

Capital Improvements Program

Fiscal Years 2021-30



Matilda Verlarde Maynard • 3rd Grade (2018-19)



Teddy Pallan • Kindergarten (2018-19)



Andrea Aguilar • Kindergarten (2018-19)



Suly Ramirez Escobar • 3rd Grade (2018-19)



Jordi Ramos • 1st Grade (2018-19)



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CAPITAL IMPROVEMENTS PROGRAM

Overview - Fiscal Years 2021-30

Prince William County Public Schools (PWCS) is the second largest of 132 school divisions in the Commonwealth of Virginia and the 36th largest school division in the country. The School Division provides services to over seven percent of the state's student enrollment.

The total 2019-20 enrollment is 91,526 students with permanent capacity for 90,279 students. This capacity is supplemented with 183 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. Permanent capacity is set to increase by 8,346 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 95 schools, along with administrative and support facilities. The CIP serves as a tool for planning and implementing the capital improvement projects needed to house 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 reduce portable classrooms by addressing the need for construction of new school facilities and classroom additions to existing schools. Elements of the CIP also include site acquisition, renovations of existing facilities, upgrading and maintaining the School Division's infrastructure, Title IX improvements, Energy Infrastructure improvements, and technology improvements.

The CIP is a blueprint of work to be performed over the next ten-year period as determined in assessments of building infrastructure needs, school capacities, and school space 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 2021) combined with a more general planning schedule for four additional years (FY 2022-25) and then an estimate of projects needed for FY 2026-30.

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 Board of County Supervisors, develop and implement a budget plan to address these needs.

Strategic Plan

The Prince William County School Board is responsible for the establishment of policies governing the education of students in Prince William County. 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. The comprehensive strategic plan is a road map allowing PWCS to focus on critical areas.

Strategic Goal

- **Goal 2: Climate.** The teaching, learning, and working environment is safe, caring, healthy, and values human diversity
 - **Objective 2.3: Physical Safety.** Enhance the appearance, condition, and capacity of physical plants, facilities, and instructional equipment

Critical Functions and Strategic Programs

- Planning and Financial—Acquire property for new facilities, administer the CIP with an annual budget ranging from \$100M-\$300M, support the Energy Conservation Program, manage student enrollment forecasting, and attendance boundary functions
- New Construction—Coordinate the planning, design, and construction efforts for new facilities, additions, and renovations
- Facilities Management—Provide preventative maintenance, repairs, and major improvements to approximately 104 existing school facilities

Accomplishments

Recent Accomplishments

The new John D. Jenkins Elementary School opened in the fall of 2019, adding 662 elementary student seats in eastern Prince William County. The classroom additions at Leesylvania Elementary School (4), Antietam Elementary School (13), Lake Ridge Elementary School (13), Springwoods Elementary School (13), Minnieville Elementary School (10), and Unity Braxton Middle School (17) were completed and opened in September 2019, adding 53 elementary school classrooms and 17 middle school classrooms.

School facilities were completed for the Special Needs Transportation Center at New Dominion, as well as the new Western Transportation Center. School renovations were completed at Leesylvania Elementary School, Marshall Elementary School, Montclair Elementary School, and Old Bridge Elementary School.

Major Accomplishments (Past 5 years)

In the past five years, seven new schools and additions to 12 existing schools have been constructed, adding capacity for more than 8,100 students. The new schools include four elementary schools, one high school, the Kilby Elementary School replacement, and the Independence Nontraditional School.

Major renovations were completed at 14 schools and over \$10.1M in major maintenance and Title IX projects were completed. Also, lighting, boilers, chillers, and other infrastructure upgrades were completed at many schools. 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.

Recent Accomplishments



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 PWCS, as of September 30, 2019, is 91,526 students. From 2018 to 2019, total enrollment grew by 1,323 students, or 1.5 percent growth rate. This is compared to growth from 2017 to 2018 of 342 students, or 0.4 percent.

Student enrollment projections are utilized for a variety of planning and decision-making functions, among which operational and capital budgeting needs are most prominent. Predicting future student enrollment is important for long-range planning, budgeting, staffing, and predicting future building and capital needs for housing PWCS students. 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 the Housing-Unit Method and Grade Progression 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.

Individual school forecasts provide a snapshot of the anticipated changes that PWCS will encounter in the course of the current planning period. 2020-21 enrollment is projected to be 92,048 students, an increase of 522 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.

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 a little less than 1.0 percent. This will result in about 3,118 additional students during this period. Projected enrollments beyond 2020-21 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.

Planning Capacity vs. Program 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 education program need and staffing. Whereas, 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. The calculation of current programs housed at a specific elementary school include 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 2019 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. The capacity for middle and high schools remains as Planning Capacity. Program Capacity for middle schools will take effect for the 2021-22 school year.

Changes from the 2020-29 CIP

Enrollment Trends Impacting the FY 2021-30 CIP

- Divisionwide enrollment grew by 1,321 students, or 1.5%, from 2018-19 to 2019-20
- 10-year projections revised to reflect current conditions
 - Elementary projections have been decreased, based on downward trend in elementary enrollments
 - High school projections have been slightly increased, due to increasing grades 9-12 cohort sizes
 - Total enrollment projections have been revised slightly downward

New Construction Changes

- **2022**
 - Marsteller Middle School addition (11-classrooms) removed from the CIP
 - Bull Run Middle School addition (11-classrooms) removed from the CIP
 - Reagan Middle School addition (6-classrooms) added to the CIP
- **2024**
 - 14th High School moved from 2024 to 2025
- **2027**
 - Kelly Leadership Center addition reinstated to the CIP
- **2029**
 - Elementary School (South Route 1 Area) added to the CIP

Adjustments due to reduced demand, based on updated enrollment projection as well as site selection

Renovation Changes

- Changes to Specific Facility-Based Projects
 - Secure Vestibules
 - Woodbridge Middle School and Graham Park Middle School (FY 2021)
 - Fenestration Improvements
 - Unity Reed High School and Osbourn Park High School (September 2022)
 - Gar-Field High School and Woodbridge High School (September 2025)
- \$12M adjustment for Hylton High School renovation (core infrastructure requirements)
- Identified Graham Park Middle School renovation schedule (FY 2025-26)

Deferred Projects (due to revised School Board budget June 10, 2020)

- **2021**
 - Brentsville High School – Artificial Turf
 - Hylton High School – Artificial Turf
 - Gar-Field High School – CTE Culinary Improvements
- **2022**
 - Bennett Elementary School Renovation
- Tennis Court Lighting
 - Two High Schools per year

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.

Facilities Services funding includes costs related to the operation and maintenance of school buildings and equipment. Funds are included in the approved budget to support the CIP. Prioritizing the work within the available funding to address the most critical needs is an ever-present challenge. The funding formula developed by the Associate Superintendent for Finance and Risk Management 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. Facilities Services funding includes costs related to the operation and maintenance of school buildings. Future enrollment projections provide the analytical basis to implement this long-term approach and are 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. Monetary contribution proffers or in-kind contributions from residential rezoning applications prior to July 2016 help the School Division to mitigate the capital costs associated with residential development.

Proffer Changes

In July 1, 2016, the Virginia General Assembly passed SB-549, which amended the Virginia Code relating to conditional zoning for residential rezonings and proffer amendments.

The new 2016 SB-549 proffer law stated proposed proffers needed to address an impact specifically attributable to a proposed new residential development that created a need for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning. The 2016 SB-549 proffer law was revised in 2019 and now allows applicants to proffer contributions that the applicant believes are appropriate. The previous SB-549 proffer law calculated proffers on a per student basis for the proposed students that exceeded the current capacity. The 2019 proffer law allows proffer contributions per residential unit.

The School Division still collects monetary contributions on rezoning cases filed prior to July 1, 2016. After this date, the School Division will be receiving monetary contributions based on date the rezoning was filed.

New Schools and Additions

<i>School Year to Open</i>	<i>School/Facility</i>	<i>Projected Cost</i>
2021	Middle School (Potomac Shores)	\$64,119,000
	Gainesville High School	\$127,400,000
2022	Elementary School (Rosemount Lewis)	\$37,156,000
	Gainesville Middle School Addition (11 rooms)	\$10,337,000
	Reagan Middle School Addition (6 rooms)	\$7,057,000
2023	Elementary School (Occoquan/Woodbridge Area)	\$38,832,000
	Elementary School (Potomac Shores Area)	\$38,832,000
2025	Occoquan Elementary School Replacement	\$43,266,000
	14 th High School (Mid-County)	\$154,800,000
2027	Kelly Leadership Center Addition	\$18,000,000
2028	Elementary School (Yorkshire Area)	\$47,331,000
2029	Elementary School (Route 1 South Area)	\$49,465,000
<i>New Schools and Additions TOTAL</i>		<i>\$636,595,000</i>



Specific Facility-Based Improvement Projects

<i>School Year to Open</i>	<i>School/Facility</i>	<i>Projected Cost</i>
2021	Unity Reed High School – Office/Admin Area Renovation Osborn Park High School – Office/Admin Area Renovation Woodbridge Middle School – Secure Vestibule Graham Park Middle School – Secure Vestibule	\$1,000,000 \$1,000,000 \$250,000 \$155,000
<i>Projects Deferred*</i>	Brentsville High School – Artificial Turf (incl. stadium lights, restroom) Hylton High School – Artificial Turf Gar-Field High School – Culinary CTE Improvements	
2022	Osborn Park High School – Fenestration Improvements Unity Reed High School – Fenestration Improvements	\$12,758,000 \$12,758,000
2025	Gar-Field High School – Fenestration Improvements Woodbridge High School – Fenestration Improvements	\$11,277,000 \$11,277,000
<i>Projects Deferred*</i>	Tennis Court Lighting – Two high schools per year: FY 2021- Potomac HS and Unity Reed HS FY 2026 - Gar-Field HS and Brentsville HS FY 2027 - Woodbridge HS and Osborn Park HS	\$1,500,000
<i>Improvement Projects TOTAL</i>		<i>\$51,975,000</i>

****The deferred projects from the revised School Board budget of June 10, 2020***

Site Acquisition

FY 20 Property Acquisition

<i>School Facility</i>	<i>Acres</i>	<i>Date Acquired</i>	<i>Purchase Price</i>
Potomac Shores Elementary School #2	5.0	Final Settlement Pending	\$2,500,000
Vulcan (Rosemount ES Access)	1.551	Jan. 2020	\$175,000
<i>Property Acquisition TOTAL</i>			<i>\$2,675,000</i>

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.

Land acquisition will continue to figure prominently in this and future capital improvement budgets. Funding for school site acquisition comes from a combination of developer proffer contributions from rezoning cases submitted prior to July 1, 2016, 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 if July 1, 2016 though, the Board of County Supervisors repealed the residential portion of the Policy Guide for Monetary Contributions. However, monetary contributions on rezoning cases 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 benchmark 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 almost \$64,000,000. The School Division purchased land for construction of 15 schools and facilities since 2000, spending over \$68,500,000. Even with purchased and proffered sites, there are still four school sites needed by 2030.

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 Acquisition Needs

<i>Year to Open</i>	<i>Year to Acquire</i>	<i>Planned School Facility</i>	<i>Property Status</i>	<i>Funds Required</i>
2022	2019	ES (Rosemount Lewis Park)	PWC Site	N/A
2023	2020	ES (Occoquan/Woodbridge Area)	Site Needed	\$7,500,000
	2019	ES (Potomac Shores Area)	Site Pending	\$2,500,000
2025	2019	Occoquan ES Replacement (Additional Land)	Acquired	N/A
	2020-21	14 th High School (Mid-County)	Site Needed	14,000,000
2028	2023	ES (Yorkshire Area)	Site Needed	\$9,568,000
2029	2023	ES (Route 1 South Area)	Site Needed	\$9,380,000
<i>Estimated Cost of School Site Needs TOTAL</i>				<i>\$42,948,000</i>

Renovations

New construction projects are only part of the CIP picture. Renovations 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 renovations 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-two of the School Division’s 95 school facilities are 25 years or older. The goal of the school renovation program is to renovate schools prior to 25 years of age since the last renovation. The older buildings are well-maintained but are in constant need of repair. They must be renovated 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 renovations 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 renovation projects at older buildings, with age of each school building the first consideration. The order of renovations may be altered when major components are addressed with previous projects, accelerated deterioration conditions warrant, and with funding constraints. The Schedule of Renovations 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.

Budget - Renovations

The School Division budgets for repairs and renovations 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 renovations. The projected FY 2021 replacement value of schools is approximately \$3,137,571,000.

Prince William County Schools has established an average annual renovation and repair target of 3% of the current replacement value of facilities with 1.5% for preventive maintenance and 1.5% for repairs and renovations. 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 2021 for repairs, renovations, and maintenance is \$94,127,000 (3.0% of value), with the estimated budget for maintenance renovations, technology, and energy improvements in FY 2021 at \$81,002,292 (2.6% of value); of which \$38,563,143 will be bond funded.

<i>School Renovations/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 Renovation 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 renovation.

School Renovations

<i>School Year to Complete</i>	<i>School/Facility</i>	<i>Projected Cost</i>
2020	Beville Middle School	\$769,047
2021	Mountain View Elementary School	\$3,308,667
<i>Project Deferred</i>	Bennett Elementary School	\$3,100,857
2022	Hylton High School	\$36,220,000
	Penn Elementary School	\$12,035,000
2023	Bristow Run Elementary School	\$12,578,000
	Signal Hill Elementary School	\$12,578,000
	Parkside Middle School	\$18,619,000
2024	Swans Creek Elementary School	\$13,145,000
	Brentsville High School	\$26,392,000
	Cedar Point Elementary School	\$13,145,000
2025	Benton Middle School	\$20,335,000
	Featherstone Elementary School	\$13,738,000
2026	Graham Park Middle School	21,252,000
	Renovation of Various Schools (based on age, condition, and availability of funds) <i>See School Facility Renovation Prioritization List</i>	\$275,299,000
<i>School Renovations TOTAL</i>		<i>\$482,514,571</i>

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 established an Infrastructure Task Force to examine, evaluate, recommend, and prioritize a long-term plan for resolving facility inequities amongst school facilities. Over two years, the School Board approved a one-time budget expenditure of \$742,000 for Elementary School Security-related recommendations, as well as the auxiliary gymnasiums at Woodbridge High School and Gar-Field High School and renovations of front office space at Osbourn Park High School and Unity Reed High School.

Current renovation plans include fenestration improvements at High Schools to enhance natural lighting within specific classrooms and enhance appearance of the school façade.

Proposed Completion Schedule

- 2022: Osbourn Park HS and Unity Reed HS
- 2025: Gar-Field HS and Woodbridge HS

Project Name		Project Total					
		Fund Source		CIP Funding Amount		Capacity Added	
School Year to Open	Project Category	Bonds	General Funds	10 Years	5 Years	10 Years	5 Years
New Schools and Additions							
2021	Middle School (Potomac Shores)	\$32,559,500	\$0	\$32,559,500	\$32,559,500	1,464	1,464
2021	Gainesville High School	\$62,400,000	\$0	\$62,400,000	\$62,400,000	2,557	2,557
2022	Elementary School (Rosemount Lewis)	\$37,156,000	\$0	\$37,156,000	\$37,156,000	696	696
2022	Gainesville Middle School Addition [11 rooms]	\$10,337,000	\$0	\$10,337,000	\$10,337,000	231	231
2022	Reagan Middle School Addition [6 rooms]	\$7,057,000	\$0	\$7,057,000	\$7,057,000	126	126
2023	Elementary School (Occoquan/Woodbridge Area)	\$38,832,000	\$0	\$38,832,000	\$38,832,000	657	657
2023	Elementary School (Potomac Shores Area)	\$38,832,000	\$0	\$38,832,000	\$38,832,000	750	750
2025	Occoquan Elementary School [Replacement]	\$43,266,000	\$0	\$43,266,000	\$39,149,000	357	357
2025	14th High School (Mid-County)	\$154,800,000	\$0	\$154,800,000	\$141,900,000	2,557	2,557
2027	Kelly Leadership Center Addition	\$18,000,000	\$0	\$18,000,000	\$0		
2028	Elementary School (Yorkshire Area)	\$47,331,000	\$0	\$47,331,000	\$0	758	
2029	Elementary School (Route 1 South Area)	\$49,465,000	\$0	\$49,465,000	\$0	750	
Specific Facility-Based Improvement Projects							
2021	Unity Reed High School -- Office /Admin Area Renewal	\$1,000,000	\$0	\$1,000,000	\$1,000,000		
2021	Osborn Park High School -- Office /Admin Area Renewal	\$1,000,000	\$0	\$1,000,000	\$1,000,000		
2021	Brentsville High School - Artificial Turf [incl stadium lights, restroom bldg] <i>Project Deferred</i>	\$0		\$0	\$0		
2021	Hylton High School - Artificial Turf <i>Project Deferred</i>	\$0		\$0	\$0		
2021	Gar-Field High School -CTE Culinary Improvements <i>Project Deferred</i>	\$0		\$0	\$0		
2022	Osborn Park High School - Fenestration Improvements	\$12,758,000	\$0	\$12,758,000	\$12,758,000		
2022	Unity Reed High School - Fenestration Improvements	\$12,758,000	\$0	\$12,758,000	\$12,758,000		
2021	Woodbridge Middle School - Secure Vestibule	\$0	\$250,000	\$250,000	\$250,000		
2021	Graham Park Middle School - Secure Vestibule	\$0	\$155,000	\$155,000	\$155,000		
	Tennis Court Lighting -- Two High Schools per year 1) Potomac HS; 2) Unity Reed HS; 3) Gar-Field HS; 4) Brentsville HS; 5) Woodbridge HS; 6) Osborn Park HS <i>Project Deferred</i>	\$0	\$1,500,000	\$1,500,000	\$0		
2025	Gar-Field High School - Fenestration Improvements	\$9,000,000	\$2,277,000	\$11,277,000	\$11,277,000		
2025	Woodbridge High School - Fenestration Improvements	\$9,000,000	\$2,277,000	\$11,277,000	\$11,277,000		
School Renewals							
2020	Beville Middle School		\$769,047	\$769,047	\$769,047		
2021	Mountain View Elementary School		\$3,308,667	\$3,308,667	\$3,308,667		
2022	Bennett Elementary School <i>Project Deferred</i>	\$2,326,300	\$774,557	\$3,100,857	\$3,100,857		
2022	Hylton High School	\$31,429,000	\$4,791,000	\$36,220,000	\$36,220,000		
2022	Penn Elementary School	\$10,934,143	\$1,100,857	\$12,035,000	\$12,035,000		
2023	Bristow Run Elementary School	\$10,000,000	\$2,578,000	\$12,578,000	\$12,578,000		
2023	Signal Hill Elementary School	\$10,000,000	\$2,578,000	\$12,578,000	\$12,578,000		
2023	Parkside Middle School	\$15,994,000	\$2,625,000	\$18,619,000	\$18,619,000		
2024	Swans Creek Elementary School	\$8,760,300	\$4,384,700	\$13,145,000	\$13,145,000		
2024	Brentsville High School	\$17,750,300	\$8,641,700	\$26,392,000	\$26,392,000		

Project Name		Project Total					
		Fund Source		CIP Funding Amount		Capacity Added	
School Year to Open	Project Category	Bonds	General Funds	10 Years	5 Years	10 Years	5 Years
2024	Cedar Point Elementary School	\$10,014,000	\$3,131,000	\$13,145,000	\$13,145,000		
2025	Benton Middle School	\$16,622,000	\$3,713,000	\$20,335,000	\$20,335,000		
2025	Featherstone Elementary School	\$9,772,000	\$3,966,000	\$13,738,000	\$13,738,000		
2026	Graham Park Middle School	\$16,653,300	\$4,598,700	\$21,252,000	\$17,466,000		
	Renewal of Various Schools (based on age, condition, and availability of funds) See School Facility Renewal Prioritization List	\$245,906,500	\$29,392,500	\$275,299,000	\$0		
School Maintenance and Repair							
	Asphalt - Upgrades		\$15,000,000	\$15,000,000	\$5,000,000		
	HVAC Equipment and Controls - Upgrades	\$1,000,000	\$17,355,000	\$18,355,000	\$8,355,000		
	Kitchen - Upgrades		\$13,915,000	\$13,915,000	\$3,915,000		
	Municipal Separate Storm Sewer Systems (MS4)		\$5,000,000	\$5,000,000	\$2,500,000		
	Portable Classroom Relocation		\$5,000,000	\$5,000,000	\$2,500,000		
	Roof Replacements/Repairs (TBD)		\$45,851,000	\$45,851,000	\$15,851,000		
	Fenestration Improvements (TBD)		\$14,870,286	\$14,870,286	\$4,870,286		
	Title IX Improvements		\$3,440,000	\$3,440,000	\$1,590,000		
	Energy Infrastructure Improvements		\$10,000,000	\$10,000,000	\$5,000,000		
Technology Improvement Program							
	Technology Improvement Program - Upgrades		\$77,500,000	\$77,500,000	\$32,500,000		
FY2021 - FY2030 Capital Improvement Program Totals		\$992,713,343	\$290,743,014	\$1,283,456,357	\$744,208,357	10,903	9,395

Summary							
	New Construction	\$504,641,500	\$0	\$504,641,500	\$390,828,500	10,546	9,038
	Additions	\$35,394,000	\$0	\$35,394,000	\$17,394,000	357	357
	Facility-Based Renovation Projects	\$45,516,000	\$6,459,000	\$51,975,000	\$50,475,000		
	School Renewals	\$406,161,843	\$76,352,728	\$482,514,571	\$203,429,571		
	Maintenance & Repair	\$1,000,000	\$130,431,286	\$131,431,286	\$49,581,286		
	Technology Improvement Program	\$0	\$77,500,000	\$77,500,000	\$32,500,000		
	Total	\$992,713,343	\$290,743,014	\$1,283,456,357	\$744,208,357	10,903	9,395

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.

Typical Major Maintenance Activities

<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

School Maintenance and Repair (10 year plan)

<i>School/Facility</i>	<i>Projected Cost</i>
Asphalt - Upgrades	\$15,000,000
HVAC Equipment and Controls - Upgrades	\$18,355,000
Kitchen - Upgrades	\$13,915,000
Municipal Separate Storm Sewer Systems (MS4)	\$5,000,000
Portable Classroom Relocation	\$5,000,000
Roof Replacement/Repairs (TBD)	\$45,851,000
Fenestration Improvements (TBD)	\$14,870,286
Title IX Improvements	\$3,440,000
Energy Infrastructure Improvements	\$10,000,000

School Facility Renovation Prioritization List

<i>School Facility Name</i>	<i>Year Opened</i>	<i>Effective Facility Age Not including effect of scheduled renovations</i>	<i>Facility Renovation Date</i>	
			<i>Most Recent/ Previous Renovation</i>	<i>Next Scheduled Renovation per Approved CIP</i>
Woodbine SE	1953	66		
Transportation Center, Main (Hooe Rd)	1979	40		
Admin Building (B-51)	1985	34		
Beville MS	1991	28		2020
Hylton HS	1991	28		2022
Mountain View ES	1995	24		2021
Bennett ES	1996	23		2022
Penn ES	1998	21		2022
Bristow Run ES	1998	21		2023
Parkside MS	1963	19	2000	2023
Signal Hill ES	2000	19		2023
Brentsville HS	1965	19	2000	2024
Benton MS	2000	19		2025
Forest Park HS	2000	19		
Cedar Point ES	2001	18		2024
Swans Creek ES	2001	18		2024
Featherstone ES	1961	18	2001	2025
Graham Park MS	1963	18	2001	2026
Lynn MS	1964	18	2001	
Occoquan ES	1927	17	2002	
Unity Braxton MS	1964	17	2002	
Ashland ES	2002	17		
Bull Run MS	2002	17		
Marsteller MS	2002	17		
Transportation Center, East (Potomac)	2002	17		
Transportation Center, West (McCuin)	2002	17		
Gar-Field HS	1972	16	2003	
Woodbridge MS	1964	16	2003	
Alvey ES	2003	16		
Sudley ES	1972	15	2004	
Woodbridge HS	1974	15	2004	
Battlefield HS	2004	15		
Ellis ES	2004	15		
Freedom HS	2004	15		

School Facility Renovation Prioritization List

<i>School Facility Name</i>	<i>Year Opened</i>	<i>Effective Facility Age Not including effect of scheduled renovations</i>	<i>Facility Renovation Date</i>	
			<i>Most Recent/ Previous Renovation</i>	<i>Next Scheduled Renovation per Approved CIP</i>
Porter (Combined)	2004	15		
Williams ES	2004	15		
Minnieville ES	1972	14	2005	
Potomac View ES	1964	14	2005	
Unity Reed HS	1973	14	2005	
Vaughan ES	1964	14	2005	
Glenkirk ES	2005	14		
Transportation Center, Central	2005	14		
Victory ES	2005	14		
Belmont ES	1967	13	2006	
Dale City ES	1967	13	2006	
Marumscos Hills ES	1966	13	2006	
Osborn Park HS	1975	13	2006	
Buckland Mills ES	2006	13		
Parks ES	2006	13		
Potomac MS	2006	13		
Kerrydale ES	1973	12	2007	
Rockledge ES	1972	12	2007	
Tyler ES	1968	12	2007	
Gainesville MS	2007	12		
Bel Air ES	1968	11	2008	
Fitzgerald ES	2008	11		
Gravelly ES	2008	11		
Kelly Leadership Center	2008	11		
Coles ES	1968	10	2009	
Enterprise ES	1978	10	2009	
Neabsco ES	1969	10	2009	
Sinclair ES	1968	10	2009	
West Gate ES	1964	10	2009	
Yorkshire ES	2009	10		
Hampton MS	1970	9	2010	
Rippon MS	1967	9	2010	
Triangle ES	2010	9		

School Facility Renovation Prioritization List

<i>School Facility Name</i>	<i>Year Opened</i>	<i>Effective Facility Age</i> <i>Not including effect of scheduled renovations</i>	<i>Facility Renovation Date</i>	
			<i>Most Recent/Previous Renovation</i>	<i>Next Scheduled Renovation</i> <i>per Approved CIP</i>
Patriot HS	2011	8		
Piney Branch ES	2011	8		
Wood ES	2011	8		
Pennington (Combined)	1969	7	2012	
Potomac HS	1981	7	2012	
PACE West SE	2012	7		
Reagan MS	2012	7		
Pattie ES	1978	6	2013	
Washington-Reid ES	1951	6	2013	
Dumfries ES	1939	5	2014	
Haymarket ES	2014	5		
Nokesville School, The (Combined)	2014	5		
Yung ES	2015	4		
Henderson ES	1985	3	2016	
King ES	1981	3	2016	
Lake Ridge ES	1983	3	2016	
Loch Lomond ES	1962	3	2016	
Springwoods ES	1985	3	2016	
Colgan HS	2016	3		
Wilson ES	2016	3		
Antietam ES	1990	2	2017	
McAuliffe ES	1989	2	2017	
Mullen ES	1990	2	2017	
Westridge ES	1989	2	2017	
Covington-Harper ES	2017	2		
Kilby ES	2017	2		
Independence Nontraditional	2018	1		
Jenkins ES	2019			

Summary

<i>Existing Conditions</i>	
Projected Growth in Students (2019-2030)	8,498
Student Enrollment (September 30, 2019)	91,526
Student Enrollment (September 30, 2029)	100,02499,578
Current Student Capacity	90,279
Current Portable Classrooms in Use	183

<i>Proposed Capital Improvements Program</i>	
New School Facilities	9
New Elementary Schools	5
New Middle Schools	1
New High Schools	2
Replacement Elementary School	1
School Additions (Classrooms)	17
Elementary School Additions	----
Middle School Additions (2 Schools)	17
High School Additions	-----
Support Facilities	1
Kelly Leadership Center	1
Proposed Capacity to be Constructed	8,346
Proposed Costs	
New Construction	\$504,641,500
Additions	\$35,394,000
Facility-Based Renovation Projects	\$51,975,000
School Renovations	\$482,514,571
Maintenance & Repair	\$131,431,786
Technology Improvement Program	\$77,500,000

Key Highlights of Fiscal Year 2021 Budget - Capital Projects Funded

- Construction of “Rosemount Lewis” Elementary School
- Renovation of Hylton High School
- Fenestration improvements at Osbourn Park High and Unity Reed High School

APPENDIX A

School Facility Information

- Count of Educational Facilities
- School Facilities – Detail Information
 - Elementary
 - Combined
 - Middle
 - High
 - Special
 - Administrative
 - Transportation
- Portable Classrooms

Count of Educational Facilities

Prince William County Schools 2014-15 to 2019-20

School Type	Count of School Facilities					
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Elementary Schools	57	58	59	60	60	61
Combined Schools	3	3	3	3	3	3
Middle Schools	16	16	16	16	16	16
High Schools	11	11	12	12	12	12
Total (Regular Education)	87	88	90	91	91	92
Special Education	3	3	3	3	4	3
TOTAL	92	93	95	96	95	95

*Independence Non-Traditional School includes the New Dominion program, New Directions program and the PACE East program.

School Facilities – Summary Information Prince William County Schools 2019-20

Use Type	School Type	Facility Count	Program / Planning Capacity	Portable Class-rooms	Square Feet	Acres
Educational	Elementary	61	41,762	72	4,683,645	1,011.3
	Combined	3	2,305		269,407	80.1
	Middle	16	20,015	50	2,194,133	557.7
	High	12	26,197	61	3,564,328	842.8
	Special	3			187,559	32.6
Non-Educational	Administrative	5			339,812	65.3
	Transportation	6			98,350	104.2
Total		106	90,279	183	11,337,234	2,693.9

School Facilities – Detail Information by School Type

Prince William County Schools

Elementary School	Program Capacity	Portable Classrooms 2019-20	Regular Classrooms	Year Opened	School Renovation		School Addition(s)			Building Square Feet	Site Acres
					Next	Last	Addition #1 Year	# Class-rooms	Addition #2 Year		
Alvey ES	838		41	2003						83,084	20.2
Antietam ES	914		45	1990		2018	2019	13		62,334	14.9
Ashland ES	960		46	2002			2008	5		98,461	18.1
Bel Air ES	392	2	28	1968		2008	2008	8		53,712	15.0
Belmont ES	547		36	1967		2006	2006	4	2017	74,142	14.3
Bennett ES	828		40	1996	FY 2022		2000	8		83,969	15.3
Bristow Run ES	828		40	1998	FY 2023		2004	8		83,885	21.7
Buckland Mills ES	936		43	2006						89,936	15.0
Cedar Point ES	838		41	2001	FY 2024					83,084	15.5
Coles ES	368	3	25	1968		2009				52,745	17.0
Covington-Harper ES	786		45	2017						101,288	21.4
Dale City ES	362	3	25	1967		2006	2001	4		44,333	14.8
Dumfries ES	409	5	27	1939		2014	1989	8		44,925	10.0
Ellis ES	492	3	32	2004						76,724	10.5
Enterprise ES	398	4	26	1978		2009				54,281	15.0
Featherstone ES	418	3	29	1961	FY 2025	2001	2015	6		56,246	12.0
Fitzgerald ES	764	2	46	2008						106,170	11.2
Glenkirk ES	823		41	2005						83,084	15.6
Gravelly ES	954		43	2008						95,314	18.0
Haymarket ES	927	2	44	2014						98,736	24.3
Henderson ES	915		42	1985		2016	2017	10		75,495	14.9
Jenkins ES	749		43	2019						100,264	17.2
Kerrydale ES	355	1	24	1973		2007				49,928	15.4
Kilby ES	684		45	2017						98,615	12.8
King ES	430		26	1981		2016				63,832	15.2
Lake Ridge ES	862		42	1983		2016	2019	13		66,408	15.1
Leesylvania ES	739		46	1996		2019	2019	4		83,084	16.3
Loch Lomond ES	440	6	30	1962		2016	2013	4		58,278	10.7
Marshall ES	738		35	1994		2019	1999	4		62,700	24.2
Marumco Hills ES	580	6	35	1966		2006	2006	2	2009	56,651	12.2
McAuliffe ES	446		28	1989		2018				59,517	15.1
Minnieville ES	623		39	1972		2005	2019	10		54,663	15.2
Montclair ES	581	1	35	1991		2019	2008	4		70,928	15.9
Mountain View ES	738		35	1995	FY 2021		2002	4		67,815	30.0
Mullen ES	702	3	43	1990		2018	1999	4	2013	82,219	15.0
Neabsco ES	716	2	43	1969		2009	2017	8		76,945	12.8
Occoquan ES	498	4	30	1927		2002	2003	5		55,225	10.1
Old Bridge ES	532		32	1995		2019				74,433	17.9
Parks ES	851		41	2006						83,084	15.2
Pattie ES	777		37	1978		2013	2018	11	2011	69,375	15.0
Penn ES	661		39	1998	FY 2022		2013	7		87,542	16.9
Piney Branch ES	946		44	2011						104,448	21.0
Potomac View ES	529	4	37	1964		2005	2005	4	2009	60,756	12.4
River Oaks ES	622	1	38	1990		2018	2014	7		80,618	15.2
Rockledge ES	522	1	31	1972		2007	2009	7		64,769	16.2
Signal Hill ES	819	2	41	2000	FY 2023					83,084	24.5
Sinclair ES	662	2	42	1968		2009	2001	6	2013	75,698	15.0
Springwoods ES	920		42	1985		2016	2019	13		83,260	15.1
Sudley ES	639	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	752		44	2010						103,679	18.9
Tyler ES	574		28	1968		2007	2007	4		56,560	25.5
Vaughan ES	586	3	36	1964		2005	2001	4	2009	58,967	13.6
Victory ES	891		43	2005						89,911	21.2
West Gate ES	501	3	36	1964		2009	2013	4		59,727	12.1
Westridge ES	709		34	1989		2018	2012	6		70,559	15.0
Williams ES	694	1	41	2004						83,084	13.6
Wilson ES	820		49	2016						106,345	19.5
Wood ES	950		44	2011						104,448	33.8
Yorkshire ES	735	3	46	2009						106,614	13.3
Yung ES	839		46	2015						107,273	20.8
Total	41,762	72	2,311					211	44	4,683,645	1,011.3

School Facilities – Detail Information

Prince William County Schools

Combined School	Planning Capacity	Portable Classrooms 2019-20	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	1,090		55	2014							141,832	48.2
Pennington TS	607		31	1969		2012					56,330	15.0
Porter TS	608		32	2004							71,245	16.9
Total	2,305		118								269,407	80.1

Middle School	Planning Capacity	Portable Classrooms 2019-20	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						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	FY 2026	2001	2001	4			110,514	21.9
Hampton MS	982	2	54	1970		2010	2002	8			124,610	30.0
Lake Ridge MS	1,464		78	1989		2018	2018	13			158,900	34.1
Lynn MS	1,170	10	64	1963		2001					131,974	28.6
Marsteller MS	1,233	5	65	2002							135,309	36.4
Parkside MS	1,453	2	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	5	65	2012							134,765	41.9
Rippon MS	1,390	2	63	1967		2010	2016	8			156,094	30.2
Saunders MS	1,212		64	1988		2018					137,088	29.5
Unity Braxton MS	#N/A		#N/A	1964		2002	2019	17			#N/A	#N/A
Woodbridge MS	1,066	9	56	1964		2003					124,511	37.4
Total	#N/A	50	#N/A					87	0		#N/A	#N/A

High School	Planning Capacity	Portable Classrooms 2019-20	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	21	101	2004							285,086	78.8
Brentsville HS	1,110		53	1965	FY 2024	2000	2000	9	1980		163,066	29.0
Colgan HS	2,053	5	102	2016							308,058	108.4
Forest Park HS	2,053		101	2000							283,268	79.1
Freedom HS	2,053	8	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
Unity Reed HS	#N/A	#N/A	#N/A	1973		2005					#N/A	#N/A
Woodbridge HS	2,734		125	1974		2004					352,497	52.7
Total	#N/A	#N/A	#N/A					39	0		#N/A	#N/A

Special School	Planning Capacity	Portable Classrooms 2019-20	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		
Independence NT			57	2018							122,850	9.9
PACE West SE			21	2012							39,998	13.5
Washington-Reid ES			9	1951		2013					24,711	9.2
Total	0	0	87					0	0		187,559	32.6

Administrative	Planning Capacity	Portable Classrooms 2019-20	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
Aquatics Center				2016							31,578	0.8
Independent Hill Complex				1968							139,947	37.6
Kelly Leadership Center				2008							145,747	20.3
Woodbine				1953							8,320	1.9
Total	0	0	0					0	0		339,812	65.3

School Facilities – Detail Information
Prince William County Schools

Transportation	Planning Capacity	Portable Classrooms 2019-20	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
New Dominion Transportation Ctr (Special Needs)				1975		2019					14,749	9.3
Transportation Center Central				2005							14,934	29.9
Transportation Center East				2002							14,565	16.8
Transportation Cntr (Hooe Rd)				1979							28,028	20.0
Western Transportation Center				2019							17,674	16.7
Total	0	0	0					0		0	98,350	104.2

All Facilities	School Capacity	Portable Classrooms 2019-20	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	90,279	183	4,820					337		44	11,337,234	2,693.9

Portable Classrooms

Current and Historical Totals
By School Type, 1998 to 2019

Year	School Type					Total
	Elementary	Middle	High	Alternative	Special Education	
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
2018	107	47	51	0	1	206
2019	72	50	61	0	0	183

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 2019-29
- 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 Prince William County (PWC) by dividing the number of students residing in the geographic region by the number of existing housing units. In Prince William County Schools (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 PWCS. The amount of new housing growth is fairly consistent with housing forecasts used for projecting population in PWC for the Metropolitan Washington Council of Governments (COG). The spatial distribution of new housing throughout PWC is determined by two factors. First, residential projects in the inventory pipeline guide where residential development is most likely to occur. Second, locations where additional housing-unit density is permitted in accordance with current zoning are utilized to guide where future, new housing is most likely to be constructed. These processes described are similar in spirit to the Build-out Analysis produced by the Planning Office in PWC Government, but differs by only considering the current zoning’s maximum residential development potential or, in other words, the maximum number of housing units that could exist on the property without undergoing rezoning.

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

1. **Progression Ratio** = $(7^{\text{th}}_{\text{Year}(-2)} + 7^{\text{th}}_{\text{Year}(-1)} + 7^{\text{th}}_{\text{Year}(0)}) / (6^{\text{th}}_{\text{Year}(-3)} + 6^{\text{th}}_{\text{Year}(-2)} + 6^{\text{th}}_{\text{Year}(-1)})$
 $7^{\text{th}}_{\text{Year}(0)}$ indicates the 7th grade cohort of Current Year.
2. **Progression Ratio** = $(4,024 + 4,184 + 4,525) / (3,888 + 4,066 + 4,348) = 1.0350$
3. **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 16 and 17 for historical error rates.

Student Enrollment Data Preparation



Elementary School
Level Data



Middle School
Level Data



High School
Level Data



Special School
Level Data



SMS Student Database - Extract Active
Students via SPSS Syntax to produce
the Official September 30th Enrollment



Import PWC Government
Shapefiles for Premise
Addresses, Parcels, and Roads

Import dataset into GIS



"Geocode" or assign each
student to a point on a map
based on the student's
residential address on file



Spatial join PZs and School
Assignments to the "Geocoded" student
point file in GIS to produce dataset

Analysis of Housing Unit Information



Prince William County Planning Office
Premise Points with Housing Unit Data



Prince William County Geographic Information System



Prince William County Planning Office
Residential Development Plans



Residential Information
Geodatabase in GIS

PWCS Staff converts
information into
geographic data



Outside data vendors provide additional
information on pace of development (e.g.,
PWC Revenue Committee, COG Housing
Forecasts, Residential Development, etc.)



Current and 10-Year
Projection of Housing
Units by Unit Type and
Planning Zone



This allows us to
prepare for Student
Enrollment Forecasting
continued on Page 5

Student Enrollment Forecasting Preparation



Residential Construction
(Generates students from new housing units based on forecasted build rates)

County-Wide Projection
forecasts the number of students anticipated in PWCS for the next 10 years



SPSS Syntax

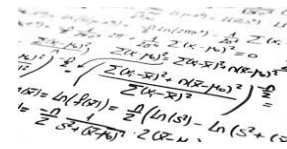
Calculate Current Student Generation Factors (SGF)
(Students per housing unit, by Unit Type, Planning Zone, and Grade)



Calculate Transfer Rates
(Percentage of students attending schools other than their geographically assigned school)



Progress student generation factor cohorts and transfer rates x-year forward



By Planning Zone:
 Students (Grade X, Year Y) =
 SGF_{Grade X-1 by Unit Type} * Units_{Year 0}
 + SGF_{Grade X by Unit Type} * Add'l Units_{Year 0 to Y}
 * Transfer Rate_{Grade X}



Calculate new grade enrollments for each Planning Zone



Make "bottom-up" forecasts comply with "top-down" division-wide forecasts for improved accuracy

Allocate Planning Zones to Schools to create Enrollment Projections by School and Grade

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 continuous communities; transportation considerations; using centerline on divided highways when possible; and topographical features.

Student Enrollment Data: Current and Projected Enrollment

Elementary Schools

SY 2019-20 to SY 2029-30

Elementary School	Available Space			2019-20			2020-21			2024-25			2029-30		
	Program Capacity 2019-20 ¹	Program Capacity 2020-29 ²	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
Alvey	838	838	0	596	242	71.1%	529	309	63.1%	383	455	45.7%	394	444	47.1%
Antietam	914	939	0	795	144	84.7%	792	147	84.3%	786	153	83.7%	810	129	86.3%
Ashland	960	960	0	857	103	89.3%	871	89	90.7%	927	33	96.5%	957	3	99.7%
Bel Air	392	392	2	392	0	100.0%	392	0	100.0%	387	5	98.7%	399	-7	101.8%
Belmont	547	536	0	525	11	97.9%	531	5	99.1%	602	-66	112.3%	653	-117	121.8%
Bennett	828	828	0	728	100	87.9%	742	86	89.7%	768	60	92.7%	848	-20	102.4%
Bristow Run	828	828	0	622	206	75.1%	598	230	72.2%	553	275	66.8%	571	257	69.0%
Buckland Mills	936	919	0	700	219	76.2%	685	234	74.5%	705	214	76.7%	749	170	81.5%
Cedar Point	838	838	0	575	263	68.6%	563	275	67.2%	601	237	71.7%	663	175	79.1%
Coles	368	368	3	412	-44	112.0%	429	-61	116.7%	478	-110	129.8%	502	-134	136.5%
Covington-Harper	786	783	0	685	98	87.5%	814	-31	104.0%	1,272	-489	162.4%	1,493	-710	190.7%
Dale City	362	371	3	414	-43	111.6%	412	-41	111.0%	409	-38	110.3%	422	-51	113.7%
Dumfries	409	379	5	443	-64	116.9%	450	-71	118.6%	539	-160	142.3%	745	-366	196.5%
Ellis	492	492	3	507	-15	103.0%	487	5	98.9%	470	22	95.5%	513	-21	104.2%
Enterprise	398	398	4	359	39	90.2%	351	47	88.2%	320	78	80.3%	330	68	82.8%
Featherstone	418	415	3	485	-70	116.9%	484	-69	116.6%	444	-29	107.1%	463	-48	111.5%
Fitzgerald	764	773	2	828	-55	107.1%	838	-65	108.4%	849	-76	109.8%	961	-188	124.4%
Glenkirk	823	823	0	736	87	89.4%	674	149	81.9%	553	270	67.2%	570	253	69.3%
Gravely	954	936	0	877	59	93.7%	887	49	94.8%	872	64	93.2%	928	8	99.2%
Haymarket	927	944	2	840	104	89.0%	827	117	87.6%	790	154	83.6%	875	69	92.7%
Henderson	915	915	0	797	118	87.1%	796	119	87.0%	737	178	80.5%	776	139	84.8%
Jenkins	749	662	0	546	116	82.5%	535	127	80.8%	496	166	74.9%	565	97	85.3%
Kerrydale	355	355	1	345	10	97.2%	345	10	97.1%	329	26	92.6%	339	16	95.5%
Kilby	684	684	0	590	94	86.3%	612	72	89.5%	756	-72	110.5%	841	-157	123.0%
King	430	430	0	442	-12	102.8%	430	0	100.1%	377	53	87.7%	389	41	90.4%
Lake Ridge	862	871	0	667	204	76.6%	671	200	77.1%	714	157	82.0%	737	134	84.6%
Leesylvania	739	760	0	710	50	93.4%	701	59	92.2%	767	-7	100.9%	837	-77	110.1%
Loch Lomond	440	441	6	550	-109	124.7%	550	-109	124.6%	630	-189	142.8%	652	-211	147.9%
Marshall	738	738	0	704	34	95.4%	694	44	94.1%	616	122	83.5%	655	83	88.8%
Marumsoo Hills	580	579	6	577	2	99.7%	588	-9	101.6%	659	-80	113.9%	716	-137	123.7%
McAuliffe	446	446	0	440	6	98.7%	430	16	96.3%	424	22	95.0%	437	9	97.9%
Minnieville	623	612	0	557	55	91.0%	562	50	91.9%	638	-26	104.2%	657	-45	107.4%
Montclair	581	592	1	670	-78	113.2%	685	-93	115.6%	697	-105	117.8%	734	-142	124.0%
Mountain View	738	721	0	525	196	72.8%	503	218	69.8%	401	320	55.6%	413	308	57.3%
Mullen	702	709	3	725	-16	102.3%	755	-46	106.4%	820	-111	115.6%	849	-140	119.8%
Neabseo	716	716	2	678	38	94.7%	669	47	93.5%	646	70	90.3%	666	50	93.1%
Nokesville School, The (ES)	651	641	0	670	-29	104.5%	699	-58	109.1%	772	-131	120.4%	949	-308	148.0%
Occoquan	498	498	4	634	-136	127.3%	646	-148	129.7%	653	-155	131.1%	708	-210	142.1%
Old Bridge	532	532	0	513	19	96.4%	506	26	95.1%	447	85	84.1%	463	69	87.0%
Parks	851	851	0	679	172	79.8%	648	203	76.1%	636	215	74.8%	704	147	82.8%
Pattie	777	785	0	711	74	90.6%	690	95	87.9%	593	192	75.6%	614	171	78.2%
Penn	661	663	0	657	6	99.1%	671	-8	101.2%	714	-51	107.7%	750	-87	113.1%
Pennington (ES)	364	364	0	405	-41	111.3%	405	-41	111.3%	405	-41	111.3%	405	-41	111.3%
Piney Branch	946	931	0	777	154	83.5%	779	152	83.6%	735	196	78.9%	757	174	81.4%
Porter (ES)	356	356	0	420	-64	118.0%	420	-64	118.0%	420	-64	118.0%	420	-64	118.0%
Potomac View	529	516	4	539	-23	104.5%	572	-56	110.9%	689	-173	133.6%	743	-227	144.0%
River Oaks	622	612	1	648	-36	105.9%	660	-48	107.9%	646	-34	105.6%	666	-54	108.8%
Rockledge	522	522	1	531	-9	101.7%	515	7	98.8%	514	8	98.5%	566	-44	108.4%
Signal Hill	819	819	2	687	132	83.9%	673	146	82.2%	623	196	76.0%	697	122	85.1%
Sinclair	662	662	2	792	-130	119.6%	796	-134	120.3%	862	-200	130.1%	892	-230	134.8%
Springwoods	920	946	0	796	150	84.1%	799	147	84.4%	803	143	84.9%	828	118	87.5%
Sudley	639	639	1	678	-39	106.1%	660	-21	103.2%	683	-44	106.8%	704	-65	110.1%
Swans Creek	653	632	1	629	3	99.5%	646	-14	102.3%	642	-10	101.5%	683	-51	108.1%
Triangle	752	752	0	772	-20	102.7%	808	-56	107.4%	816	-64	108.4%	942	-190	125.2%
Tyler	574	574	0	482	92	84.0%	478	96	83.3%	566	8	98.7%	628	-54	109.4%
Vaughan	586	585	3	594	-9	101.5%	603	-18	103.1%	603	-18	103.1%	622	-37	106.3%
Victory	891	874	0	660	214	75.5%	688	186	78.8%	719	155	82.3%	754	120	86.3%
West Gate	501	497	3	535	-38	107.6%	560	-63	112.7%	639	-142	128.6%	659	-162	132.6%
Westridge	709	709	0	697	12	98.3%	704	5	99.3%	698	11	98.4%	720	-11	101.6%
Williams	694	696	1	726	-30	104.3%	687	9	98.7%	633	63	90.9%	652	44	93.7%
Wilson	820	872	0	898	-26	103.0%	884	-12	101.4%	892	-20	102.3%	951	-79	109.1%
Wood	950	950	0	912	38	96.0%	888	62	93.5%	814	136	85.7%	841	109	88.5%
Yorkshire	735	745	3	754	-9	101.2%	780	-35	104.7%	823	-78	110.5%	929	-184	124.7%
Yung	839	839	0	727	112	86.7%	738	101	88.0%	786	53	93.7%	897	-58	106.9%
Total	43,133	43,053	72	40,422	2,631	93.9%	40,487	2,566	94.0%	41,239	1,814	95.8%	44,254	-1,201	102.8%

¹ Program Capacity on which available space is calculated for the 2019-20 school year.

² Program Capacity on which available space is calculated for the 2020-21 through 2029-30 school years.

Student Enrollment Data: Current and Projected Enrollment
 Elementary Schools – Additional Space to be Constructed
 SY 2019-20 to SY 2029-30

Elementary School	2019-20			2020-21			2024-25			2029-30		
	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
2022												
<i>Elementary School (West - Rosemont Lewis)</i>								696			696	
2023												
<i>Elementary School (Potomac Shores #2)</i>								750			750	
<i>Elementary (Occoquan/Woodbridge Area)</i>								657			657	
2025												
<i>Occoquan Replacement School</i>											357	
2028												
<i>Elementary School (Yorkshire Area)</i>											758	
2029												
<i>Elementary School (Route 1 South Area)</i>											750	
<i>Sum of Additional Seats</i>								2,103			3,968	
Totals (if new schools and additions were added)	40,422	2,631	93.9%	40,487	2,566	94.0%	41,239	3,917	91.3%	44,254	2,767	94.1%

Student Enrollment Data: Current and Projected Enrollment
Middle Schools
SY 2019-20 to SY 2029-30

Middle School	Available Space		2019-20			2020-21			2024-25			2029-30		
	Capacity	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
Benton	1,464		1,434	30	98.0%	1,320	144	90.2%	1,254	210	85.7%	1,354	110	92.5%
Beville	1,191		1,068	123	89.7%	1,051	140	88.2%	1,064	127	89.3%	1,047	144	87.9%
Bull Run	1,233		1,206	27	97.8%	1,194	39	96.8%	1,135	98	92.1%	1,190	43	96.5%
Gainesville	1,233	7	1,427	-194	115.7%	1,442	-209	117.0%	1,419	-186	115.1%	1,310	-77	106.2%
Graham Park	867	8	986	-119	113.7%	1,030	-163	118.8%	1,164	-297	134.3%	1,295	-428	149.4%
Hampton	982	2	1,052	-70	107.1%	1,066	-84	108.6%	1,039	-57	105.8%	1,080	-98	110.0%
Lake Ridge	1,464		1,484	-20	101.4%	1,477	-13	100.9%	1,402	62	95.8%	1,459	5	99.7%
Lynn	1,170	10	1,339	-169	114.4%	1,340	-170	114.5%	1,497	-327	127.9%	1,687	-517	144.2%
Marsteller	1,233	5	1,286	-53	104.3%	1,264	-31	102.5%	1,133	100	91.9%	1,186	47	96.2%
Nokesville School, The (MS)	439		379	60	86.3%	378	61	86.1%	414	25	94.3%	506	-67	115.3%
Parkside	1,453		1,485	-32	102.2%	1,527	-74	105.1%	1,555	-102	107.0%	1,674	-221	115.2%
Pennington (MS)	243		246	-3	101.2%	243	0	100.0%	243	0	100.0%	243	0	100.0%
Porter (MS)	252		265	-13	105.2%	252	0	100.0%	252	0	100.0%	252	0	100.0%
Potomac	1,464		1,262	202	86.2%	1,301	163	88.9%	1,491	-27	101.8%	1,546	-82	105.6%
Reagan	1,233	5	1,460	-227	118.4%	1,420	-187	115.2%	1,397	-164	113.3%	1,252	-19	101.5%
Rippon	1,390	2	1,348	42	97.0%	1,342	48	96.5%	1,507	-117	108.4%	1,591	-201	114.5%
Saunders	1,212		1,217	-5	100.4%	1,249	-37	103.1%	1,104	108	91.1%	1,118	94	92.2%
Stonewall	1,360		1,150	210	84.6%	1,201	159	88.3%	1,274	86	93.7%	1,436	-76	105.6%
Woodbridge	1,066	9	1,263	-197	118.5%	1,260	-194	118.2%	1,255	-189	117.7%	1,329	-263	124.7%
Total	20,949	50	21,357	-408	101.9%	21,358	-409	102.0%	21,596	-647	103.1%	22,554	-1,605	107.7%
<i>Middle School (East - Potomac Shores, 2021)</i>									1,464			1,464		
<i>Gainesville Middle School Addition (11 room, 2022)</i>									231			231		
<i>Reagan Middle School Addition (6 room, 2022)</i>									126			126		
<i>Sum of Additional Seats</i>									1,821			1,821		
Total	20,949	50	21,357	-408	101.9%	21,358	-409	102.0%	21,596	1,174	94.8%	22,554	216	99.1%

Student Enrollment Data: Current and Projected Enrollment
High Schools
SY 2019-20 to SY 2029-30

High School	Available Space		2019-20			2020-21			2024-25			2029-30		
	Capacity	Portable Classrooms	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util	Students	+/-	% Util
13th	2,557		0	2,557	.0%	0	2,557	.0%	2,628	-71	102.8%	2,585	-28	101.1%
Battlefield	2,053	21	2,949	-896	143.6%	2,986	-933	145.4%	1,919	134	93.5%	1,613	440	78.6%
Brentsville	1,110		979	131	88.2%	1,009	101	90.9%	1,088	22	98.1%	1,327	-217	119.5%
Colgan	2,053	5	2,786	-733	135.7%	2,809	-756	136.8%	2,592	-539	126.2%	2,531	-478	123.3%
Forest Park	2,053		2,229	-176	108.6%	2,196	-143	106.9%	2,320	-267	113.0%	2,675	-622	130.3%
Freedom	2,053	8	2,131	-78	103.8%	2,204	-151	107.3%	2,421	-368	117.9%	2,834	-781	138.1%
Gar-Field	2,839		2,319	520	81.7%	2,349	490	82.8%	2,437	402	85.9%	2,516	323	88.6%
Hylton	2,053		2,193	-140	106.8%	2,153	-100	104.9%	2,127	-74	103.6%	1,974	79	96.2%
Osborn Park	2,430		2,578	-148	106.1%	2,635	-205	108.4%	3,178	-748	130.8%	3,466	-1,036	142.6%
Patriot	2,053	20	2,721	-668	132.5%	2,751	-698	134.0%	1,833	220	89.3%	1,634	419	79.6%
Potomac	2,357		1,867	491	79.2%	1,937	420	82.2%	2,345	12	99.5%	2,523	-166	107.0%
Stonewall Jackson	2,409	7	2,593	-184	107.6%	2,701	-292	112.1%	2,067	342	85.8%	2,388	21	99.1%
Woodbridge	2,734		2,712	22	99.2%	2,833	-99	103.6%	3,122	-388	114.2%	3,339	-605	122.1%
Total	26,197 ¹	61	28,056	-1,859	107.1%	28,562	-2,365	109.0%	30,078	-1,324	104.6%	31,406	-2,652	109.2%
	28,754 ²													
<i>13th High School - (West 2021)</i>														
<i>14th High School - (Mid-County 2025)</i>														
<i>Sum of Additional Seats</i>														
Total	26,197 ¹	61	28,056	-1,859	107.1%	28,562	-2,365	109.0%	30,078	-1,324	104.6%	31,406	-95	100.3%
	28,754 ²													

Notes:
I. Non-public middle and high school students may enroll in PWCS for one or two classes. These students are counted as 0.25 and 0.5 of a student, respectively, per Virginia State Guidelines. Such fractions of a student may affect totals because of rounding.
II. 13th High School additional seats have been added in the totals, which is why they are not counted in the additional seats section on this page.
¹ Capacity on which available space is calculated for the 2019-20 through 2021-22 school years.
² Capacity on which available space is calculated for the 2021-22 through 2029-30 school years. It reflects the 13th High School opening for the 2021-22 school year.

Student Enrollment Data: Current Enrollment
Special Education and Alternative Schools
SY 2019-20

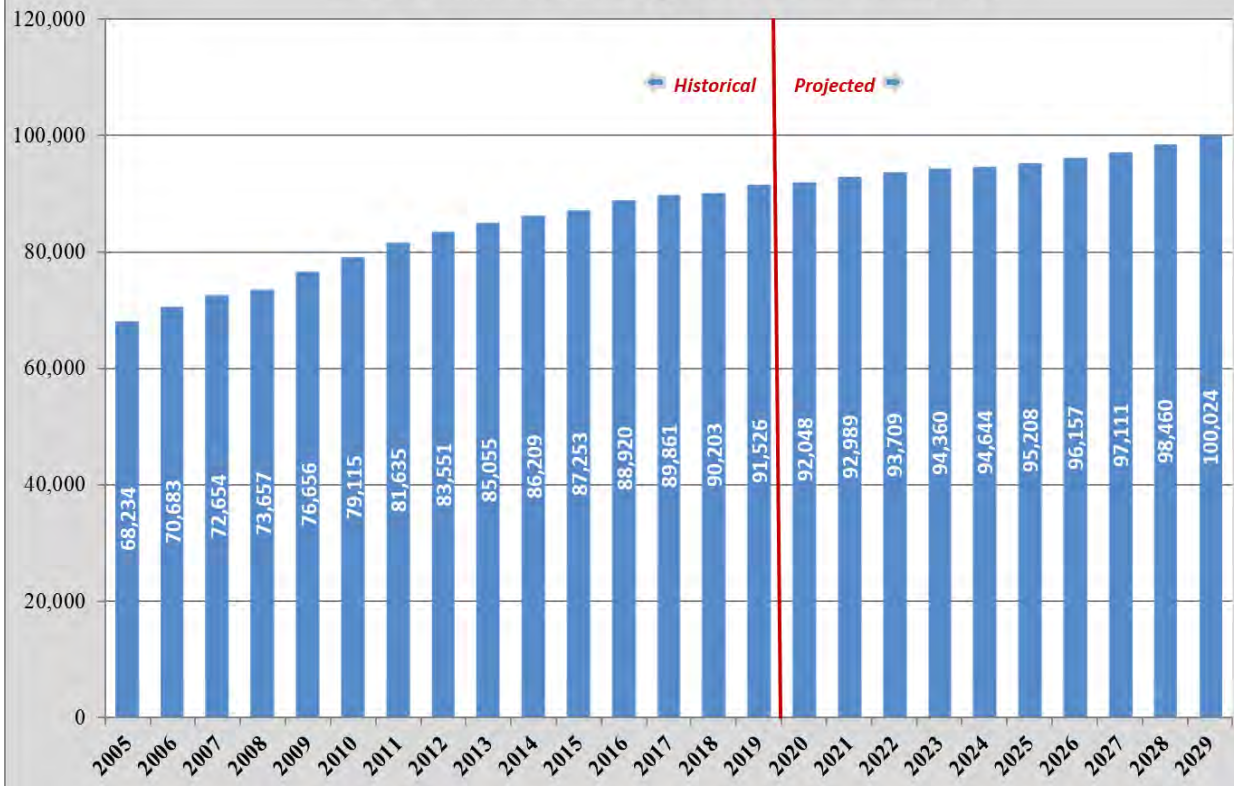
Pre-School & Special Schools	2019-20	
	Portable Classrooms	Students
Pre-School Child Find		115
School Based Preschool		495
Washington-Reid Preschool		67
PACE (West)		80
Special Ed. Private Facility		193
Independence Nontraditional School - ED Center		102
Independence Nontraditional School - Middle		48
Independence Nontraditional School - High		512
TJHS Regional		75
Total	0	1,687

I. Non-public middle and high school students may enroll in PWCS for one or two classes. These students are counted as 0.25 and 0.5 of a student, respectively, per Virginia State Guidelines. Such fractions of a student may affect totals because of rounding.

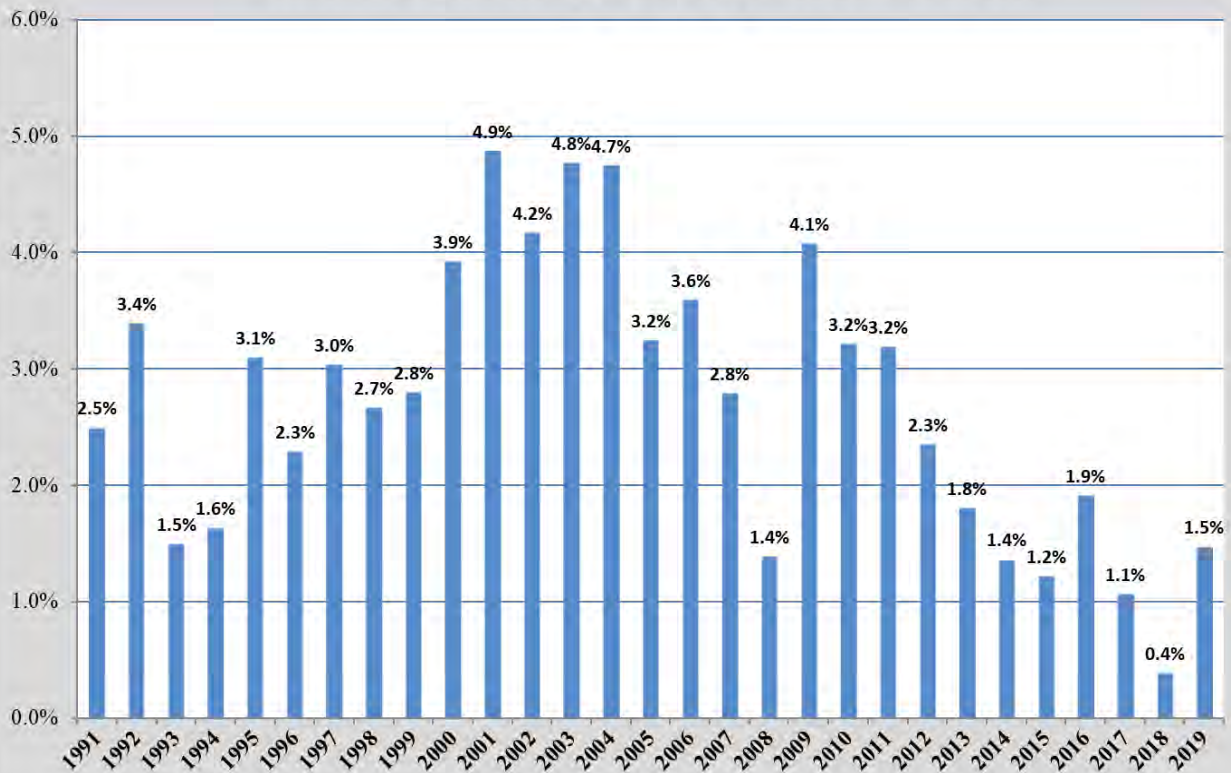
Student Enrollment Data: Historical and Projected
1990-2029

Year	School Type				Total	Annual Change	
	Elementary	Middle	High	Special Education		Number	Percentage
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	40,110	20,997	27,610	1,486	90,203	342	0.4%
2019	40,422	21,357	28,058	1,689	91,526	1,323	1.5%
2020	40,513	21,372	28,562	1,600	92,048	522	0.6%
2021	40,703	21,292	29,356	1,639	92,989	941	1.0%
2022	40,933	21,383	29,731	1,663	93,709	720	0.8%
2023	41,034	21,485	30,169	1,672	94,360	651	0.7%
2024	41,265	21,610	30,078	1,690	94,644	284	0.3%
2025	41,648	21,787	30,067	1,707	95,208	564	0.6%
2026	42,154	21,828	30,453	1,722	96,157	949	1.0%
2027	42,763	21,971	30,639	1,739	97,111	954	1.0%
2028	43,484	22,220	31,001	1,755	98,460	1,349	1.4%
2029	44,280	22,567	31,405	1,771	100,024	1,564	1.6%

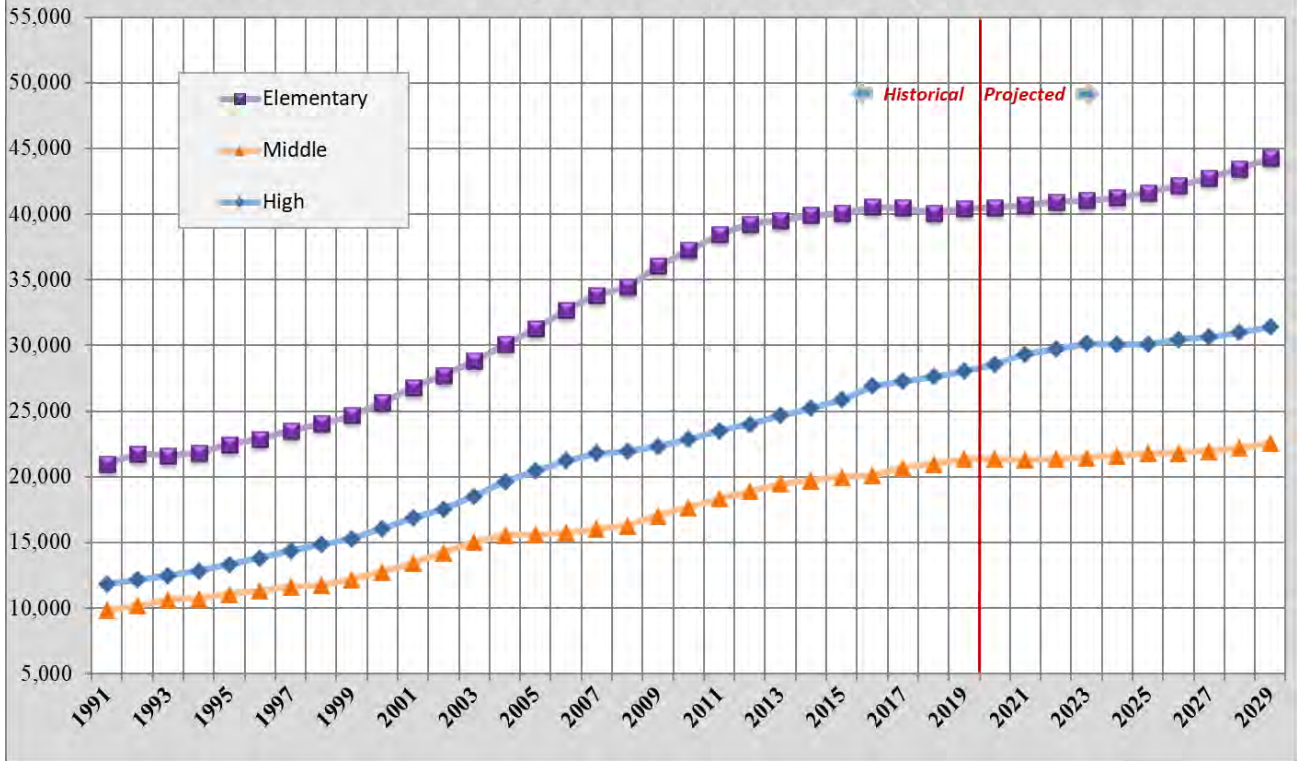
Prince William County Public Schools Historical and Projected Enrollment



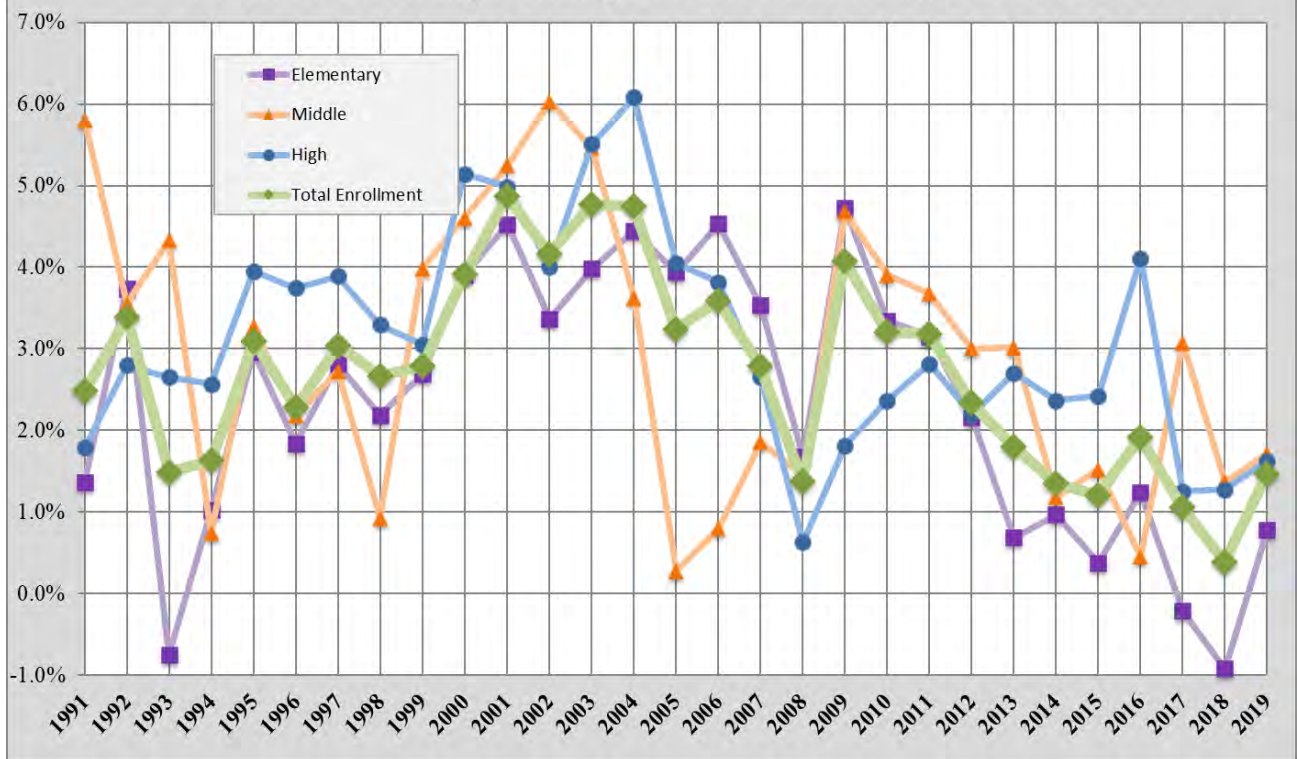
Prince William County Public Schools Annual Percentage Change in Enrollment



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

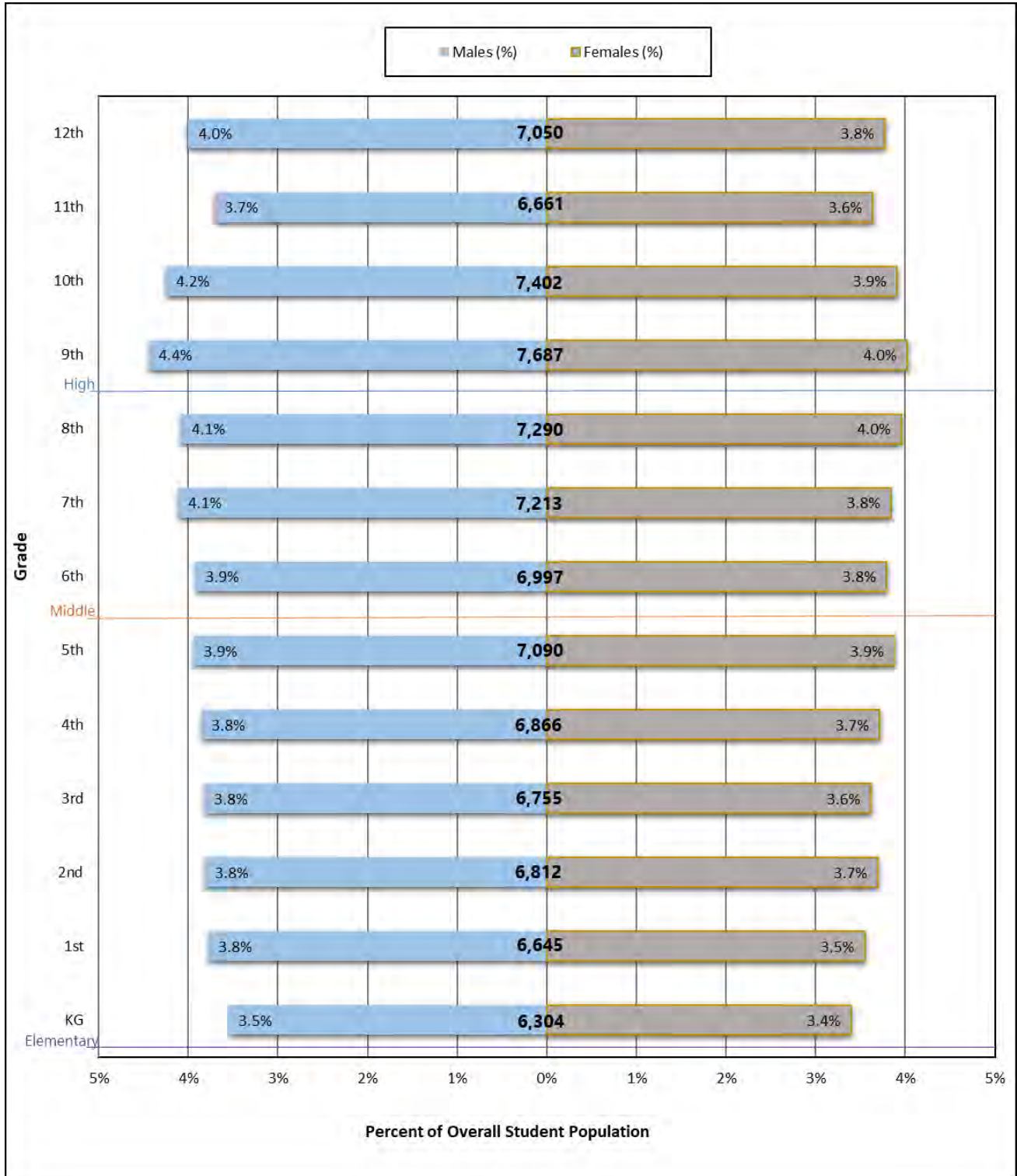


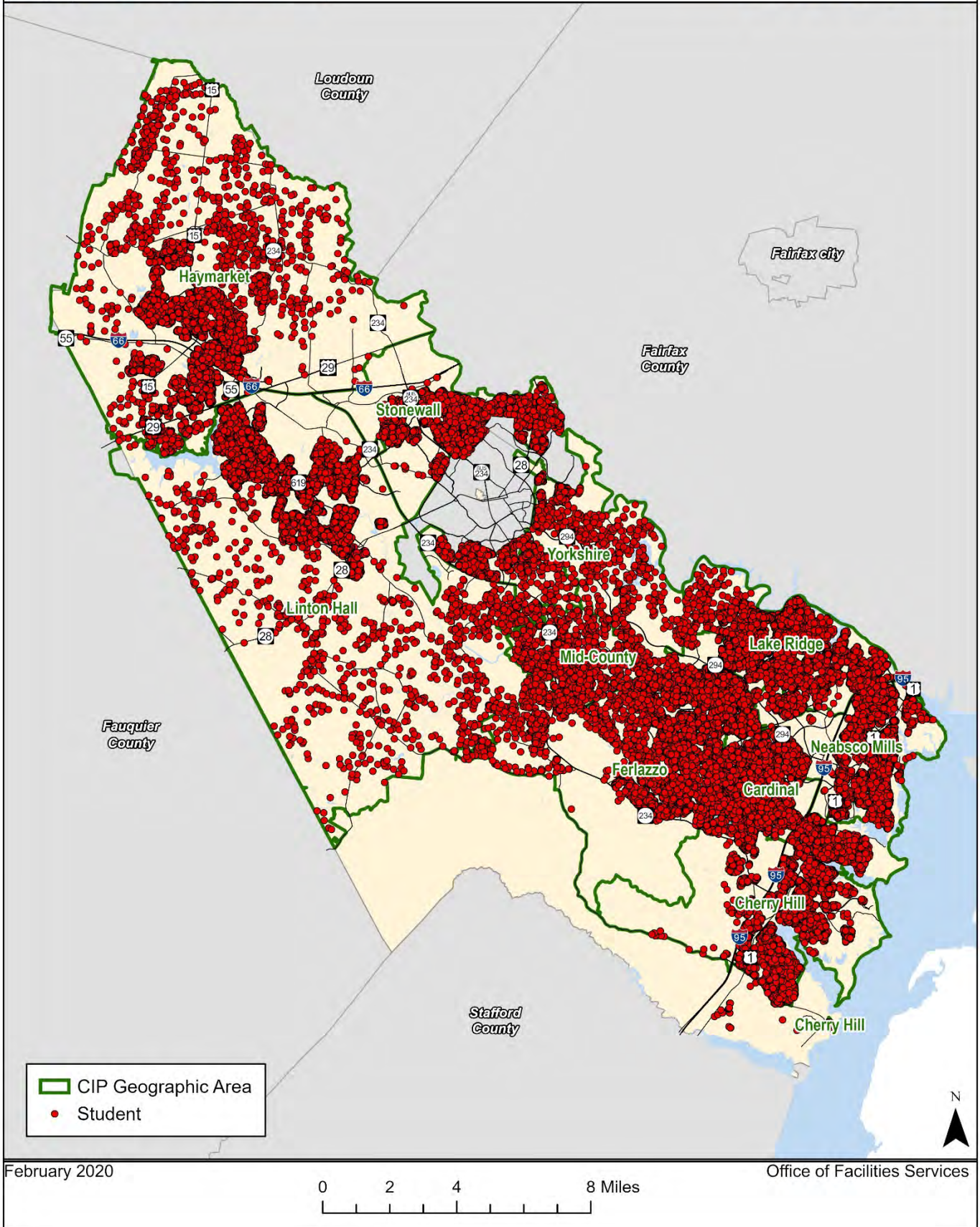
Prince William County Public Schools Annual Percentage Change in Enrollment by School Level



Student Enrollment by Grade and Gender

By Grade and Gender 2019-20



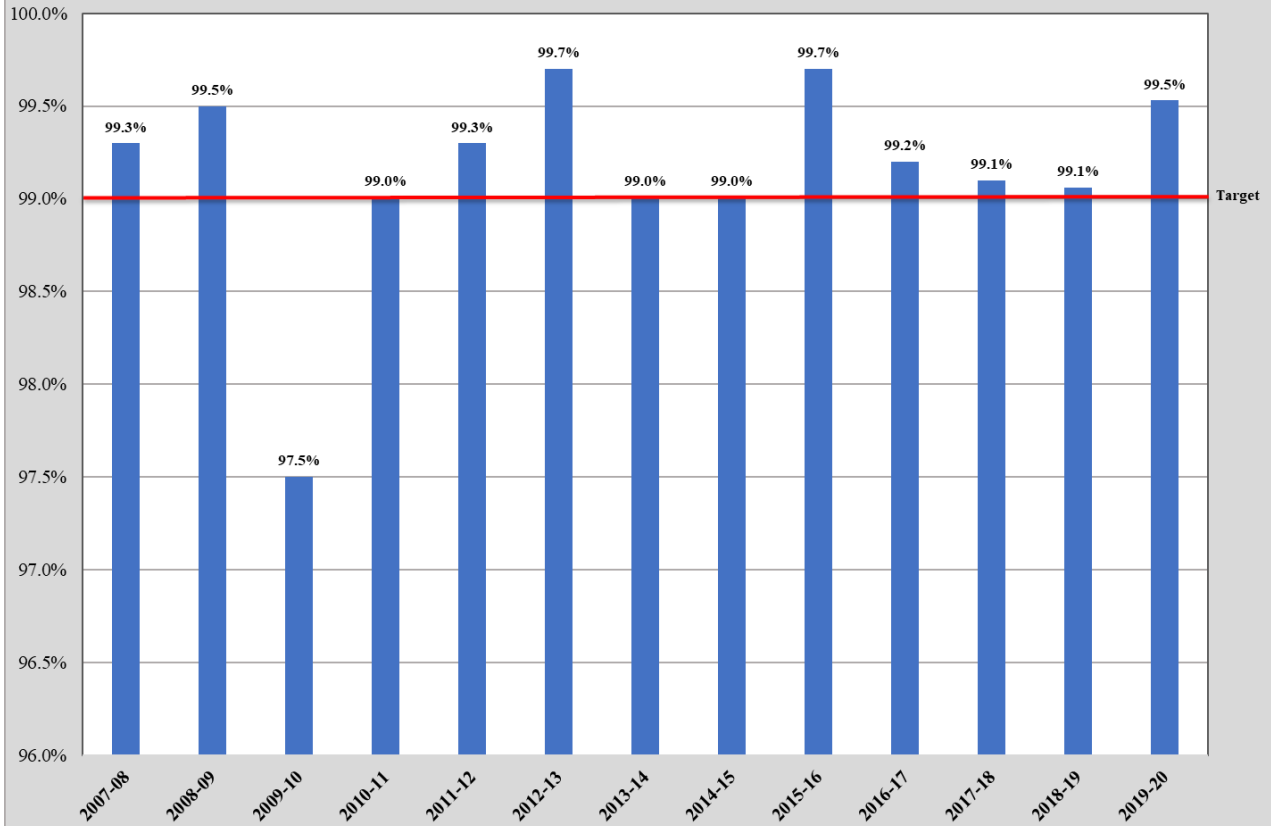


Student Enrollment Projections Error Rate Analysis

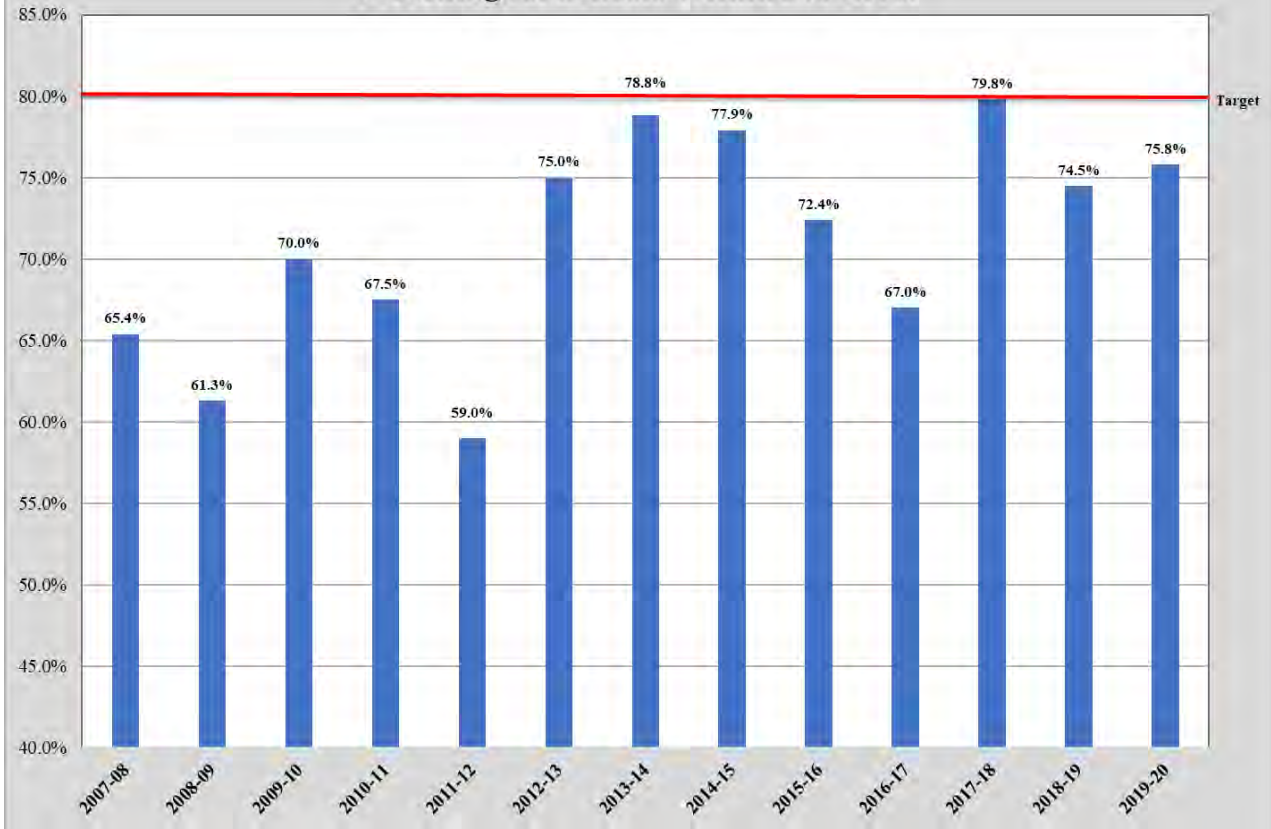
School Year	Actual Student Enrollment	Student Enrollment Projections									
		One Year Before			Two Years Before		Four Years Before		Five Years Before		
		Projection	Difference	% Error *	Projection	% Error *	Projection	% Error *	Projection	% Error *	
1984-85	35,864	36,046	182	-0.50%	35,215	1.84%	35,002	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%	
2018-19	90,203	91,054	851	-0.93%	92,282	-2.25%	91,496	-1.41%	95,615	-5.66%	
2019-20	91,524	91,095	(429)	0.47%	91,834	-0.34%	92,687	-1.25%	93,056	-1.65%	
(MPE) Mean Percentage Error				0.37%		0.71%		1.31%		1.89%	
(MAPE) Mean Absolute Percentage Error				0.83%		1.91%		4.09%		4.47%	
10-Year (MPE) Mean Percentage Error				-0.15%		-0.11%		0.28%		0.33%	
10-Year (MAPE) Mean Absolute Percentage Error				0.75%		1.66%		3.35%		3.62%	

*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 2019

Elementary School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Alvey	5			5						71		71	76
Ashland	44			44	4			4					48
Belmont			310	310	61	14	179	254			1,522	1,522	2,086
Bennett	231	124		355	209	12		221					576
Bristow Run					8			8	34	39		73	81
Buckland Mills		38		38	83	106		189	90	130		220	447
Cedar Point					127			127					127
Coles	22			22	65			65	158	54	11	223	310
Covington-Harper	254	882	20	1,156	126	453	1,363	1,942			170	170	3,268
Dale City	4			4									4
Dumfries	9			9	828	356		1,184					1,193
Ellis					20	21		41	270	438	1,220	1,928	1,969
Featherstone					13			13					13
Fitzgerald		12		12	29	428	302	759	18			18	789
Glenkirk					1			1					1
Gravelly	153			153	136			136					289
Haymarket			110	110	337			337		79	36	115	562
Henderson	71			71	42			42					113
Jenkins					176	11	216	403	21			21	424
Kilby					13	175	298	486					486
King	28			28					5			5	33
Leesylvania					41		550	591					591
Loch Lomond					8			8					8
Marshall	12			12	92			92	34			34	138
Marumco Hills					146			146					146
Montclair					60	2		62					62
Mountain View	11			11					230			230	241
Mullen					5		20	25					25
Nokesville School, The	173			173	1,059			1,059	447			447	1,679
Occoquan	4			4	148	37		185					189
Old Bridge					7			7					7
Parks					11		199	210	10			10	220
Pattie	34			34	10			10					44
Penn	91	112		203	37			37	12			12	252
Piney Branch					1			1			80	80	81
Potomac View					187			187					187
River Oaks										112		112	112
Rockledge					160			160					160
Signal Hill	90	104	70	264	338			338	53	160	190	403	1,005
Sinclair						11		11					11
Swans Creek			73	73	15	93		108					181
Triangle	53		227	280	342	24	144	510					790
Tyler	6			6	42	95	167	304					310
Vaughan										25		25	25
Victory			304	304	104			104					408
Westridge					5			5	4			4	9
Williams	31			31							86	86	117
Wilson	33			33	40	36	163	239					272
Wood					4			4		75		75	79
Yorkshire			400	400	264			264	12			12	676
Yung	190	236		426	39			39	551	1,650	1,500	3,701	4,166
Total	1,549	1,508	1,514	4,571	5,443	1,874	3,601	10,918	1,949	2,833	4,815	9,597	25,086

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 2019

Middle School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Benton	169	12		181	244			244	208	54	11	273	698
Beville	28	100		128		6		6	5			5	139
Bull Run	211	236		447	116	95	167	378	230	450	700	1,380	2,205
Gainesville	31		304	335	49			49	551	1,200	880	2,631	3,015
Graham Park	96		227	323	1,180	380	144	1,704					2,027
Hampton	4			4		32	163	195					199
Lynn	4		310	314	279	226	477	982		25	1,522	1,547	2,843
Marsteller					240		20	260	34	552	1,220	1,806	2,066
Nokesville School, The	173			173	1,059			1,059	447			447	1,679
Parkside	321	228	470	1,019	818	33		851	335	160	190	685	2,555
Potomac	285	882	93	1,260	175	546	1,363	2,084		112	256	368	3,712
Reagan	123	38	110	271	482	106		588	90	280	36	406	1,265
Rippon	71	12		83	218	428	852	1,498	18			18	1,599
Saunders	33			33	74		199	273	10			10	316
Stonewall					20	11		31					31
Woodbridge					489	11	216	716	21			21	737
Total	1,549	1,508	1,514	4,571	5,443	1,874	3,601	10,918	1,949	2,833	4,815	9,597	25,086

Note:

Active = Rezoning approved by Board of County Supervisors and site development permit issued
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Schools without additional residential development within their respective attendance areas are omitted

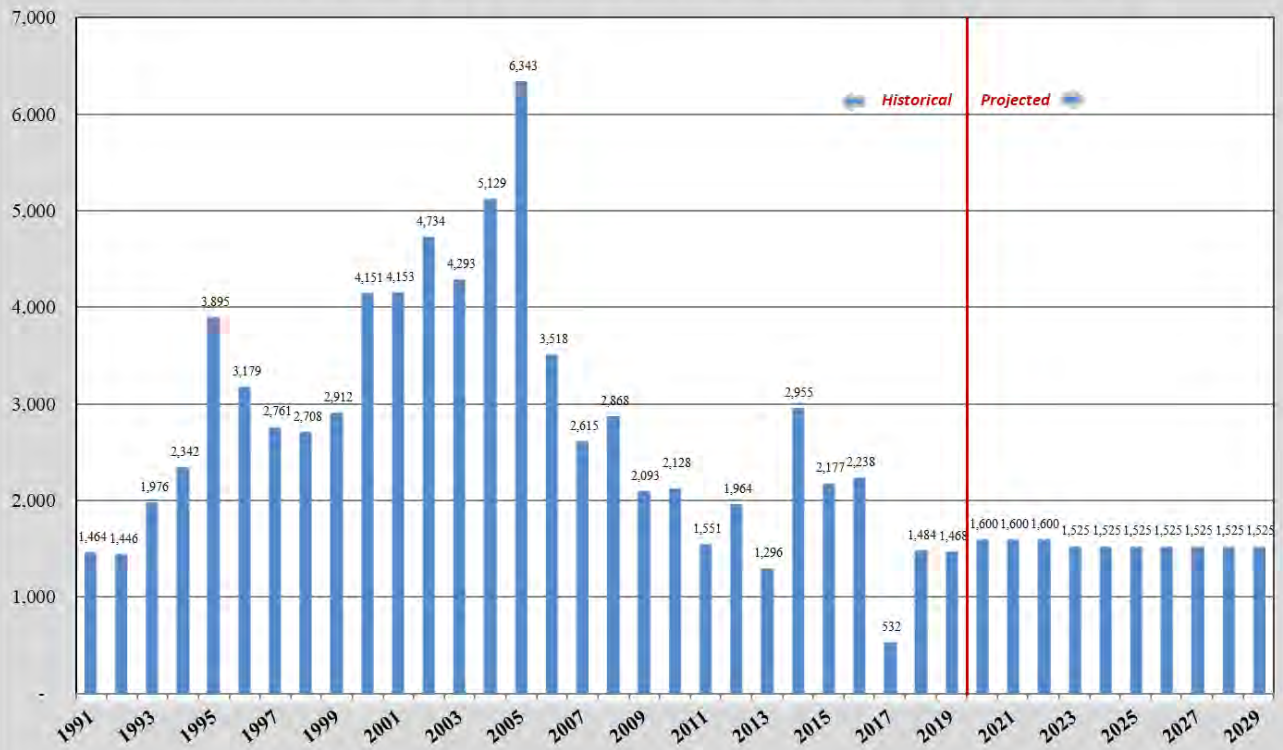
Housing Units in Residential Development
By High School Attendance Area and Stage of Development
September 2019

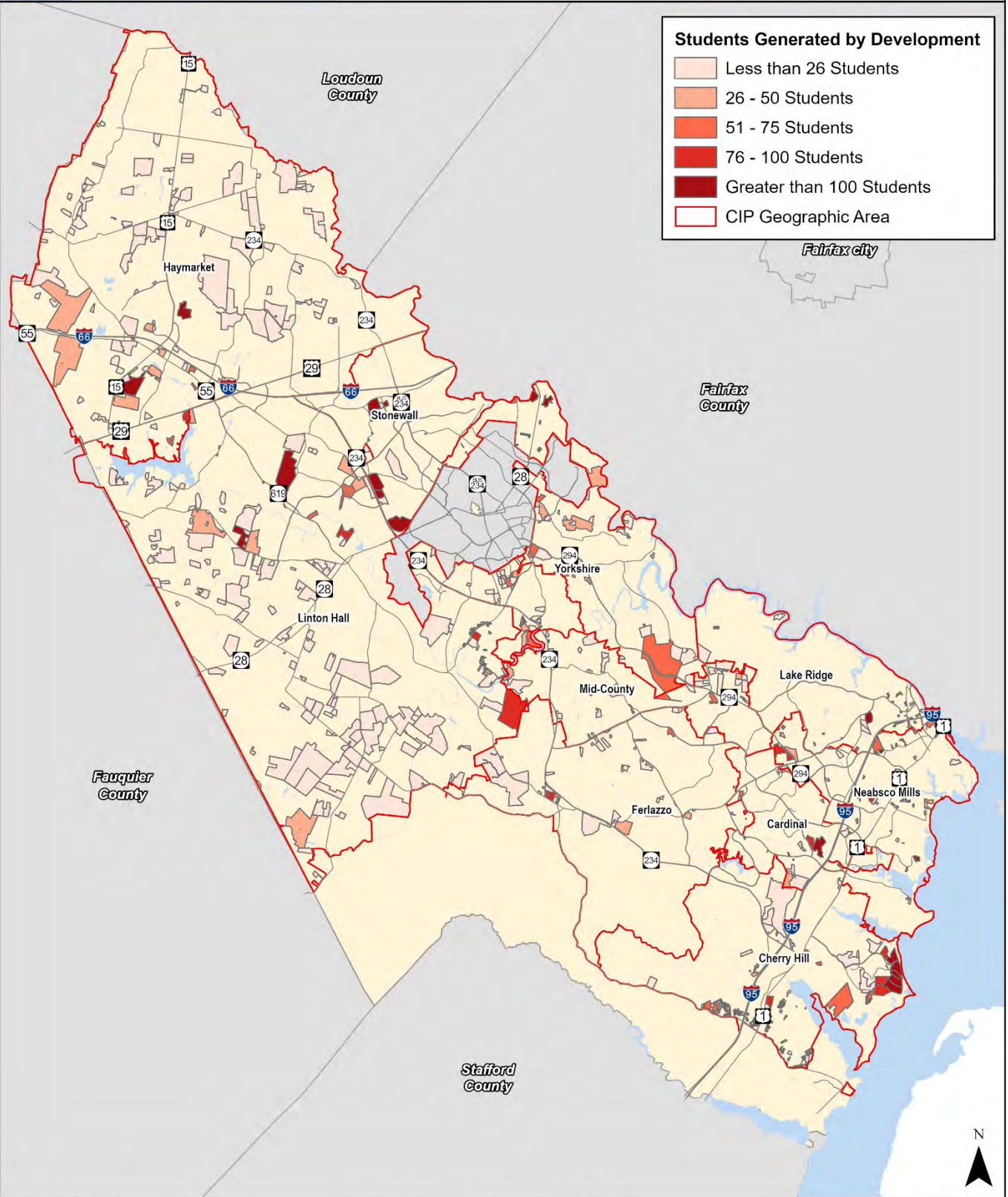
High School	Active				Planned				Rezoning Submitted				Total
	SF	TH	MF	Total	SF	TH	MF	Total	SF	TH	MF	Total	
Battlefield	175		110	285	598	95	167	860	320	600	736	1,656	2,801
Brentsville	173			173	1,223			1,223	447			447	1,843
Colgan	169	112		281	229			229	201	54	11	266	776
Forest Park	43		227	270	902	375	144	1,421				-	1,691
Freedom		12	310	322	407	442	1,179	2,028	18	25	1,522	1,565	3,915
Gar-Field	4			4	184	43	163	390	21			21	415
Hylton	61			61	64	6	199	269	10			10	340
Osborn Park	321	228	470	1,019	788	12		800	77	160	190	427	2,246
Patriot		38		38	112	106		218	34	244	80	358	614
Potomac	409	882	93	1,384	495	551	1,363	2,409		112	256	368	4,161
Stonewall Jackson	190	236	304	730	78	32	20	130	821	1,638	2,020	4,479	5,339
Woodbridge	4			4	363	212	366	941				-	945
Total	1,549	1,508	1,514	4,571	5,443	1,874	3,601	10,918	1,949	2,833	4,815	9,597	25,086

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

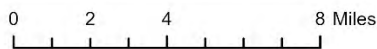




Students Generated by Development

- Less than 26 Students
- 26 - 50 Students
- 51 - 75 Students
- 76 - 100 Students
- Greater than 100 Students
- CIP Geographic Area

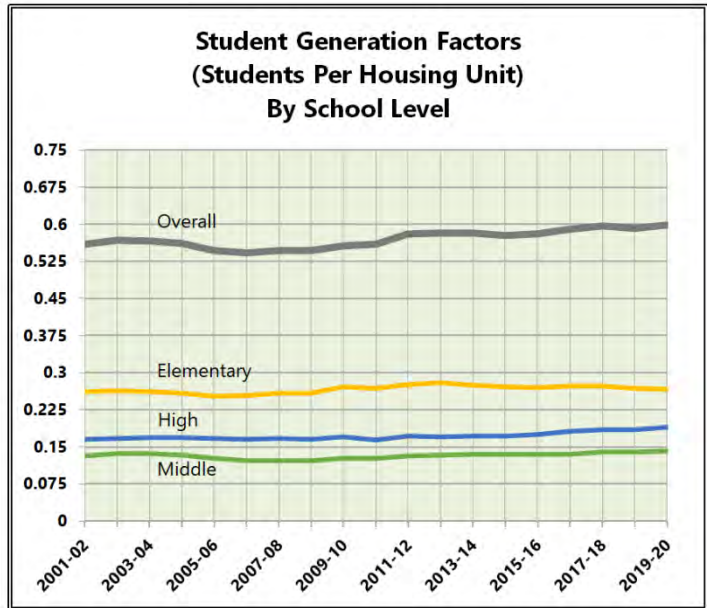
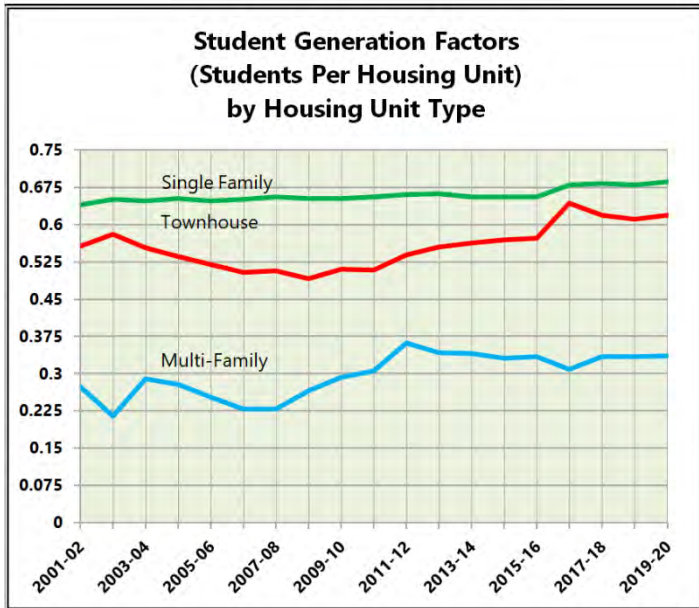
January 2020



Office of Facilities Services



Student Generation Factors By School Level and Housing Unit Type



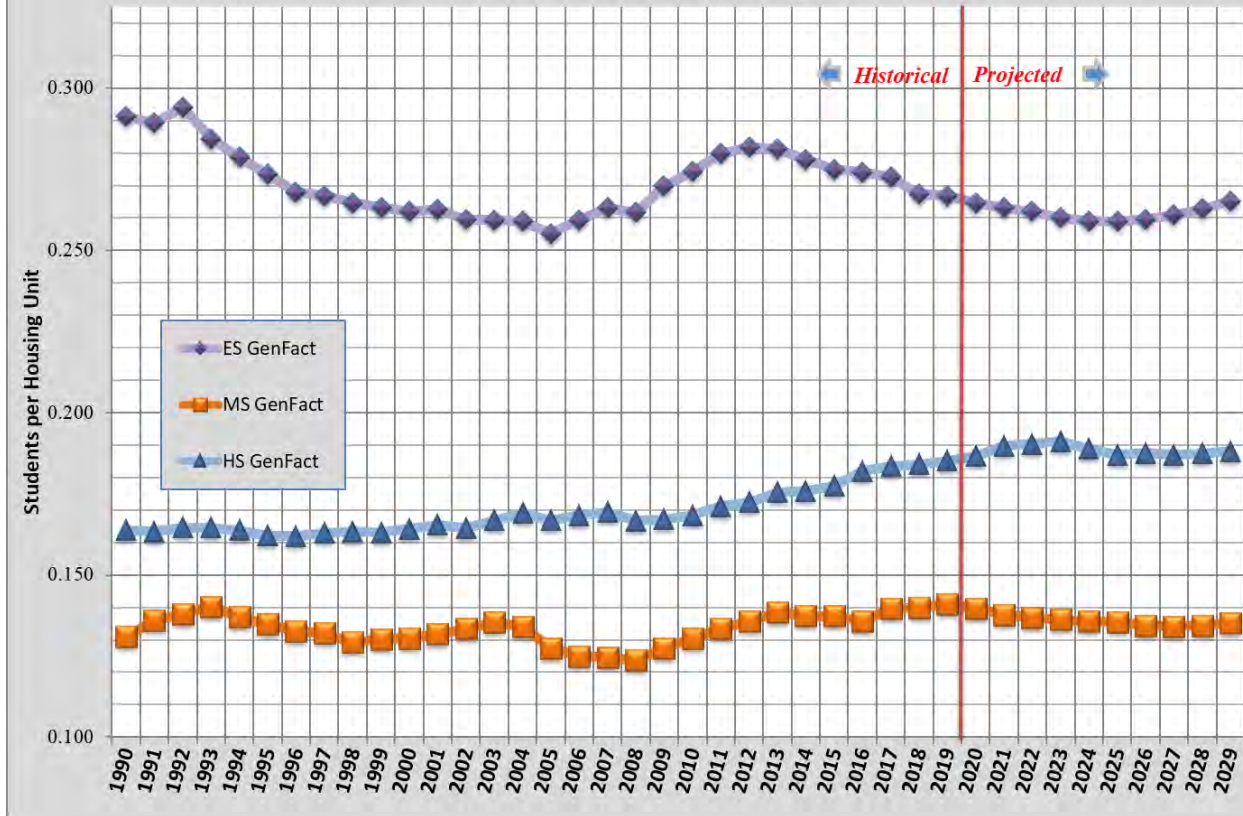
Historical Data					
Year	School Type	Unit Type			Total
		Single Family	Townhouse	Multi-Family	
2019-20	Elementary	0.292	0.289	0.172	0.267
	Middle	0.164	0.145	0.076	0.142
	High	0.230	0.185	0.088	0.189
	Total	0.686	0.619	0.336	0.598
2012-13	Elementary	0.302	0.287	0.184	0.279
	Middle	0.156	0.120	0.075	0.133
	High	0.205	0.147	0.083	0.169
	Total	0.662	0.554	0.342	0.582
2018-19	Elementary	0.292	0.288	0.175	0.268
	Middle	0.163	0.144	0.075	0.140
	High	0.224	0.179	0.085	0.185
	Total	0.680	0.611	0.335	0.592
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

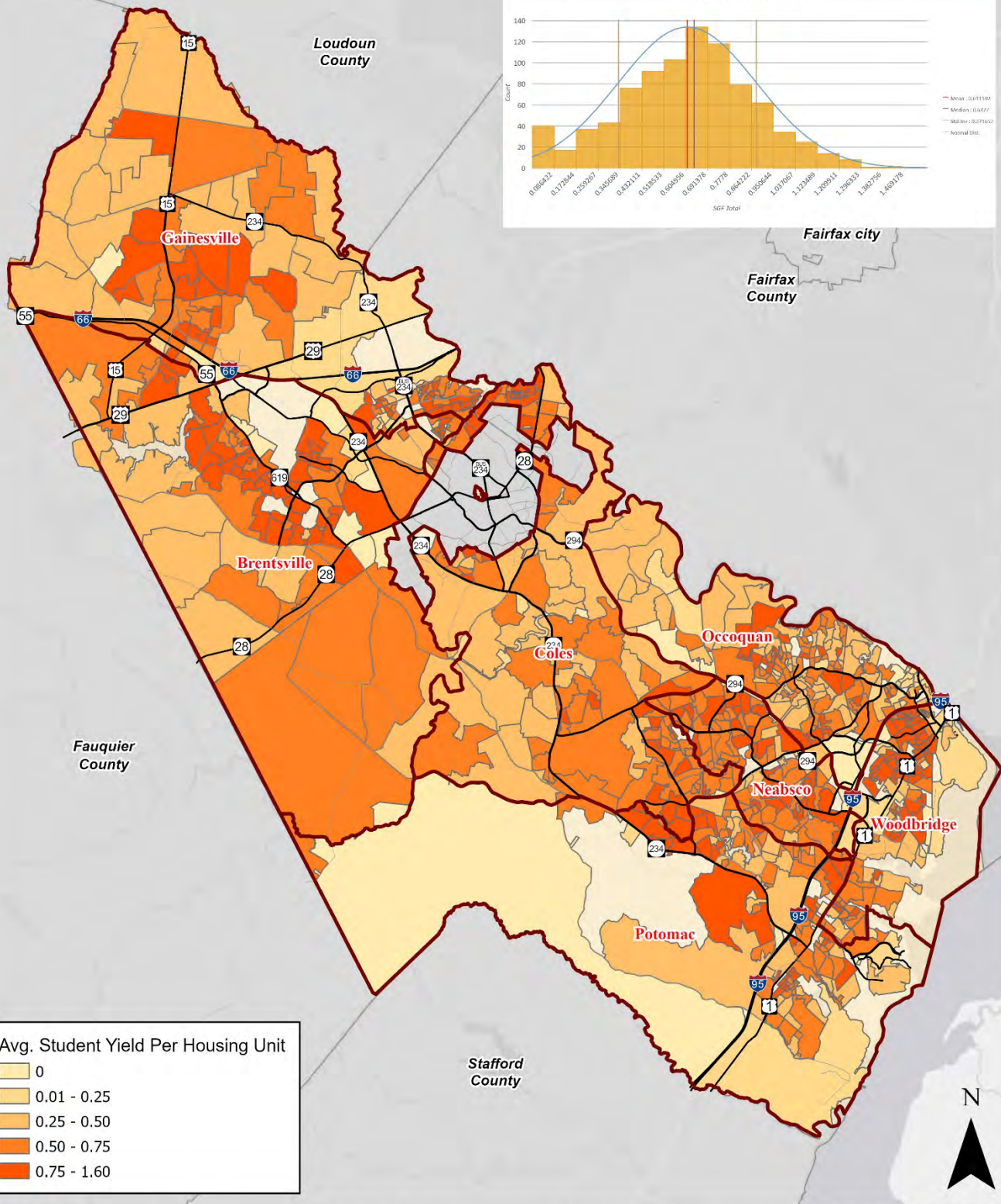
Note: 1) The 'Student Generation Factor' is a mathematical representation of the relationship between housing units in Prince William County and the number of students enrolled in Prince William County Public Schools on September 30 of each year. In other words, it is the number of enrolled students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





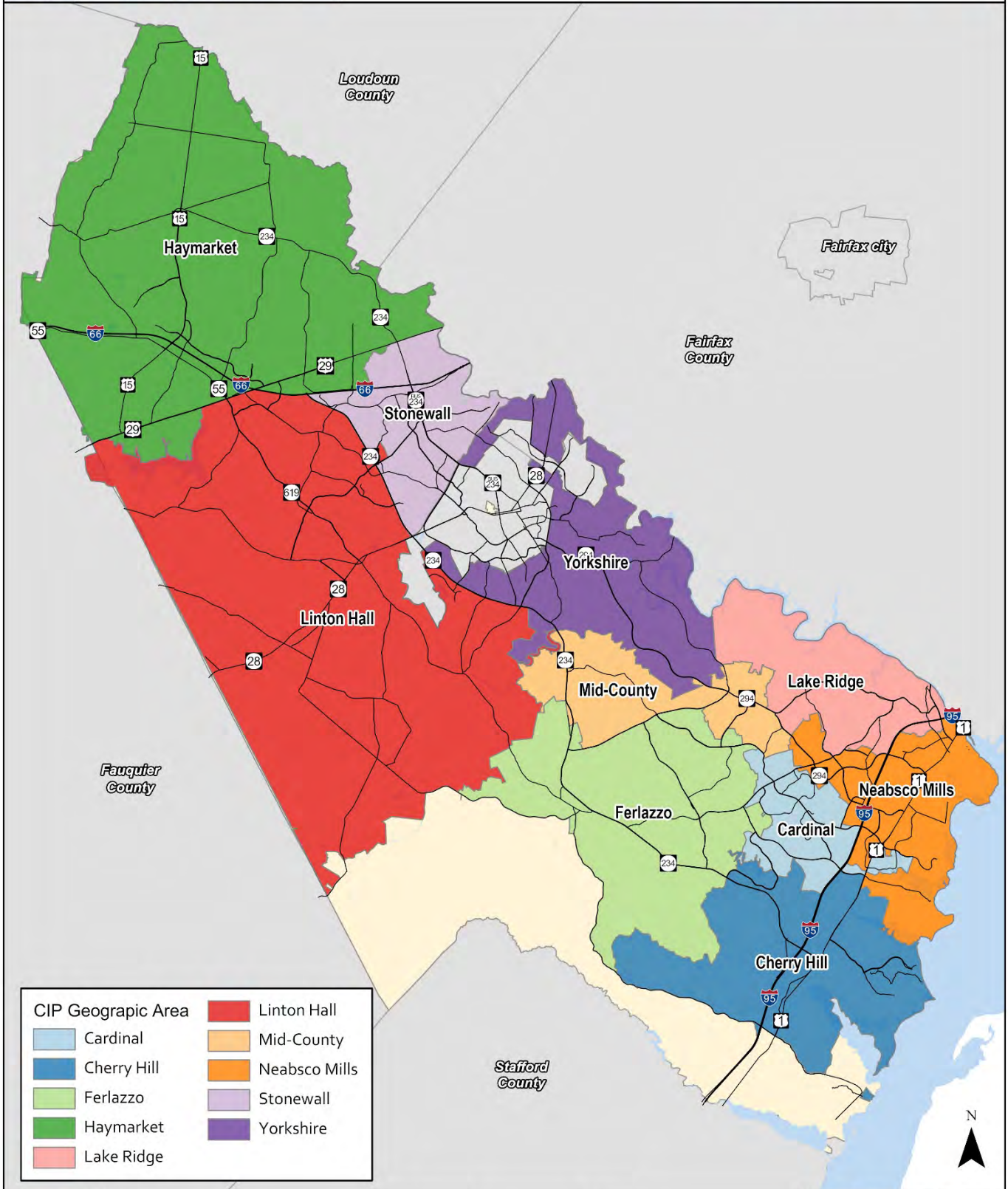
Avg. Student Yield Per Housing Unit

0
0.01 - 0.25
0.25 - 0.50
0.50 - 0.75
0.75 - 1.60

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
	Alvey ES
Haymarket Area	Buckland Mills ES
	Gravely ES
	Haymarket ES
	Mountain View ES
	Tyler ES
Lake Ridge Area	Antietam ES
	Jenkins ES
	Lake Ridge ES
	Occoquan ES
	Old Bridge ES
	Rockledge ES
	Springwoods ES
	Westridge ES

Geographic Area	Schools
Linton Hall Area	Bristow Run ES
	Cedar Point ES
	Ellis ES
	Glenkirk ES
	Nokesville School, The
	Piney Branch ES
	Victory ES
	Wood ES
Mid-County Area	Yung ES
	Kerrydale ES
	Marshall ES
Neabsco Mills / Northern Route 1	Penn ES
	Belmont ES
	Featherstone ES
	Kilby ES
	Leesylvania ES
	Marumsco Hills ES
	Potomac View ES
	Vaughan ES
Stonewall Area	Mullen ES
	Sinclair ES
	Sudley ES
Yorkshire Area	West Gate ES
	Bennett ES
	Loch Lomond ES
	Signal Hill ES
	Yorkshire ES



February 2020

0 2 4 8 Miles

Office of Facilities Services

Fall Membership By Virginia School Division

Division Name	Division Membership, PK- Grade 12						Change 2014 to 2018			
	2019-20	2018-19 ¹	2017-18	2016-17	2015-16	2014-15	Number	Rank in Virginia	Percent	Rank in Virginia
Alexandria City Public Schools	16,307	15,968	15,802	15,418	14,857	14,359	1,948	8	13.6%	7
Arlington County Public Schools	28,151	27,434	26,975	26,176	25,365	24,561	3,590	3	14.6%	5
Charlottesville City Public Schools	4,544	4,561	4,529	4,478	4,382	4,356	188	25	4.3%	23
Chesapeake City Public Schools	41,597	40,898	40,656	40,192	39,944	39,715	1,882	9	4.7%	22
Chesterfield County Public Schools	62,669	61,608	60,976	60,103	59,705	59,754	2,915	5	4.9%	21
Culpeper County Public Schools	8,521	8,235	8,210	8,204	8,135	8,079	442	16	5.5%	17
Fairfax County Public Schools	188,930	187,830	188,591	187,510	185,856	185,563	3,367	4	1.8%	34
Falls Church City Public Schools	2,649	2,621	2,680	2,672	2,519	2,465	184	26	7.5%	13
Fauquier County Public Schools	11,181	11,189	11,144	11,078	11,155	11,167	14	40	0.1%	44
Fredericksburg City Public Schools	3,755	3,710	3,617	3,581	3,532	3,466	289	21	8.3%	11
Harrisonburg City Public Schools	6,613	6,440	6,301	6,188	5,924	5,635	978	12	17.4%	4
Henrico County Public Schools	51,786	51,523	51,625	51,425	51,534	50,972	814	13	1.6%	36
Loudoun County Public Schools	83,933	82,238	80,965	78,713	76,251	73,438	10,495	1	14.3%	6
Manassas City Public Schools	7,789	7,723	7,820	7,713	7,605	7,476	313	19	4.2%	24
Manassas Park City Public Schools	3,641	3,724	3,723	3,588	3,443	3,359	282	22	8.4%	10
Prince William County Public Schools	92,270	90,876	90,595	89,378	87,823	86,664	5,606	2	6.5%	15
Spotsylvania County Public Schools	23,901	23,683	23,808	23,617	23,731	23,887	14	47	0.1%	45
Stafford County Public Schools	30,120	29,485	29,113	28,679	28,098	27,807	2,313	7	8.3%	12
Virginia Beach City Public Schools	68,706	68,624	68,986	69,085	69,777	70,121	-1,415	130	-2.0%	60
State Totals	1,298,083	1,290,513	1,293,049	1,288,481	1,284,680	1,280,978	17,105		1.3%	

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).

¹ Starting in the 2018-19 School Year the Virginia Department of Education changed their Fall Membership Report. The report no longer includes Post-Graduate students from their enrollment data in order to standardize reporting. Our data from 2013 through 2017 still include Post-Graduate students.

APPENDIX C

Identified School Sites

Identified Capital Improvement Sites

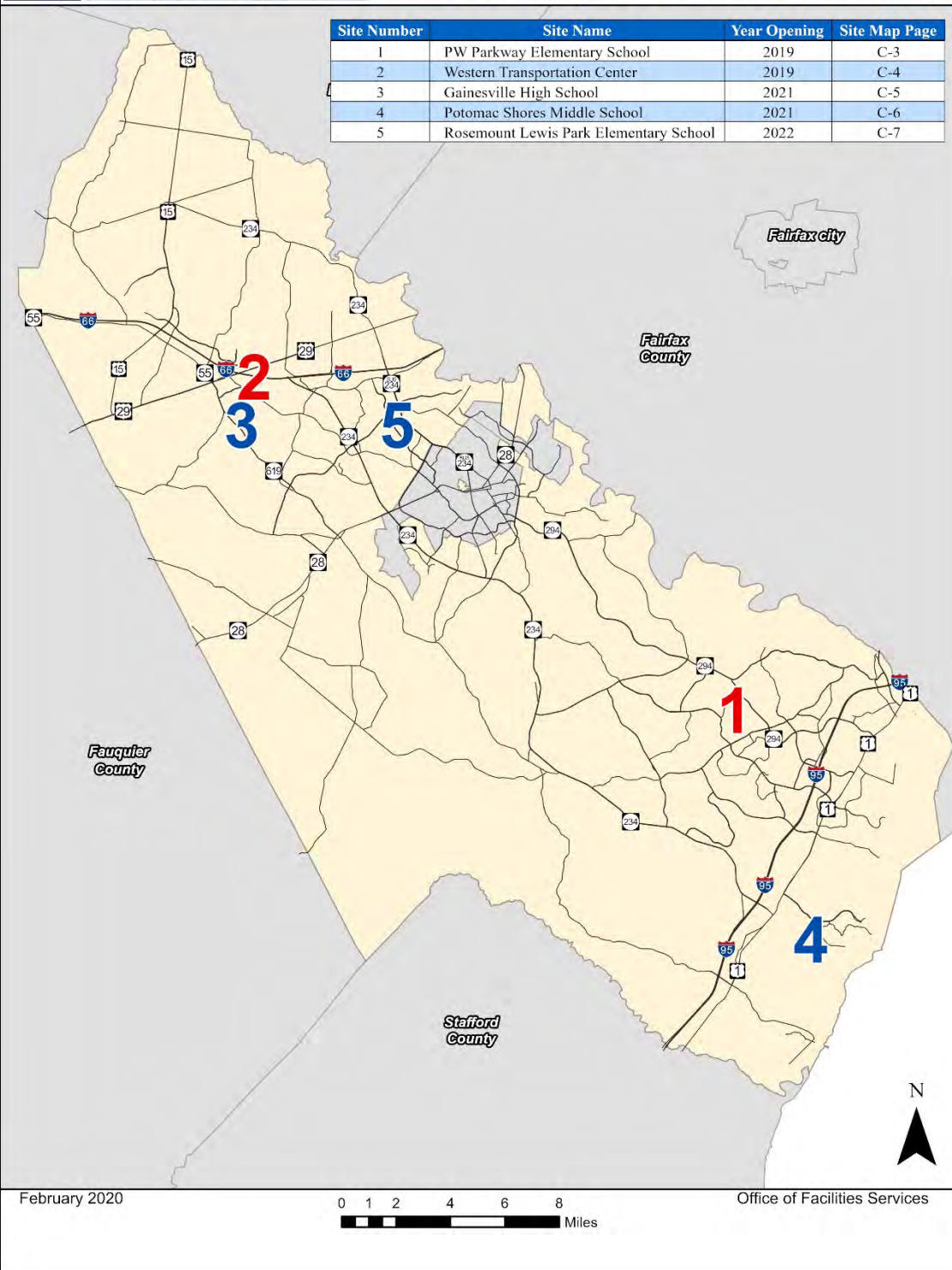
- Overall Map of Sites Identified in the Capital Improvements Program
 - John D. Jenkins Elementary School (Opened 2019)
 - Western Transportation Center (Opened 2019)
 - Potomac Shores Middle School (2021)
 - Gainesville High School (2021)
 - Rosemount Lewis Park Elementary School (2022)

[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 (2)

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

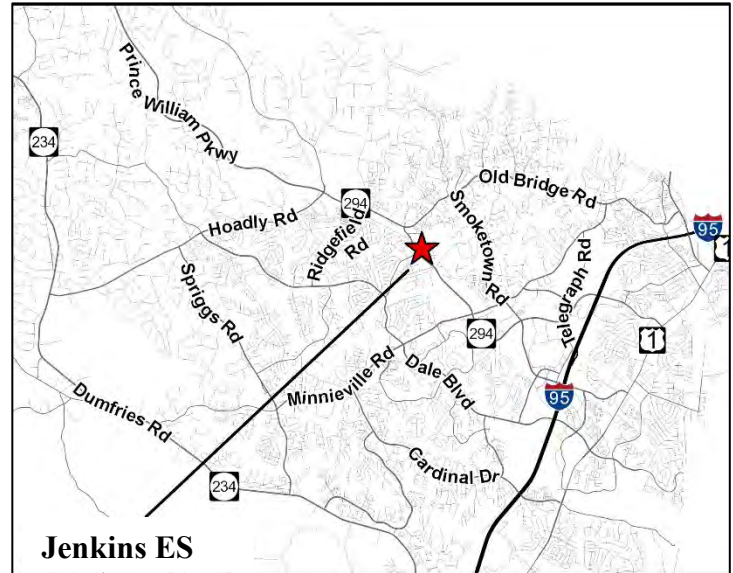
Site Number	Site Name	Year Opening	Site Map Page
1	PW Parkway Elementary School	2019	C-3
2	Western Transportation Center	2019	C-4
3	Gainesville High School	2021	C-5
4	Potomac Shores Middle School	2021	C-6
5	Rosemount Lewis Park Elementary School	2022	C-7



John D. Jenkins Elementary School (2019)

Project Description

Address:	4060 Prince William Parkway, Woodbridge
Magisterial District:	Occoquan
Acreage:	17.06 acres, including 2.12 acres of Chinn Park Property transferred by the County for a soccer field
Project Budget:	\$32,685,000
Funding Source:	Virginia Public School Authority Bond (VPSA) FY17, FY18, FY19
Architect:	Moseley Architects
Contractor:	Dustin Construction

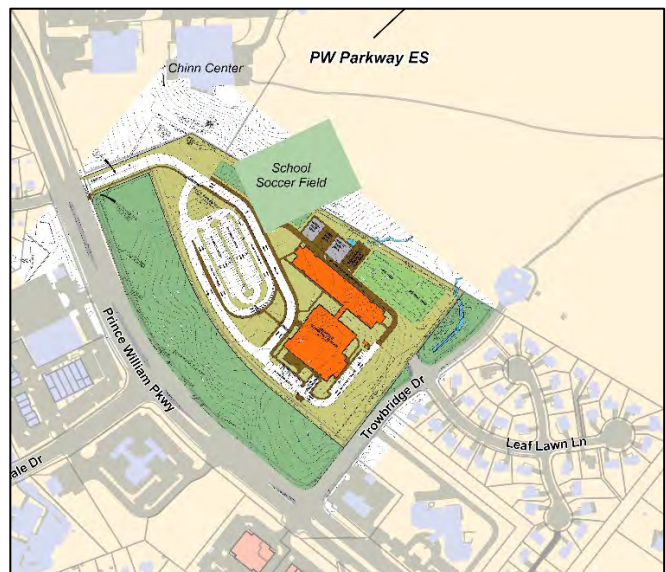


School Details

Square Feet:	100,000
Educational Programs:	Grade K-5, 38 Classrooms, 7 resource rooms, 3 fine arts rooms, science and computer lab, media center, gym/cafeteria, clinic, administration area, and activity room.

Project Schedule

Public Facility Review Approval:	February 15, 2017
Contract Awarded:	February 2018
Construction Start:	Spring 2018
Completed:	August 2019



Western Transportation Facility (2019)

Project Description

Address: 5728 Wellington Road, Gainesville

Magisterial District: Brentsville

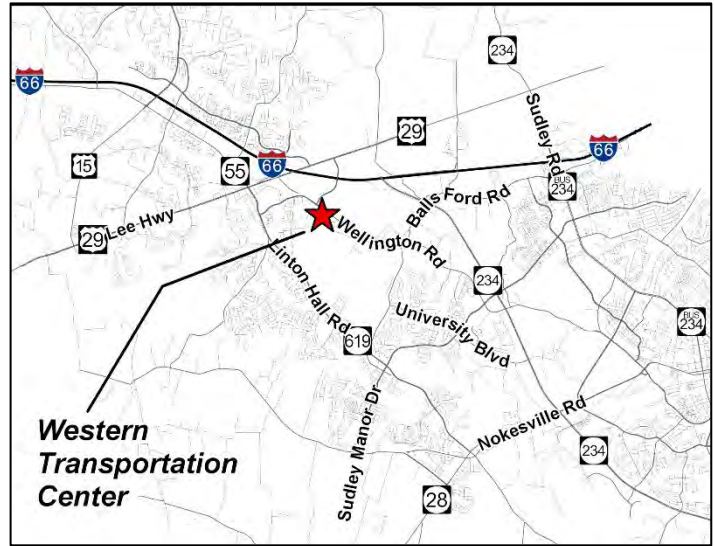
Acreage: 16.7 acres

Project Budget: \$12,500,000

Funding Source: Virginia Public School Authority Bond (VPSA) FY17, FY18, FY19

Architect: Moseley Architects

Contractor: Taft Construction Inc.



School Details

Square Feet: 15,860

Buildings/Lot: Maintenance building with 6 bus service bays and supporting office space, a bus washing facility, a refueling facility, and paved parking for 174 buses and 226 cars. Approx. 18 employees on site.

Project Schedule

Public Facility Review Approval: October 2016

Contract Awarded: June 2018

Construction Start: March 2018

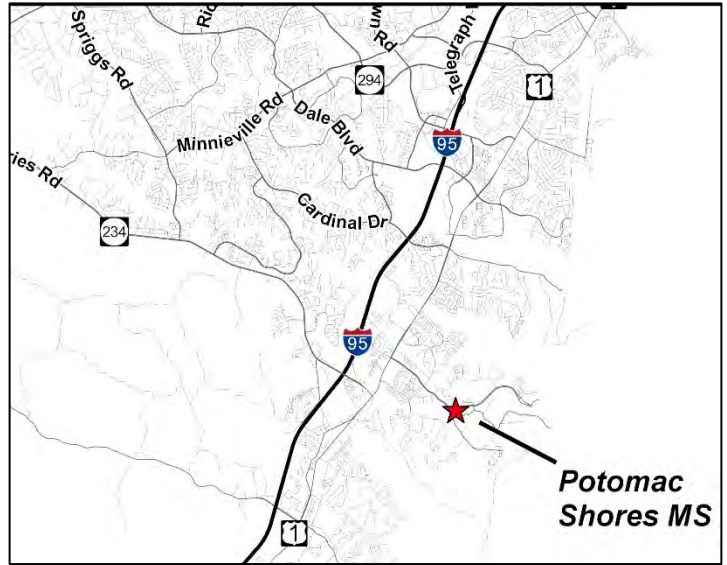
Completed: August 2019



Potomac Shores Middle School (2021)

Project Description

Address:	17851 Woods View Drive, Dumfries
Magisterial District:	Potomac
Acreage:	52.52
Project Budget:	\$64,119,000
Funding Source:	Virginia Public School Authority Bond (VPSA) FY19, FY20, FY21
Architect:	Moseley Architects
Contractor:	V. F. Pavone

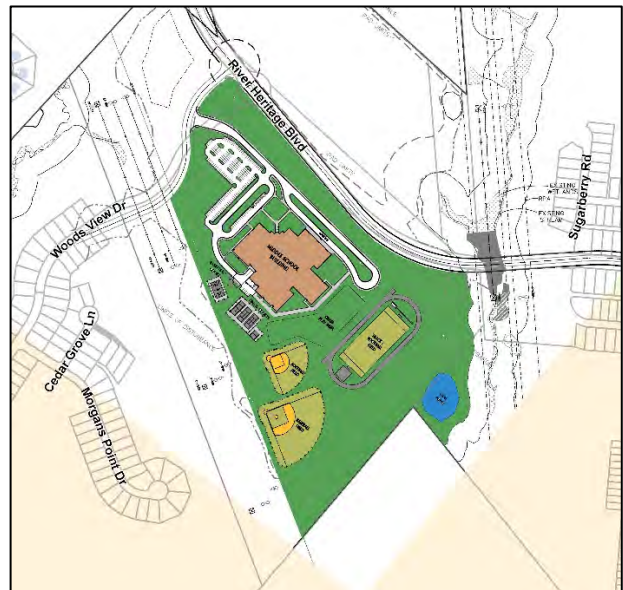


School Details

Square Feet:	197,954
Educational Programs:	Grade 6-8, 3-story academic grade house arrangement; academic classrooms, art and CTE rooms, labs, maker spaces, group activity rooms, auditorium (800 seats), cafeteria, gymnasium, administrative area, clinic, stadium and sports fields.

Project Schedule

Public Facility Review Approval:	Proffered Site
Contract Awarded:	November 7, 2018
Construction Start:	November 2018
Scheduled Completion:	August 2021



Gainesville High School (2021)

Project Description

Address: 13150 University Boulevard, Gainesville

Magisterial District: Brentsville

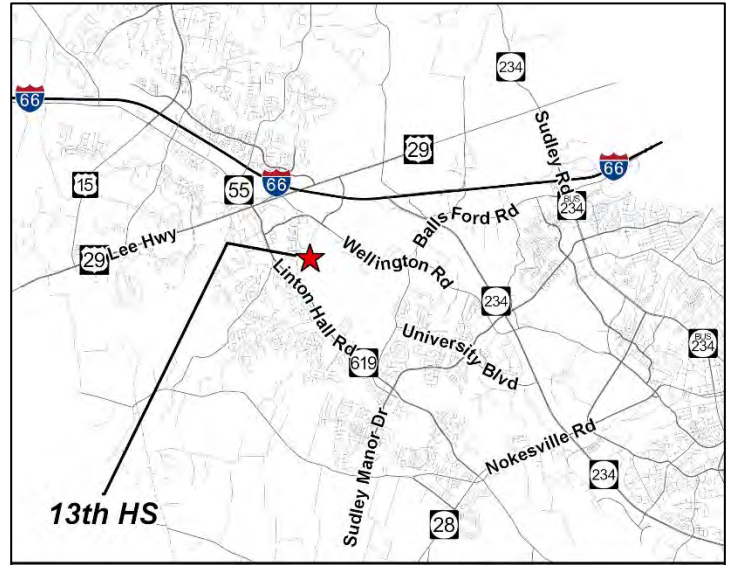
Acreage: 83.52

Project Budget: \$127,400,000

Funding Source: Virginia Public School Authority Bond (VPSA) FY17, FY18, FY19, FY20, FY21

Architect: Moseley Architects

Contractor: Dustin Construction Inc.



School Details

Square Feet: 334,885

Educational Programs: Grades 9-12, academic classrooms, fine arts rooms, science and computer labs, media center, vocational shops, auditorium (1,221 seats), stadium with artificial turf, competition and auxiliary sports fields, tennis courts, green roof, administrative area, clinic. Pedestrian connectivity from Gainesville MS to HS.

Project Schedule

Public Facility Review Approval: June 21, 2017

Contract Awarded: November 28, 2018

Construction Start: February 2019

Scheduled Completion: August 2021



Rosemount Lewis Park Elementary School (2022)

Project Description

Address: 11000 Crestwood Drive and 8200 Ashton Ave. Manassas

Magisterial District: Brentsville

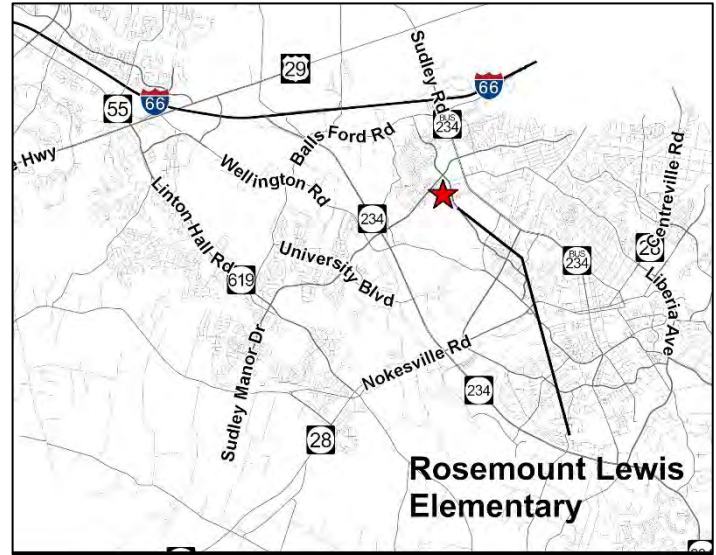
Acreage: 19.58

Project Budget: \$36,980,000

Funding Source: Virginia Public School Authority Bond (VPSA) FY20, FY21, FY22

Architect: Mosely

Contractor: TBD



School Details

Square Feet: 100,000 multi-story

Educational Programs: Grade K-5, classrooms, resource rooms, fine arts rooms, science and computer labs, media center, gym/cafeteria, activity room, administration area, and clinic.



Project Schedule

Public Facility Review Approval: June 2019

Contract Awarded: TBD

Construction Start: TBD

Scheduled Completion: August 2022



APPENDIX D

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 FY2020

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	Construction Contract Change Order Costs ²	Project Costs Outside of Construction Contract	Construction Contract	Other Non-Construction Contract Costs ⁶	Total Project Construction Contract	Total Construction Expenditures				
			Construction Contract Bid ¹	Construction Contract Change Order Costs ²	Temporary Employees ³	Engineering Services ⁴	Furnishings & Equipment ⁵	Other Non-Construction Contract Costs ⁶	Total Project Construction Contract	Total Construction Expenditures	Operating Fund / Start-Up Costs ⁷	Site Acquisition Costs ⁸	Total Project Costs
13th High School	Sep-21	\$ 127,400,000	\$ 108,500,000	\$ -	\$ 38,625	\$ 1,173,784	\$ -	\$ 1,173,784	\$ 6,928,156	\$ 115,428,156	\$ -	\$ 16,565,582	\$ 131,993,738
Potomac Shores Middle	Sep-21	\$ 64,119,000	\$ 52,474,000	\$ -	\$ 159,858	\$ 2,865,615	\$ -	\$ 590,636	\$ 3,616,110	\$ 56,090,110	\$ -	\$ -	\$ 56,090,110
Western Transportation Center	Sep-19	\$ 12,500,000	\$ 11,677,000	\$ 820,865	\$ 156,917	\$ 905,938	\$ 612,058	\$ 351,576.63	\$ 2,847,354	\$ 14,524,354	\$ -	\$ 3,757,833	\$ 18,282,188
Jenkins Elementary	Sep-19	\$ 32,686,000	\$ 27,209,000	\$ 849,882	\$ 123,003	\$ 1,608,173	\$ 1,934,250	\$ 1,052,738	\$ 5,568,046	\$ 32,777,046	\$ -	\$ 8,026,917	\$ 40,803,964
Independence Non-Traditional	Sep-18	\$ 35,850,000	\$ 27,180,000	\$ 1,458,528	\$ 180,077	\$ 2,112,436	\$ 2,389,738	\$ 3,087,021	\$ 9,227,801	\$ 36,407,801	\$ -	\$ -	\$ 36,407,801
Covington-Harper Elementary	Sep-17	\$ 29,374,000	\$ 20,831,000	\$ (15,314)	\$ 21,731	\$ 1,155,231	\$ 1,785,236	\$ 536,680	\$ 3,483,563	\$ 24,314,563	\$ 434,000	\$ -	\$ 24,748,563
Kilby Elementary Replacement	Sep-17	\$ 31,476,000	\$ 21,888,000	\$ 86,297	\$ 222,608	\$ 1,371,454	\$ 1,580,106	\$ 1,197,695	\$ 4,458,160	\$ 26,346,160	\$ -	\$ 135,398	\$ 26,481,558
Wilson Elementary	Sep-16	\$ 28,534,000	\$ 20,753,000	\$ (16,905)	\$ 63,670	\$ 1,205,054	\$ 1,579,018	\$ 886,041	\$ 3,716,878	\$ 24,469,878	\$ 425,000	\$ -	\$ 24,894,878
Maintenance Facility	Sep-16	\$ 11,444,000	\$ 8,074,000	\$ 37,561	\$ 130,361	\$ 1,328,485	\$ 322,155	\$ 822,792	\$ 2,641,354	\$ 10,715,354	\$ -	\$ -	\$ 10,715,354
Colgan High School	Sep-16	\$ 110,943,000	\$ 97,907,000	\$ 145,919	\$ 521,568	\$ 5,126,308	\$ 4,776,207	\$ (6,670,372)	\$ 3,899,630	\$ 101,806,630	\$ 1,988,547	\$ 8,785,796	\$ 112,580,973
Yung Elementary	Sep-15	\$ 25,987,000	\$ 20,286,000	\$ 54,809	\$ 197,660	\$ 1,004,729	\$ 1,412,402	\$ 770,928	\$ 3,440,527	\$ 23,726,527	\$ 419,000	\$ 3,345,844	\$ 27,491,371
Haymarket Elementary	Sep-14	\$ 27,663,000	\$ 18,788,000	\$ (262,583)	\$ 135,764	\$ 1,133,312	\$ 1,120,361	\$ 994,640	\$ 3,121,494	\$ 21,909,494	\$ 339,295	\$ 16,679	\$ 22,265,468
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

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 analysis, environmental analyses, archaeological 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 Issuance:
Virginia Public School Authority 2019 (V19A)

Bond Issuance	Project Name	Func	Anticipated /Estimated Cost in CIP	Adjustments - Year 1	Adjustments - Year 2	Resulting Project Amount
			Original Bond Disbursement			
V19A	13th High School (West)	513A	\$ 52,000,000	\$ (2,975,616)		\$ 49,024,384
V19A	Antietam Elementary School Addition (13 rooms)	376C	\$ 1,000,000	\$ (753,621)		\$ 246,379
V19A	Beville Middle School - Renewal	478C	\$ 9,901,500	\$ (419,742)		\$ 9,481,758
V19A	Gar-Field High School - Aux Gym Addition	569U	\$ 8,000,000	\$ (1,698,084)		\$ 6,301,916
V19A	Jenkins Elementary School East - PW Parkway	319A	\$ 3,000,000	\$ 162,613		\$ 3,162,613
V19A	Lake Ridge Elementary School Addition (13 rooms)	318C	\$ 1,000,000	\$ (687,195)		\$ 312,805
V19A	Leesylvania Elementary School - Renewal (Funding Phase 1)	383E	\$ 600,000	\$ (119,899)		\$ 480,101
V19A	Marshall Elementary School - Renewal (Funding Phase 1a)	379F	\$ 1,866,000	\$ (1,300,396)		\$ 565,604
V19A	Minnieville Elementary School Addition (10 rooms)	303M	\$ 1,000,000	\$ 159,786		\$ 1,159,786
V19A	Montclair Elementary School - Renewal (Funding Phase 1a)	380D	\$ 1,866,000	\$ (1,650,623)		\$ 215,377
V19A	Mountain View Elementary School - Renovation	381F	\$ 6,451,000	\$ (333,769)		\$ 6,117,231
V19A	Old Bridge Elementary School - Renewal	382D	\$ 1,866,000	\$ (1,773,951)		\$ 92,049
V19A	Potomac Shores Middle School	414A	\$ 20,559,500	\$ (1,367,113)		\$ 19,192,387
V19A	Springwoods Elementary School Addition (13 rooms)	332D	\$ 1,100,000	\$ (243,872)		\$ 856,128
V19A	Stonewall Jackson High School - Stadium Upgrades	568T	\$ 1,650,000	\$ 319,042		\$ 1,969,042
V19A	Stonewall Middle School Addition (17 rooms)	448K	\$ 1,500,000	\$ (248,993)		\$ 1,251,007
V19A	Western Bus Facility	043M	\$ 1,000,000	\$ 1,328,296		\$ 2,328,296
V19A	Woodbridge High School - Aux Gym Addition	506S	\$ 8,000,000	\$ (1,932,242)		\$ 6,067,758
V19A	Woodbridge High School - Stadium Upgrades	506R	\$ 2,150,000	\$ 310,650		\$ 2,460,650
V19A	Division Wide - REVENUE	0370		\$ 851,319		\$ 851,319
V19A	Division Wide - SITE ACQUISITION	0370		\$ 21,568		\$ 21,568
V19A	Fred Lynn Middle School - Roof Replacement	452K		\$ 3,000		\$ 3,000
V19A	Fred Lynn Middle School ***	452N		\$ 380,959		\$ 380,959
V19A	Freedom High School - Turf Fields	530E		\$ 90,489		\$ 90,489
V19A	HVAC Equipment & Controls	HVAC		\$ 941,936		\$ 941,936
V19A	Hylton High School - Renewal	571M		\$ 1,475,673		\$ 1,475,673
V19A	Independent Hill Complex - Site Improvements	603F		\$ 4,472,909		\$ 4,472,909
V19A	Independent Hill New Maintenance Facility	603H		\$ 89,373		\$ 89,373
V19A	Kelly Leadership Center ***	604B		\$ 178,116		\$ 178,116
V19A	Potomac Middle School ***	417D		\$ 489,804		\$ 489,804
V19A	Rosemount Lewis Elementary site ***	317A		\$ 1,900,000		\$ 1,900,000
V19A	Special Needs Facility	043K		\$ 1,553,858		\$ 1,553,858
V19A	Stonewall Jackson High School - Turf Fields	568S		\$ 346,342		\$ 346,342
V19A	Woodbridge High School - Turf Fields	506Q		\$ 429,384		\$ 429,384
Total			\$ 124,510,000	\$ (0)	\$ -	\$ 124,510,000

**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	\$ (600,000)	\$ 3,475,616	\$ 10,875,616
V18A	Antietam Elementary School Addition (13 rooms)	376C	\$ 8,784,000	\$ (2,893,000)	\$ 337,957	\$ 6,228,957
V18A	Jenkins Elementary School East - PW Parkway	319A	\$ 27,685,000	\$ (7,500,000)	\$ 228,573	\$ 20,413,573
V18A	Lake Ridge Elementary School Addition (13 rooms)	318C	\$ 9,284,000	\$ (3,000,000)	\$ 73,365	\$ 6,357,365
V18A	Lake Ridge Middle School Addition (13 rooms)	472E	\$ 1,500,000	\$ (1,454,949)	\$ (43,176)	\$ 1,876
V18A	Leesylvania Elementary School - Renewal (Funding Phase 1)	383E	\$ 13,485,000	\$ (2,033,838)	\$ (168,086)	\$ 11,283,076
V18A	Marshall Elementary School - Renewal (Funding Phase 1a)	379F	\$ 3,945,000	\$ 675,222	\$ 2,827,511	\$ 7,447,733
V18A	Minnieville Elementary School Addition (10 rooms)	303M	\$ 11,043,000	\$ (1,980,000)	\$ (158,600)	\$ 8,904,400
V18A	Montclair Elementary School - Renewal (Funding Phase 1a)	380D	\$ 2,000,000	\$ 465,000	\$ 22,645	\$ 2,487,645
V18A	New Alternative Education School	201Z	\$ 3,000,000	\$ (3,000,000)	\$ 520	\$ 520
V18A	Pattie Elementary School Addition (10 rooms) - Consolidation / Building Renovation @ Washington-Reid	313D	\$ 3,000,000	\$ (2,200,000)	\$ (30,268)	\$ 769,732
V18A	Springwoods Elementary School Addition (13 rooms)	332D	\$ 10,184,000	\$ (1,300,000)	\$ (421,847)	\$ 8,462,153
V18A	Stonewall Middle School Addition (17 rooms)	448K	\$ 14,630,000	\$ (2,225,000)	\$ (328,109)	\$ 12,076,891
V18A	Western Bus Facility	043M	\$ 10,000,000	\$ -	\$ (1,428,296)	\$ 8,571,704
V18A	Ann Ludwig - ELL Relocation from Ann Ludwig	209B	\$ -	\$ 80,000	\$ (42,120)	\$ 37,880
V18A	Benton Middle School - Music Room Addition	488F	\$ -	\$ 1,485	\$ (1,485)	\$ (0)
V18A	Beville Middle School - Renewal	478C	\$ -	\$ 85,500	\$ 1,038,533	\$ 1,124,033
V18A	Division Wide - REVENUE	0370	\$ -	\$ 2,082,800	\$ (2,082,800)	\$ 0
V18A	Division Wide - SITE ACQUISITION	0370	\$ -	\$ 1,825,409	\$ (1,821,568)	\$ 3,841
V18A	Fred Lynn Middle School - Roof Replacement	452K	\$ -	\$ 400,000	\$ (383,959)	\$ 16,041
V18A	Freedom High School - Turf Fields	530E	\$ -	\$ 203,266	\$ (90,489)	\$ 112,777
V18A	Gar-Field High School - Aux Gym Addition	569U	\$ -	\$ 351,561	\$ (301,916)	\$ 49,645
V18A	HVAC Equipment & Controls	HVAC	\$ -	\$ 1,350,437	\$ (9,588)	\$ 1,340,849
V18A	Hylton High School - Renewal	571M	\$ -	\$ 1,289,816	\$ (834,734)	\$ 455,082
V18A	Independent Hill Complex - Site Improvements	603F	\$ -	\$ 10,723,034	\$ (9,944,790)	\$ 778,244
V18A	Independent Hill New Maintenance Facility	603H	\$ -	\$ 601,633	\$ (89,372)	\$ 512,261
V18A	Mountain View Elementary School - Renovation	381F	\$ -	\$ 425,000	\$ 408,048	\$ 833,048
V18A	Old Bridge Elementary School - Renewal	382D	\$ -	\$ 19,841	\$ 690,258	\$ 710,099
V18A	Parkside Middle School - Roof Repl Partial	450M	\$ -	\$ 337,000	\$ (17,365)	\$ 319,635
V18A	Potomac Shores Middle School	414A		\$ 181,893	\$ 10,743,980	\$ 10,925,873
V18A	Rippon Middle School - Fenestration Improvements	459M	\$ -	\$ 1,041,317	\$ 3,641	\$ 1,044,958
V18A	Special Needs Facility	043K	\$ -	\$ 2,390,798	\$ (1,561,740)	\$ 829,058
V18A	Stonewall High School - Turf Fields	568S	\$ -	\$ 1,731,798	\$ (333,097)	\$ 1,398,701
V18A	Woodbridge High School - Aux Gym Addition	506S	\$ -	\$ 98,475	\$ (67,758)	\$ 30,717
V18A	Woodbridge High School - Turf Fields	506Q	\$ -	\$ 1,825,500	\$ (407,137)	\$ 1,418,363
V18A	Kelly Leadership Center ***	604B	\$ -	\$ -	\$ 71,884	\$ 71,884
V18A	Potomac Middle School ***	417D	\$ -	\$ -	\$ 210,196	\$ 210,196
V18A	River Oaks Elementary School ***	375C	\$ -	\$ -	\$ 2,894	\$ 2,894
V18A	Signal Hill Elementary School ***	397C	\$ -	\$ -	\$ 431,739	\$ 431,739
V18A	Woodbridge High School ***	506R	\$ -	\$ -	\$ 940	\$ 940
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	13th High School (West) - New Construction A&E	513A	\$ 3,000,000	\$ 239,635	\$ 600,000	\$ 3,839,635
V17A	Alternative Education School - New Construction	201Z	\$ 25,850,000	\$(11,138,578)	\$ 986,723	\$ 15,698,145
V17A	Antietam Elementary School - Addition (13 rooms) A&E	376C	\$ 600,000	\$ 85,000	\$ -	\$ 685,000
V17A	Elementary School East (PW Parkway) - New Construction	319A	\$ 2,000,000	\$ 7,250,000	\$ 828,342	\$ 10,078,342
V17A	Lake Ridge Elementary School - Addition (13 rooms)	318C	\$ 600,000	\$ 75,000	\$ 1,800,027	\$ 2,475,027
V17A	Lake Ridge Middle School - Renewal/Addition (13 rooms)	472E	\$ 13,037,000	\$ (4,350,000)	\$ (812,547)	\$ 7,874,453
V17A	Leesylvania Elementary School - Addition (4 rooms) A&E	383E	\$ 500,000	\$ 615,000	\$ 63,824	\$ 1,178,824
V17A	Middle School at Potomac Shores - New Construction	414A	\$ 2,000,000	\$ 1,195,924	\$ (1,000,000)	\$ 2,195,924
V17A	Pattie Elementary School - Addition (10 rooms)	313D	\$ 8,300,000	\$ (3,570,000)	\$ (102,955)	\$ 4,627,045
V17A	River Oaks Elementary School - Renewal (Funding Phase 1)	375C	\$ 6,000,000	\$ -	\$ (175,000)	\$ 5,825,000
V17A	Saunders Middle School - Renewal (Funding Phase 2)	438F	\$ 2,600,000	\$ -	\$ (839,957)	\$ 1,760,043
V17A	Site Acquisition Funding	517A	\$ 14,000,000	\$(14,000,000)	\$ -	\$ -
V17A	Special Needs Transportation Center @ New Dominion	043K	\$ 1,700,000	\$ 270,257	\$ (1,299,999)	\$ 670,258
V17A	Springwoods Elementary School - Addition (13 rooms)	332D	\$ 600,000	\$ 45,000	\$ 112,114	\$ 757,114
V17A	Stonewall Middle School - Addition (17 rooms) A&E	448K	\$ 1,000,000	\$ -	\$ 54,409	\$ 1,054,409
V17A	Western Bus Facility - New Construction A&E	043M	\$ 1,500,000	\$ 1,850,000	\$ 825,224	\$ 4,175,224
V17A	Westridge Elementary School - Renewal (Funding Phase	374C	\$ 98,000	\$ -	\$ (95,363)	\$ 2,637
V17A	Benton MS - Music Room Addition	488F	\$ -	\$ 3,200,000	\$ (100,000)	\$ 3,100,000
V17A	Division Wide - Site Acquisition	0370	\$ -	\$ 15,611,270	\$(15,043,494)	\$ 567,776
V17A	Freedom HS - Turf Fields	530E	\$ -	\$ 1,849,177	\$ (300,000)	\$ 1,549,177
V17A	Independent Hill Complex - New Maintenance Facility	603H	\$ -	\$ 572,315	\$ 252,800	\$ 825,115
V17A	Ann Ludwig - ELL Relocation from Ann Ludwig	209B	\$ -	\$ -	\$ 1,096,824	\$ 1,096,824
V17A	Antietam Elementary School - Renewal	376B	\$ -	\$ -	\$ 232,786	\$ 232,786
V17A	Fred Lynn Middle School - Roof Replacement	452K	\$ -	\$ -	\$ 564,896	\$ 564,896
V17A	Gar-Field High School - Aux Gym Addition	569U	\$ -	\$ -	\$ 355,354	\$ 355,354
V17A	Minnieville Elementary School - Addition	303M	\$ -	\$ -	\$ 1,231,580	\$ 1,231,580
V17A	Montclair Elementary School - Renewal	380D	\$ -	\$ -	\$ 3,000,000	\$ 3,000,000
V17A	Mountain View Elementary School - Renovation	381F	\$ -	\$ -	\$ 431,445	\$ 431,445
V17A	Old Bridge Elementary School - Renewal	382D	\$ -	\$ -	\$ 4,616,512	\$ 4,616,512
V17A	Potomac Shores ES site - Building, New	309A	\$ -	\$ -	\$ 30,000	\$ 30,000
V17A	Rippon Middle School - Fenestration Improvement	459M	\$ -	\$ -	\$ 2,521,326	\$ 2,521,326
V17A	Woodbine PreSchool - Roof Replacement	219A	\$ -	\$ -	\$ 141,032	\$ 141,032
V17A	Woodbridge High School - Aux Gym Addition	506S	\$ -	\$ -	\$ 224,097	\$ 224,097
Total			\$ 83,385,000	\$ (200,000)	\$ 200,000	\$ 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
		<i>Original Bond Disbursement</i>			
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
		<i>Original Bond Disbursement</i>			
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
		<i>Original Bond Disbursement</i>			
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 Data

New Elementary Schools – Commonwealth of Virginia 2012-13 through 2019-20

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
2019-20	New Elementary School-Reed Site	PK-5	Arlington County (007)	Sep-19	754	\$36,185,302	\$6,431,990	42,617,292	111,516	\$279.16	\$324.49	\$56,522
2018-19	Alice West Fleet Elementary	PK-5	Arlington County (007)	May-18	784	\$41,550,000	\$17,700,000	59,250,000	212,245	\$279.16	\$195.76	\$75,574
	New Harrowgate Elementary	K-5	Chesterfield County (021)	Feb-19	794	\$20,062,340	\$2,620,916	22,683,256	95,944	\$236.42	\$209.10	\$28,568
	Northwest County ES - McNair Site	4-6	Fairfax County (029)	Jan-19	750	\$22,080,000	\$5,000,000	27,080,000	105,652	\$256.31	\$208.99	\$36,107
	Twelfth Elementary School	K-5	Frederick County (034)	Sep-18	648	\$20,993,928	\$2,543,885	23,537,813	84,375	\$278.97	\$248.82	\$36,324
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	\$232.82	\$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

* The final report for 2019-20 will be generated after June 30, 2020.

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 – Commonwealth of Virginia 2011-12 through 2019-20

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
2019-20	New Aylor Middle School	6-8	Frederick County (034)	Apr-19	1050	\$34,219,932	\$7,141,827	\$41,361,759	151,154	\$273.64	\$226.39	\$39,392
2018-19	Manchester Middle School	6-8	Chesterfield County (021)	Oct-18	1,108	\$35,293,004	\$4,683,944	\$39,976,948	139,011	\$287.58	\$253.89	\$36,080
	Potomac Shores Middle School	6-8	Prince William County (075)	Nov-18	1,491	\$45,474,000	\$7,000,000	\$52,474,000	197,954	\$265.08	\$229.72	\$35,194
	Pulaski County Middle School	6-8	Pulaski County (077)	Oct-18	1,091	\$33,868,896	\$6,887,094	\$40,755,990	164,900	\$247.16	\$205.39	\$37,357
	Princess Anne Middle School Replacement	6-8	Virginia Beach City (128)	Jun-18	1,516	\$57,680,024	\$7,147,194	\$64,827,218	257,784	\$251.48	\$223.75	\$42,762
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	\$7,000,000	\$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

* The final report for 2019-20 will be generated after June 30, 2020.

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 – Commonwealth of Virginia 2008-09 through 2019-20

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
2019-20	Washington and Lee High School	9-12	Westmoreland County	Oct-19	837	\$41,722,000	\$4,801,000	\$46,523,000	141,089	\$329.74	\$295.71	\$55,583
2018-19	Lightridge High School (HS-9)	9-12	Loudoun County	Jul-18	1,903	\$87,875,296	\$22,330,000	\$110,205,296	305,133	\$361.17	\$287.99	\$57,911
	13th High School	9-12	Prince William County	Nov-18	2,601	\$85,500,000	\$23,000,000	\$108,500,000	334,885	\$323.99	\$255.31	\$41,715
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	\$180.96	\$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	Kellum 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 2019-20 will be generated after June 30, 2020.

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

Elementary School Construction Cost Data Prince William County Schools 2003-04 through 2019-20

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
Jenkins ES	100,264	Feb-18	\$27,209,000	\$271.37	\$19,624,164	\$195.72	\$7,584,836	\$75.65
Covington-Harper ES	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 ES	106,854	Feb-15	\$20,753,000	\$194.22	\$16,753,000	\$156.78	\$4,000,000	\$37.43
Yung ES	107,273	Dec-13	\$20,286,000	\$189.11	\$16,186,000	\$150.89	\$4,100,000	\$38.22
Haymarket ES ⁵	99,135	Jan-13	\$18,788,000	\$189.52	\$14,396,000	\$145.22	\$4,392,000	\$44.30
Wood ES ⁴	104,958	Feb-10	\$13,859,000	\$132.04	\$12,437,000	\$118.50	\$1,422,000	\$13.55
Piney Branch ES	104,958	Feb-10	\$15,799,000	\$150.53	\$12,999,000	\$123.85	\$2,800,000	\$26.68
Triangle ES Repl	103,679	Feb-08	\$19,769,000	\$190.68	\$16,169,000	\$155.95	\$3,600,000	\$34.72
Yorkshire ES Repl	106,614	Jun-07	\$18,863,000	\$176.93	\$16,292,000	\$152.81	\$2,571,000	\$24.12
Gravelly ES	95,074	Feb-07	\$17,250,000	\$181.44	\$15,449,000	\$162.49	\$1,801,000	\$18.94
Fitzgerald ES ³	106,170	Feb-07	\$17,580,000	\$165.58	\$15,880,000	\$149.57	\$1,700,000	\$16.01
Buckland Mills ES	89,911	Feb-05	\$12,765,000	\$141.97	\$10,245,000	\$113.95	\$2,520,000	\$28.03
Parks ES	83,084	Feb-05	\$12,277,000	\$147.77	\$9,622,000	\$115.81	\$2,655,000	\$31.96
Glenkirk ES	83,084	Feb-04	\$11,711,000	\$140.95	\$8,364,000	\$100.67	\$3,347,000	\$40.28
Victory ES ²	89,911	Feb-04	\$11,380,000	\$126.57	\$9,505,000	\$105.72	\$1,875,000	\$20.85
Williams ES ¹	83,084	Feb-03	\$10,570,000	\$127.22	\$8,061,000	\$97.02	\$2,509,000	\$30.20
Ellis ES	76,724	Feb-03	\$8,869,000	\$115.60	\$7,638,000	\$99.55	\$1,231,000	\$16.04
Porter TS	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.

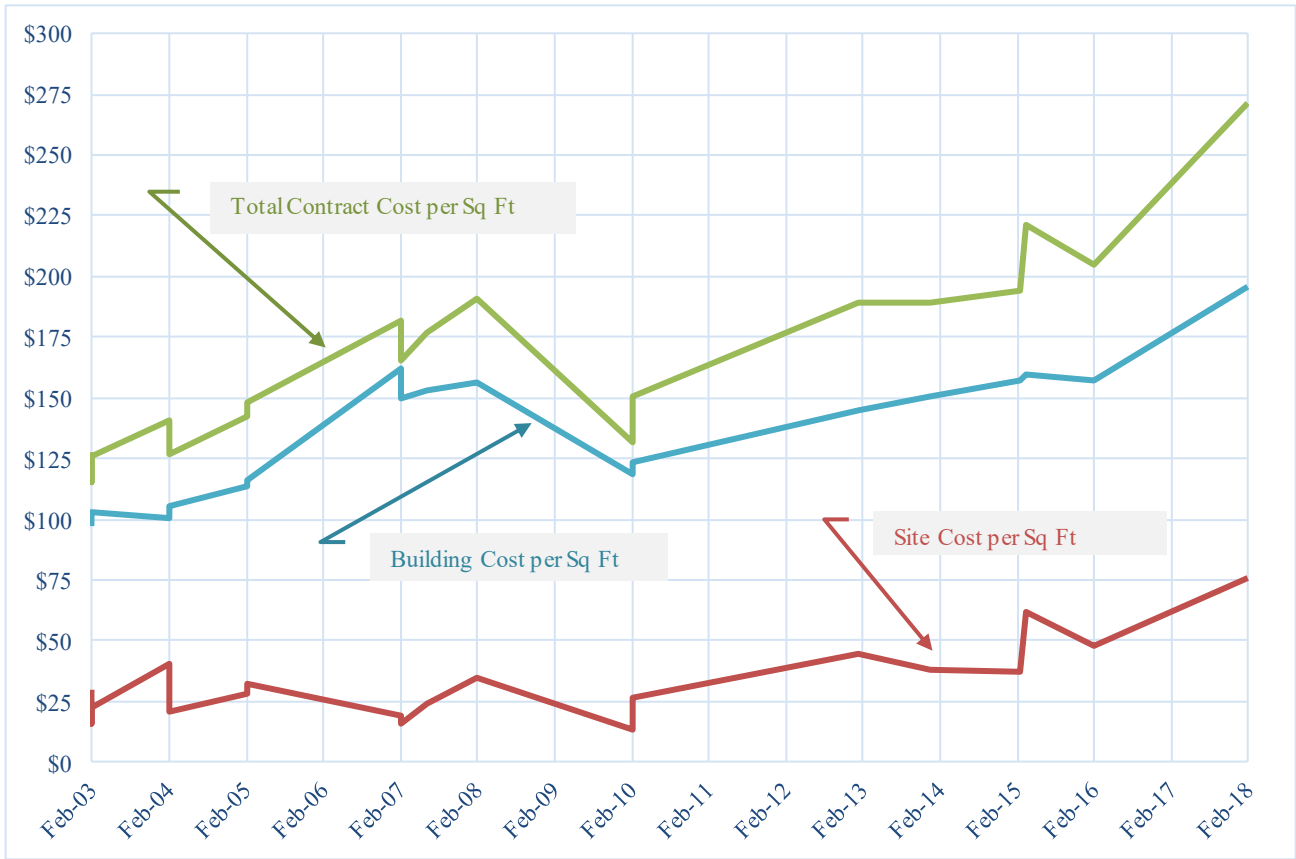
2 This site was pre-graded by the developer, value approximately \$ 1.2 million. For project comparison purposes add 13.35 to project sq. ft. cost and to site sq. ft. cost.

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.

5 This site was heavily wooded and contained \$845k in offsite utility / roadwork cost.

Elementary School Construction Cost Per Square Foot Prince William County Schools 2003-04 through 2019-20



APPENDIX E

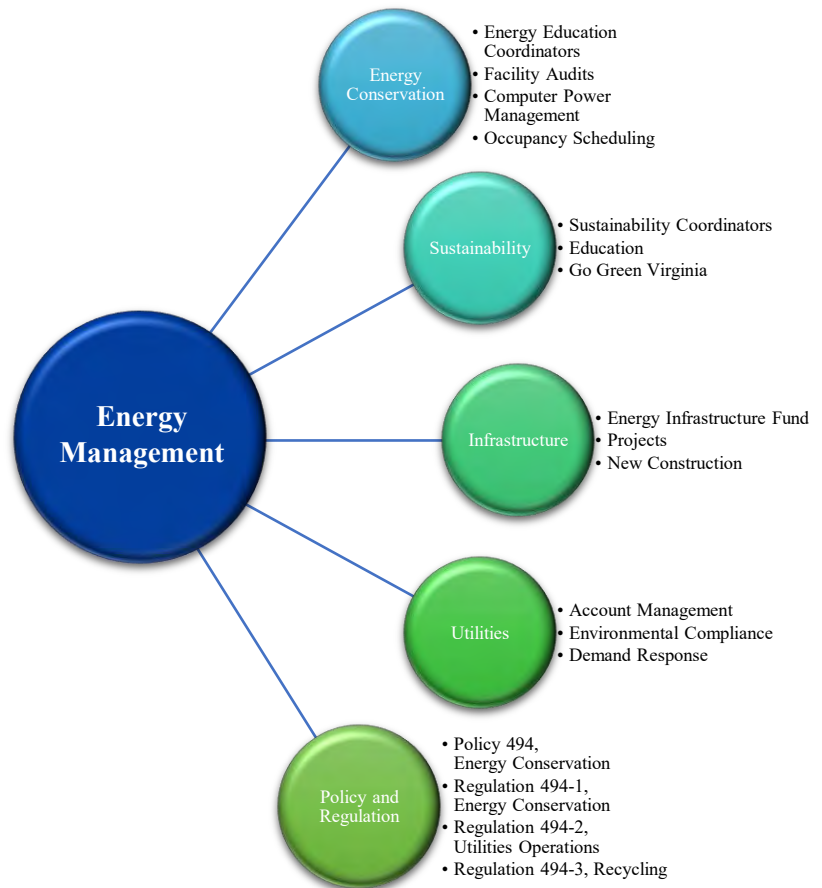
Energy Management

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 and sustainability practices.

Implementation of the energy conservation and sustainability 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 staff and student 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.

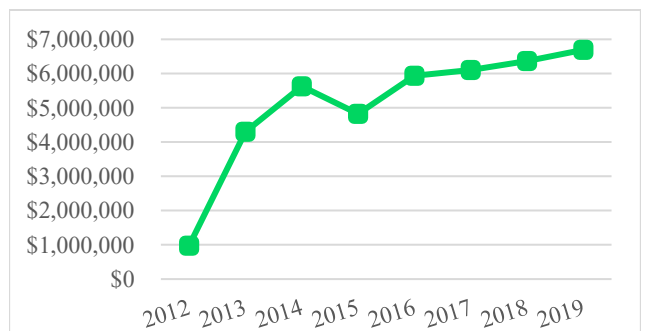
Energy Conservation Savings

July 2012 – December 2019

Period	Month	Savings		Period Totals
		\$	%	
Fast Track 2012	July - December	\$974,122	9.1%	\$974,122
Performance 2013	January - December	\$4,303,899	18.9%	\$4,303,899
Performance 2014	January - December	\$5,630,770	23.1%	\$5,630,770
Performance 2015	January - December	\$4,827,772	19.3%	\$4,827,772
Performance 2016	January - December	\$5,940,086	24.0%	\$5,940,086
Performance 2017	January - December	\$6,104,072	23.9%	\$6,104,072
Performance 2018	January - December	\$6,364,781	24.0%	\$6,364,781
3rd Performance Quarter FY2019	January	\$627,079	26.1%	\$1,746,918
	February	\$626,545	27.4%	
	March	\$493,294	23.4%	
4th Performance Quarter FY2019	April	\$611,618	28.0%	\$1,782,717
	May	\$508,836	22.1%	
	June	\$662,263	28.9%	
1st Performance Quarter FY2020	July	\$644,812	27.2%	\$1,417,783
	August	\$328,899	13.7%	
	September	\$444,072	17.5%	
2nd Performance Quarter FY2020	October	\$527,939	23.2%	\$1,745,680
	November	\$555,584	24.6%	
	December	\$662,157	30.0%	
Total Program Savings		\$40,838,601	22.9%	

Annual Energy Cost Avoidance

July 2012 – December 2019



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.

Education

The Office of Facilities Services incorporates education for students and staff 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. In 2018, Energy Management staff began offering a new certificate program, Green Classroom Professional (GCP). This certificate program is intended for educators, staff, custodians, and facilities personnel. Both courses are registered in the PWCS online Professional Learning Catalog.

PLT 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.

Green Classroom Professional certificate program provides participants with the skills to create sustainable learning spaces, identify features that support or impede environmentally healthy classrooms and energy savings, and help foster a culture that appreciates and models green practices. The GCP certificate program was created by the Center for Green Schools at the U.S. Green Building Council.

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 2018, PWCS was awarded the Platinum Green Schools Division certification and recognized as an overall Green Schools Challenge winner.

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 2021-2025**

Energy Infrastructure Improvement Project	Fiscal Year				
	2021	2022	2023	2024	2025
Building Automation Improvements	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
LED Lighting Retrofits	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000
Mechanical Infrastructure (Supplemental Heating, Cooling, Dehumidification)	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Building Envelope/Thermal Insulation	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
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 2020 and 2021

FY 2020	
Location	Project Scope
Divisionwide	HVAC Equipment Optimization Programs
Divisionwide	LED Replacement Program
Bel Air ES, Vaughan ES	Dehumidification Upgrades
Divisionwide	Upgrade Temperature Control Systems
Pattie ES, Gainesville MS	Retro-Commissioning
Gar-Field HS, Osbourn Park HS, Woodbridge HS	SMART Irrigation
Divisionwide	Chiller and Boiler Maintenance Program
Divisionwide	PC Power Management
Divisionwide	Third-Party Energy Audits
Bel Air ES, Dumfries ES, Haymarket ES, Tyler ES, Lake Ridge MS, Woodbridge MS, Colgan HS	Predictive Maintenance Analytics

FY 2021	
Location	Project Scope
Divisionwide	LED Replacement Program
Divisionwide	Predictive Maintenance Analytics
Divisionwide	Switchgear Monitoring
Belmont ES, Loch Lomond ES, McAuliffe ES, Neabsco ES, Westridge ES, Williams ES, Pennington Traditional	SMART Irrigation
Buckland Mills ES, Coles ES, Victory Lakes ES, Yung ES	Building Automation Upgrade
Divisionwide	Boiler Controls Upgrade

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

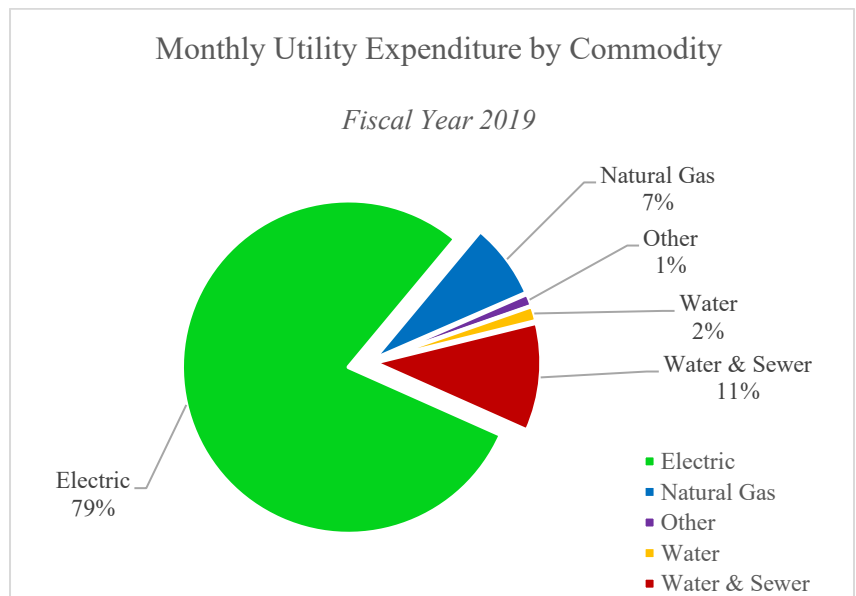
Account Management

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

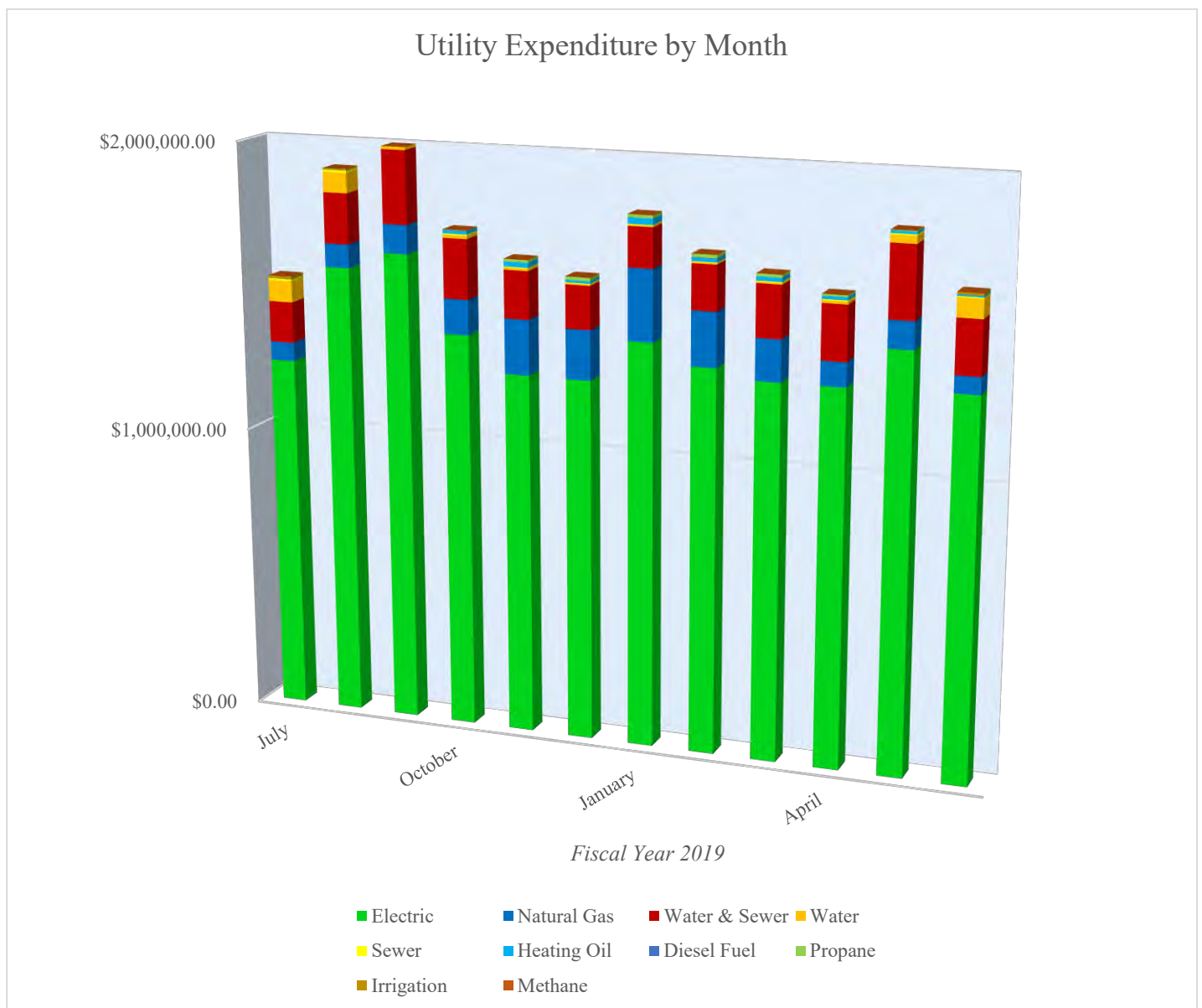
Prior to procurement, delivery or payment of any heating and/or motorized fuels, the Administrative Coordinator, Energy Management ensures coordination with the Administrative Coordinator, Environmental Services, to verify proper delivery techniques, inspect spill control methods, and verify quantity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

Required annual reporting of stored gallonage to the Department of Environmental Quality is the responsibility of the Administrative Coordinator, Energy Management.

Demand Response

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



APPENDIX F

Technology Improvement Plan

Future Ready Technology Improvement Plan

2021-2025

Innovative Learning and Engagement

Enabling learning and engagement anytime, anywhere on any device.



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Notes: 1. All Plan Overviews and Objectives are based on the FY 2016 Budgeting for Results Plan.

2. FY20 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 that are critical to delivering support to students, teachers, parents and staff.

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 which will mean less downtime for school and core business functions Divisionwide.
- 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						
	FY20	FY21	FY22	FY23	FY24	FY25
Pure Storage Infrastructure Replacement				\$450,000		
Physical Data Center SQL Servers – upgrade 2 per year	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
AIX Finance Servers	\$500,000					
Disaster Recovery	\$200,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
School Server and UPS Replacement	\$675,000					\$675,000
Server Virtualization	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Backups			\$400,000			
Total	\$1,470,000	\$195,000	\$595,000	\$645,000	\$195,000	\$870,000

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. Upgrades to WAN, LANs and WLANs will improve network access and internet speeds Divisionwide and allow for enhanced instruction.

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.
- Upgrade network infrastructure (Local Area Network, Wireless Local Area Network, and VoIP) Divisionwide.
 - * Every student has a technology-enabled learning experience during the school day.
 - * Video and other rich media are used as a crucial part of the everyday learning.

**Note: This will have an associated increase of \$42,000 in internet service provider fees in FY22 and FY23.*

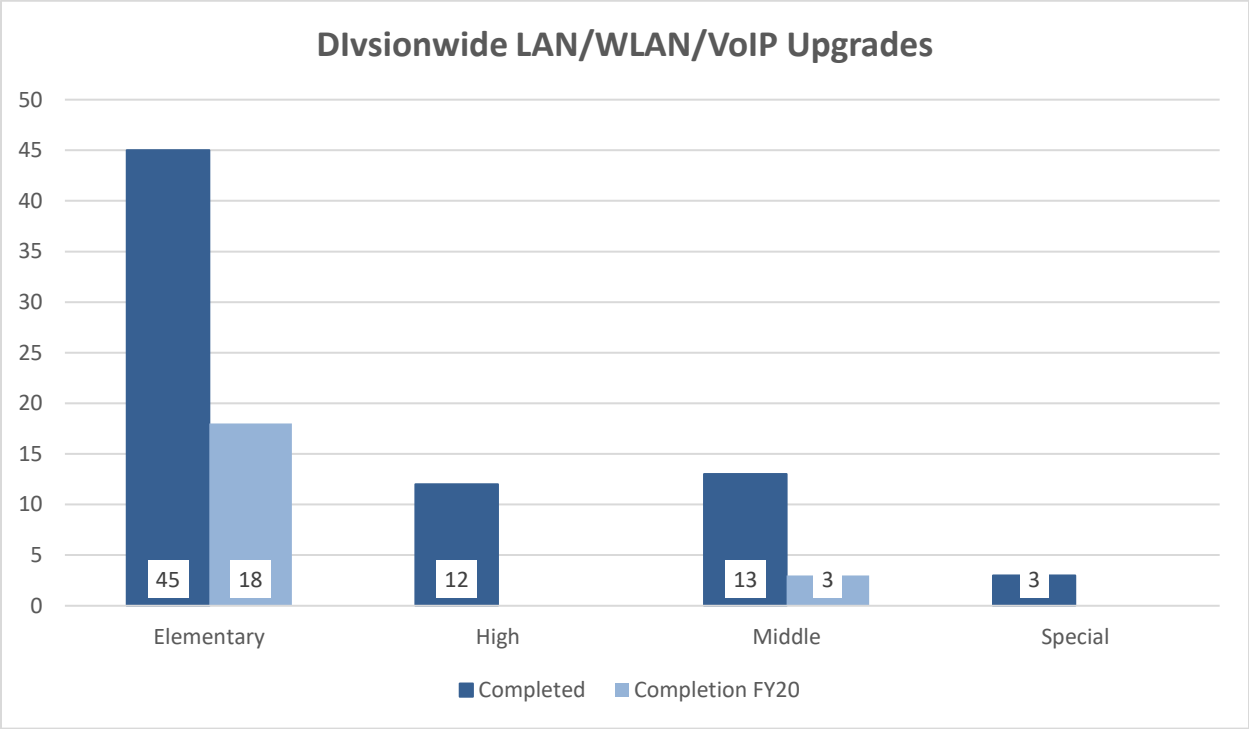
VoIP/LAN/WLAN School Upgrades and Replacements – listed in order of priority						
	FY20	FY21	FY22	FY23	FY24	FY25
Bandwidth Increase (Iron Mountain/IHC)		\$100,000* 10Gb	\$200,000* 10Gb			
Network Infrastructure Upgrades	\$2,394,000	\$6,350,000	\$6,025,000	\$6,225,000	\$6,050,000	\$6,000,000
Maintain Wireless Trailers	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000

VoIP/LAN/WLAN School Upgrades and Replacements – listed in order of priority						
	FY 20	FY21	FY22	FY23	FY24	FY25
Replacing UPS in LAN Closets	\$500,000	\$500,000				
**5G Build Out			TBD			
Upgrade Existing VoIP Equipment		\$432,892				
Total	\$3,169,000	\$7,557,892	\$6,300,000	\$6,500,000	\$6,325,000	\$6,275,000

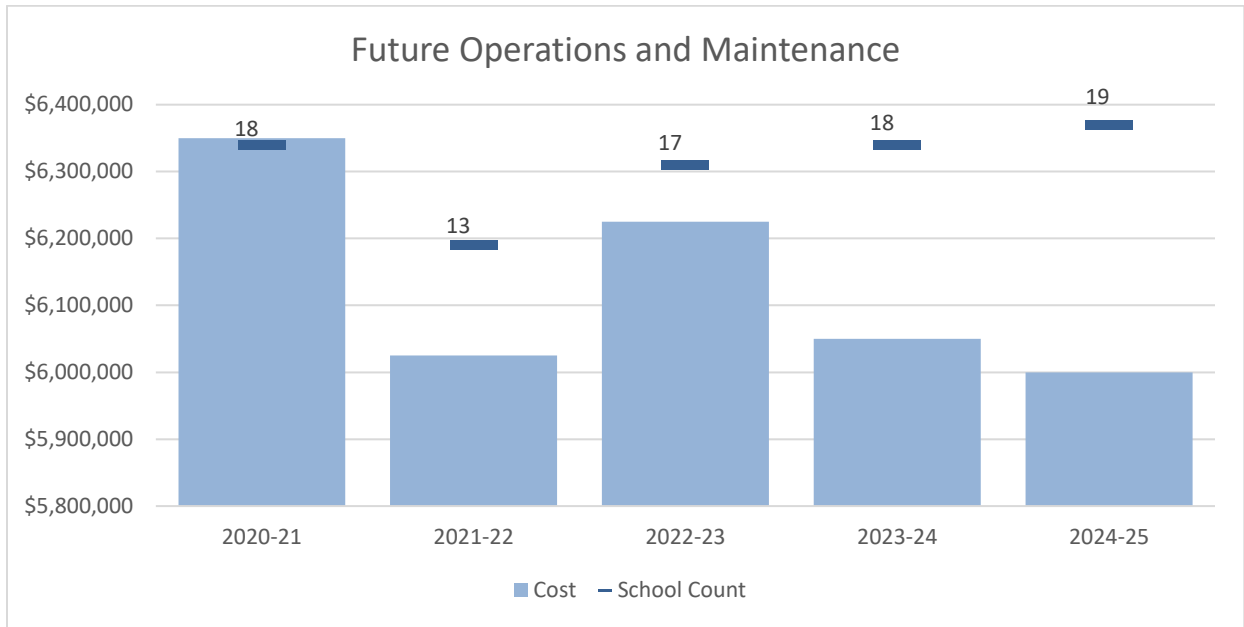
Plan Scope

LAN, WLAN, and VoIP Upgrades

The following chart shows Divisionwide LAN/WLAN/VoIP upgrades that have been completed and are in progress for FY20. **At the end of FY20, all school’s infrastructure Divisionwide will have been upgraded.**



All schools will be completed by FY20. FY21 LAN/WLAN/VoIP operations and maintenance will return to the initial schools that were upgraded over six years ago.



Plan Overview: Security 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. The PWCS network is FERPA, CIPA and COPPA compliant ensuring the protection of student and staff data and their safety in our online environment.

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 /Replacements						
	FY20	FY21	FY22	FY23	FY24	FY25
Firewall Upgrades to Support Increased Bandwidth		\$400,000			\$400,000	
Replacing Reverse Proxies (load balancer)	\$40,000		\$40,000			\$40,000

Security Infrastructure /Replacements

	FY20	FY21	FY22	FY23	FY24	FY25
VPN Firewall Appliance	\$150,000					
KLC IPS	\$150,000					
Total	\$340,000	\$400,000	\$40,000	\$0	\$440,000	\$0

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 migrate current system to new servers and evaluate and implement a new enterprise resource planning system for greater functionality, efficiency, transparency, accountability and information access. The Office of Human Resources will implement a new hiring a personnel management that aligns with state and local requirements.

The plan will meet the following objectives:

- Replace the legacy Advantage financial system.
- Implement a human resources management system for hiring.

Divisionwide New Investments					
	FY21	FY22	FY23	FY24	FY25
Financial/HR Payroll Upgrade	\$2,750,000	\$2,750,000	\$2,750,000		
Learning Management System	\$737,330				
Help Desk Call/Ticket System	\$161,640				
Content Management System (Website)	\$300,000	\$100,000	\$100,000		
*Interactive Display Refresh	\$963,375	\$963,375	\$963,375	\$963,375	\$963,375
Total	\$4,902,345	\$3,813,375	\$3,813,375	\$963,375	\$963,375

**A refresh of all projector based interactive displays.*

Plan Overview:

Currently, our limited access to high-quality, authentic resources is negatively impacting our students, hindering their opportunities to develop and apply twenty-first century skills, including communication, collaboration, critical thinking, and creativity. To ensure all PWCS students have equitable access to quality, authentic resources at home and school, implementing a four-year digital equity initiative would positively impact and prepare our students for their futures. The digital equity initiative goal is to move toward one-to-one devices in grades 3-12, and one device to three students in grades K-2. This initiative would not only positively impact our economically disadvantaged students, but will help bridge the digital inequities across the Division. Implementing equitable digital access to technology would also empower teachers to design authentic learning experiences that best serve all students, especially students with disabilities and students with limited English proficiency.

Implementation Plan:

FY20

1. Pilot a Learning Management System at Colgan, Patriot and Virtual Prince William.
2. Choose 5 pilot schools for Digital Equity Pilot – Spring 2020
3. 5 pilot schools receive professional development – Spring & Summer 2020
4. Choose a device – Spring 2020
5. Purchase devices – Spring 2020

FY21

1. Deploy Learning Management System Divisionwide – Fall 2020
2. Implement Digital Equity Pilot at 6 identified schools
3. Ongoing professional development for pilot schools
4. Begin professional development for middle schools
5. Include funding for all middle schools for deployment by August 2021

FY22

1. Fund all high schools for Digital Equity Project – implement August 2022

FY23

1. Fund all elementary schools for Digital Equity – implement August 2023

Digital Equity					
	FY20	FY21	FY22	FY23	FY24
*August 2020 Pilot School Rollout	\$2,429,500				
*Fall 2020 Pilot School Rollout		\$2,125,800			
*August 2021 Middle School Rollout		\$2,125,800			
*August 2022 Rollout			\$6,216,400		
*August 2023 Rollout				\$5,823,550	
*August 2024 Rollout					\$2,936,199
Total	\$2,429,500	\$4,251,601	\$6,216,400	\$5,823,550	\$2,936,199

**Notes: Includes refresh for staff computers.*

Plan Implementation Costs Overall

Comprehensive TIP						
	FY20	FY21	FY22	FY23	FY24	FY25
Data Center/School Upgrades/Replacements	\$1,470,000	\$195,000	\$595,000	\$645,000	\$195,000	\$870,000
VoIP/LAN/WLAN School Upgrades and Replacements	\$3,169,000	\$7,557,892	\$6,300,000	\$6,500,000	\$6,325,000	\$6,275,000
Security/Infrastructure Upgrades/Replacements	\$340,000	\$400,000	\$40,000	\$0	\$440,000	\$0
Divisionwide Enterprise Systems	\$4,902,345	\$3,813,375	\$3,813,375	\$963,375	\$963,375	\$963,375
Digital Equity	\$2,429,500	\$4,251,601	\$6,216,400	\$5,823,550	\$5,823,550	\$2,936,199
Projected Estimated Totals	\$12,310,845	\$16,217,868	\$16,964,775	\$13,931,925	\$13,746,925	\$11,044,574

Projected Local, State and Federal Revenue

Projected Revenue						
	FY20	FY21	FY22	FY23	FY24	FY25
PWCS Five-Year Budget* Plan	\$5,094,300	\$5,500,000	\$6,000,000	\$6,500,000	\$7,000,000	\$7,500,000
Federal E-Rate, Type II Modernization*	\$1,182,387	\$2,363,518	-	-	-	-
VPSA State Technology Incentive Program*	\$2,416,000	\$2,494,000	\$2,494,000	\$2,494,000	\$2,494,000	\$2,494,000
Local Cable Franchise Fees*	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
LOCAL, STATE, AND FEDERAL TOTALS	\$9,092,687	\$10,757,518	\$8,894,000	\$9,394,000	\$9,894,000	\$10,394,000
Comprehensive Estimated Tip Totals	\$12,310,845	\$16,217,868	\$16,964,775	\$13,931,925	\$13,746,925	\$11,044,574
PROJECTED REVENUE (+/-) VS. PLAN	-\$3,218,158	-\$5,460,350	-\$8,070,755	-\$4,537,925	-\$3,852,925	-\$650,574

**Notes: 1. These revenue sources have restriction on the technology and service that can be purchased. For FY21-FY24, E-Rate Type II revenue is not included pending available funding from the Federal Government.*

2. These revenue sources do not include year-end funding that has supplemented the TIP over recent years.