8	Norfolk City	Dec-14	1,151	\$27,017,178	\$2,815,912	\$29,833,090	181,489	\$164.38	\$148.86	\$25,919
2014-15	Frederick County Middle	6-8	Frederick County	Nov-15	921	\$35,592,328	\$5,907,672	\$41,500,000	186,163	\$222.92	\$191.19	\$45,060
	New Page Middle	6-8	Gloucester County	Sep-15	738	\$18,931,000	\$3,922,763	\$22,853,763	118,237	\$193.29	\$160.11	\$30,967
	Old Donation Center & Kemps Landing Magnet	2-8	Virginia Beach City	May-14	1,375	\$45,448,808	\$5,124,278	\$50,573,086	225,785	\$223.99	\$201.29	\$36,780
2013-14	Jefferson-Houston	PK-8	Alexandria City	Jun-13	805	\$31,961,348	\$4,695,397	\$36,656,745	124,500	\$294.43	\$256.72	\$45,536
2012-13	Trailside	6-8	Loudoun Co	Jun-12	1,154	\$26,874,012	\$3,221,898	\$30,095,910	175,064	\$171.91	\$153.51	\$26,080
	Martin Luther King ³	6-8	Richmond City	Apr-12	847	\$27,306,636	\$2,835,518	\$30,142,154	149,600	\$201.48	\$182.53	\$35,587
2011-12	Nokesville K-8 School	K-8	Prince William County	Jun-12	924	\$22,602,000	\$5,800,000	\$28,402,000	141,832	\$200.25	\$159.36	\$30,738
2010-11	<i>No Projects Reported</i>											
2009-10	Ronald Reagan Middle	6-8	Prince William County	Feb-10	1,102	\$15,265,478	\$3,648,522	\$18,914,000	133,480	\$141.70	\$114.37	\$17,163
	South County	6-8	Fairfax Co	Mar-10	1,172	\$19,293,100	\$2,656,900	\$21,950,000	176,021	\$124.70	\$109.61	\$18,729
	J. Michael Lunsford	6-8	Loudoun Co	Jan-10	1,351	\$24,145,000	\$4,281,000	\$28,426,000	177,880	\$159.80	\$135.74	\$21,041
2008-09	West Area ⁴	6-8	Henrico Co	Aug-08	1,000	\$19,715,150	\$3,500,000	\$23,215,150	120,024	\$193.42	\$164.26	\$23,215
	4th Middle School ⁵	6-8	Williamsburg/JC Co	Nov-09	830	\$26,031,431	\$3,822,350	\$29,853,781	145,458	\$205.24	\$178.96	\$35,968
	Great Neck ⁶	6-8	Va Beach City	Jul-09	1,212	\$28,706,998	\$6,320,002	\$35,027,000	223,260	\$156.89	\$128.58	\$28,900
	Orange ⁷	6-8	Orange Co	Feb-09	1,295	\$24,947,000	\$5,460,000	\$30,407,000	169,320	\$179.58	\$147.34	\$23,480

* The final report for 2017-18 will be generated after June 30, 2018.

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

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, watertank, and road widening.

New High Schools 2008-09 through 2017-18

Year	Name	Grades	Division	Contract Award Date	Maximum ¹ Operating Capacity	Building Cost	Site Cost	Total ² Cost	Total Sq Ft	Total Cost/ Sq Ft	Building Only Cost/Sq Ft	Total Cost/ Pupil
2017-18	<i>No Projects Reported</i>											
2016-17	<i>No Projects Reported</i>											
2015-16	<i>No Projects Reported</i>											
2014-15	New Heritage High	9-12	Lynchburg City	Apr-14	1,452	\$42,544,428	\$20,879,572	\$63,424,000	266,151	\$238.30	\$159.85	\$43,680
	Union High School	9-12	Wise County	Nov-11	863	\$23,562,210	\$943,772	\$24,505,982	126,508	\$193.71	\$186.25	\$28,396
	Central High School	9-12	Wise County	Nov-11	863	\$25,082,622	\$411,396	\$25,494,018	126,508	\$201.52	\$198.27	\$29,541
2013-14	Louisa County High School	9-12	Louisa County	Jul-13	2,011	\$46,473,432	\$2,059,570	\$48,533,002	272,834	\$177.88	\$170.34	\$24,134
	Colgan High School	9-12	Prince William County	Dec-13	2,053	\$70,481,000	\$19,000,000	\$89,481,000	425,176	\$210.46	\$165.77	\$43,585
	New Huguenot High School	9-12	Richmond City	Jun-12	1,574	\$51,991,220	\$10,283,262	\$62,274,482	253,821	\$245.35	\$204.83	\$39,564
	Stafford High School Repl	9-12	Stafford County	Jun-13	2,102	\$50,715,200	\$9,106,800	\$59,822,000	281,653	\$212.40	\$180.06	\$28,460
2012-13	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	\$224.12	\$199.52	\$32,591
	Blacksburg High School	9-12	Montgomery County	Jul-11	1,650	\$47,258,625	\$7,621,578	\$54,880,203	293,286	\$187.12	\$161.13	\$33,261
	New Auburn High School	9-12	Montgomery County	Jul-11	853	\$27,985,261	\$4,261,737	\$32,246,998	180,940	\$178.22	\$154.67	\$37,804
2011-12	Kelsum Replacement ³	9-12	Va Beach City	Aug-11	2,000	\$58,909,096	\$15,013,694	\$73,922,790	350,952	\$210.64	\$167.86	\$36,961
2010-11	Wakefield	9-12	Arlington County	May-11	2,173	\$77,389,376	\$11,000,623	\$88,389,999	382,102	\$231.33	\$202.54	\$40,676
	NEW Clarke County	9-12	Clarke County	Jul-10	884	\$19,550,000	\$3,750,000	\$23,300,000	162,050	\$143.78	\$120.64	\$26,357
	John Champe ⁴	9-12	Loudoun County	Jan-11	1,955	\$40,996,000	\$19,766,000	\$60,762,000	275,574	\$220.49	\$148.77	\$31,080
2009-10	<i>No Projects Reported</i>											
2008-09	Henrico #1 ⁵	9-12	Henrico County	Oct-08	1,868	\$50,700,000	\$7,133,623	\$57,833,623	255,000	\$226.80	\$198.82	\$30,960
	Tuscarora ⁶	9-12	Loudoun County	Dec-08	1,895	\$45,071,040	\$11,000,000	\$56,071,040	279,426	\$200.67	\$161.30	\$29,589
	Woodgrove ⁷	9-12	Loudoun County	Jan-09	1,651	\$44,375,000	\$9,500,000	\$53,875,000	251,915	\$213.86	\$176.15	\$32,632
	Fluvanna ⁸	9-12	Fluvanna County	Mar-09	1,633	\$44,379,363	\$12,486,637	\$56,866,000	314,389	\$180.88	\$141.16	\$34,823
	Patriot High School	9-12	Prince William County	Jan-09	2,053	\$58,655,600	\$12,043,400	\$70,699,000	312,067	\$226.55	\$187.96	\$34,437

* The final report for 2017-18 will be generated after June 30, 2018.

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 fieldhouse 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 2017-18

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
Parkway Elementary	100,264	Feb-18	\$27,209,000	\$271.37	\$19,624,164	\$195.72	\$7,584,836	\$75.65
Covington-Harper	101,528	Feb-16	\$20,831,000	\$205.17	\$15,981,000	\$157.40	\$4,850,000	\$47.77
Kilby ES Repl.	98,976	Mar-15	\$21,888,000	\$221.14	\$15,788,000	\$159.51	\$6,100,000	\$61.63
Wilson	106,854	Feb-15	\$20,753,000	\$194.22	\$16,753,000	\$156.78	\$4,000,000	\$37.43
Yung	107,273	Dec-13	\$20,286,000	\$189.11	\$16,186,000	\$150.89	\$4,100,000	\$38.22
Haymarket ⁵	99,135	Jan-13	\$18,788,000	\$189.52	\$14,396,000	\$145.22	\$4,392,000	\$44.30
Wood ⁴	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 ³	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 ²	89,911	Feb-04	\$11,380,000	\$126.57	\$9,505,000	\$105.72	\$1,875,000	\$20.85
Williams ¹	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

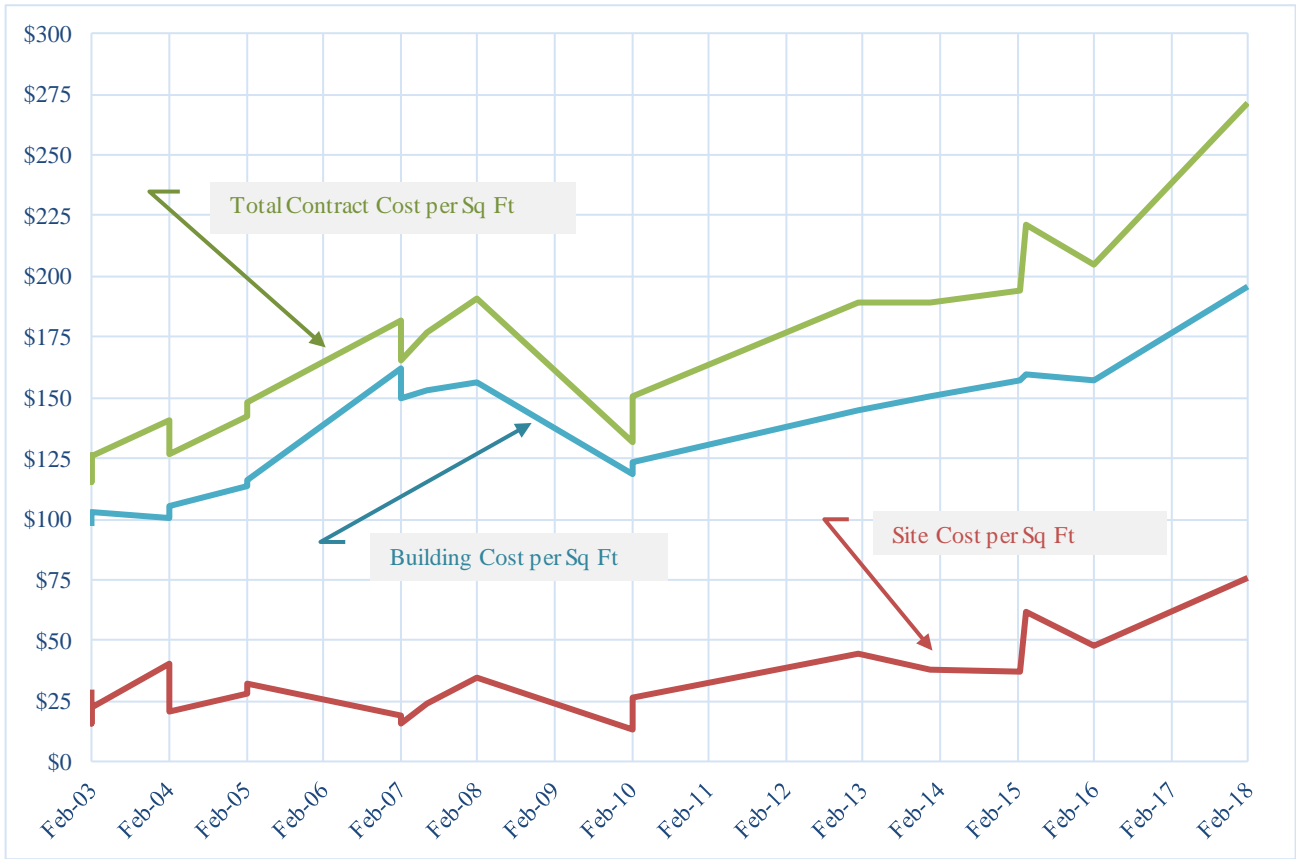
1 Actual bid was \$ 12.57 million. Approximately \$ 2.0 million is for site work associated with adjacent middle school. For project comparison purposes bid amount and site sq. ft. amounts have been adjusted accordingly.

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.

Prince William County Schools
 Elementary School Construction Cost Per Square Foot
 2003-04 through 2017-18



APPENDIX E

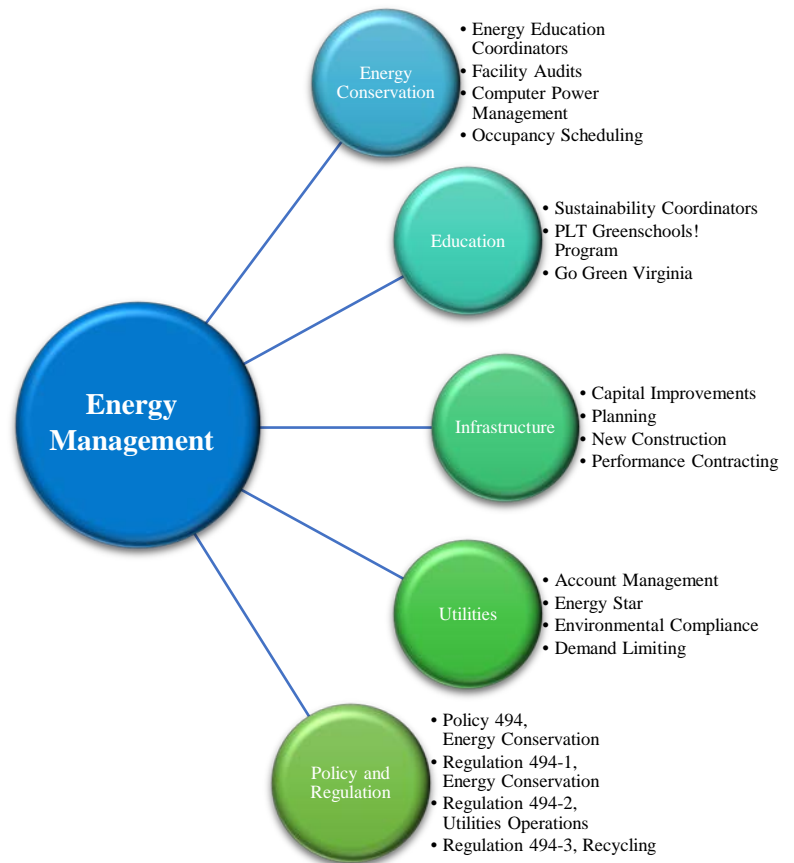
Energy Management

Energy Management

Energy Management in Prince William County Public Schools (PWCS) utilizes a multifaceted approach to energy stewardship and conservation. Policy 494 states that the School Board embraces energy conservation and believes it to be their responsibility to conserve energy and natural resources. Support and program oversight are the responsibility of the Office of Facilities Services. However, each school or facility has designated 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 that are intended to reduce 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.

Computer Power Management

Computer Power Management refers to the mechanism for controlling the power use of personal computer hardware. In Prince William County Public Schools, this is done through globally deployed policy using software to implement and monitor computer energy consumption and cost. An established schedule of machine and monitor sleep settings as well as automated remote shutdown is enforced.

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 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.

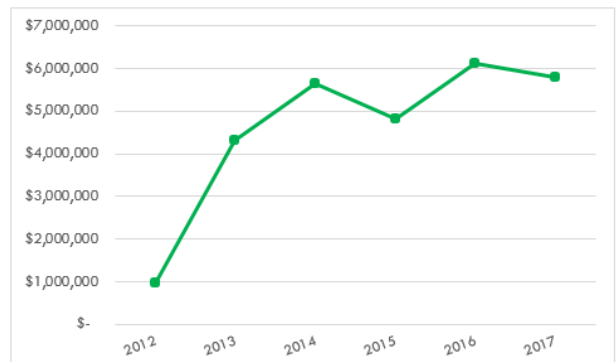
Energy Conservation Savings

July 2012 – December 2017

Period	Month	Savings		Period Totals
		\$	%	
Fast Track 2012	July - December	\$974,122	9.10%	\$974,122
Performance 2013	January-December	\$4,303,899	19.00%	\$4,303,899
Performance 2014	January-December	\$5,630,770	23.10%	\$5,630,770
Performance 2015	January-December	\$4,827,772	19.30%	\$4,827,772
5th Performance Quarter 2016	January	\$577,867	23.80%	\$1,553,089
	February	\$425,382	20.40%	
	March	\$549,840	28.60%	
6th Performance Quarter 2016	April	\$577,867	21.70%	\$1,553,089
	May	\$425,382	23.00%	
	June	\$549,840	25.80%	
7th Performance Quarter 2016	July	\$615,637	31.40%	\$1,466,489
	Aug	\$454,664	21.00%	
	September	\$396,188	17.80%	
8th Performance Quarter 2016	October	\$465,202	23.10%	\$1,531,178
	November	\$552,024	27.20%	
	December	\$513,952	23.50%	
9th Performance Quarter 2017	January	\$466,178	21.70%	\$1,449,099
	February	\$461,058	22.30%	
	March	\$521,863	25.10%	
10th Performance Quarter 2017	April	\$514,879	27.20%	\$1,461,365
	May	\$456,057	21.40%	
	June	\$490,429	22.40%	
11th Performance Quarter 2017	July	\$545,967	25.60%	\$1,297,622
	August	\$474,417	22.00%	
	September	\$475,235	20.60%	
12th Performance Quarter 2017	October	\$467,473	21.70%	\$1,375,404
	November	\$429,427	27.70%	
	December	\$478,504	23.50%	
Total Program Savings		\$27,621,895	22.82%	

Annual Energy Conservation Savings

July 2012 – December 2017



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 Project Learning Tree (PLT) 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.

This program is the foundation for the annual Energy Challenge where participating schools can earn up to \$2,000 annually for their efforts - \$1,800 for the site and \$200 for the supervising staff member.

Go Green Virginia

The Go Green Virginia 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.

In 2017, PWCS was awarded the Platinum Green Schools Division certification and recognized as an overall Green Schools Challenge winner.

Energy Infrastructure Improvements

Energy Infrastructure Fund

The PWCS Capital Improvements Program (CIP) calls for a portion of the anticipated energy conservation savings to be directed towards continued investment in infrastructure improvements capable of generating 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 measurable Return on Investment (ROI).

The Energy Management division has endeavored to work with a variety of stakeholders 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).

Anticipated Energy Infrastructure Funding Priorities Fiscal Years 2019-2023

Energy Infrastructure Improvement Project	Fiscal Year				
	2019	2020	2021	2022	2023
Building Automation Improvements	\$150,000	\$150,000	\$250,000	\$250,000	\$250,000
Boiler Fuel Conversions	\$200,000	\$200,000			
Lighting Control Systems	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Mechanical Infrastructure (Supplemental Heating, Cooling, Dehumidification)	\$300,000	\$400,000	\$500,000	\$500,000	\$500,000
Building Envelope/Thermal Insulation	\$200,000	\$100,000	\$100,000	\$100,000	\$100,000
Third-Party Energy Audits	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
TOTAL	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

Energy Infrastructure Improvement Projects Fiscal Years 2018 and 2019

FY 2018	
Location	Project Scope
All Sites	Expand Interval and Demand Management Program to enable more real-time data analysis
Osborn Park HS	Replace Boilers
Stonewall HS	Replace Water Heater and Expansion Tank
Freedom HS, Battlefield HS, Forest Park HS, Potomac View ES	Auditorium and Gym Lighting Upgrades
Divisionwide	Boiler Maintenance Program
Divisionwide	PC Power Management
Divisionwide	Third-Party Energy Audits

FY 2019	
Location	Project Scope
Bel Air ES, Parkside MS, Lynn MS	HVAC Controls Systems Upgrades
Parkside MS	Replace Chillers
Woodbridge HS, Gar-Field HS, Rippon MS, Mountain View ES	Replace Water Heater and Expansion Tank
Central Transportation, Stonewall MS, Various HS Auditoriums	LED Lighting Upgrades
Divisionwide	Chiller and Boiler Maintenance Program
Divisionwide	PC Power Management
Divisionwide	Third-Party Energy Audits

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 project's 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.

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.

Utilities

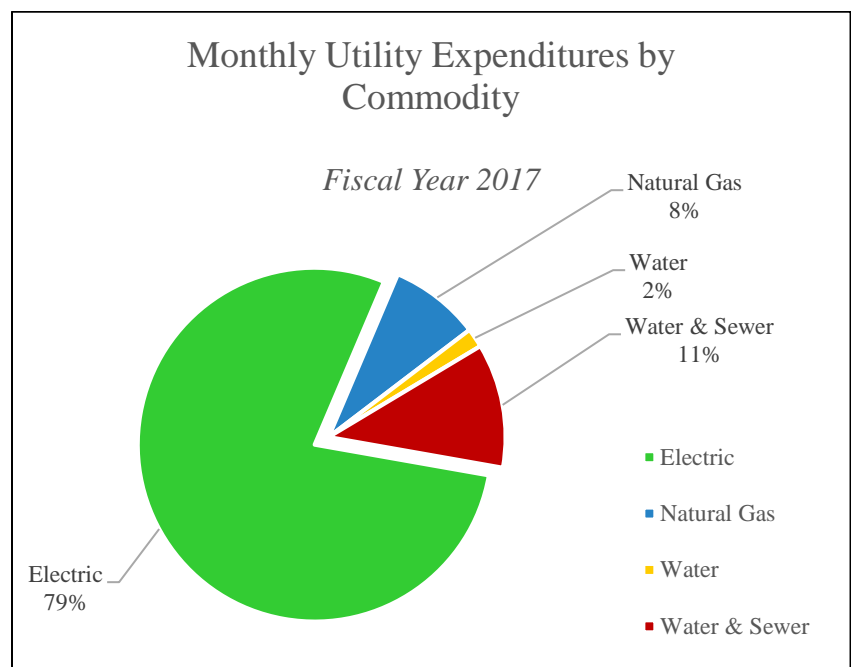
Account Management

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 "EnergyCap". 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.



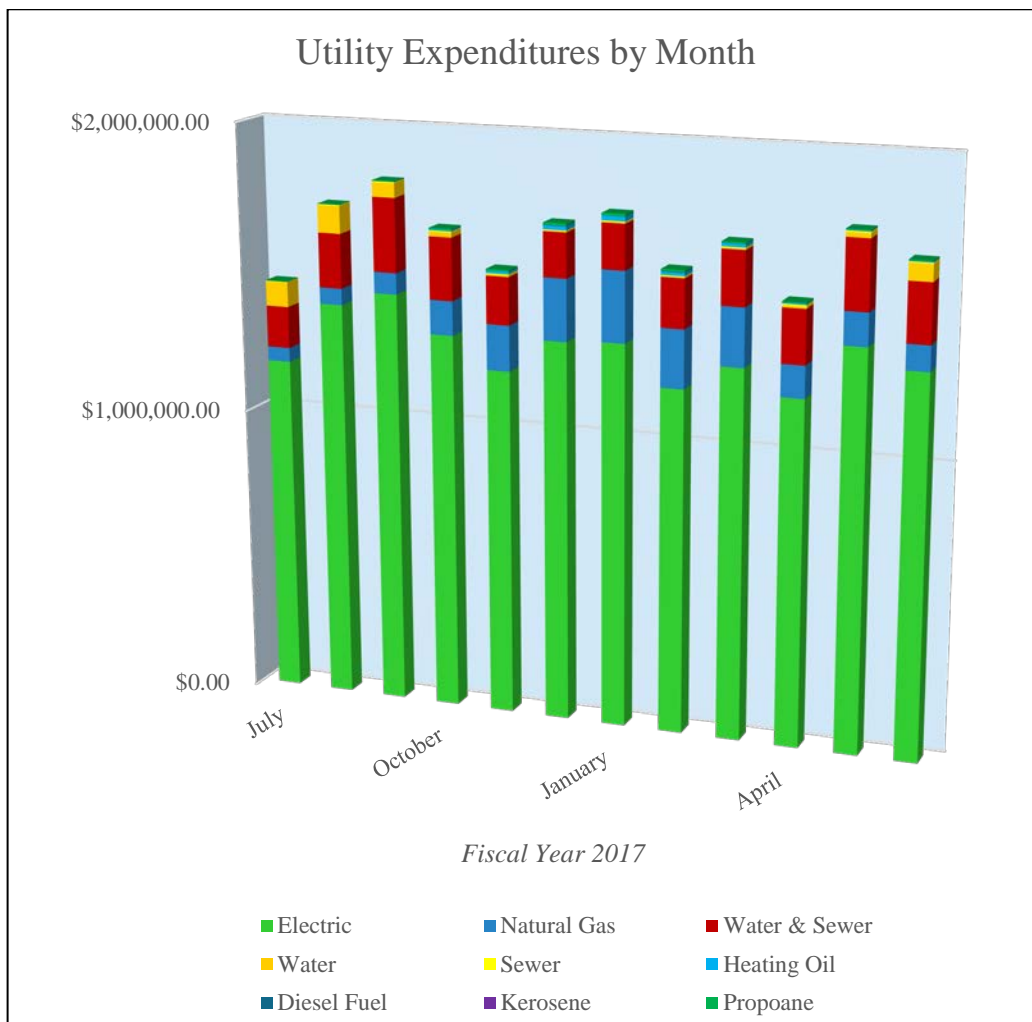
Environmental Compliance

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.



APPENDIX F

Technology Improvements Program

Future Ready Technology Improvement Plan

2019-2023

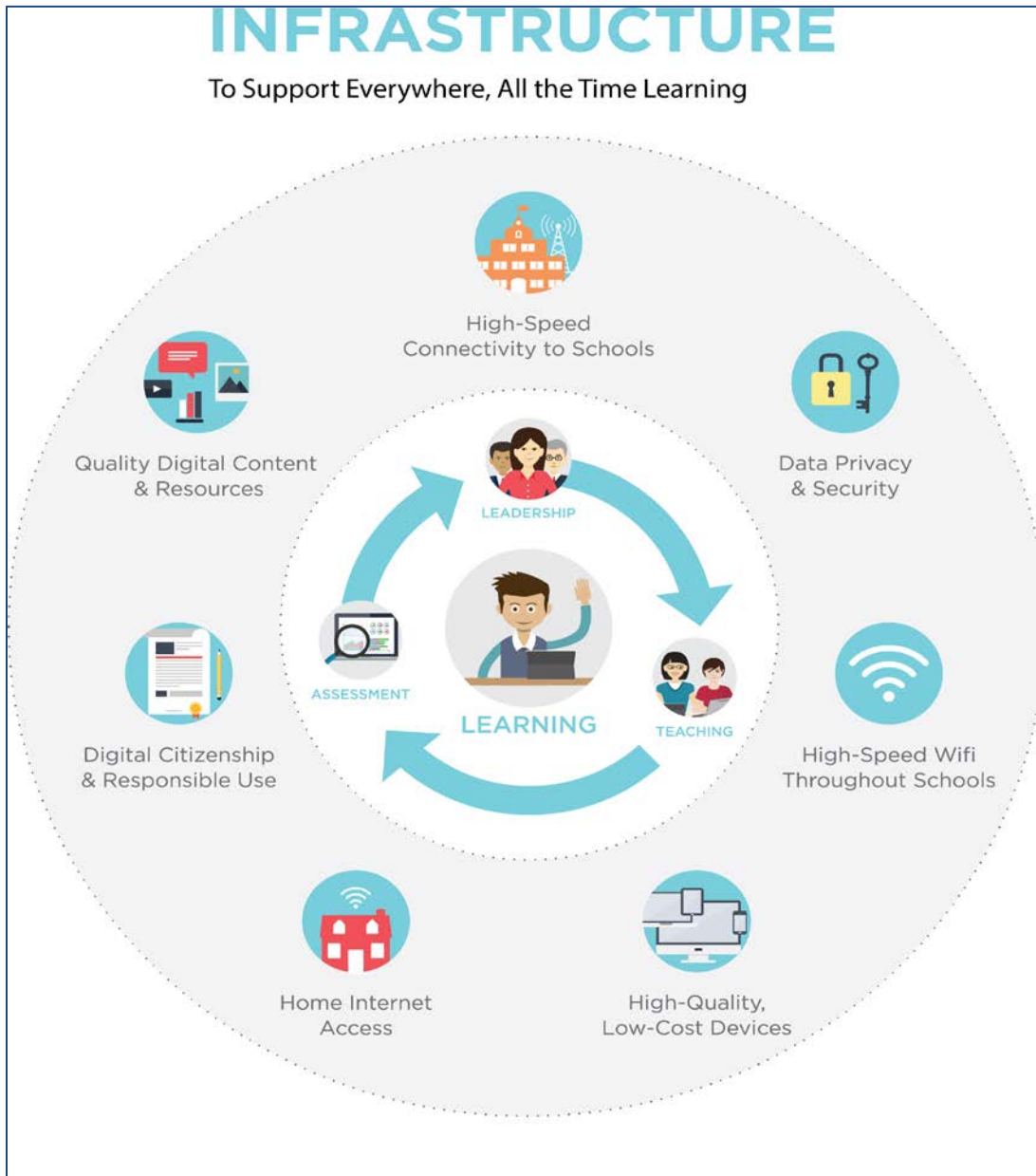


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*Notes: 1. All Plan Overviews and Objectives are based on the FY 2016 Budgeting for Results Plan.
2. FY 2018 current year expenses are shaded in gray on all charts and are included for reference.*

Plan Overview: Data Center/School Upgrades/Replacements

This section includes information regarding the operational, technical, and functional support of the Enterprise Data Centers, backup/restore services, disaster recovery services, and authentication services.

Plan Objectives

Through the PWCS Technology Improvement Plan, data center systems, servers, and backups need to be replaced, refreshed, and maintained on a regular technology improvement plan schedule. This equipment is critical in maintaining and supporting core infrastructure and ensures instructional and business systems are able to access the data and resources needed to support teaching and learning and to perform other critical functions and/or provide data/communications to stakeholders.

The plan will meet the following objectives:

- Replace backup infrastructure to not over exceed capacity.
- Upgrade network infrastructure in the data center on a regular maintenance schedule of five years.
- Upgrade the disaster recovery plan and develop a strategy that includes evaluating the effectiveness of using Independent Hill Complex (IHC) as a disaster recovery site.
- Maintain some physical servers and replace every five years for applications not supported in a virtualized environment.
- To make more efficient use of hardware and environmental resources, invest and maintain virtualization annually.

See detailed chart on the following page.

Data Center/School Upgrades/Replacements – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
Backup System Replacement	\$231,000					
Storage Infrastructure Replacement						
Physical Data Center SQL Servers	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
AIX Finance Servers			500,000			
Data Center Networking						
School Server and UPS Replacement			\$600,000			
Server Virtualization		\$50,000 – Vmware			\$250,000	
Disaster Recovery		\$50,000				
IHC Datacenter A/C & Generator		\$500,000				
HMC – Manage the AIX Servers		\$25,000				
Retention of Records		\$433,500				
Total	\$251,000	\$1,078,500	\$1,120,000	\$20,000	\$270,000	\$20,000

Network Services and Architecture

Plan Overview: VoIP/LAN/WLAN and Bandwidth Upgrades

This section includes information regarding the installation, management, and operational support for the PWCS I-Net wide area network (WAN) including the local area networks (LANs), and wireless area networks (WLANs) throughout the School Division.

Plan Objectives

Through the PWCS Technology Improvement Plan, Network Services provides bandwidth and VoIP/LAN/WLAN upgrades Divisionwide. Locations are upgraded based on the end-of-life of their current phone system and in correlation, when possible, with PWCS facilities renovations and additions.

The plan will meet the following objectives:

- Increase bandwidth to meet Federal ConnectEd initiative and the Virginia Department of Education (VDOE) and Education Superhighway recommendations of 1 Mbps per student by 2018.
- Upgrade network infrastructure (Local Area Network, Wireless Local Area Network, and VoIP) Divisionwide.
 - ✓ Schools;
 - ✓ Trailers; and
 - ✓ Central office and other related facilities.

**Note: This will have an associated increase of \$173,000 in internet service provider fees from December 2017-18. An overall increase from FY18 to FY19 is \$260,550.*

VoIP/LAN/WLAN School Upgrades and Replacements – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
Bandwidth Increase	\$1,500,000* To go from 2Gb to 10Gb			\$2,100,000* To go from 10Gb to 20Gb		
Voice and Data Network Upgrade	\$1,610,000	\$4,601,000	\$3,466,000	\$2,400,522	\$2,400,522	\$2,400,522
Maintain Wireless Trailers			\$175,000	\$175,000	\$175,000	\$175,000

VoIP/LAN/WLAN School Upgrades and Replacements – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
Replacing UPS in LAN Closets			\$500,000			
VoIP Server upgrade		\$50,000				
Total	\$3,110,000	\$4,651,000	\$4,141,000	\$4,675,522	\$2,575,522	\$2,575,522

Plan Scope

Tentative LAN, WLAN, and VoIP Upgrades Schedule

The charts below provide a tentative schedule over the next five years of locations to be upgraded. The VoIP telephone replacement sequence is based on the age of existing equipment in each facility and coordinated with renovations and new construction.

Note: Light-blue-shaded boxes in the charts indicate service upgrades that still need to be completed.

2018-19 School Year (FY19)			
School	LAN	WLAN	VoIP
Alvey ES	\$75,000	\$81,000	\$65,000
Bel Air ES	\$75,000	\$81,000	\$65,000
Bennett ES	\$75,000	\$81,000	\$65,000
Coles ES	\$75,000	\$81,000	\$65,000
Dale City ES	\$75,000	\$81,000	\$65,000
Featherstone ES		\$81,000	
King ES		\$81,000	
Lake Ridge ES	\$75,000	\$81,000	\$65,000
Leesylvania ES	\$75,000	\$81,000	\$65,000
Loch Lomond ES	\$75,000	\$81,000	
Marumsco Hills ES	\$75,000	\$81,000	\$65,000
Mary Williams ES	\$75,000	\$81,000	\$65,000
Montclair ES	\$75,000	\$81,000	\$65,000
Mullen ES		\$81,000	
Penn ES	\$75,000	\$81,000	\$65,000
Piney Branch ES	\$75,000	\$81,000	\$65,000
Rockledge ES	\$75,000	\$81,000	\$65,000
Rosa Parks ES	\$75,000	\$81,000	\$65,000
Sinclair ES	\$75,000	\$81,000	\$65,000
Vaughan ES	\$75,000	\$81,000	\$65,000
West Gate ES	\$75,000	\$81,000	\$65,000
Woodbine Preschool	\$25,000	\$30,000	\$25,000
Beville MS		\$115,000	
Upgrade School WAN Links	\$250,000		
Total	\$1,375,000	\$1,846,000	\$1,130,000
Grand Total	\$4,601,000		

2019-20 School Year (FY20)			
School	LAN	WLAN	VoIP
Ashland ES	\$75,000	\$81,000	\$65,000
Belmont ES		\$81,000	
Bristow Run ES	\$75,000	\$81,000	\$65,000
Buckland Mills ES			\$65,000
Cedar Point ES	\$75,000	\$81,000	\$65,000
Ellis ES	\$75,000		\$65,000
Enterprise ES	\$75,000	\$81,000	\$65,000
Fannie Fitzgerald ES	\$75,000	\$81,000	
Glenkirk ES	\$75,000	\$81,000	
Marshall ES			\$65,000
Neabsco ES		\$81,000	
River Oaks ES	\$75,000	\$81,000	\$65,000
Samuel Gravely ES	\$75,000	\$81,000	
Signal Hill ES	\$75,000	\$81,000	\$65,000
Springwoods ES		\$81,000	
T. Clay Wood ES	\$75,000	\$81,000	
Triangle ES	\$75,000	\$81,000	
Victory ES	\$75,000	\$81,000	\$65,000
Pennington Traditional	\$50,000	\$45,000	\$45,000
Porter Traditional	\$75,000	\$81,000	\$65,000
Bull Run MS			\$75,000
Fred Lynn MS			\$75,000
Rippon MS		\$115,000	
Total	\$1,100,000	\$1,456,000	\$910,000
Grand Total	\$3,466,000		

FY21 LAN/WLAN/VoIP schools to be updated is TBD. If we stay on course with the plan outlined in this document, all schools will have been upgraded. For FY21 we would go back to the initial schools that were upgraded over four years ago and start the upgrade process over again as needed and based on new technologies. Estimated cost \$2,400,522.

Completed Upgrades – Updated 3/23/18			
School	LAN	WLAN	VoIP
Antietam ES	X	X	
Belmont ES	X	X	X
Buckland Mills ES	X	X	
Chris Yung ES	X	X	X
Covington-Harper	X	X	X
Dumfries ES	X	X	X
Ellis ES		X	
Featherstone ES	X		X
Fitzgerald ES			X
Glenkirk ES			X
Gravelly ES			X
Haymarket ES	X		X
Henderson ES	X	X	X
Kerrydale ES	X	X	
Kilby ES	X	X	X
King ES	X		X
Kyle Wilson ES	X	X	X
Lake Ridge ES	X	X	X
Loch Lomond			X
Marshall ES	X	X	
McAuliffe	X	X	
Minnieville ES	X	X	
Mountain View ES	X	X	X
Mullen ES	X		X
Neabsco ES	X	X	X
The Nokesville School	X	X	X
Occoquan ES	X	X	
Old Bridge ES	X	X	X
Pattie ES	X	X	X
Piney Branch ES			
Potomac View ES	X	X	X
Springwoods ES	X		X
Sudley ES	X	X	X
Swans Creek	X	X	
T. Clay Wood ES			X

Completed Upgrades – Updated 3/23/18			
School	LAN	WLAN	VoIP
Triangle ES			X
Tyler ES	X	X	
Westridge ES	X	X	X
Williams ES		X	
Yorkshire ES	X	X	
Benton MS	X	X	X
Beville MS	X		X
Bull Run MS	X	X	
Fred Lynn MS	X	X	X
Gainesville MS	X	X	X
Godwin MS	X	X	X
Graham Park MS	X	X	X
Lake Ridge MS	X	X	X
Marsteller MS	X	X	X
Parkside MS	X	X	X
Porter Traditonal	X	X	X
Potomac MS	X	X	
Reagan MS	X	X	X
Rippon MS	X		X
Saunders MS	X	X	X
Stonewall MS	X	X	X
Woodbridge MS	X	X	X
Battlefield HS	X	X	X
Brentsville HS	X	X	X
Colgan HS	X	X	X
Forest Park HS	X	X	X
Freedom HS	X	X	X
Garfield HS	X	X	X
Hylton HS	X	X	X
Independence Nontraditional	X	X	X
Osborn Park HS	X	X	X
Patriot HS	X	X	X
Potomac HS	X	X	X
Stonewall Jackson HS	X	X	X

Completed Upgrades – Updated 3/23/18			
School	LAN	WLAN	VoIP
Woodbridge HS	X	X	X
PACE West			X
EKLC	X	X	X
IHC	X	X	X
Transportation East			X
Transportation West			X
Transportation Central			X
Transportation Hooe Rd			X
Totals	63	58	62

Plan Overview: Network/Infrastructure/Replacements

This section includes information regarding information security operations to provide confidentiality, integrity, and availability for all PWCS network and computer system assets. Information Security Services supports the design, implementation, management, and maintenance of all information security solutions Divisionwide to identify and prioritize security risks.

Plan Objectives

Through the PWCS Technology Improvement Plan, Information Security Services provides firewalls, intrusion prevention systems, DNS, email/spam filtering, forward/reverse proxies, content filtering, malware and patch management, auditing, and security management.

The plan will meet the following objectives:

- Provide for enterprise wireless management, network system identification, access control, and segmentation.
- Meet future ready bandwidth requirements and replace end-of-life hardware with additional firewall, VPN, and intrusion prevention.
- Incident and event correlation solution to log and capture event data through SIEM.
- Decrypt encrypted network traffic and actively pass traffic to proxy, firewalls, and intrusion prevention systems.
- Analyze network traffic including spam, websites, and executables in a protected environment and detonate payloads in real-time to ensure malicious content does not get downstream to critical systems.

Security/Infrastructure Upgrades/Replacements – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
802.1x Network Access Control, System Profiling				\$600,000		
Divisionwide Enterprise Class Forward Proxies	\$702,000	\$400,000 – adding 2	\$400,000 – adding 2	\$756,000 – adding 4	\$400,000 – adding 2	\$400,000 – adding 2

Security/Infrastructure Upgrades/Replacements – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
Replacing Reverse Proxies		\$40,000			\$40,000	
Divisionwide Enterprise Class Perimeter and Datacenter Firewalls, VPN, AAA	\$365,000	\$52,000	\$715,000	\$365,000	\$52,000	\$715,000
Divisionwide Enterprise Cloud Based SIEM Incident and Event Correlation Solution				\$561,751		
Network Encryption Tap Appliance	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000
Spam and Network Traffic Sandboxing		\$240,000	\$100,000			
CIS		\$9,000				
Patch Management Licenses (10,000)		20,000				
Total	\$1,215,000	\$909,000	\$1,719,000	\$2,074,751	\$1,280,000	\$1,263,000

Note: The TIP has been modified to reflect the results of the FY 2016 internal audit.

Plan Overview: Replacement of Divisionwide Enterprise Systems

This section includes information regarding human resource management, financial, operational, technical, and functional support for applications within the School Division. These systems provide technical support for data analysis reporting, development, maintenance, hiring, and payroll.

Plan Objectives

Through the PWCS Technology Improvement Plan, Information Technology Services will replace PowerSchool student information system due to end-of-life. Financial Services will upgrade AMS to version 3.11 for greater functionality, efficiency, transparency, accountability and information access. The Office of Human Resources will implement a new observation, hiring, and evaluation process that aligns with state and local requirements, and facilitating collaboration between teachers, principals and staff.

The plan will meet the following objectives:

- Replace the current end-of-life student information system.
- Upgrade the current AMS financial system.
- Implement a human resources management system for hiring, and evaluation management.

Student Information System – listed in order of priority						
	FY 18	FY19	FY20	FY21	FY22	FY23
Student Information System (once purchased ongoing costs will be part of the ITS operation budget)	\$2,134,289	\$3,171,228	\$1,094,300			
AMS Upgrade			\$2,750,000			
HR Talent Management		\$829,106				
Total	\$2,134,289	\$4,000,334	\$3,844,300			

Plan Overview: Refresh

This section includes information that will outline the age-based refresh cycle for technology devices in PWCS along with associated costs over the next five years.

Plan Objectives

The PWCS age-based technology refresh is not intended to replace all equipment, serve as the sole funding source for technology equipment, or drive instructional and operational goals. Instead, the age-based refresh is one avenue to equip students, teachers, administrators, and support staff, with the needed tools to support the Strategic Plan by integrating technology into instruction and business operations.

Included in the Refresh Plan

Across the School Division there is a variety of technology in classrooms. For the scope of this refresh plan, we are including Division-standard equipment and replacing it based on the age of each asset across the School Division, some dating back to 2004. Therefore, refresh funds will not be equally divided between schools. Instead, to get the School Division on an “even playing field,” available funds will be expended where the oldest computers and related equipment are located. Information Technology Services notifies schools of the age of all their technology equipment, the plan’s schedule to replace/update it over a five-year period, and options within 50/50 matches (when offered/available) to refresh the remaining equipment. This provides schools with the information needed to fiscally plan for their participation in 50/50 match opportunities.

The following equipment is included in the refresh plan:

- All “Red Tag” non-Windows 7 or higher capable computers in the School Division;
- Desktops;
- Laptops;
- Servers; and
- Storage Area Networks (SANS) and will assess and implement cloud storage when appropriate.

Fully-Funded Computer/Server Refresh						
	FY 18	FY19	FY20	FY21	FY22	FY23
Information Systems Equipment	\$722,000	\$585,000	\$1,520,000	\$776,000	\$710,000	\$420,000
Schools/Offices	\$18,005,160	\$4,949,523	\$5,677,305	\$7,264,869	\$7,360,608	\$7,360,608
	Years: 2008-2017					
Total	\$18,727,160	\$5,534,523	\$7,197,305	\$8,040,869	\$8,070,608	\$7,780,608

Fully-Funded Computer Refresh vs Funded						
	FY 18	FY19	FY20	FY21	FY22	FY23
*Fully Funded Refresh	\$18,005,160 Years: 2008-2017	\$4,949,523	\$5,677,305	\$7,264,869	\$7,360,608	\$7,360,608
VPSA Funded Refresh	2,338,000	2,338,000	2,338,000	2,338,000	2,338,000	2,338,000
Total	-\$15,667,160	-\$2,611,523	-\$3,339,305	-\$4,926,869	-\$5,022,608	-\$5,022,608

Note: Current plan does not include a refresh for all technology equipment (e.g., interactive whiteboards, printers, tablets), estimated to cost an additional \$2,000,000+ annually.

Snapshot of the Refresh with Projected VPSA Funding and 50/50 Match						
	FY 18	FY19	FY20	FY21	FY22	FY23
Information Systems Equipment	\$722,000	\$585,000	\$1,520,000	\$776,000	\$710,000	\$420,000
School 50/50	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000
ITS 50/50	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000
Straight Refresh Funding for Schools	\$916,000	\$1,053,000	\$118,000	\$862,000	\$928,000	\$1,218,000
Total	\$2,688,000	\$2,688,000	\$2,688,000	\$2,688,000	\$2,688,000	\$2,688,000

Snapshot of the Projected Cost Differential in Funded vs. Fully-Funded						
	FY 18	FY19	FY20	FY21	FY22	FY23
*Fully Funded Refresh	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396
VPSA Only Funded Refresh	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000
Difference	-\$6,168,396	-\$6,168,396	-\$6,168,396	-\$6,168,396	-\$6,168,396	-\$6,168,396

**Note: 1. The amounts for the fully funded refresh have been averaged out over a six-year period. Total cost for a complete Divisionwide refresh would be \$51,038,073.*

TIP Summary

Plan Implementation Costs Overall

Comprehensive TIP						
	FY 18	FY19	FY20	FY21	FY22	FY23
Data Center/School Upgrades/Replacements	\$251,000	\$1,078,500	\$1,120,000	\$20,000	\$270,000	\$20,000
VoIP/LAN/WLAN School Upgrades and Replacements	\$3,110,000	\$4,651,000	\$4,141,000	\$4,675,522	\$2,575,522	\$2,575,522
Security/Infrastructure Upgrades/Replacements	\$1,215,000	\$909,000	\$1,719,000	\$2,074,751	\$1,280,000	\$1,263,000
Student Information System (once purchased, ongoing costs will be part of the ITS operating budget)	\$2,134,289	\$4,000,334	\$3,844,300	-	-	-
Computer Refresh Average (additional funding would be needed if fully-funded)	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396	\$8,506,396
Projected Estimated Totals	\$15,216,685	\$19,145,230	\$19,330,696	\$15,276,669	\$12,631,896	\$12,364,918

- When revenue is insufficient to cover expenses, items in the age-based computer refresh will be delayed until future years, unless 50/50 school matching funds (when offered/available) exceeds expectations.
- The non-fully-funded equipment would cost an additional \$4.3 million (on average) annually (e.g. \$1.8 million for interactive whiteboards, tablets, and printers and \$2.5 million for computers).

Projected Local, State and Federal Revenue

Projected Revenue						
	FY 18	FY19	FY20	FY21	FY22	FY23
PWCS Five-Year Budget* Plan	\$6,634,289	\$7,500,334	\$7,844,300	\$4,500,000	\$5,000,000	\$5,500,000
Federal E-Rate Type I*	-	-	-	-	-	-
Federal E-Rate, Type II Modernization*	\$1,201,200	\$2,082,600	\$1,533,600	-	-	-
50/50 Computer Refresh (Revenue from Schools)	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000
VPSA State Technology Incentive Program*	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000	\$2,338,000
Local Cable Franchise Fees*	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
LOCAL, STATE, AND FEDERAL TOTALS	\$10,723,489	\$12,470,934	\$12,265,900	\$7,388,000	\$7,888,000	\$8,388,000
PROJECTED REVENUE (+/-) VS. PLAN IMPLEMENTATION	-\$4,493,196	-\$6,674,296	-\$7,064,796	-\$7,888,669	-\$4,743,896	-\$3,976,918

- *Notes: 1. FY18-FY20 PWCS Five-Year Budget Plan includes funding to replace the vendor end-of-life student information system (\$6.4 million total).
2. FY18 includes one-time funding to addressing the critical unmet need for increased bandwidth (\$1.5 million) that meets the Federal ConnectEd initiative and the Virginia Department of Education (VDOE) and Education Superhighway recommendations of 1 Mbps per student by 2019.
3. These revenue sources have restrictions on the technology and services that can be purchased. For FY21-FY23, E-Rate Type II revenue is not included pending available funding from the Federal Government.
4. These revenue sources do not include year-end funding that has supplemented the TIP over recent years.