FREDERICK COUNTY PUBLIC SCHOOLS

COMPREHENSIVE MAINTENANCE PLAN

FY2025

...Building on the Past, with an Eye on the Future...

FCPS
Frederick County Public Schools

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EXECUTIVE SUMMARY

The annual Comprehensive Maintenance Plan (CMP) aims to inform the Local Education Agencies (LEA) stakeholders, including the State of Maryland, about the LEA's facilities-maintenance program intentions for the upcoming fiscal year.

Per Code of Maryland Regulations (COMAR) 14.39.02.18, each LEA must update and submit a Board-of-Education-approved CMP to the Interagency Commission on School Construction (IAC) annually. This CMP must align with the local Educational Facilities Master Plan (EFMP) and the local Capital Improvement Program (CIP).

The IAC mandates the submission of the CMP to:

- Evaluate the LEA's planning for activities that contribute to maintaining healthy, safe, and educationally sufficient learning environments for all students.
- Assess the LEA's planning for activities that ensure facilities' longevity and value, reflecting the local and State investments made to date.
- Compare and evaluate each LEA's maintenance planning over time and across the state to identify and share best practices.

To ensure the CMP's value to the LEA, its stakeholders, and the State, the IAC has established minimum content requirements for these plans. This document adheres to those requirements, and provides supplemental information for stakeholders and decision makers.

FY24 New Construction, Brunswick Elementary School

A

INTRODUCTION AND SUPPORTING INFORMATION

A.1.

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A.2.

GUIDING PRINCIPLES

Our guiding principles are rooted in our commitment to delivering safe, reliable, and comfortable school facilities. We emphasize:

Integrity | Ensuring all actions and decisions uphold the highest ethical standards.

Efficiency | Utilizing resources prudently to maximize productivity and cost-effectiveness.

Excellence | Striving for superior quality in all maintenance and operational efforts.

Various FCPS Maintenance Employees

A.3.

VISION

Our vision is to maintain optimal learning environments that foster educational success and community well-being. We aim for facilities that are safe, welcoming, and conducive to learning.

A.4.

MISSION

Our mission is to build a cohesive, skilled maintenance team that optimizes processes and implements strategic planning. We focus on ensuring the reliability and efficiency of all our facilities, supporting educational objectives and operational excellence.

A.5.

INTERRELATIONSHIPS

The Comprehensive Maintenance Plan (CMP) works in tandem with the Educational Facilities Master Plan (EFMP) and the Capital Improvement Plan (CIP). These documents are interconnected and collectively support our strategic maintenance approach, aligning with our long-term educational and infrastructural goals.

Educational Facilities Master Plan

The FCPS Capital Programs Department must annually update its Educational Facilities Master Plan (EFMP). The EFMP must be approved by the Board of Education, and submitted to the State's Interagency Commission on School Construction (IAC) for their subsequent approval. The EFMP must include:

- Educational goals, standards, and guidelines;
- Community analysis, concluding that the plan conforms to the adopted county and municipal comprehensive plan and growth management strategies;
- An inventory and evaluation of existing school buildings;
- Current and projected enrollment data;
- Analysis of future school facility needs;
- Policies for co-location, shared use, and shared cost of existing and planned school facilities;
- Policies to address school capacity needs in planned growth areas or to address adequate public facilities ordinance requirements; and
- Policies addressing current and planned transportation for students, administrators, and teachers per school.

Capital Improvement Plan

The Capital Programs Department must also annually update its 10-Year Capital Improvement Plan (CIP) within the EFMP. Therefore, the CIP must be consistent with the EFMP.

The CIP must identify and prioritize the following for the next fiscal year:

- New construction projects, including replacement schools and additions, and renovation projects, including limited renovation projects, proposed for local planning approval;
- New construction projects, including replacement schools and additions, and renovation projects, including limited renovation projects, proposed for planning and design funding;
- New construction projects, including replacement schools and additions, renovation projects, including limited renovation projects, systemic renovation projects, and relocatable facilities proposed for funding approval; and
- New construction projects, including replacement schools and additions, and renovation projects, including limited renovation projects, that the LEA has locally funded and for which the LEA seeks planning approval and funding approval.

Comprehensive Maintenance Plan

The Maintenance and Operations Department must also annually update its Comprehensive Maintenance Plan (CMP). The purpose of the CMP is to communicate to FCPS stakeholders, including the State, FCPS's intentions for the coming fiscal year with respect to its facilities-maintenance program. The CMP must be approved by the Board of Education prior to its annual submission to the IAC.

This CMP is compliant with the FY 2025 Comprehensive Maintenance Plan Instructions, as issued by the IAC on March 1, 2024. Also, as required, this CMP is compatible with the FCPS EFMP and 10-Year CIP.

Our plan and focus remains consistent, maintaining systems until failure, and when necessary we will repair or replace failed systems with CIP contingency funds that are provided by the Frederick County Government.

A.6.

LONG-TERM FOCUS

Due to funding constraints, our long-term focus has shifted towards a strategic approach that prioritizes maintaining our essential systems such as HVAC, roofing, and electrical systems to the point of failure. This approach necessitates a comprehensive plan to ensure the reliability and safety of our facilities while recognizing the financial limitations we face. We aim to achieve this through strategic goals that involve:

Maintenance to Failure | Instead of focusing on proactive capital renewal, prioritize maintenance efforts on critical systems and components to ensure they remain operational as long as possible. When failures occur, repairs or replacements will be executed as needed, based on urgency and available resources.

Total Cost of Ownership (TCO) | Minimize the TCO by extending the lifespan of facility components through targeted maintenance until replacement is unavoidable. Implement cost-effective maintenance practices and allocate resources to systems most likely to fail.

Comprehensive Facility Assessment Program | Implement an internal facility assessment program to aid in maintaining high standards of quality, safety, and efficiency. Key components include:

- **Facility Condition Rating System** - Establish a standardized system to rate and monitor facility conditions, helping us identify which components are most at risk of failure.
- **Continuous Monitoring and Data Collection** - Integrate data collection into our CMMS to track the performance of facility components, enabling timely interventions when failure becomes imminent.

- **Harmonization with Capital Planning** - Facility condition ratings will guide our decision-making process, focusing on the most critical systems and deferring capital renewal unless absolutely necessary.

Impact Evaluation | Understand the impact of facility-related issues critical to managing our constrained resources effectively by assessing these impacts:

- **Educational Impact** - Assess how facility conditions affect student learning, particularly when components fail or are at risk of failure. Prioritize maintenance activities that directly influence the learning environment.
- **Financial Impact** - Analyze the financial implications of a maintenance-to-failure strategy, including the costs associated with emergency repairs versus planned interventions. This analysis will help us allocate limited resources more effectively.
- **Community Impact** - Consider the broader impact of facility conditions on the community, particularly how facility failures might affect neighborhood stability and public perception. Engage with stakeholders to manage expectations and communicate our maintenance strategy clearly.

Our long-term focus acknowledges the financial constraints we face and adapts our strategy accordingly. By adopting a maintenance-to-failure approach, we prioritize the most critical systems, extend the operational life of our facilities, and ensure the continued safety and functionality of our schools. Through careful planning, robust facility assessments, and responsible financial management, we aim to maintain our facilities in a way that supports the educational mission of FCPS, even in the face of limited resources.

A.7.

NEAR-TERM FOCUS

Qualified Workforce Recruitment

Although there has been a reduction in maintenance position vacancies from 13% to 9%, filling HVAC and plumber positions in FCPS maintenance and operations department continues to present several challenges, including:

- **Competitive Compensation |** Private-sector companies often offer higher salaries and better compensation packages compared to public-sector jobs in FCPS maintenance and operations. Many skilled tradespeople are drawn to private companies where financial rewards are greater, making it difficult for schools to attract and retain qualified candidates.
- **Aging Workforce |** The trades workforce is aging, with many experienced professionals nearing retirement. This results in a shrinking pool of available and qualified candidates to fill these positions, increasing the difficulty of finding skilled workers.
- **Training and Skill Requirements |** The complexity of modern HVAC systems and plumbing installations requires specialized training and certifications. Schools may

struggle to find candidates with the necessary skills and qualifications, particularly those who are prepared to work in the unique environment of K-12 schools.

- **Perception of Public-Sector Jobs |** There is often a perception that public-sector jobs lack the advancement opportunities and dynamic work environments found in private industry. This can deter potential candidates from considering careers in FCPS maintenance and operations.
- **Work Environment |** While K-12 schools may offer a positive work culture and job stability, these benefits may not be enough to attract candidates who prioritize higher salaries and flexible job roles found in the private sector.
- **Limited Talent Pool |** There is a national shortage of skilled tradespeople, exacerbating the difficulty of filling these vacancies. The reduced number of vocational training programs and apprenticeships further limits the availability of new entrants into the field.
- **Economic Factors |** Economic conditions can impact the availability of skilled workers. When the economy is strong, more opportunities are available in the private sector, leading to increased competition for skilled tradespeople.
- **Geographic Constraints |** Some areas may have a limited local talent pool, requiring schools to compete with other districts and industries to attract workers willing to relocate or commute.

Addressing these challenges requires strategic efforts such as enhancing recruitment practices, offering competitive living wage compensation packages, promoting the benefits of working in the public sector, and investing in training programs to build a pipeline of skilled workers.

Compensation - When salary is the main consideration for candidates, FCPS struggles to attract qualified individuals. Although FCPS offers a better working environment and often provides significantly superior fringe benefits, the advantages of work culture, environment, and even excellent health insurance are less appealing to many technicians early in their careers.

For FCPS, the assessment of the Maintenance Department's compensation structure was postponed until 2025, as the Human Resources Department carries out a salary reclassification study for maintenance positions. Given the unique nature of our work and the tendency for these studies to compare public-sector employees with those in nearby public entities rather than private industry, we do not expect our salaries to reach parity with those in the private sector.

One of the remaining challenges is for those conducting classification studies to gain a deeper understanding of the complex nature of commercial building trades, particularly the skills that FCPS technicians must acquire to perform their duties effectively.

Career Pathways to the Trades, Internships, and Trades Apprenticeship Programs

The idea that high school students are not interested in trades is increasingly outdated. Many students are actively seeking alternative career paths that offer hands-on work, job stability, and opportunities for growth without the burden of student debt associated with traditional four-year degrees. Trades provide lucrative career options with high demand across various industries. As

more students and educators recognize the value of vocational training, there is a growing interest in programs that prepare students for rewarding careers in fields like plumbing, HVAC, and electrical work. By providing exposure and access to these opportunities, we can nurture students' interest and demonstrate the diverse possibilities available in the trades.

Creating a career pathway program for high school students interested in maintenance trades is crucial to addressing the skills gap in this industry. By offering opportunities for internships, work-study programs, and part-time positions, students can gain practical, hands-on experience in fields like plumbing, HVAC, and electrical work. This approach not only equips students with the technical skills needed for entry-level positions but also provides them with a clear career trajectory and the confidence to pursue trades as a viable career option. Additionally, these programs can help students build professional networks and foster relationships with industry mentors, enhancing their employability after graduation. Implementing such a program can ensure a continuous supply of skilled tradespeople, benefiting both students and the local economy by filling critical workforce needs.

For the foreseeable future, it is our plan to continue to focus heavily on our trades apprentice program. Since its inception in 2017, our trades apprentice program has been highly successful. The program has effectively trained and prepared numerous individuals for careers in trades such as plumbing, HVAC, and electrical work. By providing hands-on experience and mentorship, the program has equipped apprentices with the skills and knowledge needed to excel in their chosen fields. This success has helped meet the growing demand for skilled workers and has demonstrated the value of vocational training as a viable career path. The program's positive outcomes highlight the importance of continued investment in apprenticeship opportunities to support workforce development.

Immediate priorities are centered on enhancing leadership, developing apprenticeship programs, promoting workforce development, and targeted recruitment. These efforts ensure we build a strong, capable maintenance team equipped to meet current and future challenges.

A.8.

COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM

Our Computerized Maintenance Management System (CMMS) is integral to our operations, streamlining workflow processing and enhancing overall efficiency. This section includes:

System Overview | Detailed description of the CMMS components and functionalities.

Implementation | Steps taken for CMMS deployment and integration.

System Modules | Interoperability between Brightly software solutions.

Efficiency Measures | Protocols and practices to ensure optimal use of the CMMS.

A.8.a

SYSTEM OVERVIEW

A.8.b

FCPS currently utilizes Asset Essentials (AE) by Brightly. AE has been adopted by the majority of Maryland's 24 Local Education Agencies (LEA). This software is also in widespread use by 7,000 educational systems worldwide.

AE provides various components and functionalities that FCPS takes full advantage of to ensure optimal usage of the system. AE components detailed below:

Dashboard: The Dashboard acts as a landing page with multiple sections for quick access or overview information. There are various sections within the Dashboard that are used by our school base staff, maintenance teams and operations staff. The most commonly used components include Quick Links, My Reports, Work Center, KPIs, and Charts. Information shown within each component is customizable to fit our users direct needs.

Work Orders: The work order system is used by school base staff, third party contractors, technicians and our grounds crew. Due to the software allowing Single Sign-On, all of our school base staff have the ability to sign-in and submit requests and view their requests. Our technicians are able to track their time, purchases, and work completed in a simple work order form. For historical data tracking purposes; assets, parts, purchases and labor all become associated with one another to track costs and labor over time per equipment and building.

Assets: Multiple fields for data tracking and helpful information for future reference. Assets can be added to work orders and become associated with the costs and labor hours for historical data tracking purposes.

Preventative Maintenance (PM) Schedule: Allows us to input our PM Plan, attach assets, add task books, assign personnel, and attach important documentation. Automatic work order generation occurs based off of an inputted set schedule to keep us on track and accountable.

Parts: Currently using the Parts module for inventorying filters. Used for storing part data, tracking parts on work orders, and viewing inventory counts to aid in reorder needs.

A.8.c

IMPLEMENTATION

Since deployment of the CMMS, various user groups have integrated AE into their day-to-day in different manners.

School Base Staff: Submit work order requests and view status updates on previous requests.

Administrative Staff: Review and approve or deny work order requests. View previous work order request history for their facility.

Third-Party Contractors: Fill out Corrective or Preventive Maintenance work orders assigned to them. Currently we only have one contractor fully utilizing the software in this manner, and that is Eastern Elevator. Other contracted work orders are filled out manually by our maintenance staff.

Maintenance Technicians: Fill out and complete Corrective and Preventive Maintenance Work Orders. Track labor, purchases, and work done within the work orders. View asset data and locations within a facility.

Operations Staff: Submit work order requests, view status updates and history on previous requests. May fill out work order forms on occasion.

SYSTEM MODULES

FCPS selected a software-as-a-service vendor. In this format, the software is accessed online via subscription rather than having purchased licenses and installing software on FCPS servers. Brightly software solutions allow for interconnectivity between internal and external products. Interoperability between the various solutions aid in maintaining consistent data across all platforms. FCPS employs the following Brightly software modules:

Asset Essentials

Within this CMMS software, Asset Essentials (AE), FCPS maintains its inventory of physical maintenance-worthy assets, preventative maintenance schedule, corrective maintenance requests, and inventory of filters. For historical data purposes; labor, costs, parts and purchases are captured within each work order and associates the data with the related assets and facilities. AE is interconnected with Capital Forecast, and provides data such as equipment and Facility age.

Capital Forecast

This software tracks the progress of building systems through their lifecycle, in order to aid capital maintenance decisions, and to analyze our portfolio's deferred maintenance.The IAC Statewide Facility Assessments compliment FCPS' usage of Capital Forecast, by providing a Facility Condition Index (FCI) value to facilities that are based on FCPS provided information.

Energy Manager

This software allows our Sustainability, Energy and Utilities Manager to track the consumption and cost for utilities to aggregate data, compare the performance of individual facilities, and to target opportunities for conservation.

FS Direct

The FCPS Use of Facilities Coordinator employs this module to field requests from community user groups for after-hours facility use, and to schedule use by internal users.

Our Board of Education considers the school facilities to be public assets, and strives to encourage their use by qualified community user groups. Actual use is provided in the accompanying data table. Also, to meet the needs of students and families before and after the school day, three local childcare providers offer daycare at 32 of our elementary schools.

FS Automation

This software allows for interoperability of FS Direct with our building automation software, Metasys. In summary, once an event is approved in FS Direct (including proof of insurance), the interface prompts Metasys to create a schedule exception so that heating, cooling, and ventilation is provided to the user during their occupancy. This automation saves considerable labor and cost, when compared to manual entry of schedule exceptions.

A.8.d

EFFICIENCY MEASURES

A.8.e

Preventive Maintenance (PM) Processing

100% of PM work orders are generated automatically within the CMMS pursuant to the Preventative Maintenance Plan (Section G.1.)..

Asset Inventory

FCPS currently has approximately 250,000 assets inventoried – these are termed “maintenance worthy assets”. With an extensive asset inventory, each asset is named in a way so that they are easily recognizable and differentiated from others. There are three components that make up the naming structure: Equipment ID, Unique Identification Number, School Code. In practice, the first inventoried Air Handler at Example School would be A11-01 1234. The equipment ID is reflective of the equipment titling guidelines from the UniFormat equipment classification protocol. The unique identification number goes in chronological order and each asset is given a number. The school code allows us to quickly identify which facility the asset belongs to. 100% of FCPS’ portfolio of facilities have the major building systems and components inventoried within the CMMS.

Inventory Naming Structure

FCPS employs UniFormat; A Uniform Classification of Construction Systems and Assemblies, an equipment classification protocol to guide the equipment inventory naming structure. This protocol is issued by the American Society for Testing and Materials for use by architects, engineers, and maintenance personnel to ensure thoroughness and consistency in all phases of facility management. This maintains consistency in naming across our extensive portfolio of inventoried assets.

Inventory Collection

During construction of new facilities, certain groups of equipment and their data is collected by the contractors (List some examples). Due to our extensive list of maintenance-worthy equipment, the remaining asset data must be captured by the Area Team and submitted to the Facilities Support (CMMS) Team. Provided to the Area Team is a blank asset inventory spreadsheet with required column fields to ensure vital information is being captured about the assets upfront. Photos of equipment data plates, QR codes, or other important supporting documentation can be provided as an attachment onto the asset within the CMMS for future reference. It takes about one-year after the occupancy of a new school to complete the inventory of the building. As such, we are working to complete the inventory of the schools and additions completed within the last calendar year. This fiscal year we will focus on completion of the inventory for the newly-replaced Valley and Green Valley Elementary Schools.

Work Order Requests

We allow and encourage school base staff to submit service requests directly into AE. This is the best means for us to receive timely and accurate information regarding issues affecting classroom instruction. Requestors are encouraged to select the accurate work category that fits the requests needs, describe in great detail what the request is for, and to attach supporting photos or documents all to ensure timely resolution of the problem. All service requests entered by school staff are routed through the facilities Administrative office for review and approval. This keeps the Administrative staff apprised of facility activity. Once approved by the facilities Administrative Approver, the work order is automatically forwarded to the Area Supervisor and Foremans who oversee that facility and maintenance team. Supervisors and Foreman are required to respond to service requests in a timely manner based on urgency and need, and will assign technicians or other personnel capable of performing the necessary duties for the request. Technicians assigned to requests are responsible for providing maintenance within a window of time that does not require interference with classroom activity, unless the issue is directly impacting usage of the area. Requesters can choose to receive automatic updates, via email, with regards to the status and completion of their service request. Alternatively, requesters may also access the work order system to view their previous requests. Completed work orders are reviewed by the Area Supervisor to ensure completeness and quality before fully closing out the work order. The full request to work order cycle certifies that our customers requests and concerns are being resolved in a timely and accurate manner.

Preventative Maintenance Protocol

FCPS derives its Preventative Maintenance (PM) schedules and tasks from RSMeans Facilities Maintenance & Repair Cost Data (2011 Version). The RSMeans PM schema is not exhaustive, and in some cases FCPS must rely on other sources for PM schedules and tasks. For life-safety systems (e.g., fire alarms and fire sprinkler systems) FCPS has adopted the more stringent PM procedures defined by the National Fire Protection Association (NFPA). For other ancillary items, such as food-service and groundskeeping equipment, we must use PM as recommended by the equipment manufacturer.

A.9.

FACILITIES ASSESSMENT PROCESS

Facility conditions are assessed through various methods to maintain high standards. These processes include annual IAC assessments, internal assessments, contracted assessments, and regulatory inspections conducted by various agencies.

A.9.a

INTERAGENCY COMMISSION ON SCHOOL CONSTRUCTION

FCPS has primarily relied on the Interagency Commission on School Construction (IAC) to perform facility assessment processes such as the Statewide Facility Assessment (SFA) and Maintenance Effectiveness Assessment (MEA). Scores, recommendations, and remediations are provided through the completion of these assessments, which aids in our understanding of our facilities conditions mechanically and structurally.

STATEWIDE FACILITY ASSESSMENT

After a Statewide Facility Assessment (SFA) is conducted, the facility receives a Combined Facility Score, otherwise known as a Maryland Condition Index (MDCI) score. The MDCI score is the product of the combined Facilities Condition Index (FCI) score and Educational Sufficiency.

Since the initial round of assessing physical condition and educational sufficiency for all Maryland facilities in 2020-2021, data is to be updated annually with 25% of facilities

getting reassessed each year[1]. The FCI score calculated during the SFA can be useful in several respects, including:

- Comparing the condition of one facility to a group of facilities
- Tracking trends (the extent of improvement or deterioration over time)
- Prioritizing capital improvement projects

MAINTENANCE EFFECTIVENESS ASSESSMENT

The Maintenance Effectiveness Assessments (MEA) are performed annually by the IAC. The IAC selects a sample set of Local Educational Agencies (LEA) facilities each year to assess them for the effectiveness of maintenance efforts by using 23 categories to guide the assessment. The MEA utilizes a 5-level scoring structure, where each category is scored individually to make up a total combined score. The individual rankings of these categories and any deficiencies pointed out during assessments are helpful in pointing out weak areas and areas to focus on.

A.9.b

INTERNAL FACILITIES ASSESSMENTS

Playgrounds - Annual Playground inspections are conducted by an in-house certified playground safety inspector. Inspection task list follows best practice inspection requirements.

Portables - Annual portable inspections are conducted by our in-house carpentry team to assess physical condition internally and externally.

CONTRACTED FACILITIES ASSESSMENTS

Roofing - During a roofing assessment, each section receives a thorough inspection and the contractor records conditions and deficiencies with the section receiving an overall condition score.

Bleachers - Our contracted Annual Indoor Bleacher and Stadium Inspections focus on three main categories: Seating, Handrails, and Support Structure. Each section within a category allows for suggestions on whether certain aspects should be repaired or replaced. A bleacher receives an overall condition score of Satisfactory or Unsatisfactory.

[1] ("Statewide Facilities Assessment – MD Public School Construction")

REGULATORY INSPECTIONS

Numerous agencies perform periodic and as-needed inspections, including the Maryland Department of Labor, Licensing, and Regulation, the Maryland Department of Agriculture, the Frederick County Fire Marshal, the County Health Department's, and County Sustainability and Environmental Resources. Various regulations compel FCPS to contract for certified inspectors for elevators, fire extinguishers, underground storage tanks, pressure vessels, bleachers, diving boards, and fire suppression systems. Deficiencies found during these inspections are corrected as soon as possible as they can adversely affect occupant safety, or the environment.

Risk mitigation - FCPS works collaboratively with its liability insurance carrier to conduct routine safety inspections. The periodic inspections focus primarily on curricular areas that may pose higher risk activities such as technical education, science labs, and theater arts.

B

FACILITY OUTCOMES

FACILITY USABILITY AND OUTCOMES

The following elements are metrics that help to illuminate those key issues that can have an adverse impact upon life, safety, and/or health of facility occupants; upon teaching and learning; and/or upon the longevity of the facility.

Facility Usability

In the past year, there were two incidents in which a school facility was unable to provide adequate support to instruction. In both instances, closure was on the side of caution and impacted services were repaired within an hour of closure announcements. Normally the incidents that threaten usability can be divided into three categories:

- **Utility Failure** – Our schools experience infrequent disruptions in water and electricity services. For those schools dependent on well water, we have a team of state-certified water treatment specialists ready to restore service in the event of equipment failure. This team is also responsible for conducting the necessary flushing and testing to ensure the safety of drinking water after any water failure, whether the source is well-water or public utility water. Should there be a delay in restoring water service, we are prepared to provide bottled water, and our Food and Nutrition Services team can supply bagged lunches if kitchen sanitation cannot be maintained. In the event of an electrical service failure, we maintain communication with the utility provider to obtain up-to-date restoration timelines.

- **Equipment Failure** – In the event of a critical system failure, we are generally able to restore functionality or implement suitable accommodations to prevent school closure. The most common scenario for such a failure is the loss of a fire alarm system. Thanks to our in-house team of qualified alarm system technicians, prolonged outages are rare. If a failure occurs and cannot be quickly resolved, we coordinate with the school to establish a manual fire watch, where staff continuously monitor for signs of smoke or fire and manually initiate evacuation if necessary.

- **Fire/Flood** – Our in-house maintenance and custodial staff are able to provide a quick response to such events. So far, the schools have been able to temporarily relocate one, or few, classrooms when a flood event occurs due to a plumbing or fire-suppression fault. Existing contracts with mitigation contractors allow us to provide quick restoration of instructional space.

We have contingency plans and vendor agreements in place to ensure a rapid response to equipment failures. Recently, we encountered an electrical surge at our newest elementary school disabling components of our Variable Refrigerant systems (VRF), and Dedicated Outside Air System (DOAS) taking them offline. FCPS maintenance staff worked with our vendors and were able to make needed repairs restoring system functionality without disruption to educational programs.

Facility Maintenance

B.1.

B.2.

B.3.

B.4.

	FY2023 Actual	FY2024 Goal	FY2024 Actual	FY2025 Goal	Notes
1) Facility Usability					
For each active or holding PK-12 school facility, the number of facility-days during which the facility could not support the delivery of the educational programs and services assigned to that facility and that are normally delivered in that facility.	0	0	2	0	
2) Maintenance Work Orders					
Preventive Maintenance (PM)					
The total number of PM WOs opened.	46,172	-	54,717	-	1
The percentage of PM WOs closed within 30 days.	77%	80%	60%	75%	2
The total number of staff hours spent on PM work.	147,237	147,237	145,782	145,782	
The total number of contractor hours spent on PM work.	N/A	N/A	N/A	N/A	3
The total dollars spent on PM work completed by staff.	$ 314,124	$ 314,124	$ 357,348	$ 357,348	1
The total dollars spent on PM work completed by contractors.	N/A	N/A	N/A	N/A	3
The percentage of all maintenance work hours spent on preventive maintenance.	64%	60%	62%	60%	
Corrective Maintenance (CM)					
The total number of CM WOs opened.	16,817	16,817	23,197	23,197	1
The percentage of CM WOs closed within 30 days.	82%	82%	76%	80%	2
The percentage of CM WOs marked as Emergency or High Priority WOs.	9%	<1%	0.3%	<1%	
The total number of staff hours spent on CM work.	82,200	82,200	89,868	89,868	1
The total number of contractor hours spent on CM work.	N/A	N/A	N/A	N/A	3
The total dollars spent on CM work completed by staff.	$1,911,278	3,213,101	$2,873,264	$3,213,101	1
The total dollars spent on CM work completed by contractors.	N/A	N/A	N/A	N/A	3
The mean time to repair the items for which a CM WO was opened.	22	22	16	16	1
The percentage of CM WOs entered by central-administration or non-building-level staff.	35%	35%	50%	35%	
The percentage of CM WOs entered by building-level staff.	65%	65%	50%	65%	
3) Custodial					
The percentage of custodians trained on the LEA's Custodial Scope of Work during the last two fiscal years.	100%	100%	100%	100%	4
The percentage of custodial duties completed adequately (as assessed through the LEA's selected method of assessment and against the LEA's selected standard).	80%	89%	80%	89%	5

Notes

1 Work order generation follows established guidelines. Preventive Maintenance (PM) work orders are initiated based on current inventory levels and task protocols, with ongoing inventory activities for the new Brunswick Elementary School (ES). Corrective Maintenance (CM) work orders are created in response to the evolving needs and requests of staff.

2 We are committed to defining and maintaining an optimal Preventive Maintenance (PM) and Corrective Maintenance (CM) program, without limiting activities to fit within current resource constraints. However, we recognize that our staffing levels are insufficient to fully meet the demands of the PM/CM workload, a situation further compounded by a current 10% vacancy rate among technicians.

3 Integrating contractors into the CMMS has proven unachievable at this time.

4 A comprehensive, Operations training program remains an incomplete objective.

5 A rating of "Good" is 89-94%, and defined as: Meets or exceeds general requirements and specifications.

The table above provides the essential data requested for CMP inclusion, with two notable exceptions. First, despite our efforts, we have not yet been able to successfully integrate our vendors into our CMMS software. The existing CMMS lacks the advanced technical or programmatic capabilities necessary for seamless electronic integration. Moreover, the cost of enforcing manual compliance from vendors appears to outweigh the potential benefits, especially considering our current limitations in performing rigorous quality assurance on their data.

Secondly, we face challenges in establishing credible goals due to the absence of a consistent set of historical data. Our organization is in the midst of its third reorganization within the past 17 years, a period marked by significant organizational flux. This, coupled with ongoing procedural and administrative changes, has created an environment where data consistency is difficult to achieve. Furthermore, procedural differences between various LEAs—such as disparities in the division of responsibilities between maintenance and custodial staff—limit our ability to draw on goal-setting benchmarks from other organizations.

Looking ahead, we are committed to continuous improvement and intend to establish a formal quality assurance component within our CMMS office as part of the reorganization. If this initiative comes to fruition, we anticipate that it will equip us with the necessary resources to develop, track, and achieve more credible and ambitious goals. This will ultimately strengthen our ability to deliver on our commitments and ensure that our operations are aligned with the highest standards of excellence.

Custodial

All custodians have successfully completed the required training, with the exception of newly-hired individuals who are currently undergoing the necessary training.

To enhance our operational efficiency and better align with the recent restructuring of our area maintenance teams, we have added a new Custodial Support Specialist. This new position will bring our total number of Custodial Support Specialists to four, ensuring that each area has a dedicated Custodial Support personnel. By expanding our team, we aim to improve the coordination and management of custodial services across all areas, leading to more consistent and effective maintenance operations throughout the district. This strategic move is designed to strengthen our overall maintenance framework and enhance the quality of service delivery.

C

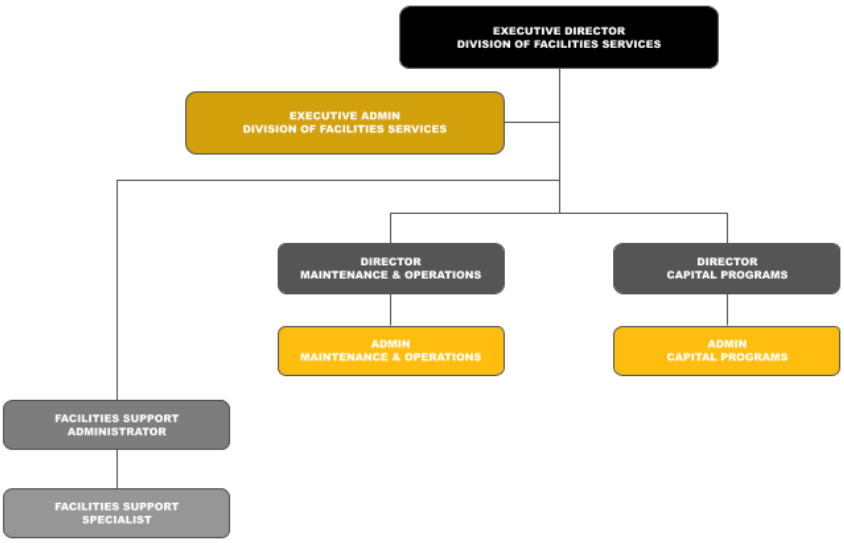
RESOURCES AND INPUTS

C.1.

STAFFING AND ORGANIZATION

DIVISION OF FACILITIES SERVICES

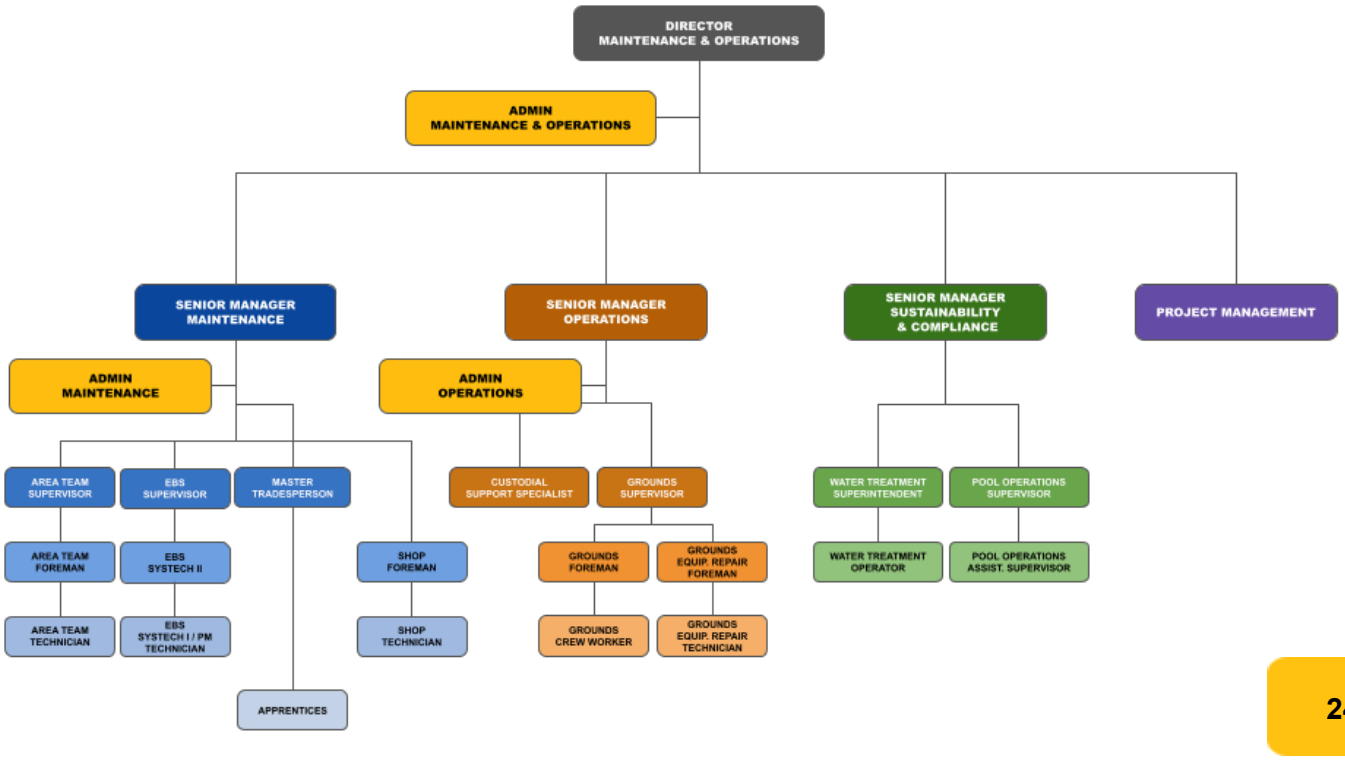
The Division of Facilities Services is composed of the Capital Programs Department, Maintenance & Operations Department, and Facilities Support.



C.1.a

MAINTENANCE AND OPERATIONS DEPARTMENT

The maintenance and operations department is made up of four operational branches: Maintenance, Operations, Sustainability and Compliance, and Project Management.



C.1.b

LIST OF POSITIONS

The table below provides the list of positions, by department and title, as well as the total number of positions and the number of vacant positions as of June 30, 2024.

DEPT	TITLE	# OF POSITIONS	VACANCIES
FS	Facilities Support Administrator	1	0
FS	Facilities Support Specialist	1	0
M&O	Director of Maintenance and Operations	1	0
M&O	Admin for Maintenance and Operations	1	0
MAINT.	Senior Manager of Maintenance	1	1
MAINT.	Admin for Maintenance	1	0
MAINT.	Master Electrician	1	0
MAINT.	Master HVAC/R	1	0
MAINT.	Master Plumber-Gas Fitter	1	0
MAINT.	HVAC/R Apprentice	6	0
MAINT.	Plumber Apprentice	2	0
MAINT.	Area Supervisor	4	0
MAINT.	Area Foreman	8	0
MAINT.	Electrician	16	0
MAINT.	HVAC/R Technician	31	8
MAINT.	Plumber	15	0
MAINT.	General Mechanic	16	1
MAINT.	EBS Supervisor	1	0
MAINT.	Building Automation Sys Tech II	1	0
MAINT.	Building Automation Sys Tech I	2	0
MAINT.	Predictive Maintenance Tech	2	0
MAINT.	Building Trades Foreman	1	0
MAINT	Carpenter	3	0

MAINT	Maint Mechanic, Roofer	2	0
MAINT	Painter I	1	0
MAINT	Painter II	2	0
OPS	Senior Manager of Operations	1	1
OPS.	Admin for Operations	1	0
OPS	Custodial Support Specialist	4	1
OPS	Grounds Supervisor	1	1
OPS	Grounds Foreman	2	0
OPS	Grounds Crew Worker	8	0
OPS	Grounds Equipment Repair Foreman	1	0
OPS	Grounds Equipment Repair Technician	1	0
SUSTAIN.	Senior Manager of Sustainability and Compliance	1	1
SUSTAIN.	Water Treatment Superintendent	1	1
SUSTAIN.	Water Treatment Operator	1	0
SUSTAIN.	Pool Operations Supervisor	1	0
SUSTAIN.	Pool Operations Assistant Supervisor	1	0
PM	Project Manager IV	1	0
PM	Project Manager III	1	0
PM	Project Manager II	1	0
TOTALS		**149**	**15**

C.1.b cont.

DIVISION OF FACILITIES SERVICES DESCRIPTIONS

The Division of Facilities Services is composed of two Department branches and a Facilities Support Team. Outlined below will describe the Facilities Support Team, followed by the Maintenance and Operations Department.

FACILITIES SUPPORT TEAM

The Facilities Support Administrator oversees the Facilities Support Specialist, and this team is responsible for the following:

- CMMS - Manage the software solution designed to help the organization manage, track, and optimize their maintenance operations. It serves as a centralized platform for managing all aspects of maintenance activities, ensuring that assets, equipment, and facilities are maintained efficiently and effectively.
- Intranet - Maintains the internal communication website designed specifically for managing and streamlining the interaction between employees and the facilities management team within the organization. It acts as a centralized hub where employees can access information, request services, report issues, and communicate with the facilities management team.
- IAC MEA - Point of contact and engagement for the systematic evaluation process designed to ensure that school facilities are maintained at optimal levels to support a safe, healthy, and conducive learning environment. This commission typically oversees the condition and maintenance practices of public school facilities to ensure that they meet established standards of quality, safety, and efficiency.
- Initiative Development - Aid in the process of creating, planning, and implementing new projects, programs, or strategies designed to achieve specific goals or address particular challenges within an organization or community.
- Technology and Software - Ensuring that hardware and software integrate effectively to meet facility services needs is crucial for the seamless operation and management of modern facilities. This process involves selecting, configuring, and maintaining the right combination of technology solutions that work together to support the goals of the facility management team.
- Data Services - In the context of facility management, data services focused on maintenance are essential for optimizing operations, reducing costs, and improving the overall efficiency of maintenance activities. By systematically gathering, compiling, and analyzing maintenance-related data, facility managers can identify trends, make informed decisions, and establish best practices that enhance the performance and longevity of facility assets.

MAINTENANCE AND OPERATIONS

Maintenance

This branch includes four maintenance areas, an electronic building systems (EBS) shop, and the building trades shops. These responsibilities include:

- Area Teams
    - Preventative Maintenance: Perform scheduled preventive maintenance tasks to foster reliability, extend equipment life, ensure regulatory compliance, and improve energy efficiency.
    - Corrective Maintenance: Satisfy customer service requests, and correct faults found during routine preventative maintenance.
    - Emergencies/After-Hours: Respond to emergency situations that serve as interruptions to instruction, or that threaten the safety of occupants or the value of FCPS property.
- EBS
    - Predictive Maintenance: Predictive maintenance of key equipment to detect anomalous operating conditions so that repairs can be enacted prior to equipment failure.
    - Building Automation Systems: Ensures building systems that operate on an automatic schedule are working properly. Works closely with Use of Facilities and sets up schedules so building systems are running during scheduled building use.
- Trades
    - Trade shops have skilled tradesmen and equipment necessary to provide services not available within each of the Area teams. These trades include locksmithing, roofing, carpentry, and painting. Design and construct building modifications to correct structural deficiencies, to support instructional innovation, and to address accessibility deficiencies (relative to the Americans with Disability Act).
- Manage contracts, including those for water heaters, boiler and chiller repair, grease trap service, mechanical water treatment, plumbing parts, lighting, boiler repair, air filters, uniforms, cellular telephones, maintenance software, automated building controls, and bleacher inspections.

Operations

This branch includes four custodial support specialists inline with the four maintenance areas, and the Grounds department. These responsibilities include:

- Custodial Support Specialists
    - Provide support to building Administrators, lead custodians and custodians regarding building operations.
    - Handles Equipment Transfer Requests (ETF).
- Grounds

    - Maintain and repair all competition fields, tracks, and tennis courts at ten high schools.
    - Supplement the groundskeeping efforts of site-based custodial teams by inspecting and correcting stormwater assets, and by providing tree service, fence repair, and mulching.
    - Repair groundskeeping and snow removal equipment used throughout FCPS.
    - Perform regular inspection and repair of all playgrounds to maintain safe environments for students.
    - Repair and replace concrete and asphalt paving.
- Manage contracts, including those for custodial equipment supply and repair, ice melt, cleaning supplies, bottled water, hand soap, cleaning chemicals, snow removal, and mowing.

Sustainability and Compliance

This branch is composed of Water Treatment, Pool Operations, Energy Management, and Environmental Sustainability. These responsibilities include:

- Water Treatment: Operate nine well water systems for schools that are not served by public water systems.
- Pool Operations: Operate and manage swimming pool operations, including complete coordination of use by outside groups whose user fees help to offset pool operation costs.
- Energy: Coordinate strategic procurement of energy and utilities. Prompt efforts to conserve resources via reduction in energy use and solid-waste generation.
- Environmental Sustainability: Manage contracts for industrial hygiene services, lead and asbestos remediation, emergency mitigation and repair, and fuel tank testing.
- Provide technical support and consultation to building administrators, curriculum specialists, and others with regards to environmental compliance and occupational health concerns.
- Manage contracts, including those for electricity, natural gas, propane, heating oil, recycling, measurement and verification, and solid waste services.

Project Management

This branch is comprised of three skilled project managers who oversee a diverse range of building, maintenance, and grounds projects. They are responsible for managing each project from inception through to completion, ensuring that all phases—including planning, development, execution, and final review—are meticulously handled. Their projects span a wide array of areas, including structural and spatial modifications, large-scale equipment replacements, upgrades to fields, and improvements or replacements of pavements and walkways, such as tennis courts. In addition to these tasks, project managers coordinate and manage contracts with external service providers, such as those specializing in elevator maintenance and fire safety systems, ensuring that all services are delivered to the highest standards.

C.2.

PORTFOLIO

NAME	SQ FT	BUILDING TYPE
33 Thomas Johnson Drive, Frederick	43,100	Office
57 West Frederick St	2,445	Office
7446 Hayward Road	26,678	Office
Ballenger Creek Elementary	64,187	Elementary
Ballenger Creek Middle	113,850	Middle
Blue Heron Elementary	95,085	Elementary
Brunswick Elementary	96,475	Elementary
Brunswick High	166,066	High
Brunswick Middle	119,539	Middle
Butterfly Ridge Elementary	105,515	Elementary
Career and Technology Center	86,681	Specialty
Carroll Manor Elementary	77,593	Elementary
Catoctin High	179,045	High
Centerville Elementary	87,175	Elementary
Central Office Building	86,681	Office
Crestwood Middle	107,212	Middle
Deer Crossing Elementary	77,966	Elementary
Earth and Space Sciences Laboratory	10,771	Specialty
Emmitsburg Elementary	45,080	Elementary
Frederick High	270,618	High
Glade Elementary	66,500	Elementary
Governor Thomas Johnson High	312,533	High
Governor Thomas Johnson Middle	126,700	Middle
Green Valley Elementary	51,888	Elementary
Heather Ridge	31,553	Specialty
Hillcrest Elementary	62,305	Elementary
Kemptown Elementary	53,800	Elementary
Learning and Leadership Center	27,352	Office
Lewistown Elementary	50,898	Elementary
Liberty Elementary	40,720	Elementary
Lincoln Elementary	98,463	Elementary
Lincoln "A" Building	20,334	Elementary
Linganore High	253,565	High
Middletown Elementary	54,854	Elementary
Middletown High	189,641	High
Middletown Middle	114,974	Middle

Middletown Primary	70,288	Elementary
Monocacy Elementary	57,900	Elementary
Monocacy Middle	114,445	Middle
Myersville Elementary	54,889	Elementary
New Market Elementary	88,983	Elementary
New Market Middle	114,936	Middle
New Midway Elementary	21,894	Elementary
North Frederick Elementary	95,613	Elementary
Oakdale Elementary	89,566	Elementary
Oakdale High	241,061	High
Oakdale Middle	129,858	Middle
Orchard Grove Elementary	70,142	Elementary
Parkway Elementary	32,223	Elementary
Rock Creek School	79,474	Specialty
Spring Ridge Elementary	66,276	Elementary
Sugarloaf Elementary	97,869	Elementary
Thurmont Elementary	64,250	Elementary
Thurmont Middle	135,260	Middle
Thurmont Primary	66,334	Elementary
Tuscarora Elementary	86,938	Elementary
Tuscarora High	257,062	High
Twin Ridge Elementary	68,900	Elementary
Urbana Elementary	98,178	Elementary
Urbana High	249,609	High
Urbana Middle	145,135	Middle
Valley Elementary	59,989	Elementary
Walkersville Elementary	89,514	Elementary
Walkersville High	181,416	High
Walkersville Middle	119,353	Middle
Waverley Elementary	130,225	Elementary
West Frederick Middle	166,439	Middle
Whittier Elementary	81,244	Elementary
Windsor Knolls Middle	116,644	Middle
Wolfsville Elementary	41,657	Elementary
Woodsboro Elementary	28,557	Elementary
Yellow Springs Elementary	52,600	Elementary
72 BUILDINGS TOTAL	**7,124,690**	

C.3.

SUMMARY OF CURRENT STAFFING AGAINST INDUSTRY STANDARDS

The Association of Physical Plant Administrators (APPA) sets industry standards that serve as a benchmark for facilities management professionals in educational institutions. These standards can help to guide best practices in the maintenance, operation, and sustainability of campus facilities. By comparing APPA's standards, facilities management professionals can gauge resource allocation and process outcomes to ensure consistent quality, enhance operational efficiency, and promote a safe and sustainable environment for students, faculty, and staff. APPA's standards are a valuable tool for driving continuous improvement and achieving excellence in the management of physical plant operations.

Maintenance Standards

APPA identifies five (5) maintenance standards (listed from lowest to highest, in terms of quality of service): Crisis Management, Reactive Management, Managed Care, Comprehensive Stewardship, and Showpiece Facility. The IAC chooses Level 2 (Comprehensive Stewardship) as the industry standard for LEA comparative purposes.

Level 2 is defined as: a well-developed PM program, in which most required PMs are done at a frequency slightly less than per the defined schedule. Appreciable reactive maintenance required due to systems wearing out prematurely and high number of lamps burning out. Occasional emergencies caused by pump failures, cooling system failures, etc..

Custodial Standards

APPA identifies five (5) cleaning standards (listed from lowest to highest): Unkempt Neglect, Moderate Dinginess, Casual Inattention, Ordinary Tidiness, Orderly Spotlessness. The IAC chooses Level 2 (Ordinary Tidiness) as the industry standard for LEA comparative purposes.

Comparative Results and Interpretation

The table below provides a comparison of FCPS resource allocation relative to the APPA Level 2 standards for both maintenance and custodial. It appears from this table that FCPS is understaffed in Custodians, and overstaffed in Maintenance, relative to APPA Level 2 standards. *However, this simple deduction, by itself, does not provide a useful means of assessing FCPS staffing, as described below.*

	Metric	Industry Standard	Previous FY Budgeted	Previous FY Actual	Current FY Budgeted	
C.3.a	**a) Maintenance Staffing** *(FTEs for Total GSF)*	APPA Level 2 (Comprehensive Stewardship) *124 FTEs for 7,124,690 Total GSF*	148	146	138	1
C.3.b	**b) Maintenance Load** *(GSF per FTE)*	APPA Level 2 (Comprehensive Stewardship) *67,456 GSF per FTE*	47,766	67,327	57,457	
C.3.c	**c) Percent of Maintenance staff delivering building services***	N/A	94%	90%	90%	
C.3.d	**d) Custodial Staffing** *(FTEs for Total GSF)*	APPA Level 2 (Ordinary Tidiness) *391 FTEs for 7,124,690 Total GSF*	392	404	405	2
C.3.e	**e) Custodial Load** *(GSF per FTE)*	APPA Level 2 (Ordinary Tidiness) *16,700 GSF per FTE*	18,034	16,713	17,592	

1 This does not include Administrative Staff. As part of the restructure our Alarm and Lockshop have been realigned under Security and Emergency Management. Additionally regions were condensed reducing the number of building supervisors.

2 The FY2024 Budgeted number represents occupied positions rather than budgeted positions

When applying industry staffing standards to individual organizations, one must consider the following unique conditions:

- ***Funding Effect*** – APPA standards provide further guidance on the funding levels necessary to achieve Level 2 facility performance. Specifically, APPA recommends that the maintenance operating budget should constitute 4.0% of the facility portfolio's current replacement value (CRV). In contrast, the entire maintenance and operations budget for FCPS, which includes maintenance and custodial services accounts for only 1% of the CRV. This suggests that FCPS may be relying more on in-house resources rather than external contractors or equipment replacement to meet Level 2 performance standards. Observations indicate that many APPA-affiliated organizations typically outsource essential services, which would require a significantly larger operating budget and reduced reliance on internal staff.
- ***Building Age and Condition Effect*** – APPA also asserts that under Level 2, the average FCI should be 0.05-0.15. The portfolio-wide average FCI for FCPS is 0.5 (more generally stated as 50%). As stated above, FCPS cannot accomplish timely capital renewal, and therefore maintenance must accommodate the greater workload that derives from older buildings. The average age of our buildings is 39 years.
- ***Division of Duties*** – There is no standardization among organizations as to the division of duties among maintenance and custodial staff. Even among the 24 LEAs in Maryland, the division of duties varies greatly.
- ***Program Intensity*** – We believe that FCPS has the most intensive preventive-maintenance program among the State's LEAs, and also incorporates a predictive maintenance program. The APPA calculations may, or may not, account for the fact that FCPS may also be unique in the following: intense facility use by outside user groups, and maintenance staff executing small - medium renovations.

C.4.

BUDGET NARRATIVE AND CONTEXT

The effective maintenance of our facilities requires significant financial commitment from both the Frederick County Government and the State of Maryland. In establishing annual funding priorities, our Board of Education consistently affirms its dedication to supporting the critical needs and initiatives of a comprehensive maintenance program. Currently, the budget for Maintenance and Operations represents approximately 4% of the organization's total $970 million operating budget.

The table below details the budget allocations for labor, supplies, and services essential for the operation and upkeep of our facilities. Notably, this table excludes costs associated with utilities and solid waste management. The industry standard values are based on guidelines from facility management authorities, which recommend that operational expenditures should constitute 1% of the facility portfolio's current replacement value (CRV), while maintenance should account for 3% of the CRV.

Spending	Industry Standard	Previous FY Budget $	Previous FY Budget $ per GSF	Previous FY Actual $	Previous FY Actual $ per GSF	Current FY Budget $	Current FY Budget $ per GSF
Maintenance (M)	$ 102,809,277	$ 16,157,977	$ 2.27	$ 14,632,557	$ 2.05	$ 15,466,661	$ 2.17
Operations (O)*	$ 34,269,759	$ 21,727,087	$ 3.05	$ 21,214,964	$ 2.98	$ 22,570,237	$ 3.17
M&O Combined	$ 137,079,036	$ 37,885,064	$ 5.32	$ 35,847,521	$ 5.03	$ 38,036,898	$ 5.34

* Excluding utilities, solid waste management, swimming pools

C.5.

LIST OF BUDGET CATEGORIES

The Maintenance and Operations budget is structured according to several distinct subcategories, each determined at the state level. This standardization ensures that funding can be accurately compared across Local Education Agencies (LEAs). The following outlines the specific categories that comprise the budget for both Maintenance and Operations:

Maintenance:

- Salaries
- Contracted Services
- Materials and Supplies
- Uniforms and Telecommunications
- Vehicle and Equipment Replacement
- Miscellaneous/Other

Operations:

- Salaries
- Contracted Services
- Materials and Supplies
- Miscellaneous/Other

C.6.

CURRENT REPLACEMENT VALUE OF PORTFOLIO

Gross SqFt (GSF)	Cost per GSF	Total Value
7,124,690	$481	$3,426,975,890

C.7.

FISCAL SUMMARY

C.7.a - C.7.i

	Industry Standard	FY 24 Goal/ Budget	FY 24 Goal/ Budget per GSF	FY 24 Actual	FY 24 Actual per GSF	FY 25 Goal/ Budget	FY 25 Goal/ Budget per GSF	
Spending								
Preventive Maintenance	N/A	N/A	N/A	$357,348	$0.05	TBD	TBD	2
Corrective Maintenance	N/A	N/A	N/A	$2,873,264	$0.45	TBD	TBD	2
Deferred Maintenance (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
All Maintenance	$102,809,276.70	N/A	N/A	$14,632,557	$2.05	TBD	TBD	2
Operations	$34,269,758.90	N/A	N/A	$21,214,964	$2.98	TBD	TBD	2
M&O Combined	$137,079,035.60	N/A	N/A	$35,847,521	$5.03	TBD	TBD	2

1 FCPS has moved to a run to fail strategy. This involves defunding deferred maintenance in favor of mid-lifecycle renovation.

2 FCPS has not historically performed this evaluation, and will work toward determining this information moving forward.

This table reflects the FY24 spending specifically on preventive, corrective, and deferred maintenance, excluding salaries, benefits, and other departmental expenditures. In alignment with industry standards, funding values are calculated using the following formula:

- **Maintenance:** Cost Replacement Value * 0.03
- **Operations:** Cost Replacement Value * 0.01

FCPS recognizes that historical funding has not consistently met these standards. However, in an effort to fully integrate all elements of the Comprehensive Maintenance Plan (CMP), FCPS has taken significant steps to collect and analyze this fiscal data and work towards setting goals for future fiscal years. Moving forward, FCPS is committed to refining its data collection processes to ensure the highest level of accuracy in reporting and to support continuous improvement.

D

PLANNED ACTIONS

D.1.

CHANGES

Streamlining Maintenance Operations: Enhancing Leadership Structure for Operational Excellence

To optimize our maintenance operations and achieve our systemic goal of operational excellence, we reorganized the previous structure of eight work areas into four more efficiently managed areas. Each new area has one supervisor and two foremen, replacing the previous configuration of one supervisor and one foreman per area.

Key Benefits of the New Structure:

- **Improved Supervision and Support**: By assigning two foremen to each area, we ensure better oversight and support for maintenance teams. This allows for more effective management of daily tasks, quicker response to issues, and more direct guidance for workers.
- **Enhanced Communication**: Reducing the number of work areas fosters clearer communication between supervisors and foremen, allowing for more consistent implementation of strategies and quicker dissemination of important information.
- **Increased Efficiency**: With foremen able to focus more specifically on team leadership and task management, supervisors can concentrate on strategic oversight and planning, leading to more efficient operations and better alignment with organizational goals.
- **Balanced Workloads**: The new structure facilitates a more balanced distribution of work and resources across fewer areas, minimizing bottlenecks and ensuring that all teams receive adequate attention and support.
- **Leadership Development**: Providing two foremen per area creates opportunities for leadership development and skill enhancement, preparing foremen for future supervisory roles and strengthening the leadership pipeline within the organization.

Alignment with Operational Excellence

This restructure aligns with our superintendents systemic goal of operational excellence by streamlining processes, improving resource allocation, and fostering a culture of continuous improvement. It enhances our ability to deliver high-quality maintenance services efficiently and effectively, ensuring that we meet the evolving needs of our organization. By prioritizing leadership development and enhancing communication, we create a more agile and responsive maintenance team that is better equipped to handle challenges and seize opportunities for innovation.

This restructuring is a strategic step towards achieving our vision of a well-maintained, efficient, and sustainable facility portfolio that supports the success of our organization.

Predictive Maintenance Program Expansion

FCPS will assess the current predictive maintenance program to improve strategies,resources and tools needed for critical system operations. A predictive maintenance program is essential in facilities management for several reasons:

- **Proactive Problem Solving**: Predictive maintenance uses data and monitoring tools to identify potential issues before they lead to equipment failure. By addressing problems early, schools can avoid costly emergency repairs and minimize disruptions to the learning environment.
- **Extended Equipment Lifespan**: Regular monitoring and maintenance based on real-time data can significantly extend the lifespan of critical building systems, such as HVAC, plumbing, and electrical systems. This reduces the need for premature replacements and maximizes the return on investment for existing infrastructure.
- **Cost Efficiency**: Predictive maintenance helps schools allocate resources more efficiently by focusing on areas that require attention rather than performing unnecessary routine maintenance. This targeted approach reduces maintenance costs over time and prevents expensive downtime.
- **Enhanced Safety**: By identifying potential failures before they occur, predictive maintenance improves the safety of school facilities. This proactive approach helps ensure that critical systems, like fire alarms and ventilation systems, remain operational and in good condition, safeguarding students and staff.
- **Optimized Energy Use**: Predictive maintenance can also optimize energy consumption by ensuring that systems operate at peak efficiency. For example, maintaining HVAC systems based on predictive data can reduce energy waste, leading to lower utility bills and a smaller environmental footprint.
- **Improved Planning and Budgeting**: With predictive maintenance, schools can better plan and budget for repairs and replacements. The data-driven insights allow for more accurate forecasting of maintenance needs, helping to prevent unexpected costs and allowing for more strategic financial planning.
- **Minimized Disruptions**: By preventing unexpected equipment failures, predictive maintenance minimizes disruptions to school operations. This ensures that classrooms and other essential facilities remain functional, supporting a consistent and conducive learning environment.
- **Compliance and Accountability**: Predictive maintenance programs help schools stay compliant with regulations and safety standards. Regular monitoring and maintenance can be documented, demonstrating due diligence in maintaining a safe and healthy environment for students and staff.

Overall, a predictive maintenance program enhances the efficiency, safety, and longevity of facilities, ensuring that they remain well-maintained and fully operational while optimizing costs and resource use.

D.2.

IMPROVEMENTS

List of Planned Improvements to Maintenance Structures and Systems

We currently have plans to enact the following capital maintenance projects:

- Whittier ES - Chiller replacement (Contingency CIP Funded)
- Tuscarora HS - Roof section replacements
- Thomas Johnson HS - Dual Cooling Tower replacements
- Catoctin HS - Rooftop Air Handler replacement
- Myersville ES - Dehumidification project

D.3.

MAJOR MAINTENANCE AND REPAIR PROJECTS

List of Major Capital Maintenance Projects

We currently have underway two mid-lifecycle renovation projects at:

- Ballenger Creek Middle School
- Spring Ridge Elementary School

D.4.

PROFESSIONAL DEVELOPMENT

Establishing a career progression model is essential for workforce development, yet the model created two years ago remains unimplemented and unfunded.

- **Employee Development and Retention**: A clear career progression pathway promotes employee growth and development, leading to higher job satisfaction and retention. Employees are more likely to stay with the organization when they see opportunities for advancement and skill enhancement.
- **Skill Enhancement**: Structured training tied to career progression ensures that employees gain the necessary skills for higher-level positions. This not only improves their abilities but also strengthens the overall capabilities of the workforce.
- **Talent Attraction**: A well-defined career progression model makes the organization more appealing to potential hires. Prospective employees are attracted to companies that offer clear paths for advancement and professional growth.
- **Workforce Planning**: Career progression models assist in succession planning and workforce management by identifying and preparing employees for future leadership roles within the organization.

- **Increased Efficiency and Productivity**: Employees who advance through a structured career path tend to be more engaged and productive. Their enhanced skills and expertise contribute to greater efficiency and effectiveness in maintenance operations.
- **Adaptability and Innovation**: A workforce that continuously learns and progresses is better equipped to adapt to new technologies and industry changes. This fosters innovation and helps the organization remain competitive.

Investing in a career progression model is crucial for developing a skilled, motivated, and adaptable maintenance trades workforce capable of meeting the organization's present and future needs.

E

OBSTACLES AND MISSING RESOURCES

E.1.

OBSTACLES

CAPITAL FUNDING AVAILABILITY AND PRIORITIZATION

As mentioned, capital funding has mainly been used for new construction to handle enrollment growth. Over the past three decades, FCPS has added more than three square feet of new facilities for every one square foot of facility replaced.

Our 40-year capital renewal strategy (Appendix A) might rely on an optimistic funding forecast, but it does incorporate planned modernization projects that were uncommon in previous FCPS CIP plans. Given that state and local governments are unlikely to see a significant increase in capital funds soon, we must explore alternative methods to speed up capital renewal projects. This document outlines a near-term strategy shift and examines prudent long-term decisions and actions.

FCPS must maintain a robust maintenance program. In the short term, this ensures that aging school buildings remain viable for education. In the long term, the IAC has indicated potential financial incentives for effective construction and maintenance that reduce overall ownership costs. We hope that FCPS' history of dedicated maintenance and asset conservation will positively influence future State funding incentives.

We are thankful for the continued financial support from State and County governments, as well as the budget allocations from the Board of Education. We also appreciate the encouragement and reassurance from our Superintendent, the Board of Education, and the Interagency Commission on School Construction.

AGING SCHOOL FACILITY PORTFOLIO

The FCPS school-building portfolio reflects the State's trend of aging school facilities. The cumulative capital needs at the State level are significant and growing. The State continues to develop strategic concepts, policies, and procedures that collaborate with LEA strategies to promote sustainable school facility management.

Intensive preventive maintenance and capital maintenance have allowed FCPS to sustain older school buildings, but this approach cannot continue indefinitely. No amount of maintenance can prevent a building's eventual decline. The following points highlight the urgent need for a revised strategy:

- **Inevitable Failure of Nonrenewable Building Systems**: Some building systems cannot be adequately repaired or replaced without a capital renewal project. Systems like aged electrical, water, and sewer infrastructures cannot be upgraded during minor renovations. Their failure will disrupt instruction and require costly, unplanned repairs.
- **Overwhelming Capital Maintenance Needs**: Successful maintenance extends the lifespan of building systems beyond their projected lifespan, leading to an increasing

capital maintenance backlog. This backlog is expected to double in the next twenty years.

- **Operating Budget Limitations**: Delaying capital renewal shifts an increasing maintenance burden to the operating budget, which is unsustainable in the long run.
- **Compliance and Suitability**: Aging buildings accumulate deficiencies in areas such as code compliance, energy efficiency, and educational adequacy. While safe to occupy, they do not fully meet the needs of occupants. Without modernization, these buildings will eventually fail to meet the occupants' needs.
- **Educational Sufficiency**: The State will soon conduct a statewide school facilities assessment to evaluate each facility's physical condition and educational suitability according to the Maryland Public School Facilities Educational Sufficiency Standards. This comprehensive assessment will likely reveal that some FCPS school buildings do not meet these standards.

E.2.

SUMMARIES OF DATA

Each dataset within this report includes summaries of the data below them, and in some instances footnotes to further explain the data.

F

PROOF OF BOARD APPROVAL

Board of Education of Frederick County

Agenda Item Details

Meeting	Sep 11, 2024 - Board of Education Meeting
Category	1. WORK SESSION (OPEN MEETING) [3:00 p.m.]
Subject	1.07 FY2025 Comprehensive Maintenance Plan
Type	Action, Information, Discussion
Recommended Action	Board Approval of the FY2025 Comprehensive Maintenance Plan
Goals	Goal 1 Student Achievement - FCPS will equip each and every student to be an empowered learner and an engaged citizen to achieve a positive impact in the local and global community. Goal 2 Effective and Engaged Staff - FCPS will hire, support, and retain staff who champion individual, professional, and student excellence. Goal 3 Resource Allocation - FCPS will pursue and utilize all resources strategically and responsibly to achieve identified outcomes and inspire public confidence. Goal 4 Family and Community Involvement - FCPS will nurture relationships with families and the entire community, sharing responsibility for student success and demonstrating pride in all aspects of our school system. Goal 5 Health and Safety - FCPS will promote a culture fostering wellness and civility for students and staff.

PURPOSE OF PRESENTATION: To obtain the Board of Education of Frederick County (BOE) approval of the FY2025 Comprehensive Maintenance Plan (CMP).

BACKGROUND/SUMMARY: Under Code of Maryland Regulations (section 14.39.02.19), each Local Education Agency (LEA) must annually update and submit to the Interagency Commission on School Construction (IAC) a BOE-approved CMP.

PROCESS STATEMENT: The IAC uses CMPs for the following purposes:

1. Evaluate the degree to which activities should contribute to maintaining learning environments that are healthy, safe, and educationally sufficient for all of the students that the LEA serves;

2. Evaluate the degree to which activities should maintain facilities in a condition that will ensure that the LEA obtains the appropriate longevity and value from the local and state investments made to date; and

3. Evaluate and compare each LEAs' maintenance planning both over time and across the state in a manner that supports the identification of best practices that the IAC can then share with all LEAs.

PRESENTER(S) & TITLE(S):
Veronica Hill, Executive Director, Facilities Services
Larry Phillips, Director, Maintenance and Operations
Lloyd Mills, Acting Senior Manager, Maintenance

SUBMITTED BY: Paul A. Lebo, DSL, Chief Operating Officer

09.11.2024_FCPS BOE Presentation - FY 25 Comprehensive Maintenance Plan.pdf (466 KB)

09.11.2024_Comprehensive Maintenance Plan_FY 2025.pdf (14,971 KB)

Motion & Voting

Board Approval of the FY2025 Comprehensive Maintenance Plan.
Elijah Steele, Student Member of the Board, supported the motion.

Motion by Karen Yoho, second by Rae Gallagher.
Final Resolution: Motion Carries
Yea: Karen Yoho, David Bass, Sue Johnson, Rae Gallagher, Dean Rose, Nancy Allen
Not Present at Vote: Jason Johnson

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PM PLAN

G.1.

PREVENTATIVE MAINTENANCE PLAN (PM)

PM Title	Equipment Description	PM Frequency
A01/A04/F39 / Quarterly	Air Dryer	Quarterly
A02 / Annual	Packaged Unit, Air Cooled Condenser	Annual
A02 / Quarterly	Packaged Unit, Air Cooled Condenser	Quarterly
A02G / Annual	Packaged Unit, Air Cooled Condenser W/gas heat	Annual
A02G / Quarterly	Packaged Unit, Air, Cooled Condenser W/gas heat	Quarterly
A02W / Annual	Packaged Unit, Water Cooled Condenser	Annual
A02W / Quarterly	Packaged Unit, Water Cooled Condenser	Quarterly
A03 / Semi-Annual	Humidification System	Semi-Annual
A01/A04/F39 / Quarterly	Air Compressor	Quarterly
A06 / Annual	VRF System	Annual
A06 / Quarterly	VRF System	Quarterly
A07 / Annual	CRAC Unit	Annual
A07 / Quarterly	CRAC Unit	Quarterly
A08 / Annual	Window Air Conditioner Unit	Annual
A09 / Annual	Mini Split System	Annual
A09 / Quarterly	Mini Split System	Quarterly
A10AA / Annual	Heat Pump Air to Air	Annual
A10AA / Quarterly	Heat Pump Air to Air	Quarterly
A10WA / Annual	Heat Pump Water to Air	Annual
A10WA / Quarterly	Heat Pump Water to Air	Quarterly
A10WW / Annual	Heat Pump Water to Water	Annual
A10WW / Semi-Annual	Heat Pump Water to Water	Semi-Annual
A11 / Annual	Air Handling Unit (Chilled and / or Hot Water Coils)	Annual
A11 / Quarterly	Air Handling Unit (Chilled and / or Hot Water Coils)	Quarterly
A11C / Annual	Air Handling Unit (Hot Water Coils and/or Remote Condenser)	Annual
A11C / Quarterly	Air Handling Unit (Hot Water Coils and/or Remote Condenser)	Quarterly
A11G / Annual	Air Handling Unit (Gas Heat and/or Remote Condenser)	Annual
A11G / Quarterly	Air Handling Unit (Gas Heat and/or Remote Condenser)	Quarterly
A13 / Annual	Wall Mounted or Thru Wall Package Unit (PTAC)	Annual
A13 / Quarterly	Wall Mounted or Thru Wall Package Unit (PTAC)	Quarterly
A15/A15D / Quarterly	Intrusion Alarm Panel	Quarterly

A15/A15D / Quarterly	Intrusion Alarm Device	Quarterly
A19 / Quarterly	Dust Collector	Quarterly
A20 / Quarterly	Self-Contained Dust Filter	Quarterly
A21 / Quarterly	Self-Contained Air Purifier	Quarterly
A21 / Annual	Self-Contained Air Purifier	Annual
A40 / Quarterly	Air Vent, Automatic, W/ Manual Override (high vent)	Quarterly
A41 / Weekly	Air tester, Multigas Detector	Weekly
B02 / Annual	Hot Water Boiler	Annual
B02 / Monthly	Hot Water Boiler	Monthly
B02 / Quarterly	Hot Water Boiler	Quarterly
B02C / Annual	Boiler Condensing, Gas	Annual
B02C / Monthly	Boiler Condensing, Gas	Monthly
B02C / Semi-Annual	Boiler Condensing, Gas	Semi-Annual
B02S / Annual	Steam Boiler	Annual
B02S / Monthly	Steam Boiler	Monthly
B02S / Quarterly	Steam Boiler	Quarterly
Group with B02 / Annual, or B02C / Annual, or B02S / Annual	Burner, Gas	Annual
Group with B02 / Annual, or B02C / Annual, or B02S / Annual	Burner, Oil	Annual
Group with B02 / Annual, or B02C / Annual, or B02S / Annual	Burner, Duel Fuel	Annual
B05 / Annual	Boiler, Electric	Annual
B05 / Monthly	Boiler, Electric	Monthly
B05 / Quarterly	Boiler, Electric	Quarterly
B08 / Annual	Basketball Backboard and Hoist	Annual
B07 / Annual	Bleachers, Folding	Annual
B09 / Annual	Bleachers, Fixed	Annual
B10 / Annual	Bleachers, Fixed Movable	Annual
B12 / Annual	Backstop	Annual
B14 / Semi-Annual	Bathroom Partitions / Doors	Semi-Annual
C01 / Semi-Annual	Clock Control System	Semi-Annual
C02 / Semi-Annual	Air Intake Damper	Semi-Annual
C03 / Annual	Coils- Preheat, Reheat (Remote Location)	Annual
C04 / Semi-Annual	Building Pressure Relief Damper	Semi-Annual
C05 / Annual	Automatic Mixing Box, Pneumatic or Electric	Annual
C06 / Annual	Building Automation System local device controller DDC	Annual
C07 / Semi-Annual	Steam Condensate Pump	Semi-Annual
C09 / Semi-Annual	Cooling Tower	Semi-Annual

C10 / Annual	Building Automation System (UNC, NCE, NAE, Main Pneumatic Controls)	Annual
C11 / Annual	Evaporative Cooler	Annual
C28 / Semi-Annual	Carpet Extractor	Semi-Annual
C29 / Semi-Annual	Carpet Extractor, Spot	Semi-Annual
D03/D03D/D03O/D03S / Annual	Gutters and Downspouts (inventory per roof section)	Annual
D03/D03D/D03O/D03S / Annual	Roof Drains	Annual
D03/D03D/D03O/D03S / Annual	Roof Overflows	Annual
D03/D03D/D03O/D03S / Annual	Roof Scuppers	Annual
D04A / Quarterly	Exterior Entrance Door w/ Automatic Opener	Quarterly
D04E / Quarterly	Exterior Entrance Door (any exterior door in a hallway or corridor)	Quarterly
D04I / Quarterly	Interior Entrance Door (Vestibule only)	Quarterly
D06 / Annual	Site Storm Drains	Annual
D07 / Semi-Annual	Storm water Pond	Semi-Annual
D08 / Annual	Bioretention Facility	Annual
D10E / Semi-Annual	Exterior Coiling Door	Semi-Annual
D10I / Semi-Annual	Interior Coiling Door	Semi-Annual
D13E / Annual	Exterior Swinging Door (any exterior doors other than D04E)	Annual
D13I / Annual	Interior Swinging Door (any interior door other than D04I)	Annual
D14 / Annual	Floor Drain (sanitary Sewer)	Annual
D16 / Annual	Hand Dryer	Annual
D18I / Annual	Interior Folding Door	Annual
E01E 5 year load test	Elevator, Electric Traction	5 Years
E01E / Annual	Elevator, Electric Traction	Annual
E01E / Monthly	Elevator, Electric Traction	Monthly
E01H / Annual	Elevator, Hydraulic	Annual
E01H / Monthly	Elevator, Hydraulic	Monthly
E19A / Annual	Emergency Light, Emergency Generator Powered	Annual
E19A / Monthly	Emergency Light, Emergency Generator Powered	Monthly
E20 / Annual	Building Service Main Breaker/ Disconnect	Annual
E25 / Annual	Trans / Bus Diff Relay	Annual
E27 5 Years	Breaker, Panel (inventory only the panel not each breaker in the panel)	5 Years
E30 / Annual	Switchboard (Breakers feed from main bus)	Annual
E34 / Annual	Disconnects, Isolation Switches	Annual
E36 / Monthly	Automatic Transfer Switch	Monthly

E40D / Annual	Emergency Generator (Diesel)	Annual
E40D / Monthly	Emergency Generator (Diesel)	Monthly
E40NG / Annual	Emergency Generator (Natural / LP Gas)	Annual
E40NG / Monthly	Emergency Generator (Natural / LP Gas)	Monthly
E51 / Annual	Motor Starters	Annual
E56 / Quarterly	Dimmer Panel	Quarterly
E57 / Annual	Transformer	Annual
E58C / Annual	Commercial Clothes Washer	Annual
E58R / Annual	Residential Clothes Washer	Annual
E59C / Annual	Commercial Clothes Dryer	Annual
E59R / Annual	Residential Clothes Dryer	Annual
E61 / Annual	Emergency Light, Dry Cell	Annual
E61 / Monthly	Emergency Light, Dry Cell	Monthly
E63 / Annual	Exhaust Hood (all except Kitchen)	Annual
E64 / Quarterly	Energy Recovery Unit (External and internal units) Note: Must be associated to an air handler (i.e. A02, A10, A11, or A13)	Quarterly
E64 / Annual	Energy Recovery Unit (External and internal units) Note: Must be associated to an air handler (i.e. A02, A10, A11, or A13)	Annual
E65 / Annual	Evacu-Trac	Annual
E68 / Annual	Exit/Emergency Light Combo	Annual
E68 / Monthly	Exit/Emergency Light Combo	Monthly
E69 / Annual	GFI Breakers (inventory each breaker)	Annual
E70 / Quarterly	GFI Receptacles (inventory each receptacle)	Quarterly
F01 / Monthly	Sprinkler System Check Valve	Monthly
F01A / Monthly	Sprinkler System Check Valve (Alarmed)	Monthly
F01G 5 year	Fire protection Gauges	5 years
F02 / Annual	Fire Extinguishing System, Dry pipe	Annual
F02 / Monthly	Fire Extinguishing System, Dry pipe	Monthly
F02 / Quarterly	Fire Extinguishing System, Dry pipe	Quarterly
F03 / Annual	Fire Post Indicator Valve	Annual
F04 Test & Maintenance / Annual	Fire Control Valve	Annual
F04 Inspection / Quarterly	Fire Control Valve	Quarterly
F05 / Monthly	Fire Pump	Monthly
F05 / Weekly	Fire Pump	Weekly
F05D / 2 year	Fire Pump, Diesel Motor	2 year
F05D / 5 year	Fire Pump, Diesel Motor	5 year
F05D / Annual	Fire Pump, Diesel Motor	Annual
F05D / Semi-Annual	Fire Pump, Diesel Motor	Semi-Annual

F05D Test & Maintenance / Weekly	Fire Pump, Diesel Motor	Weekly
Fire Alarm Test / Annual	Magnetic Door Holdback	Annual
F08 / Annual	Fire Hose	Annual
F09 / Annual	Fire Dept. Hose Connection (outlet)	Annual
F10 / Annual	Fire Department Pumper Connections	Annual
Fire Alarm Test / Annual	Alarm Notification Device (Strobe, and/or Horn)	Annual
Fire Alarm Visual Inspection / Semi-Annual	Alarm Notification Device (Strobe, and/or Horn)	Semi-Annual
Fire Alarm Test / Semi-Annual	Air Pressure Switch	Semi-Annual
Fire Alarm Visual Inspection / Quarterly	Air Pressure Switch	Quarterly
Fire Alarm Test / Annual	CO Detector	Annual
Fire Alarm Visual Inspection / Semi-Annual	CO Detector	Semi-Annual
Fire Alarm Test / Annual	Fire Extinguishing (Halon, Co2, Ansel) (Initiating Device for assoc. F26)	Annual
Fire Alarm Visual Inspection / Semi-Annual	Fire Extinguishing (Halon, Co2, Ansel) (Initiating Device for assoc. F26)	Semi-Annual
Fire Alarm Test / Annual	Fusible Link	Annual
Fire Alarm Visual Inspection / Semi-Annual	Fusible Link	Semi-Annual
Fire Alarm Test / Annual	Heat Detectors	Annual
Fire Alarm Visual Inspection / Semi-Annual	Heat Detectors	Semi-Annual
Fire Alarm Test / Annual	Manual Pull Stations	Annual
Fire Alarm Visual Inspection / Semi-Annual	Manual Pull Stations	Semi-Annual
Fire Alarm Test / Annual	Smoke Detector	Annual
Fire Alarm Visual Inspection / Semi-Annual	Smoke Detector	Semi-Annual
Fire Alarm Test / Annual	Smoke Detector, Beam	Annual
Fire Alarm Visual Inspection / Semi-Annual	Smoke Detector, Beam	Semi-Annual
Fire Alarm Test / Annual	Smoke Detector, Duct	Annual
Fire Alarm Visual Inspection / Semi-Annual	Smoke Detector, Duct	Semi-Annual
Fire Alarm Test / Semi-Annual	Tamper Switch	Semi-Annual
Fire Alarm Visual Inspection / Quarterly	Tamper Switch	Quarterly
Fire Alarm Test / Semi-Annual	Water Flow	Semi-Annual
Fire Alarm Visual Inspection / Quarterly	Water Flow	Quarterly
Fire Alarm Test / Semi-Annual	Water Level Switch	Semi-Annual
Fire Alarm Visual Inspection / Quarterly	Water Level Switch	Quarterly

Fire Alarm Test / Annual	Main Fire Alarm Panel	Annual
Fire Alarm Visual Inspection / Semi-Annual	Main Fire Alarm Panel	Semi-Annual
Fire Alarm Test / Annual	Fire Annunciator Panel	Annual
Fire Alarm Visual Inspection / Semi-Annual	Fire Annunciator Panel	Semi-Annual
Fire Alarm Test / Annual	Fire Alarm Booster Panel	Annual
Fire Alarm Visual Inspection / Semi-Annual	Fire Alarm Booster Panel	Semi-Annual
Fire Alarm Test / Annual	Fire Alarm Audio Notification (microphone)	Annual
Fire Alarm Visual Inspection / Semi-Annual	Fire Alarm Audio Notification (microphone)	Semi-Annual
Fire Alarm Test / Annual	Remote Fire Alarm Control Panel	Annual
Fire Alarm Visual Inspection / Semi-Annual	Remote Fire Alarm Control Panel	Semi-Annual
Fire Alarm Test / Annual	Communicator (Dialer)	Annual
Fire Alarm Visual Inspection / Semi-Annual	Communicator (Dialer)	Semi-Annual
F18 2 year	Fire & Smoke Damper	2 years
F19 / Annual	Fire Hydrants	Annual
F20 / Annual	Sprinkler Heads	Annual
Obstruction Test / 5 Year	Sprinkler System Piping	5 Year
F22 12 year	Fire Extinguisher (ABC Chemical)	12 Year
F22 6 year	Fire Extinguisher (ABC Chemical)	6 Year
F22 / Annual	Fire Extinguisher (ABC Chemical)	Annual
F22 / Monthly	Fire Extinguisher (ABC Chemical)	Monthly
F22CO2 5 year	Fire Extinguisher (CO2 Chemical)	5 Year
F22CO2 / Annual	Fire Extinguisher (CO2 Chemical)	Annual
F22CO2 / Monthly	Fire Extinguisher (CO2 Chemical)	Monthly
F22K 5 year	Fire Extinguisher (Class K wet Chemical)	5 Year
F22K / Annual	Fire Extinguisher (Class K wet Chemical)	Annual
F22K / Monthly	Fire Extinguisher (Class K wet Chemical)	Monthly
F26 Annual	Fire Extinguishing System (System other than water not portable extinguisher)	Annual
F27 / Semi-Annual	Exhaust Fan, centrifugal	Semi-Annual
F28 / Annual	Exhaust Fan, Radon	Annual
F36 / Semi-Annual	Exhaust Fan, axial	Semi-Annual
F37B / Semi-Annual	Burnisher, Electric	Semi-Annual
F37L / Semi-Annual	Floor Machine, low Speed	Semi-Annual
F37P / Quarterly	Burnisher, Propane Powered	Quarterly
F38 / Annual	Lightning Protection	Annual
A01/A04/F39 / Quarterly	Pneumatic Lines, Filter, etc.	Quarterly

Group with B02 / Annual, or B02C / Annual, or B02S / Annual	Draft Fan, Boiler	Annual
F43 / Quarterly	Charcoal Vent Filter (sanitary)	Quarterly
F49 / Annual	Fencing, All Types	Annual
F50 / Monthly	Filterra- Storm water Pollution Treatment	Monthly
F52 / Annual	Flag Pole	Annual
F55 / Annual	Variable Frequency Drive	Annual
G01 / Annual	Independent Fuel Oil pump & Strainers	Annual
G02 / Annual	Grease Trap	Annual
G02 / Monthly	Grease Trap	Monthly
G03E / Semi-Annual	Exterior Gates	Semi-Annual
G04 / Annual	Goal Post	Annual
G04A / Annual	Playground Equipment	Annual
G04A / Annual	Playground Equipment	Annual
G06 / Annual	Generator, Portable	Annual
G06 / Quarterly	Generator, Portable	Quarterly
G08 / Annual	Geothermal Heating/ Cooling Water to Air	Annual
G08 / Quarterly	Geothermal Heating/ Cooling Water to Air	Quarterly
G08WW / Annual	Geothermal Heating/ Cooling Water to Water	Annual
G08WW / Quarterly	Geothermal Heating/ Cooling Water to Water	Quarterly
H01 / Annual	Water to Water Heat Exchanger Domestic systems only	Annual
H01 / Semi-Annual	Water to Water Heat Exchanger Domestic systems only	Semi-Annual
H01FP / Annual	Flat Plate Heat Exchanger	Annual
H01FP / Quarterly	Flat Plate Heat Exchanger	Quarterly
H02G / Annual	Water Heater, Gas	Annual
H02G / Semi-Annual	Water Heater, Gas	Semi-Annual
H02O / Annual	Water Heater, Oil	Annual
H02O / Semi-Annual	Water Heater, Oil	Semi-Annual
H03 / Annual	Water Heater Electric	Annual
H15M / Annual	Maintenance Hoist	Annual
I02/I04 / Annual	Cabinet Fan Coil Unit Wall Mounted	Annual
I02/I04 / Quarterly	Cabinet Fan Coil Unit Wall Mounted	Quarterly
I02/I04 / Annual	Cabinet Fan Coil Unit Ceiling Hung	Annual
I02/I04 / Quarterly	Cabinet Fan Coil Unit Ceiling Hung	Quarterly
I05 / Quarterly	Variable Air Volume, Fan Powered	Quarterly
I05NFP / Quarterly	Variable Air Volume, Non-Fan Powered	Quarterly
I07 / Annual (Activation)	Irrigation System	Annual
I07 / Annual (De-activation)	Irrigation System	Annual

K02 / Annual	Hot Cabinet, Electric (All Sizes)	Annual
K05 / Annual	Booster Heater	Annual
K07 / Quarterly	Dishwasher Commercial	Quarterly
K08 / Quarterly	Garbage Disposal Commercial	Quarterly
K11 / Quarterly	Deep Fat Fryer	Quarterly
K13 / Annual	Exhaust Hood (kitchen)	Annual
K15 / Quarterly	Static Milk or Ice cream cooler (i.e. no evaporator Fan)	Quarterly
K17 / Quarterly	Ice Machine	Quarterly
K19 / Quarterly	Kettle	Quarterly
K21 / Quarterly	Mixer	Quarterly
K22 / Quarterly	Broiler	Quarterly
K24 / Annual	Oven, Gas / Electric	Annual
K25 / Annual	Warmer, stationary unit	Annual
K26 / Annual	Hose & Reel	Annual
K29 / Semi-Annual	Reach-in Refrigerator all types (Commercial)	Semi-Annual
K30 / Semi-Annual	Refrigerator/freezer, walk-in box	Semi-Annual
K31 / Annual	Sink, Kitchen	Annual
K32 / Quarterly	Slicer	Quarterly
K33 / Quarterly	Cooker, Steam	Quarterly
K33 / Annual	Cooker, Steam	Annual
K37 / Quarterly	Serving Line-Heated	Quarterly
K38 / Annual	Serving Line-Refrigerated & Non-Refrigerated	Annual
K43 / Annual	Combi-Oven, Gas / Electric	Annual
K45 / Annual	Dishwasher Power Dryer	Annual
K49 / Quarterly	Pizza Cooker	Quarterly
L01 / Semi-Annual	Grounds Equipment	Semi-Annual
L02 / Semi-Annual	Material Lift i.e. Duct Lift	Semi-Annual
L04P / Annual	Lighting, Exterior, Pole	Annual
L04S / Annual	Lighting, Exterior, Other than pole or building mounted	Annual
L04W / Annual	Lighting, Exterior, wall	Annual
L08 / Semi-Annual	Spotlights	Semi-Annual
L09 / Annual	Ladder, Exterior, Fixed	Annual
L10 / Annual	Stage Hoist	Annual
L11 / Annual	Exit Light	Annual
L11 / Monthly	Exit Light	Monthly
M01 / Annual	Manhole/Electrical	Annual
M02 / Quarterly	Manhole/Sewers	Quarterly

M05 / Semi-Annual	Man Lift	Semi-Annual
M06 / Semi-Annual	Material Handling Equipment- Engine Driven (i.e. fork lift, platform lift)	Semi-annual
M12 / Annual	Loading Dock, Lift or leveler	Annual
P04 / Semi-Annual	Pump, Centrifugal	Semi-Annual
P08 / Semi-Annual	Partition / Curtain, Electric	Semi-Annual
P09 / Semi-Annual	Chemical Feed Metering Pump	Semi-Annual
P09A / Quarterly	Chemical Feed Metering Pump (water treatment department equipment only)	Quarterly
P10 / Annual	Paint Booth, Gas Fired, Hot Air	Annual
P10 / Monthly	Paint Booth, Gas Fired, Hot Air	Monthly
P16 / Semi-Annual	Partition / Curtain, Manual	Semi-Annual
P19 / Annual	Pressure Washer, Electric	Annual
P20 / Annual	Pressure Washer, Gas	Annual
Portable / Annual	Portable Classroom	Annual
Bathroom Portable / Annual	Portable Classroom with Bathroom	Annual
Bathroom Portable / Monthly	Portable Classroom with Bathroom	Monthly
Bathroom Portable / Quarterly	Portable Classroom with Bathroom	Quarterly
Portable / Monthly	Portable Classroom	Monthly
Portable / Quarterly	Portable Classroom	Quarterly
R02 / Semi-Annual	Shingles, Metal	Semi-Annual
R02 / Semi-Annual	Buildup, Membrane	Semi-Annual
R02 / Semi-Annual	Canopy Roofing	Semi-Annual
R05 (Reciprocating and Scroll Air Cooled Condenser) / Annual	Chiller (Reciprocating and Scroll Air Cooled Condenser)	Annual
R05 (Rotary Screw Air Cooled Condenser) / Annual	Chiller (Rotary Screw Air Cooled Condenser)	Annual
R05 (Centrifugal Water Cooled) / Annual	Chiller (Centrifugal Water Cooled)	Annual
R05 (Rotary Screw (Water Cooled) / Annual	Chiller (Rotary Screw (Water Cooled)	Annual
R05 (Reciprocating and Scroll Water Cooled) / Annual	Chiller (Reciprocating and Scroll Water Cooled)	Annual
R09 2 year	Finned-tube Radiant Heaters All types i.e.. Electric, steam, hot water	2 Year
R11 / Semi-Annual	Roof Hatch	Semi-Annual
S02C/S02CT/S02D/S02G/S02H / Monthly	Hydronic System Chilled Loop Piping	Monthly
S02C/S02CT/S02D/S02G/S02H / Monthly	Cooling Tower Loop Piping	Monthly
S02C/S02CT/S02D/S02G/S02H / Monthly	Hydronic System Dual Temp Loop Piping	Monthly
S02C/S02CT/S02D/S02G/S02H / Monthly	Hydronic System Geothermal Loop Piping	Monthly

S02C/S02CT/S02D/S02G/S02H / Monthly	Hydronic System Heating Loop Piping	Monthly
S03 / Semi-Annual	Septic System	Semi-Annual
S05 / Semi-Annual	Lift pump System	Semi-Annual
S06 / Semi-Annual	All Sewage Pumping Equipment	Semi-Annual
S07 / Semi-Annual	Sump Pump	Semi-Annual
S08 / Annual	Valve, sediment strainer	Annual
S10R/S10W / Quarterly	Floor Scrubber (Ride-on)	Quarterly
S10R/S10W / Quarterly	Floor Scrubber (Walk Behind)	Quarterly
S20/S20P/S21 / Quarterly	Card Access (Swipes)	Quarterly
S20/S20P/S21 / Quarterly	Card Access (Proximity)	Quarterly
S20/S20P/S21 / Quarterly	Card Access Control Panel	Quarterly
S23 / Semi-Annual	Non-Kitchen lavatory/Sink	Semi-Annual
S23A / Semi-Annual	Non-Kitchen lavatory/Sink, hand dryer, soap integrated unit	Semi-Annual
S24 / Semi-Annual	Solar Panel Electric	Semi-Annual
S25 / Annual	Solar Panel Water	Annual
S25 / Semi-Annual	Solar Panel Water	Semi-Annual
S26 / Semi-Annual	Structures other than the school	Semi-Annual
T01F / Annual	Tank, Fire Protection Water Storage	Annual
T01H / Annual	Tank, Hydronic Water Storage (Chilled or Hot Water)	Annual
T01P / Annual	Tank, Potable Water Storage	Annual
T03 / Annual	Tank, Fuel Oil, Aboveground	Annual
T04 / Annual	Tank, Fuel Oil, Underground	Annual
T06 / Annual	Tank, Chemical (Acid nutrition tank) only included, if not associated to a piece of equipment	Annual
T07 / Semi-Annual	Toilet	Semi-Annual
T08 5 year	Traps (Steam Traps)	5 Year
T09 / Quarterly	Traps (Clay Trap)	Quarterly
U01 / Annual	Unit Heater, Steam or Hot Water	Annual
U02 / Annual	Unit Heater, Gas	Annual
U03 / Annual	Unit Heater Electric	Annual
U04 / Semi-Annual	Urinals	Semi-Annual
U05 / Monthly	Urinal, Waterless	Monthly
V01B/V01T/V01U / Semi-Annual	Vacuum Cleaner Backpack	Semi-Annual
V01R / Annual	Vacuum Ride-On	Annual
V01B/V01T/V01U / Semi-Annual	Vacuum Cleaner Tank (Wet/Dry)	Semi-Annual
V01B/V01T/V01U / Semi-Annual	Vacuum Cleaner Upright	Semi-Annual
V03 / Annual	Valve, pressure regulator	Annual

V05 / Annual	Valve 2" and larger main or critical not associated to a piece of equipment	Annual
V06 / Semi-Annual	Hydronic 3 way valve	Semi-Annual
V09 / Annual	Backflow Preventer	Annual
V09T / Annual	Backflow Tester	Annual
V10 / Annual	Domestic water tempering mixing valve	Annual
V11 / Annual	Solenoid Valve	Annual
W01 / Annual	Stand-alone Bottle Filling Station, Refrigerated	Annual
W01A / Annual	Drinking Fountain, Refrigerated	Annual
W01B / Annual	Drinking Fountain, Non-Refrigerated	Annual
W02 / Weekly	Emergency Eye Wash Station	Weekly
W03 / Annual	Water Softener	Annual
W04 / Semi-Annual	Water Filter	Semi-Annual
W06 / Annual	Building Domestic Water Piping	Annual
W07 / Monthly	Wheelchair Lift	Monthly
W07 / Annual	Wheelchair Lift	Annual
W09 / Annual	Water Purifier, Ultraviolet	Annual
W10 / Quarterly	Water Heater, on demand	Quarterly
W14 / Semi-Annual	Welder, Portable, Engine Driven	Semi-Annual
W16 / Semi-Annual	Windows, Manual	Semi-Annual
W17 / Semi-Annual	Windows, Motorized System	Semi-Annual
XT / Weekly	Vehicle	Weekly
XX / Annual	Trailers, Fixed Deck and Hydraulic	Annual
Building Tour / Monthly	Building Tour	Monthly
F20 / Annual	Fire Protection System Annual Test	Annual
Glove Exchange / Semi-Annual	Glove Exchange	Semi-Annual
Lifeguarding	Lifeguarding	Monthly
Pool Maintenance	Pool Maintenance	Monthly
Water Quality Shop Re-Agent tour	Water Quality Shop Re-Agent tour	Monthly
Calibration of a Turbidity Meter	Calibration of a Turbidity Meter	Monthly
Water Quality Tour / Weekly	Water Quality Tour	Weekly
Athletic Field		
B13P (Practice Field, Natural Grass)	Core Aerating	Sept
B13P (Practice Field, Natural Grass)	Mowing	Mar-Nov
B13P (Practice Field, Natural Grass)	Overseeding	Mar & Sept
B13P (Practice Field, Natural Grass)	Compaction Testing	Jul
B13P (Practice Field, Natural Grass)	Fencing Insp.	Oct
B13P (Practice Field, Natural Grass)	Rolling	Mar
B13P (Practice Field, Natural Grass)	Soil testing	Feb

B13P (Practice Field, Natural Grass)	Soil testing (post)	Oct
B13P (Practice Field, Natural Grass)	TDAOC	Jun
B13P (Practice Field, Natural Grass)	Verti-quaking/De-compaction	Apr
B13C (Competition Field, Natural Grass)	Dragging	Feb
B13C (Competition Field, Natural Grass)	Soil testing	Feb
B13C (Competition Field, Natural Grass)	Irrigantion	Mar& Nov
B13C (Competition Field, Natural Grass)	Rolling	Mar-Nov
B13C (Competition Field, Natural Grass)	Mowing	Mar-Nov
B13C (Competition Field, Natural Grass)	QA inspection	Mar-Nov
B13C (Competition Field, Natural Grass)	Soil testing (post season)	Oct
B13C (Competition Field, Natural Grass)	Compaction Testing	Jul
B13C (Competition Field, Natural Grass)	Core Aerating	Sept
B13C (Competition Field, Natural Grass)	Top dressing/Pest & Insect Control	Jun
B13C (Competition Field, Natural Grass)	Fertilizer application	Mar & Aug
B13C (Competition Field, Natural Grass)	Herbicide application	Mar-Oct
B13C (Competition Field, Natural Grass)	Slit seeding & Over seeding	Mar & Sept
B13C (Competition Field, Natural Grass)	Verti-quaking/De-compaction	Apr
B13CA&PA (Competition and Practice Field, Artificial)	Synthetic Turf G-Max Test	Jun
B13CA&PA (Competition and Practice Field, Artificial)	General Service Task	Nov
B13CA&PA (Competition and Practice Field, Artificial)	Inspection	Mar,Jun, Sep, Dec
B13CA&PA (Competition and Practice Field, Artificial)	Herbicide application	Mar-Oct
B13CA&PA (Competition and Practice Field, Artificial)	Drainage testing (out sourced)	Jun