

# MUNICIPAL AUDITING REPORT CITY OF ROANOKE



## **RCPS Capital Improvement Plan** **November 2, 2022**

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Audit Plan Number: 22-107

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## AUDIT OBJECTIVES & CONCLUSIONS

1. Is the condition of each major capital asset consistently evaluated and documented annually?

**Yes with Qualifications** – Heating, Ventilation and Air Conditioning (HVAC), Playgrounds, Athletic Facilities, Paving and Roofing at each school facility were itemized and rated as to current condition on a series of spreadsheets. Management and staff have been developing these spreadsheets over the last 18 months; some data, such as year of installation, could not be determined for all assets. The Physical Plants Department is evaluating asset management systems that can provide a more complete inventory of assets and related data such as warranty periods and work order history.

2. Are enrollment capacities for each school consistently and accurately determined based on current Virginia Uniform Building Code and Virginia Department of Education (VDOE) guidelines?

**No** – Management had architects recalculate both constructed and useable capacities over the summer of 2022. The capacities changed significantly from those historically reported in the Annual Comprehensive Financial Reports. After additional consultation with the VDOE during the audit, management will be computing useable capacities based on the number of classrooms, input from Principals on how spaces are utilized, and pupil-to-teacher ratios allowed under Virginia’s Standards of Quality.

3. Do Principals and site-based staff provide input on how existing space could be renovated / reconfigured to more effectively and efficiently support instructional needs?

**Yes** – Principals have sufficient opportunities to communicate existing space, building, and capacity needs to decision makers for capital improvement planning.

## END OF AUDIT OBJECTIVES & CONCLUSIONS

## BACKGROUND

Roanoke City Public Schools' Strategic Plan is the basis for the Capital Improvement Plan (CIP) and guides all decisions. The primary business objective in relation to the CIP is for the Division to be good stewards of the budget, the environment, and in providing equitable and universal access to safe, healthy, and secure school and work facilities.

The Division recently changed its process for prioritizing capital improvements. The new process utilizes a scoring matrix based on the following indicators:

### Level 1

- Equity: equitable outcomes, access to programs and projects, and a reduction of the adverse impacts on marginalized students, families, and community at large
- Health & Safety: focuses on student, staff, and community's existing health and safety concerns
- Existing Conditions:
  - Initial concern: needs attention within five or more years
  - Emerging concern: needs attention within three years
  - Substantial concern: needs immediate attention or within one year
    - Required Work: needed for corrective action or compliance
    - Economy: focuses on the associated costs in three levels:
      - Substantially above budget
      - At or above budget
      - Below budget

### Level 2

- Environment: focuses on preserving and conserving the environment
- Improvement: upgrades school plant or environment, educational program, lives of students, staff, and community
- Collaboration: opportunities for collaboration among community partners
- Shovel Ready: preparedness and ability to start when project is approved

Level 1 indicators use a one (1) to three (3) point scale. The equity score is multiplied by 2.

Level 2 indicators use a Yes / No scale that equates to one (1) or zero (0) points.

The maximum score for any one project on the CIP Equity Scorecard is 22 points. Based on the score, each project is assigned a project recommendation level:

- Level 1 projects are those that received the highest score and are mandatory
- Level 2 projects are recommended for funding
- Level 3 projects are the lowest priority for funding

The CIP process incorporates many different data points:

- Asset condition as assessed by Lead Technicians in each trade
- School Capacity Reports
- VDOE At-A-Glance Reports
- CIP funding sources (Debt and Fund Balance)

All data is provided to the Courageous Leadership Subcommittee for use in evaluating and scoring capital projects using the CIP Equity Scorecard Template.

The Fixed Asset Report provided by Physical Plants lists 34 buildings with an average age of 41 years:

Elementary	Date Built	Age	Middle	Date Built	Age
Crystal Spring	7/1/1922	100	James Breckinridge	6/30/1998	24
Fairview	7/1/1961	61	James Madison	7/1/1969	53
Fallon Park	2/20/2022	0	John Fishwick	6/30/1998	24
Fishburn	7/1/1959	63	Lucy Addison	6/30/2001	21
Garden City	7/1/1950	72	Woodrow Wilson	6/30/1999	23
Grandin Court	7/1/1950	72	<b>High</b>	<b>Date Built</b>	
Highland Park	7/1/1988	34	Patrick Henry	7/1/2006	16
Hurt Park	7/1/1961	61	Patrick Henry (ROTEC)	6/30/2011	11
Lincoln Terrace	7/1/1958	64	Patrick Henry Football Stadium	6/30/2010	12
Monterey	7/1/1960	62	William Fleming	6/30/2009	13
Morningside	7/1/1993	29	William Fleming Football Stadium	6/30/2011	11
Preston Park	7/1/1952	70	<b>Academies</b>	<b>Date Built</b>	
RAMS	6/30/2007	15	Forest Park	7/1/1928	94
Round Hill	10/31/2016	5	Noel C. Taylor	7/1/1975	47
Virginia Heights	7/1/1992	30	Roanoke Valley Governors School	6/1/1988	34
Wasena	6/30/1997	25	<b>Administration</b>	<b>Date Built</b>	
Westside	7/1/1959	63	Central Administration Building	7/1/1928	94
			Transportation (HS Bus Shelters)	6/30/2010	12
			Transportation Operations (Barnes Ave)	6/30/2005	17
			William Ruffner Operations Center	7/1/1970	52

If the schools were closed for major renovations or rebuilt, this is reflected in the built dates.

The report did not include the recently completed athletic fieldhouse at Patrick Henry or the recently acquired Roanoke Times Building on Campbell Avenue.

### Key Performance Indicators

Maintenance primarily gauges capital asset performance based on work order activity and regular inspections. Data on the age and warranty periods for assets are also tracked and evaluated. Management utilizes enrollment projections from the Weldon Cooper Center for Public Service to identify schools that may need additional capacity over the five year planning horizon for CIP. The Division's goal is to have a dashboard where employees and the public can easily view and understand all of the data used in the capital improvement planning process.

In accordance with the performance agreement with TRANE, the Virginia Department of Mines, Minerals and Energy evaluates utility cost savings realized from more efficient lighting, cooling and heating systems installed under the agreement.

### Risk Assessment

Management has developed several spreadsheets and is working to populate all of the historical data necessary to regularly evaluate the risk of capital asset performance declining over a 10 year planning horizon. The Division also engages third parties to routinely inspect and clean HVAC equipment, and to replace HVAC filters on a recommended schedule.

### Budget and Finance Highlights

Chris Perkins, Chief Operations Officer, oversees the Capital Improvement Plan. Other key stakeholders assist in the development and maintenance of the CIP each year including the following:



Also reporting directly to the Chief of Physical Plants, are the following lead "trade staff" who

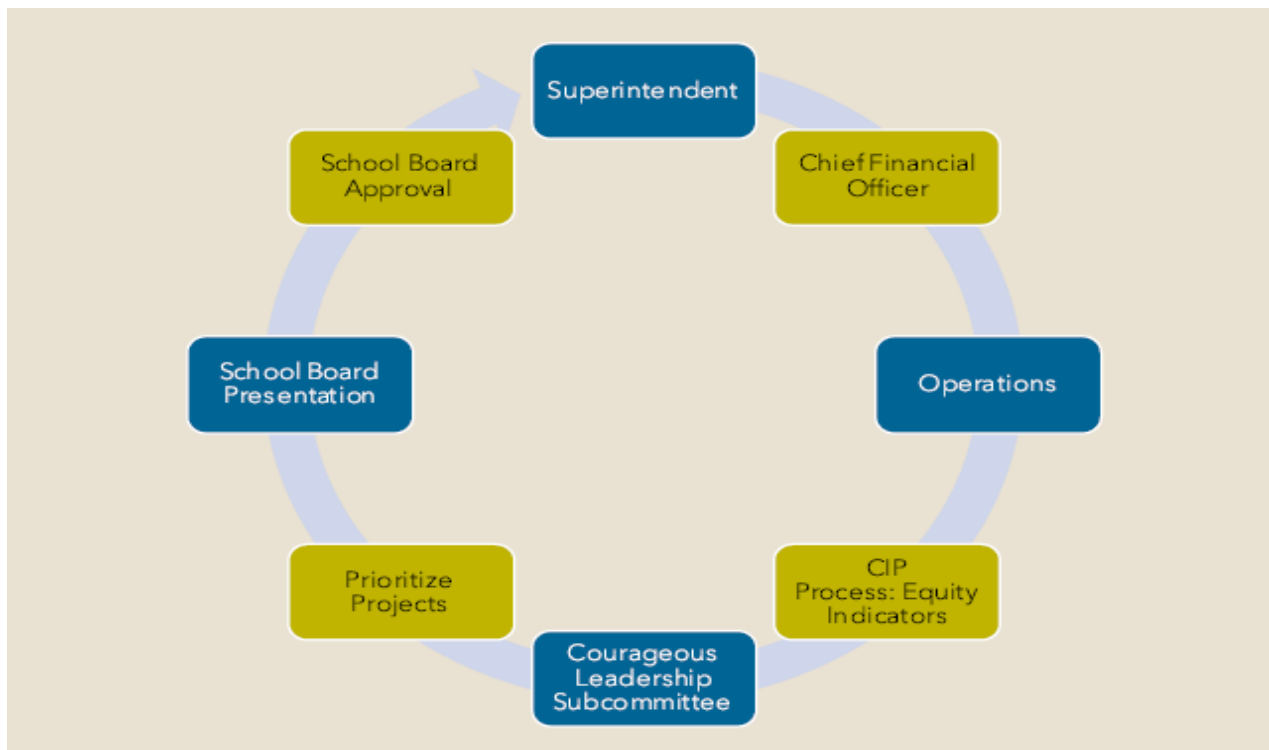
play a key role in monitoring third party performance and updating asset documentation as needed:

- HVAC and Roofing: Melvin Jordan, Facilities Maintenance Worker
- Playgrounds and Athletics Facilities: Chad Maddox, Assistant Supervisor of Grounds
- Paving: Steve Yuille, Supervisor of Grounds

School Board Policy DAB – Equity Policy, establishes an Equity Task Force to develop the Equity Plan and advise the School Board on equity issues within the school division. Membership on the task force includes the Superintendent, principals, teachers, parents, students, and community representatives. The task force created five (5) subcommittees, one of which is the Courageous Leadership Subcommittee.

The Courageous Leadership Subcommittee includes teachers, parents, students, and department representatives. The committee is responsible for scoring all capital improvement projects recommended by the Physical Plants Department using the CIP Equity Scorecard Template. The subcommittee is charged with making inequities visible, normalizing conversations about racism and inequity, disrupting practices that perpetuate inequities, and supporting efforts to address equity and racism.

RCPS' approach to CIP planning is depicted on the following graphic:



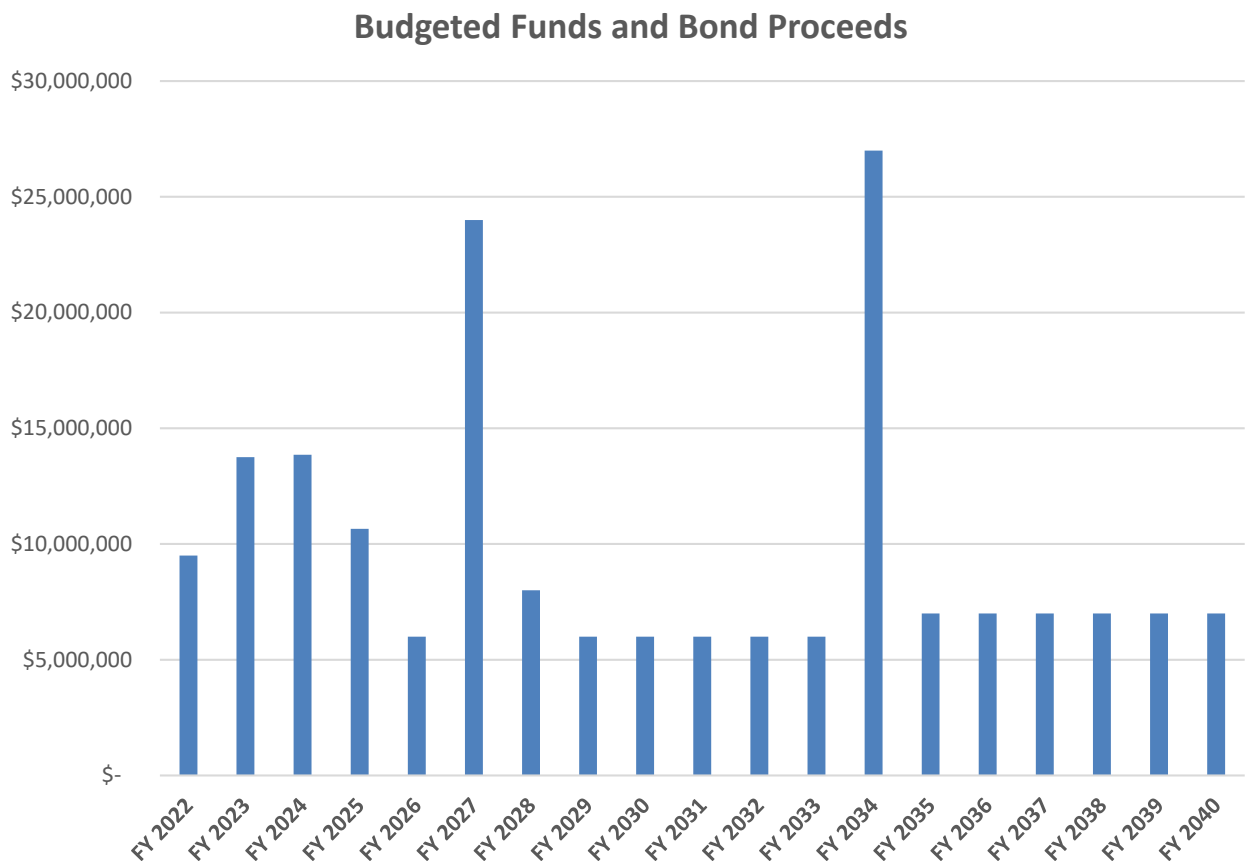
Funding for Capital Improvements

In Virginia, School Divisions do not have the authority to levy taxes or issue debt. School funding comes from federal, state and local governments. The City of Roanoke transfers 40% of local taxes to the School Division to support operations and capital projects. The City typically allots \$5,000,000 of its overall debt capacity to the Division annually for capital improvements. Repayment of the debt is the responsibility of the School Division. Pandemic relief funds from the federal government (ESSER) can also be used on qualifying projects, such as updating or replacing HVAC systems.

At the November 9, 2021 meeting, the School Board approved the establishment of a Capital Project Fund. The purpose of the fund is to account for the acquisition or construction of major capital facilities paid with cash on hand rather than borrowed money.

The Capital Projects Fund will be used to pay any portion of projects not intended to be paid with borrowed funds. The goal is to maintain a steady budget of \$18 million for these obligations in all future years. RCPS will determine annually whether additional funds are available to be added to the Capital Fund (as permitted by Fund Balance Policy).

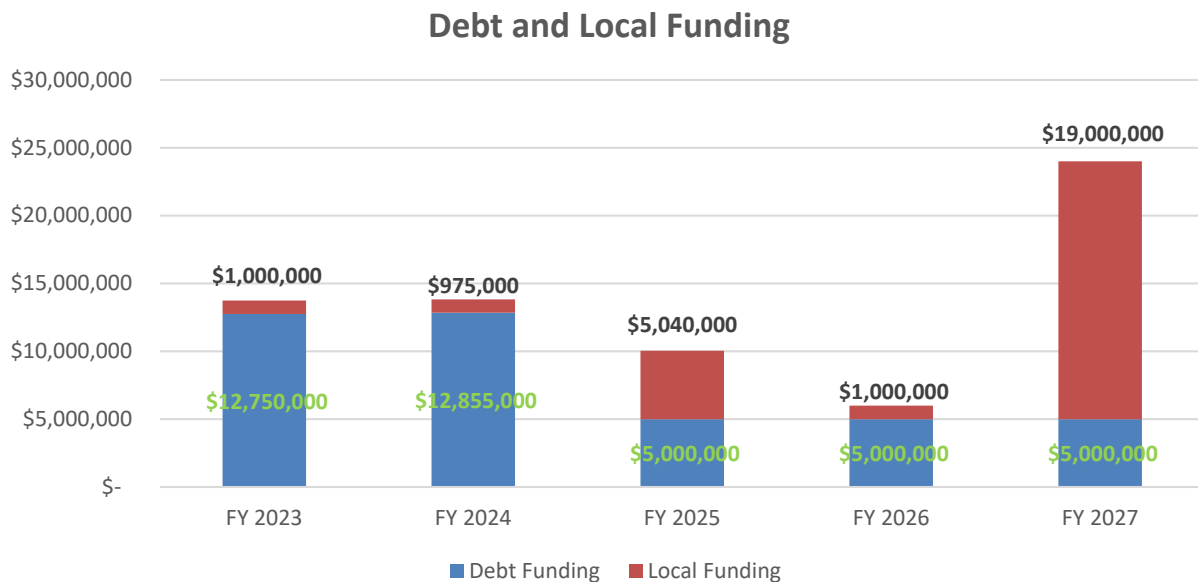
Projected capital projects spending using both cash funds and bond proceeds is as follows:





The significant increase for FY 2027 is for the Westside Elementary School renovation or replacement, and for FY 2034, the next major renovation or replacement, which is not yet finalized.

RCPS projects debt and local funding for capital projects over the next five (5) fiscal years as follows:

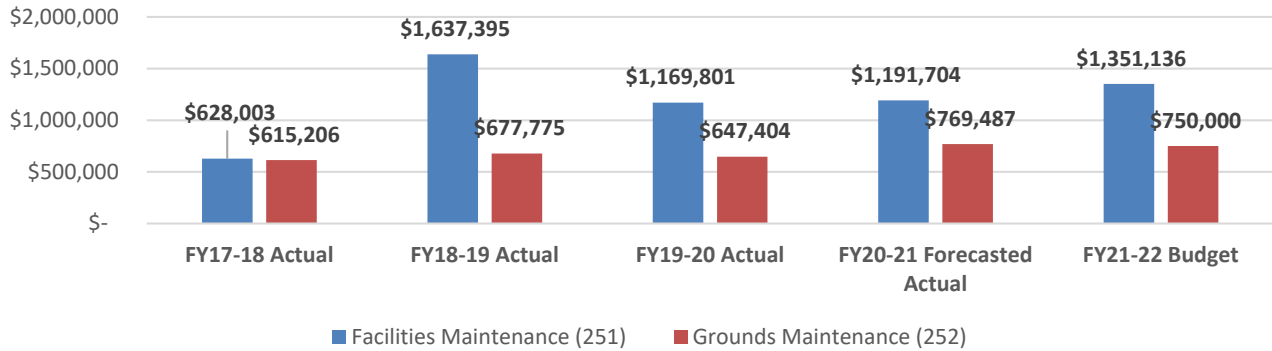


The Division plans to use \$27,799,290 in ESSER federal funds during FY 2022-2023 as follows:

- To convert William Ruffner to a career and technical education center
- For an addition to Breckinridge Middle School
- For 14 designated HVAC additions / replacements.

Expenditures for painting, roofing and building repairs, architectural fees, electrical work, auto and glass work, chiller maintenance and work order software support are budgeted as operating expenses. Other professional services such as sidewalk and parking lot repairs, engineering services, lawn care, and landscaping are budgeted in the Grounds Maintenance operating budget. The Facilities Maintenance and Grounds Maintenance Line Item Budgets for FY 2022 show the following expenditures:

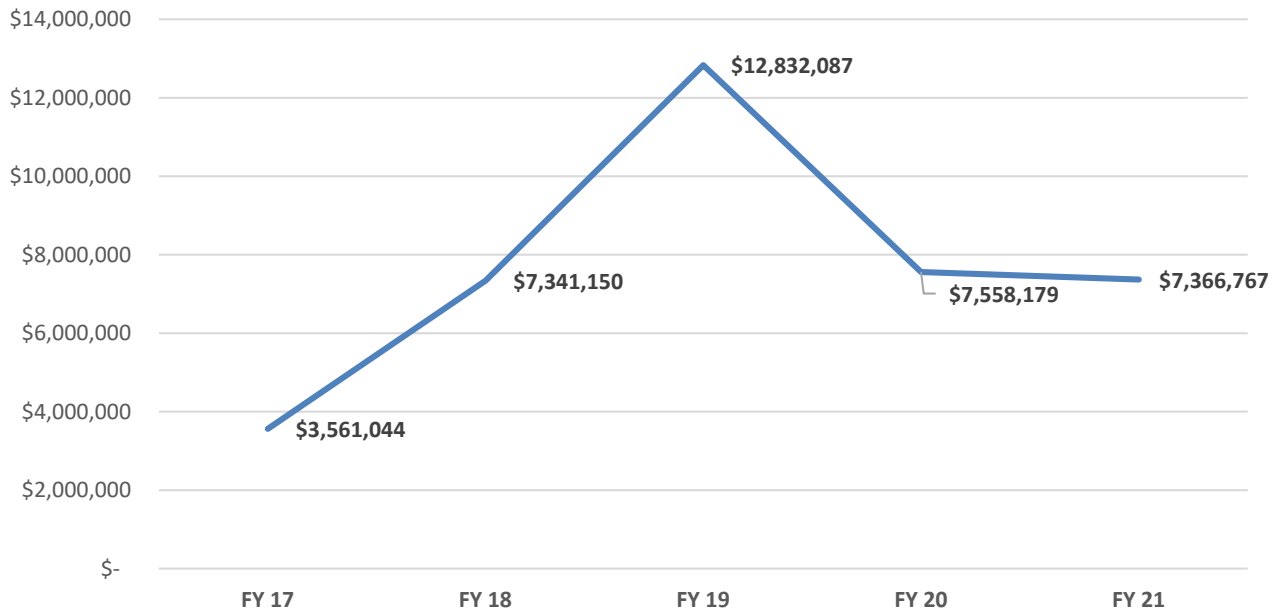
### Professional Services



### Capital Spending Trend

All debt issued by the City, including that allocated to the Schools, is reported as a liability on the City’s financial statements. As an offset to that liability, the School Division’s buildings are entered as an asset on the City’s financial statements. Fund 31 on the City’s books is used to track the School’s capital expenditures. Fund 31 reports the following for the last five (5) years:

### Capital Expenditures



The increase in FY 2019 was primarily due to Fallon Park Phase I and II expansion. RCPS spent just over \$5.8 million on each phase of the project that year.

The School Division uses Fund 312, Capital Project Fund, on its books to track capital spending

funded with cash on hand. In November of 2021, \$16.5 million in fund balance was transferred to this fund. As of March 28<sup>th</sup> almost \$6 million had been used to purchase and renovate the former Roanoke Times building on Campbell Avenue.

As noted earlier, ESSER pandemic funding can be used for capital expenditures such as updating or replacing HVAC systems. The Schedule of Expenditures of Federal Awards (SEFA) in the FY 2021 Annual Comprehensive Financial Report shows that the Division expended \$8,137,038 in ESSER funding that year.

### Contracts with Third Parties

RCPS contracts with seven (7) architectural firms for general on-call registered design professional services. Each firm is responsible for specifically assigned schools. In August 2021, RCPS contracted with Cooperative Strategies, LLC for school redistricting consulting services. The contract seeks to utilize expert advice and assistance on potential redistricting of the schools to help with overcrowding issues.

In September 2019, RCPS contracted with TRANE U.S. Inc. (TRANE) for an energy performance project, which replaced heating, ventilation and air conditioning (HVAC) units and retrofitted old lighting with LED fixtures, along with other energy efficiency measures. Prior to execution of the contract, RCPS hired TRANE to study energy systems and implement upgrades. TRANE was hired through a cooperative procurement process by using contracts competitively bid by other public entities. The project is supposed to guarantee RCPS a savings of \$1.3 million annually over the next 15 years, requiring TRANE to pay the difference if savings do not meet the \$1.3 million threshold. TRANE managed the equipment installation and will monitor usage over the life of the project to ensure annual savings guarantees are met. Fallon Park Elementary School was not included in the scope of the project as the new school was being built, and was just fully completed in February 2022.

### Significant Laws and Regulations

The *Virginia Construction Code (Part I of the Virginia Uniform Statewide Building Code)* regulates the general health, safety, and welfare of building occupants of public educational facilities in Virginia. The code does not offer any design guidance to school planners and educators on how to meet their program needs.

The Americans with Disabilities Act (ADA) specifies accessibility requirements for public school sites and buildings, as well as all educational programs, activities and services offered.

Various requirements contained in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* and in the *Standards of Quality*, such as required program offerings, pupil-teacher ratios/maximum class sizes, and administrative staffing, provide minimum

standards for school facilities design.

*Guidelines for School Facilities in Virginia's Public Schools*, published by the VDOE in 2021, provides detailed guidance for planning and designing public school facilities. The guidelines define the minimum standards that schools in Virginia should meet, and the recommendations contained therein should be considered when planning school capital projects.

#### Significant Internal / External Reporting

The *Capital Improvement Plan* is updated annually and submitted for School Board approval in February. The CIP for FY2023 thru 2027 was approved by the School Board on February 8, 2022.

Individual projects for renovation, additions and new construction are submitted to the Virginia Department of Education (VDOE) for review and approval. The VDOE reviews all projects submitted by school divisions across the State, and questions any costs or square footage that looks significantly out of line.

#### Key Information Systems

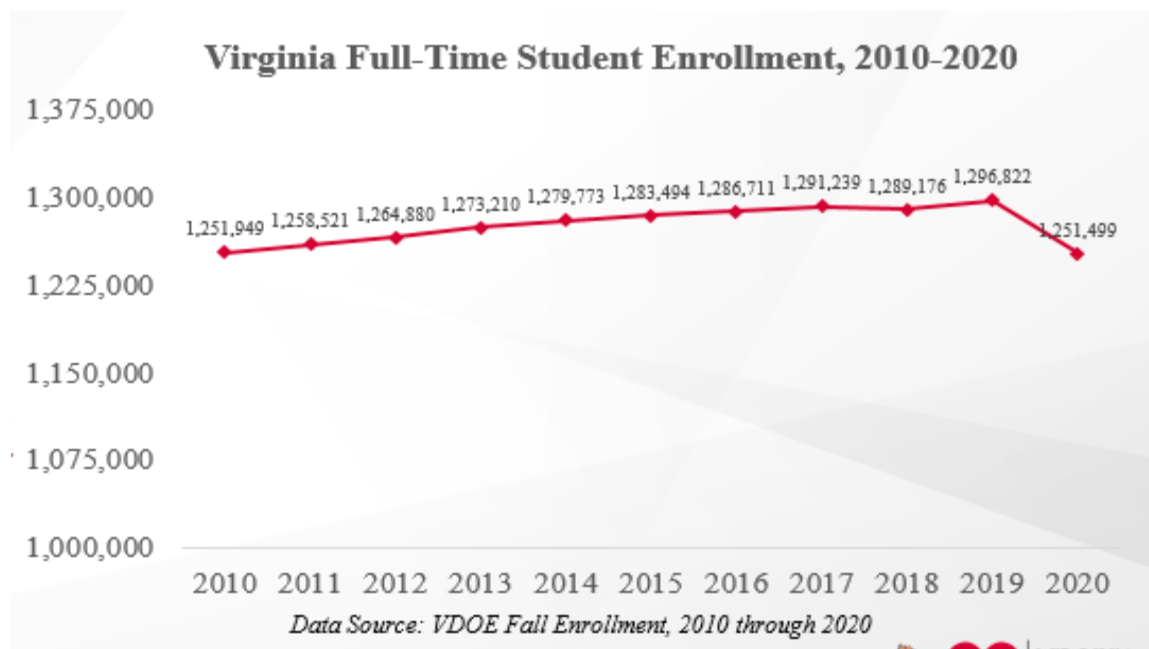
Keystone is the financial system used for processing all payments, whether to outside vendors or to internal personnel. The system houses financial information and records, including purchase orders, invoices, checks, and change order documentation.

Synergy is the Student Information System used to manage student records, including student identification numbers, addresses, grades, and test scores. Student enrollment can be pulled in real time from the system, as well as enrollment numbers from prior years.

School Dude is a cloud-based system used for facilities work order requests. The data include location, trade involved, a description of the issue, and actual completion date.

#### Enrollment Trends

The VDOE's *Needs and Conditions of Virginia Public School Buildings and Virginia's School Facilities Guidelines* presentation in September 2021 showed enrollment in the State's public schools increased 3.6% from 2010 to 2019. Enrollment dropped in 2020 to just below 2010's enrollment due to the pandemic:

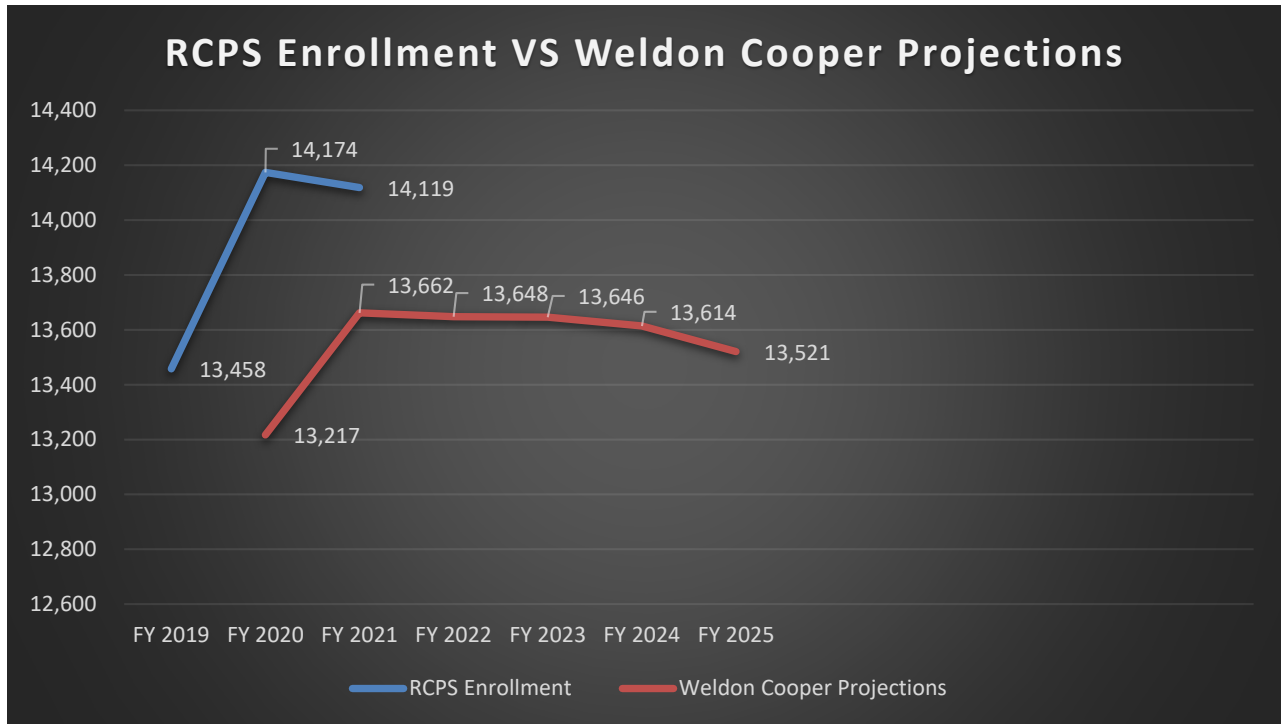


The presentation projects 4% growth by 2026, however; the Western Virginia region projects a 6.78% decrease:

Region	Percent Enrollment Change by 2026
1: Central Virginia	5.84%
2: Tidewater	1.43%
3: Northern Neck (including Fredericksburg)	11.08%
4: Northern Virginia	7.94%
5: Valley	3.01%
6: Western Virginia	-6.78%
7: Southwest	-10.01%
8: Southside	-7.40%
<b>Virginia</b>	<b>4.03%</b>

Enrollment projections unlikely to include impacts of COVID-19  
 Data Source: School Construction Survey, 2021

RCPS uses enrollment projections from Weldon Cooper Center for Public Service as the basis for planning. Weldon Cooper projects enrollment for the next five (5) years, based on the grade-progression ratio method. The projections use birth data, and historical and current fall membership counts. The most recent projections (March 2021) were for fall enrollment in 2020 through 2025. Actual enrollment data for RCPS was more than projected to date:



**Student Capacity**

The VDOE periodically inventories school buildings in response to studies or legislative inquiries. Data was most recently collected in 2021 for the Commission on School Construction and Modernization (128 of 132 divisions reporting data for 97% of school buildings).

Divisions reported 40.5% of school buildings currently at or above capacity and an additional 29.4% nearing capacity:

Capacity Level	Number of Schools	Percent of Schools
Above Capacity (100% or more of capacity)	239	13.65%
At Capacity (85 to 99% of capacity)	469	26.80%
Nearing Capacity (70 to 84% capacity)	515	29.42%

*Capacity is calculated by dividing the serving student enrollment count with the student building capacity count  
Data Source: VDOE School/Building Inventory, 2021*

RCPS publishes student capacity on Table 21 in the Annual Comprehensive Financial Report. During audit planning, we requested the most recent Table 21 data available, which was dated October 26, 2021 (after the FY 2021 published annual report). The data had recently been updated based on an architectural review to validate the number of classrooms and student capacities. The data showed the following schools were at more than 100% of constructed and

/ or useable capacity as of 10/26/21:

School	Constructed Student Capacity	Useable Student Capacity	Enrollment FY2020-21	% of Constructed Capacity	% of Useable Capacity
Preston Park Elementary	700	474	518	74%	109%
Round Hill Elementary	650	720	763	117%	106%
Breckinridge Middle	775	630	691	89%	110%
Patrick Henry High	2,059	1,850	2050	100%	111%
William Fleming High	2,100	1,850	1856	88%	100%
RVGS	160	275	268	168%	97%

We inquired how Round Hill Elementary and RVGS could have more current useable capacity than constructed student capacity. The Chief of Physical Plants believed the numbers could have been transposed and asked to have the architect review this in detail.

The data also showed the following schools were at 60 % or less of constructed and / or useable capacity as of 10/26/21:

School	Constructed Student Capacity	Useable Student Capacity	Enrollment FY2020-21	% of Constructed Capacity	% of Useable Capacity
Fisburn Park Elementary	600	480	283	47%	59%
Garden City Elementary	575	456	286	50%	63%
Highland Park Elementary	700	456	381	54%	84%
Hurt Park Elementary	600	384	345	58%	90%
Lincoln Terrace Elementary	525	360	290	55%	81%
Morningside Elementary	525	312	263	50%	84%
RAMS Elementary	750	530	394	53%	74%
Virginia Heights Elementary	650	332	292	45%	88%
Wasena Elementary	400	288	225	56%	78%
Addison Middle	1,075	720	602	56%	84%

When we compared useable student capacity to constructed student capacity to determine how much of the constructed space at each school is currently utilized, the data showed on average, elementary schools use approximately 77% of constructed space, middle schools use 93% of constructed space, and high schools use 89% of constructed space. As of October 2021, the Division was reporting that the following schools had more useable capacity than constructed capacity, which is an indication of inaccurate data:

- Round Hill Elementary School (111%)
- John Fishwick Middle School (126%)

- James Madison Middle School (106%)
- Roanoke Valley Governor's School (172%)

Based on these indications of data quality issues, the Chief of Physical Plants instructed each architect to re-evaluate constructed and useable capacities to coincide with the building code and VDOE guidelines.

**END OF BACKGROUND**



**OBJECTIVE 1: Major Capital Asset Condition Assessment****Objective:**

Is the condition of each major capital asset consistently evaluated and documented annually?

Yes with Qualifications

**Scope:**

We reviewed processes in place to track and monitor the condition of the following major capital assets as of June 30, 2022:

- Heating, Ventilation, and Air Condition (HVAC)
- Playgrounds
- Athletics
- Paving
- Roofing

We analyzed data from each major capital asset spreadsheet for insights on how assets are inventoried and monitored over time. Our analysis related to athletic facilities was limited as the spreadsheet is incomplete and lists only 21 facilities thought to be most in need of repairs or replacement.

We reconciled the capital asset spreadsheet data to the CIP Equity Scorecards to verify that asset conditions were accurately reflected in the scoring used to develop the Capital Improvement Plan.

We reviewed work order activity for each major asset category and school building for fiscal years 2021 and 2022.

**Results:**

The Physical Plants Department tracks repairs, renovations and replacements of capital assets on spreadsheets. For each craft, the department assigns a lead technician as the capital asset coordinator responsible for maintaining their craft's capital assets spreadsheet. These spreadsheets are on the network drive and accessible to employees in the Physical Plants Department, the Information Technology Department, and the Finance Department.

In early fall, the Chief of Physical Plants meets with each capital asset coordinator individually to review the spreadsheets and identify priorities. The priority rankings are based on key metrics for each type of capital asset. The Chief of Physical plants provides the rankings and capital

asset spreadsheets to the Chief Operations Officer for incorporation into the CIP equity scorecard process.

### Heating, Ventilation and Air Conditioning (HVAC)

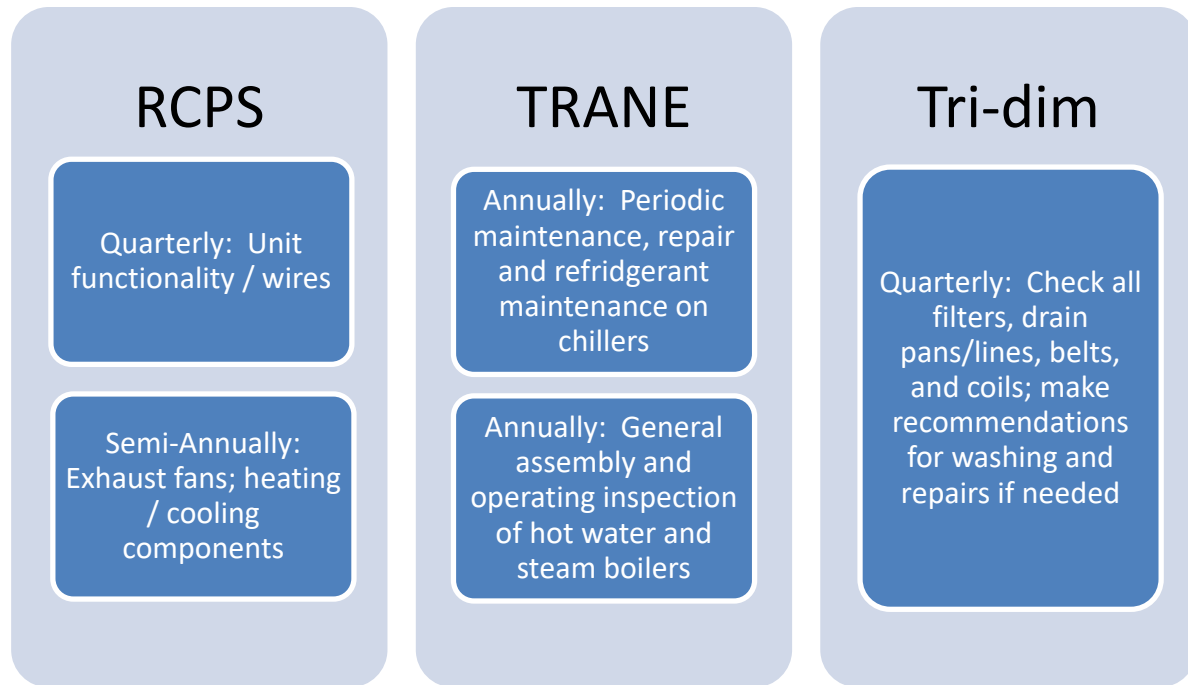
RCPS entered into an energy performance contract with TRANE in 2019, which provided for upgrades to heating and cooling systems and controls, replacement of inefficient lighting and water heating systems, and building envelope improvements across all buildings except for Fallon Park elementary, which was being constructed at that time. As part of the contracting process, TRANE surveyed the Division's buildings, identifying all major HVAC components and documenting their conditions in the HVAC spreadsheet. The Physical Plants Department maintains the spreadsheet based on work reported by TRANE and the Coordinator's own observations during site visits. TRANE plays a significant and ongoing role in assessing the condition and performance of the Division's major HVAC assets. The Physical Plants department coordinates with TRANE to ensure the data on the HVAC spreadsheet is up-to-date.

The HVAC spreadsheet captures the following data:

- Asset type, model year, life expectancy, location and notes on condition
- Maintenance and Capital Program Department priority rankings
- High-level description of upgrades made at each elementary, middle and high school
- High-level description of upgrades made at administrative / operational locations
- Detailed description of components, including pictures, for both high schools, 4 of the 5 middle schools, and 2 elementary schools

The Physical Plants Administrative Assistant, a former TRANE employee, is currently gathering information on minor HVAC units, including warranties, life expectancies, serial numbers, location, and install dates. The work order system (School Dude) is not an asset management system and does not track this type of information.

As with any major asset, inspection and preventive maintenance is crucial to the performance and longevity of the equipment. HVAC units are inspected regularly throughout the year to help ensure components are in good working order:



RCPS inspections are documented on preventive maintenance (PM) work orders through School Dude. TRANE provides a Field Report to the Physical Plants Department to document the annual inspections of chillers and boilers. Tri-dim provides a Filter Change Report to RCPS upon completion of the work, which includes any recommendations regarding washing and repairs.

*Data Analysis*

As of June 30, 2022, almost half (45%) of the major HVAC components in the Division have been in operation ten (10) years or less:

Model Year	Volume	%
Before 1990	3	5%
1991-1995	0	0%
1996-2000	13	20%
2001-2005	14	21%
2006-2010	6	9%
2011-2015	8	12%
2016-2020	16	24%
2021 +	6	9%
	<u>66</u>	<u>100%</u>

Seventeen (17) HVAC components are currently in operation beyond their estimated useful life. Ten (10) of 17 are expected to be addressed through building renovations or equipment replacement plans:

Building	HVAC Equipment Type	Year Built	Life Expectancy	Action Year
Highland Park	RTUs	1988	18	2006
Administration (current)	Steam Boilers	1988	25	2013
James Breckinridge	RTUs	1996	18	2014
Woodrow Wilson	RTUs	1997	18	2015
Fishburn Park	RTUs	1998	18	2016
Lucy Addison	RTUs	1998	18	2016
Hurt Park	RTUs	1999	18	2017
William Ruffner	RTUs	1999	18	2017
Garden City	RTUs	2000	18	2018
Grandin Court	RTUs	2000	18	2018
Highland Park	Hot Water Boiler	1988	30	2018
Preston Park	RTUs	2000	18	2018
James Madison	RTUs	2000	18	2018
Lucy Addison	FCUs	1998	20	2018
Governor's School	RTUs	2000	18	2018
Fishburn Park	RTUs	2001	18	2019
ROTEC	RTU	2002	18	2020

One (1) planned replacement has significant estimated useful life remaining [William Fleming Chillers planned for 2022, six years earlier than estimated]. The chiller at William Fleming broke during the school year and the cost to repair it would have been as much as the replacement cost. RCPS rented a chiller to use at the high school until the summer, at which point it was replaced with a new unit.

The oldest HVAC component is a boiler installed in the Douglas Avenue Administration Building in 1988. Beginning in 1988, the data show no HVAC components were installed from 1989 through 1995, a seven (7) year stretch. One or more replacements occurred every year since 1996, with the exception of no HVAC activity during 2009 and 2010. Based purely on the assigned action year, 27% of the listed components are past due for replacement.

Forty (40) of the 66 components, or 61%, have an action year of 2026 or later.

Action Year	Volume	%
2006-2010	1	2%
2011-2015	3	5%
2016-2020	13	20%
2021-2025	9	14%
2026 or later	40	61%
	66	100%

### *HVAC Spreadsheet Review*

Only the HVAC major components are included on the HVAC spreadsheet (RTU's, DOA's, etc.). Each individual unit is not listed separately, as the model year will be the same for all units for a building. While RCPS performs maintenance and repairs on individual units as needed, when units need replacement, the school division overhauls the entire system at one time, rather than replacing each individual unit.

The HVAC spreadsheet includes data on 31 RCPS locations, but is missing data on units at Fallon Park, one unit at Highland Park, and the units at the new Administration Building on Campbell Avenue. Fallon Park Elementary was undergoing construction at the time the initial inventory was completed, and the Administration Building on Campbell Avenue had not yet been purchased by RCPS. The missing data on the DOA at Highland Park Elementary was an oversight by the TRANE technician, as they did not record the model year. The Chief of Physical Plants confirmed the unit would have the same model year as the other RTUs at the school.

We validated the HVAC data for all 15 RCPS locations in our sample agree to the TRANE Inventory. We also verified the Building Owners and Managers Association (BOMA) life expectancy included on the HVAC spreadsheet to the BOMA Preventive Maintenance Guidebook for all units sampled.

### *HVAC CIP Review*

Only one (1) HVAC project was included in the FY 2023-2027 CIP: Lincoln Terrace Elementary School. The rooftop units were built in 2003, with a life expectancy of 18 years, making the action year 2021. The CIP Equity Scorecard for this project reflects that current conditions merit the need to be replaced right away, noting there are fluctuations with heating and cooling throughout the building. The project is scheduled to be completed during FY 2023.

Four (4) other locations have HVAC components past their action year:

- Garden City
- Highland Park
- James Madison
- William Ruffner Operations Center

Units at William Ruffner Operations Center are currently under construction with completion anticipated in Summer 2023. The remaining three (3) locations are scheduled to be replaced according to the FY 2023-2027 CIP.

The Roanoke Technical Education Center (ROTEC) and Preston Park rooftop units are also past their action year. ROTEC is included in the FY 2028-2032 CIP for replacement, and construction of a new school for Preston Park Elementary is planned for FY 2026-2027.

The remaining locations with HVAC components past their action year include:

- Administration Building on Douglas Avenue – to be removed or replaced during the building's renovation into a welcome center in FY 2023
- Fishburn Park Elementary School RTUs
- Governor's School RTUs
- Grandin Court Elementary RTUs
- Transportation Building AC units

The Chief of Physical Plants noted while these units are also past their action year, they are performing well in comparison to other units. Our review of FY 2022 HVAC work orders for the buildings above (excluding the Administration building since there are plans for renovation), shows a relatively smaller volume of work orders for these buildings in comparison to buildings in their category. Due to financial constraints, RCPS cannot replace all HVAC units that are past their action year, and since these have been performing well, they have not been included in the most current CIP's.

### Playgrounds & Athletics

The Physical Plants Department tracks the following information on all RCPS playgrounds:

- School
- Playground description / type (i.e.; 2-5-year age group or 5-12-year age group)
- Installation year
- Condition (Below, Meets, or Exceeds Expectations)
- Open to the Public (Y/N)

The standard warranty on playground equipment is 20 years, which is the threshold utilized by RCPS. The Grounds Assistant Supervisor, who is a Certified Playground Safety Inspector, assesses playground conditions every four (4) months by visual detailed inspection. Critical factors in assessing playground condition include age, warranty, and use (wear and tear). He documents inspections in School Dude through preventive maintenance (PM) work orders.

The Grounds Assistant Supervisor also tracks the following information on athletic facilities considered to be most in need of renovation or replacement:

- School location
- Project description
- Project cost

- Condition of current facility (Below, Meets, or Exceeds Expectations)

Examples of facilities missing from the Athletics Facilities worksheet include:

- Gymnasium Bleachers
- Basketball Goals
- Practice Fields
- Softball / Baseball Fields

The Grounds Assistant Supervisor visually inspects all athletic facilities, including tracks, fields, basketball goals, and gymnasium bleachers every summer. He documents the inspection of basketball goals and bleachers through a PM work order in School Dude.

A qualified third party (Stadium Seating Inspection) performs a detailed inspection of both high school stadium exterior bleachers as required by the International Building Code (IBC) and International Code Council (ICC) 300. The vendor provides a report to the Chief of Physical Plants documenting the results of the inspection, along with a Bleacher Inspection Certificate to certify all structures are in satisfactory condition and all systems function properly as designed with any exceptions noted in the accompanying report. The August 24, 2021 reports for both high schools showed the stadiums to be in good condition and compliant with building code.

#### *Data Analysis*

Five (5) of 32 playgrounds, or 15% are 16 or more years old. Four (4) of the 5 are currently rated below expectations:

<b>Elementary School</b>	<b>Age (In Years)</b>
Crystal Spring	21
Fairview	16
Lincoln Terrace	23
Westside	21

The remaining 28 playgrounds are rated as either meets or exceeds expectations.

#### *Playground CIP Review*

We reviewed the replacement plans for playgrounds rated “below expectations:”

- Crystal Spring Elementary School’s oldest playground was scheduled for replacement in 2030. However, this replacement was initiated and completed during the course of our audit due to safety concerns.
- Fairview Elementary School’s playground replacement was completed during our audit.

- Lincoln Terrace Elementary School's older playground was replaced during our audit.
- Westside Elementary School is scheduled to have the older of two playgrounds replaced in FY 2025.

In reviewing the Capital Improvement Plan, we noted that Hurt Park Elementary School is scheduled to have a new playground for ages 2-5 installed in FY 2024, as it does not currently have a playground for this age group.

#### *Playground Spreadsheet Review*

We reviewed available playground records for a sample of eight (8) schools. The records for playgrounds installed in 2012 and prior are limited, with vendors confirming installations dates via emails. Records for playgrounds installed after 2012 include purchase orders and proposals that list specifications and more detailed information. We were able to verify the installation dates and the age of playgrounds as reported on the spreadsheet.

We also physically observed the playgrounds for six (6) of 8 locations sampled. The condition ratings assigned on the spreadsheet were consistent with our impressions from our limited visual inspections.

#### *Athletics CIP Review*

All 21 projects listed on the Potential Athletic & Playground Project Cost spreadsheet are rated "below expectations." Each project has a ranking (1-4), indicating the priority of the project based on current condition and needs. The FY 2023-2027 Capital Improvement Plan includes four (4) athletic facilities:

1. Patrick Henry High School track re-coating and repair (Priority 1)
2. Patrick Henry High School regrading and sodding of lower practice field (Priority 1)
3. James Breckinridge Middle School bleachers and basketball goals replacement (Priority 1)
4. William Fleming High School recoating of running track (Priority 2)

All remaining athletic facility projects on the Potential Athletic & Playground Project Cost spreadsheet were ranked as a priority 2, 3 or 4.

#### Paving

The Physical Plants Department tracks the following pavement information:

- RCPS location
- Year facility was built



- Estimated year paving was last completed
- Condition (Below, Meets, or Exceeds Expectations)

The Grounds Supervisor is responsible for tracking paving conditions. He rates the condition of the pavement based on observations made during routine visits throughout the year. He recommends repaving once safe conditions can no longer be maintained through patching and sealing.

### *Data Analysis*

Almost half (14 of 31) RCPS locations have been paved within the last five (5) years and are rated exceeds expectations. Eleven (11) locations were last paved more than 20 years ago according to management's estimates. Two of these were paved over 40 years ago:

- Hurt Park
- Monterey (completed Fall 2022)

Overall, 7 of 31 (23%) are rated below expectations.

### *Paving Spreadsheet Review*

We validated paving data for all 15 locations in our sample, based on supporting documentation on the Physical Plants Department network drive. Garden City Elementary School was listed as having partial repaving completed in 2009, and is scheduled to be fully repaved in FY 2023.

We also physically observed the pavement for all 15 locations sampled and found that the condition assigned in the spreadsheet was consistent with the Department's rating criteria.

### *Paving CIP Review*

All five (5) schools scheduled for repaving in the FY 2023-2027 plan are currently rated "below expectations" and are the oldest in the inventory based on estimated dates:

- Crystal Spring
- Highland Park
- Hurt Park
- Monterey
- Woodrow Wilson

Garden City Elementary School was not included in the "Paving Scores" section of the FY 2023-2027 plan. However, it is included in the "Debt and Local Funding" section of the plan and is to be paid with local funds in FY23.

Forest Park Academy is also rated below expectations on the spreadsheet, and was last paved in 1991. It is currently scheduled for replacement in FY 2028.

All other locations on the Paving spreadsheet meet or exceed expectations.

### Roofing

The Physical Plants Department tracks the following information for all RCPS roofs:

- Location
- Estimated Cost (of replacement)
- Justification (age, # of work orders in 12 months, and other relevant data)
- Condition (Below, Meets, or Exceeds Expectations)

The work order system (School Dude) generates a quarterly preventive maintenance work order for roof inspections at each building. The lead technician for roofing rates the condition of each roof based on age, remaining warranty, number and types of roof repairs, root cause of problems, cost of repairs, and physical observation.

In 2009, a roofing contractor (Tremco) evaluated all roofs in the district, estimating the age and documenting the condition in the company's MyOLI Online Roof Management database. RCPS replaced a number of roofs at that time and used the MyOLI database to track maintenance required for the warranties to remain in force. After 2009, the MyOLI database was not updated for roofing work due to the costs of annual updates.

### *Data Analysis*

The Roofing spreadsheet was missing data on the roof condition of the Transportation Building on Barnes Avenue and the new Administration Building on Campbell Avenue. Eight (8) of 30 RCPS roofs were noted as being 20+ years old:

- Highland Park Elementary School
- Lincoln Terrace Elementary School
- Monterey Elementary School (new roof completed Fall 2022)
- Preston Park Elementary School
- Westside Elementary School
- John Fishwick Middle School
- Lucy Addison Middle School (currently under construction)
- Woodrow Wilson Middle School (scheduled for Summer 2023)

Seven (7) of the roofs above are rated below expectations and are out of warranty. Preston Park was not rated based on plans to renovate or replace the school in the near future.

Twelve (12) roofs are currently under warranty:

- Nine (9) have warranties expiring in 2030 or later
- Both High Schools and Hurt Park Elementary have warranties expiring between 2025 and 2028

### *Roofing Spreadsheet Review*

The roofing spreadsheet was initially created using the data in the MyOLI database. Due to roofs being installed piece meal in past years, the install dates in the database could not be used in the new roofing spreadsheet. The spreadsheet is primarily used to record information about the condition of each roof, such as leaks, patches, and ponding.

Our review of 15 locations listed in the spreadsheet indicated that data is not consistently recorded:

- **Leak Significance:** Significance of leaks are not recorded based on the number of work orders, total repair costs, and remaining warranty coverage for the 15 locations reviewed
- **Age:** Age of roof is unknown for 5 of the 15 locations reviewed
- **Work Order Volume:** Work order volume over the last 12 months was not recorded for 10 of the 15 locations reviewed; these 10 locations have incurred at least 2 roof condition-related work orders in the same time frame per the School Dude work order system

The current roofing spreadsheet would be a more effective tool for planning roof replacements if the data were more complete and consistent. Clear criteria for establishing the age (if known), warranty status and expiration, recording work order volumes and costs, and for classifying the nature and significance of leaks are needed.

### *Roofing CIP Review*

The following roofs are included in the FY 2023-2027 capital improvement plan:

- Highland Park Elementary
- Lincoln Terrace Elementary
- RAMS Elementary
- James Madison Middle
- John Fishwick Middle

All five (5) schools are rated below expectations, and three (3) are reported to be 20+ years old. The two (2) roofs that are less than 20 years old are at RAMS and James Madison. The roof at RAMS has a significant number of leaks due to the loss of shingles. James Madison's roof has fewer issues, but is nearly out of warranty and will have a new HVAC system installed in FY23 using ESSER II-III funding. Replacing the roof after installing the new HVAC is more efficient as it avoids issues related to the footprint of the old HVAC system. The James Madison roof is currently unfunded but has been designated as a priority should funding become available.

The roof at Westside Elementary School is scheduled to be replaced with new construction and as such, is not included in roofing improvement plans. The roof at Monterey Elementary School was scheduled for replacement in the summer of 2021, but was delayed until the summer of 2022 due to materials shortages.

The Administration Building on Douglas Avenue is listed as performing below expectations, but with "normal" leak activity. It is not currently projected for replacement at any point over the current ten (10) year planning horizon (through FY 2032).

All other locations on the roofing spreadsheet were evaluated as meeting or exceeding expectations.

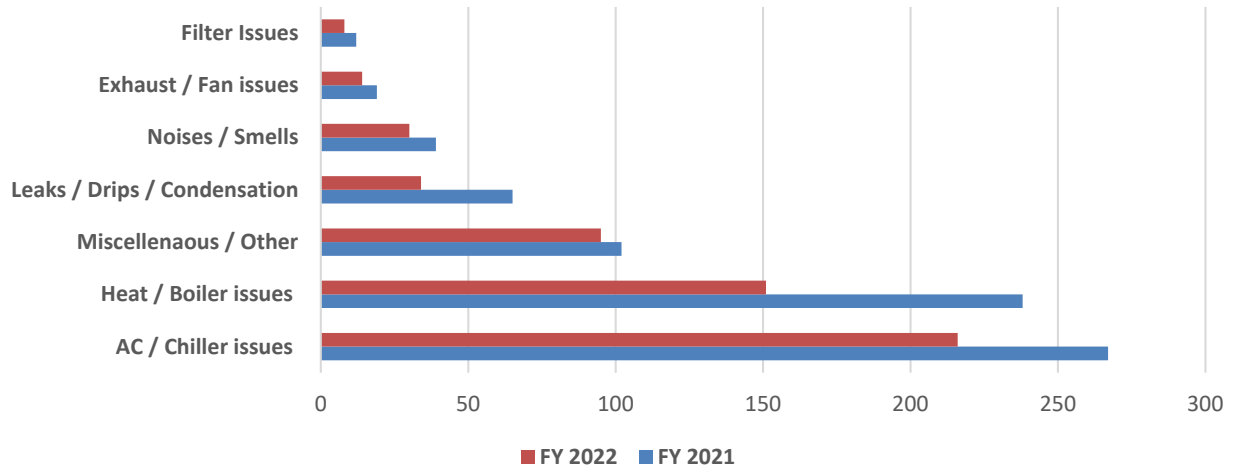
#### Work Order Analysis

During FY 2021 and FY 2022, employees submitted the following non-preventive maintenance capital asset condition-related work orders through School Dude for each major asset category:

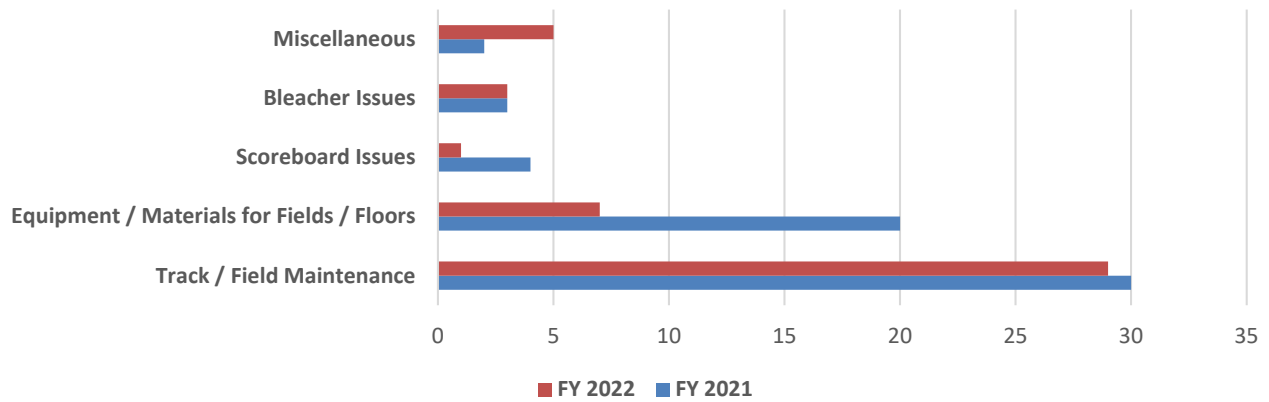
<b>Asset Category</b>	<b>FY 2021</b>	<b>FY 2022</b>
HVAC	742	548
Roofing	143	137
Athletic Field & Gym Equipment	59	45
Playground	35	30
Paving	10	10

The following charts illustrate the types of work orders submitted through School Dude based on the description entered (roofing work orders are all due to leaks, so no chart is included):

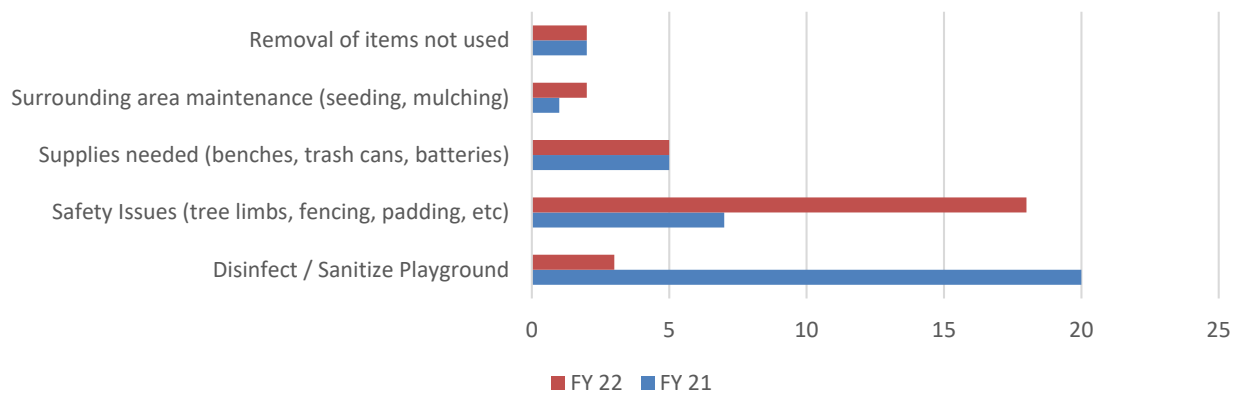
### HVAC Non-PM WO's by Description



### Athletic Fields and Gym Equipment Non-PM WO's by Description

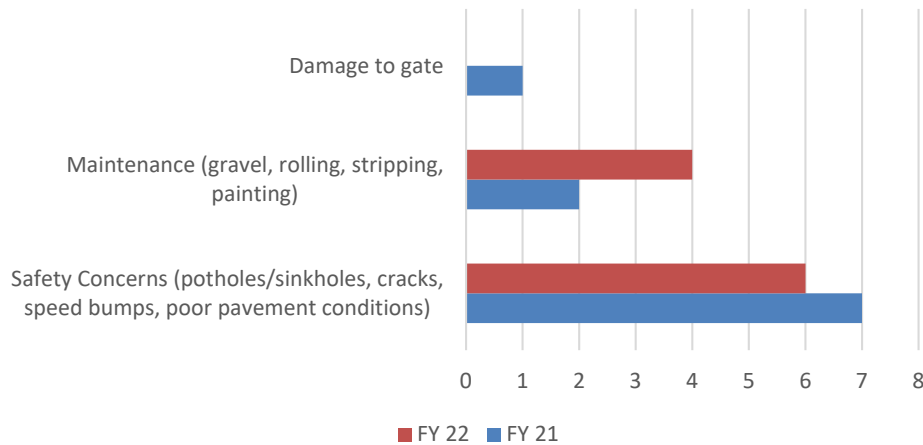


### Playground Non-PM WO's by Description



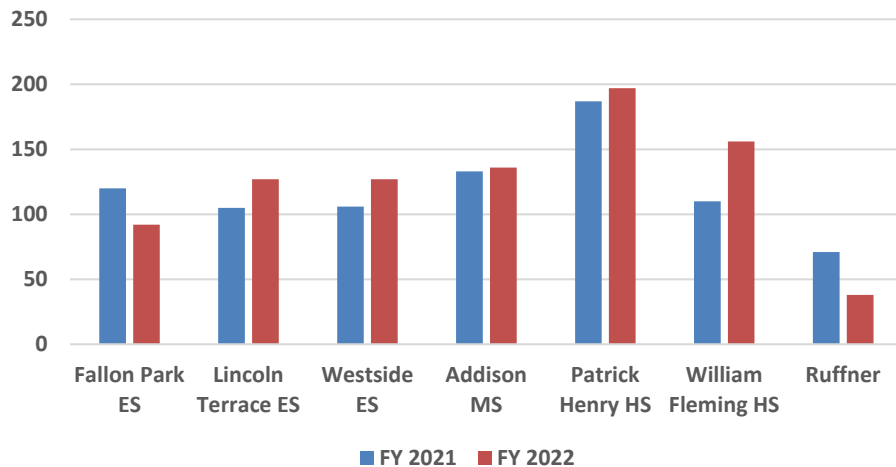
We also identified six (6) “Division-Wide” work orders in FY 21 and one (1) in FY 22 for playgrounds, but removed them from these figures as they were for things such as mulching, seeding, and ordering additional supplies such as hand sanitizer stations and disinfectant for all playgrounds. We wanted the analysis to focus on capital asset condition-related concerns.

### Paving Non-PM WO's by Description



When we analyzed capital asset condition related non-preventive maintenance work orders, we found the following locations to have the highest volume compared to other locations in the same category (elementary, middle, high, or administrative) for both FY 2021 and FY 2022:

### Capital Asset Condition-Related Work Orders



Fallon Park Elementary is a newly constructed school, so the high volume of work orders is most likely indicative of working out issues within the new buildings. Westside and Lincoln Terrace Elementary are two (2) of the older buildings in the Division. The design of Westside

lends itself to issues such as roof leaks. Due to the age and size of the school, there are typically more work orders for this building compared to others. Patrick Henry and William Fleming High Schools are the two (2) largest school buildings holding the greatest volume of students, and generally have more work orders than other buildings.

Issues affecting the quality of work order data included the following:

- **Inconsistency of craft selected:** Some personnel may input a work order for a baseboard heating issue as electrical, while others may input it as an HVAC issue.
- **Duplicate work orders:** Some personnel may input a work order multiple times, for instance every day for a week until the issue is resolved, while others may enter a work order only once.
- **Data entry errors:** Personnel may erroneously enter the wrong craft. For instance, we noted a plumbing issue entered under the craft “vehicle maintenance.”
- **Blank craft:** Work orders can be submitted without a craft selected.

The Work Order Specialist reviews all work orders submitted as a quality control measure. If she identifies a duplicate work order, she changes the “Status” to “Duplicate Work Request,” and enters a journal note. She reaches out to the appropriate lead technician when questions arise as to the proper craft designation. If the Specialist identifies a work order without a craft assigned, she adds the craft or contacts the submitter for more information in order to identify the correct craft.

A backup has been assigned to review work orders if the Work Order Specialist is unavailable. However, the process is manual and subject to human error. We identified 28 completed capital asset condition-related work orders with blank crafts in FY 2021 and 55 in FY 2022. This error rate of 1% in each year was not considered significant based on the overall volume of work orders.

Overall processes are effective in capturing and tracking major capital asset data, but could be enhanced with a more robust system and elimination of manual spreadsheets. RCPS is currently in the process of implementing a new asset management and work order system which will ultimately house all relevant capital assets and related work order data. The current plan is for vendor staff to visit all RCPS schools / locations to inventory assets and input the necessary data into the system. Supporting data such as install dates, cost data and warranty information will be captured which should enhance tracking and monitoring the condition and performance of RCPS capital assets. Additionally, all relevant data currently housed in School Dude will be transferred into the new system in order to preserve historical records. The District’s floor plan will also be entered into the system which will allow users to view where the gas, water, and electrical lines are located as well as the location of every asset. This should

significantly improve tracking and monitoring of critical data while eliminating the need to reenter data in multiple spreadsheets.

The Physical Plants Department is currently developing a Request for Quotations (RFQ) to solicit a Computerized Maintenance Management System (CCMS) to be implemented July 1, 2023. The intention is to have permission-based access limited to certain employees based on their role. RCPS plans to have a more centralized process where certain personnel such as Building Managers, Principals, and Assistant Principals, enter work orders and one employee (and a backup in the employee's absence) review the accuracy and completeness of work orders.

**END OF OBJECTIVE 1**



**OBJECTIVE 2: Enrollment Capacity**

**Objective:**

Are useable enrollment capacities for each school consistently and accurately determined based on current VDOE guidelines?

No

**Scope:**

We reviewed processes in place to update and maintain “Table 21 - Capital Asset Statistics” from the Annual Comprehensive Financial Report. We analyzed changes in constructed and useable student capacity data from Fiscal Years 2010 through 2022, and validated the data reported on Table 21 as of September 26, 2022.

**Results:**

The Chief of Physical Plants is responsible for maintaining Table 21. The excerpt below shows the data reported in Table 21 for the year ended June 30, 2021:

ROANOKE CITY PUBLIC SCHOOLS CAPITAL ASSET STATISTICS June 30, 2021 (Unaudited)								Table 21 Unaudited
School Description	Total Current Classrooms	Constructed Student Capacity	Current Useable Student Capacity	Enrollment FY2019-20	Enrollment FY2020-21	% Of Constructed Capacity	% Of Useable Capacity	Modular Buildings
<i>Elementary Schools:</i>								
Crystal Spring	19.0	425	456	358	325	76%	71%	0
Fairview	30.0	775	600	555	565	73%	94%	0
Fallon Park	39.0	858	780	608	572	67%	73%	0
Fishburn Park	25.0	750	480	299	259	35%	54%	0
Garden City	25.0	575	456	296	278	48%	61%	0
Grandin Court	16.0	525	480	340	341	65%	71%	0
Highland Park	27.0	525	456	367	372	71%	82%	0

“Constructed” student capacity is based on Virginia Building Code guidelines. “Useable” student capacities are based on VDOE guidelines and pupil-to-teacher ratios specified in Virginia’s Standards of Quality (SOQ). The Executive Director of Accountability and Assessment provides enrollment numbers to the Chief of Physical Plants.

Changes to Useable Capacity – Fiscal Years 2010 to 2022

Based on the Division's Annual Comprehensive Financial Reports, the useable student capacities changed for one or more schools in the following years:

	<b>Increase (Decrease) in Student Capacities</b>					
<b>Elementary Schools</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2016</b>	<b>FY 2018</b>	<b>FY 2020</b>	<b>FY 2022</b>
Crystal Spring	48	-	-	-	-	(138)
Fairview	(144)	-	-	-	-	73
Fallon Park	(360)	-	-	-	156	103
Fishburn Park	(240)	-	-	-	-	(76)
Garden City	(288)	-	-	-	-	36
Grandin Court	-	-	-	-	-	(126)
Highland Park	(48)	-	-	-	-	(85)
Hurt Park	(264)	-	-	-	-	122
Lincoln Terrace	(288)	-	-	-	-	146
Monterey	(312)	88	-	-	-	64
Morningside	(216)	-	-	-	-	19
Preston Park	-	(30)	-	-	-	9
Roanoke Academy	(288)	-	98	-	-	51
Round Hill	(120)	198	180	30	(72)	130
Virginia Heights	(158)	-	-	-	-	71
Wasena	(96)	-	-	-	-	30
Westside	(144)	-	-	-	-	85
<b>Middle Schools</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2016</b>	<b>FY 2018</b>	<b>FY 2020</b>	<b>FY 2022</b>
Lucy Addison	(312)	-	-	-	-	193
James Breckinridge	(234)	-	-	-	-	116
John Fishwick	(156)	-	-	-	-	(110)
James Madison	(246)	-	-	-	-	(12)
Woodrow Wilson	(96)	-	-	-	-	(27)
<b>High Schools</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2016</b>	<b>FY 2018</b>	<b>FY 2020</b>	<b>FY 2022</b>
William Fleming	(190)	-	-	-	-	(129)
Patrick Henry	(358)	-	-	-	-	(128)
RVGS	-	-	-	35	-	-
	<b>(4,510)</b>	<b>256</b>	<b>278</b>	<b>65</b>	<b>84</b>	<b>417</b>

The FY22 changes were based on having architects review and recalculate every school in the Division. We could find no explanation for the substantial reductions in useable capacities in 2013, either on file or through the VDOE.

We compared both constructed and useable capacities as reported in 2012 versus 2022. Changes were primarily the result of new computations prepared by outside architects and not from actual changes to the buildings:

Elementary Schools	Constructed Capacity			Useable Capacity		
	2012	2022	Difference	2012	2022	Difference
Crystal Spring	425	667	242	408	318	(90)
Fairview	775	1,040	265	744	673	(71)
Fallon Park	850	1,850	1,000	984	883	(101)
Fishburn Park	750	764	14	720	404	(316)
Garden City	575	866	291	744	492	(252)
Grandin Court	525	574	49	480	354	(126)
Highland Park	525	799	274	504	371	(133)
Hurt Park	600	885	285	648	506	(142)
Lincoln Terrace	600	951	351	648	506	(142)
Monterey	775	1,143	368	744	584	(160)
Morningside	500	713	213	528	331	(197)
Preston Park	525	905	380	504	483	(21)
Roanoke Academy	750	1,598	848	720	581	(139)
Round Hill	475	1,721	1,246	504	850	346
Virginia Heights	425	552	127	480	403	(77)
Wasena	400	598	198	384	318	(66)
Westside	850	1,697	847	960	901	(59)
Middle Schools	2012	2022	Difference	2012	2022	Difference
Lucy Addison	1075	1,616	541	1032	913	(119)
James Breckinridge	550	1,142	592	864	746	(118)
John Fishwick	775	980	205	816	550	(266)
James Madison	900	1,090	190	936	678	(258)
Woodrow Wilson	975	1,389	414	936	813	(123)
High Schools	2012	2022	Difference	2012	2022	Difference
William Fleming	2,100	3,024	924	2,040	1,721	(319)
Patrick Henry	2,059	3,191	1,132	2,208	1,722	(486)
RVGS	160	580	420	240	275	35

Actual increases in capacity as a result of renovation and new construction occurred at Round Hill and Fallon Park Elementary Schools.

Fiscal Year 2022 Changes

In May 2022, the Chief of Physical Plants directed the architects currently under contract with RCPS to update the current number of classrooms, and the constructed and useable capacities for each school. Each architect was instructed to calculate constructed student capacity based on Virginia Uniform Building Code guidance of 20 square feet per student in each classroom. Useable capacities were to be based on state requirements for preschools and average pupil : teacher ratios for K-12 specified in the Standards of Quality:

<b>Classroom</b>	<b>Number of Students</b>
Pre-K	18
K - 3	24
4 - 5	25
6 - 8	24
9 - 12 (English)	24
9-12 (Other Academic)	25

VDOE published guidelines recommend minimum square footage for classrooms, including all features such as garment storage, teachers' storage, shelving, work counters, vestibules, and incidental partitions, but excluding classroom toilet and general storage rooms, as follows:

<b>Grade</b>	<b>Square Feet</b>
Pre-Kindergarten, Kindergarten, Grade 1	975 square feet
Grades 2 – 5	800 square feet
Grades 6 – 12	700 square feet

Due to the significant changes reported by the architects in FY 2022, we reviewed their calculations for a sample of 13 schools:

- Useable Capacity for nine (9) of 13 schools incorrectly included resource classrooms. VDOE specifies that resource classrooms, art and music rooms should not be included in capacity computations.
- Architects did not include drawings necessary to recalculate capacities for 10 of 13 schools.
- Constructed student capacity is understated by 351 students for one elementary school due to a calculation error in Building Code Capacity by the architect
- Constructed student capacity is overstated by 45 students for one elementary school due to inclusion of an extra K-3 classroom
- Current useable student capacity is understated by 250 students

VDOE guidelines recommend square footage for each classroom without stating how many students the space could accommodate. The guidelines specify that capacity should be based on pupil-teacher ratios **and** class size maximums set out in the Standards of Quality (SOQs). Although this implies that recommended square footage for classrooms should accommodate the maximum class sizes, discussion with VDOE representatives on October 18, 2022, and follow-up email correspondence on November 23, 2022 confirmed they do not recommend prorating based on classroom size. The VDOE did not intend to establish a minimum square footage per student through their guidelines. VDOE bases capacity strictly on pupil-to-teacher ratio caps specified in the Standards of Quality multiplied by the number of classrooms, without regard to the square footage of individual classrooms. Since RCPS based its minimum required space on pupil-to-teacher ratios, and prorated capacity down for classrooms smaller than VDOE guidelines, useable capacity was understated.

We recalculated useable capacities for our sample of 13 schools based strictly on SOQ pupil-to-teacher ratios, with the following results:

<b>Elementary</b>	<b>2022 Useable Student Capacity Per Table 21</b>	<b>Maximum Occupancy based on PTR</b>	<b>Over (Under) Stated on Table 21</b>
Crystal Spring	318	423	(105.00)
Fairview	673	730	(57.00)
Fallon Park	883	888	(5.00)
Garden City	492	482	10.00
Lincoln Terrace	506	482	24.00
Morningside	331	378	(47.00)
<b>Preston Park (see below)</b>	<b>483</b>	<b>648</b>	<b>(165.00)</b>
Virginia Heights	403	421	(18.00)
Westside	901	974	(73.00)
<b>Middle</b>			
James Breckinridge	746	722	24.00
Woodrow Wilson	813	771	42.00
<b>High</b>			
William Fleming	1,721	1649	72.00
Patrick Henry	1,722	1674	48.00
			(250.00)

There are five (5) schools that report enrollment greater than their pro-rated useable capacity:

<b>Elementary Schools</b>	<b>Useable Student Capacity</b>	<b>Synergy Enrollment a/o 9.26.22</b>	<b># Over Capacity</b>	<b>% Over Capacity</b>
Grandin Court	354	371	(17)	-5%
Highland Park	371	398	(27)	-7%
<b>Preston Park</b>	<b>483</b>	<b>510</b>	<b>(27)</b>	<b>-6%</b>
William Fleming	1,721	1951	(230)	-13%
Patrick Henry	1,722	2034	(312)	-18%

As shown in the prior table, when capacity is calculated without prorating based on classroom size, **Preston Park Elementary** actually has capacity for 648 students, or 138 more than currently enrolled. In discussions with VDOE representatives, they stated that capacities are based on pupil-to-teacher ratios and the number of classrooms. Square footage is not factored into the computation. Several RCPS school buildings, however, are older, with classroom square footage that does not meet current VDOE guidance. As such, they would be considered “undersized”.

The School Division can establish Pupil-Teacher Ratios (PTRs) that are less than required by SOQs, can reduce the PTR for “undersized” classrooms, and can exceed the average PTR for oversized classrooms within SOQ maximums. Such a policy should be formalized and adopted by the Board, and capacity numbers should be computed and published consistently across schools and year-to-year in accordance with the adopted policy.

Ensuring the accuracy of Table 21 is important based on its implied relevance to capital planning and public perceptions of the adequacy of the Division’s buildings.

## **END OF OBJECTIVE 2**

**OBJECTIVE 3: Site-Based Input****Objective:**

Do Principals and site-based staff provide input on how existing space could be renovated and reconfigured to more effectively and efficiently support instructional needs?

Yes

**Scope:**

We reviewed processes in place as of March 31, 2022 for developing RCPS's Capital Improvement Plan, which includes an evaluation of major capital asset data by the Courageous Leadership Subcommittee. Committee membership includes principals, teachers, students, the Office of Gifted and Advanced Programs & Rtl, Athletics, Operations, Physical Plants and Accounting.

We reviewed processes in place for conducting the Annual School Safety Audit Assessment, as of May 31, 2022, which includes a walkthrough of each building by the Chief Operations Officer and the building principal.

We interviewed Principals at eight (8) Roanoke City Public Schools during the month of August 2022 (prior to the start of the new school year):

- 4 Elementary Schools
- 2 Middle Schools
- 2 High Schools

**Results:**

All Roanoke City Public Schools complete and electronically submit an annual School Safety Audit to the Department of Criminal Justice Services (DCJS) within 30 days of the last day of school. During the summer, the Chief Operations Officer walks through every building with the building Principal to conduct the Annual School Safety Audit Assessment. This assessment allows Principals to document and report any building concerns and recommendations they may have that bear on the capital improvement plan.

Principals also have other communication channels to communicate building, space, and capacity concerns:

- Work Orders
- Email
- Telephone

- In-person discussions
- Service on the Courageous Leadership Subcommittee

All eight (8) principals we interviewed identified building space as their primary concern. Other notable issues were:

Temperature /  
Humidity

4 Schools

- HVAC work is currently underway in two (2) of these locations

Parking

1 School

- Difficult to address given the limited land available around the school

Safety

1 School

- May be more appropriately addressed through means other than capital construction

Principals have multiple lines of communication with Physical Plants, as well as decision makers in the central office. Principals we interviewed generally felt two-way communication about the condition and needs of their buildings is good. Those with buildings under renovation felt the most engaged as they were regularly consulted about their projects as they progressed.

Principals are aware of the VDOE regulations regarding teacher-student ratios. To accommodate small group and one-on-one instruction, special education and other itinerant instruction, schools use hallways, conference rooms, stairwells, elevator landings, the cafeteria and gym, storage rooms and other available space as needed.

Ongoing communication with Facilities and Operations throughout the year is mostly through work orders. The Principals interviewed confirmed work orders are addressed timely, particularly for safety concerns or student-impact issues. Principals try to address space and capacity issues through their Building Managers once school has started.

Overall, the capital improvement planning process is designed to gather information from principals, teachers, students and administrators in a variety of ways.

### END OF OBJECTIVE 3



**SUMMARY OF MANAGEMENT ACTION PLANS**

<b>Management Action Plan – Athletics Data</b>	
<p>Integrate a new computerized maintenance management system or CMMS, which is software that centralizes maintenance information and facilitates the processes of maintenance operations. It helps optimize the utilization and availability of physical equipment like vehicles, machinery, communications, plant infrastructures and other assets.</p>	
<b>Assigned To</b>	<b>Target Date</b>
Steve Yuille, Supervisor of Grounds	12/31/23

<b>Management Action Plan - Roofing Data Inconsistencies</b>	
<p>Integrate a new computerized maintenance management system or CMMS, which is software that centralizes maintenance information and facilitates the processes of maintenance operations. It helps optimize the utilization and availability of physical equipment like vehicles, machinery, communications, plant infrastructures and other assets.</p>	
<b>Assigned To</b>	<b>Target Date</b>
Don Richardson, Maintenance Supervisor	12/31/23

<b>Management Action Plan – Table 21 Inconsistencies</b>	
<p>The Capital Asset Statistic (Table -21) will conform with VDOE Standards of Quality Guidelines on useable capacity and the Virginia Construction Code (when the school was issued a certificate of occupancy) for constructed student capacity. Additionally, undersized classrooms determined by VDOE square footage guidelines will be pro-rated based on the square footage recommended by VDOE. Furthermore, the pupil-teacher ratio (PTR) will be adjusted for these undersized classrooms. Registered design professionals will verify this data. The individual responsible for updating the table will be the Capital Project Manager. That will take place before capital planning in the fall of each year. Once updated, the table will be password protected and shared with the Senior Director of Physical Plants.</p>	
<b>Assigned To</b>	<b>Target Date</b>
Greg Burgess, Capital Project Manager	12/31/23

**MANAGEMENT COMMENTS**

None were provided.

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