



Queen Anne's County Public Schools

Preparing World-Class Students Through Everyday Excellence

OCTOBER, 2021

COMPREHENSIVE MAINTENANCE PLAN



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**Board of Education of Queen Anne's County
Comprehensive Maintenance Plan
2021-2026**

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**Board of Education of Queen Anne's County
Comprehensive Maintenance Plan
2021-2026**

SECTION A: INTRODUCTION AND SUPPORTING INFORMATION

Guiding Principals

The Board of Education of Queen Anne's County Comprehensive Maintenance Plan has been established to develop, maintain, and improve the maintenance program of the public school system. This plan is intended to support the delivery of educational programs and services in all schools and support buildings, and provide for a safe and healthy environment.

Vision and Mission

The primary objective of the maintenance program is to successfully maintain all buildings and grounds, providing preventative and corrective maintenance throughout the anticipated 40 year building life expectancy. This plan also addresses the repair and replacement of fixed equipment. This is further explained as follows:

1. To provide continuous use of facilities without disruptions to the educational program.
2. To provide efficient functioning buildings.
3. To maintain the plant building and fixed equipment in such a manner as to eliminate or reduce all possible hazards.
4. To protect and maintain public property by organized and scheduled maintenance repairs.
5. To conserve energy by insuring that the maximum results are obtained with minimum expenditure of energy.
6. To provide a maintenance program that will encourage preventative measures, while offering prompt response to requests.

Interrelationships

Each spring, the Chief Operating Officer, Facilities Planner, and Maintenance Foreman begin to assess the maintenance and capital project building needs for the next fiscal year. As part of that review, they reference the facility condition assessment,

completed in 2016, the Comprehensive Maintenance Plan from the previous year, and the maintenance tickets placed over the course of the last year. Along with the projected enrollment calculations, necessary projects are then rated in the priority of life safety, building envelope, capacity, energy efficiency, and systemic replacement. The result of this rating begins to build the Educational Facility Master Plan and guide the funding requests for the next year of the Capital Improvement Plan.

Future Goals of the Maintenance Program

QACPS has recently purchased tablets for all members of the maintenance team, in an effort to better document repairs and replacements done in the field. We are currently training the staff on how to photograph and upload photos into the CMMS system and track their time on each task.

Computerized Maintenance Management System (CMMS)

SherpaDesk is the computerized maintenance management system that is utilized by QACPS. At this time, there is one module for maintenance tickets and one for technology. Primarily, this system is used by the schools to input requests for repair. Our maintenance team also employs this system to schedule preventative maintenance tasks. We do not utilize this system or any other to track or tag maintenance assets. Work that is done by outside contractors is not tracked in this system.

Assessment of Facilities

The last facility condition assessment was completed for the district in 2016 by an independent contractor. The goal is to complete a like survey every 10 years. In future years, QACPS also anticipates that we will utilize the data gathered in the facility condition assessments and maintenance inspections that are completed routinely by the IAC.

SECTION B: FACILITY OUTCOMES

Facility Usability

All school buildings are 100% operational. There have been no issues in any of the facilities that have precluded the delivery of educational programs or regular services.

Work Orders

Preventative Maintenance Work Orders

From July 1, 2020 through June 30, 2021, there were 159 preventative maintenance work orders opened. 21% of these were closed within 30 days. At this time,

maintenance staff do not log their hours or total dollars spent into the CMMS. They operate on the number of work orders that need to be completed each day, as assigned by the Maintenance Foreman. The SherpaDesk CMMS system does allow us to capture data for both time and cost, and employees are currently being trained on how to routinely do so. Please see "Appendix A" for an example of the hourly report that the system is able to compile. As of July 1, 2022, the goal is to see that all maintenance staff input their hours spent on all tasks and provide photographs of the completed work. QACPS does not log time or dollars spent with outside contractors into the CMMS.

Corrective Maintenance Work Orders

From July 1, 2020 through June 30, 2021, there were 2,630 corrective maintenance work orders opened. 19% of these were closed within 30 days. We are not currently set up to notate tickets as emergency or high priority. This designation is determined and assigned by the Maintenance Foreman. At this time, maintenance staff do not log their hours or total dollars spent into the CMMS. They operate on the number of work orders that need to be completed each day, as assigned by the Maintenance Foreman. The SherpaDesk CMMS system does allow us to capture data for both time and cost, and employees are currently being trained on how to routinely do so. Please see "Appendix A" for an example of the hourly report that the system is able to compile. As of July 1, 2022, the goal is to see that all maintenance staff input their hours spent on all tasks and provide photographs of the completed work. QACPS does not log time or dollars spent with outside contractors into the CMMS. The average time it takes to close a corrective maintenance work order is shown in Appendix B. However, this report is skewed by tickets that have not been placed in a hold status, but are awaiting further action. Tickets are primarily created at the school level and the CMMS system does not easily report data on who initiates each one. We estimate that approximately 8% of the yearly tickets are entered by the Maintenance Foreman, the Facilities Planner, or the administrative staff.

Custodial

100% of our custodians have been trained on the Custodial Scope of Work in the last two fiscal years. QACPS is currently working on a custodial mentoring program that will give further instruction and guidance on the expectations of the job to new hires. Lead Custodians in each building do a weekly assessment of their facility and submit a checklist to the Custodial Foreman. Based on that rubric and feedback from the building administrators, about 85% of those duties are completed in a consistent manner.

SECTION C: RESOURCES AND INPUTS

Staffing and Organization

This section describes the organizational units, which form the Maintenance Department. The department has two (2) divisions; namely Operations of Plant and Maintenance of Plant. The Chief Operating Officer manages both divisions. With few exceptions such as roof repairs and replacement or retubing of boilers, the maintenance staff is capable of handling all repairs and minor alterations to the school plants. Specific duties and responsibilities of the Maintenance Department personnel are as follows:

Chief Operating Officer- 1 position

Controls the planning, direction, control and review of countywide physical facilities of the school system. Works directly with the foreman of maintenance and buildings, conducts training classes, handles personnel problems, evaluates and hires workers and provide assistance with budgetary decisions. Also, is responsible for developing and monitoring the district's energy management program under board-level policy and Superintendent's guidelines for the purpose of reducing utility consumption.

Facilities Planner- 1 position

Serves as the advisor to the Chief Operating Officer in all matters related to capital planning, architectural planning, building construction/alterations, and site acquisition. Coordinates the implementation of capital improvement requests, capital budget, enrollment projections, moving of relocatable classrooms, and property records management.

Maintenance Foreman- 1 position

This position serves as a working foreman and also oversees and coordinates the activities involved in the maintenance and repair of buildings and related structures; determines the need for repair or maintenance of buildings, related structures and/or building utility systems; environmental testing, inspect work of contractor, arrange for the acquisition of supplies and perform related work as required.

Building Service Foreman- 1 position

Assigns and controls work of building service employees, inspects work of assigned personnel and directs corrective measures to secure satisfactory performance and meet established standards and evaluates job assignments.

Mechanics, Plumbers and Electricians- 7 positions

Provides emergency repair or replacement of all mechanical equipment, fire alarms, electrical, low-voltage, water and sewage lines within the school buildings.

Carpenters- 1 position

Repairs or replaces floor coverings, doors, windows, stairs, stair treads, wall systems, ceiling and floor tile, door hardware, locks and similar structural elements.

Custodians- 64 positions

Primary tasks involve sanitizing and disinfecting, cleaning classrooms, corridors, restrooms, and all other spaces within the schools. Custodians are expected to change lightbulbs, do monthly inspections on fire extinguishers, and change all ceiling tiles that do not require specialty cuts. They maintain daily readings of the boilers.

Supporting Service's Administrative Assistant

Maintains a variety of files for correspondence, work orders, purchase orders and inspections, oversees bidding process and communicates phone messages to appropriate personnel.

Other Personnel

In addition to these staff positions, extra part-time help is sometimes needed in order to maintain the buildings and equipment in the best possible condition. Private vendors are also contracted in specialized areas when needed.

- Maintenance Staffing (FTE's for total GSF):
 - Total GSF: 1,370,071
 - Total FTEs needed: 20
 - FY2021 Budgeted: 9 maintenance staff /\$546,455 per year
 - FY2022 Budgeted: 9 maintenance staff / \$552,037 per year
- Maintenance Load (GSF per FTE):
 - Total Existing FTEs: 9
 - Maintenance Load (GSF per FTE): 152,230
- Percentage of Maintenance Staff delivering services: 100% (9 maintenance staff)
- Custodial Staffing (FTEs for total GSF):
 - Total GSF: 1,370,071

Total FTEs needed: 82

- Custodial Load (GSF per FTE):
Total Existing FTEs: 64
Custodial Load (GSF per FTE): 21,407

Funding, Budgets, and Spending

General

The Board of Education of Queen Anne's County defines "Maintenance of Facilities" as those activities, which involve the keeping of grounds, buildings, mechanical equipment and mechanical technical systems. The goal is to maintain all facilities, at or near their original condition of completeness and efficiency. Either through repairs or by replacement, all grounds and equipment are to be maintained to meet or exceed the life expectancy of the facility, which is at least forty years.

A. Preventative Maintenance

Preventative maintenance is the action taken by users, operators and maintenance personnel to prevent expensive repairs and breakdowns before they occur. Through preventive maintenance, it is hoped that the life expectancy of the facilities will be extended beyond the manufacturers projected life expectancy. A brief explanation of the preventive maintenance categories follows:

1. Fire Alarms and Smoke Detectors

Fire alarms and sprinkler systems are tested each quarter in each facility. During the summer, a private service vendor makes an annual check.

2. Fire Extinguishers

Fire extinguishers are installed in all facilities to meet the standards / requirements of the Maryland State Fire Marshall's office. The Maintenance and Custodial staff perform monthly inspections. A private vendor inspects the fire extinguishers annually.

3. Sprinkler Systems

All facilities are equipped with sprinkler systems. The Maintenance Department makes scheduled quarterly inspections of the systems. Schools that are fully equipped with a sprinkler system are scheduled for

quarterly inspections by a private vendor.

4. Fire Marshal Inspection

The County Fire Marshall inspects each facility bi-annually. Local Volunteer Fire Companies visit all facilities during National Fire Prevention Week.

5. Emergency / Back-up Generators

Generators are located in the following schools: Board of Education, Matapeake Elementary, Kent Island High, Bayside Elementary, Stevensville Middle, Grasonville Elementary, Centreville Middle, Centreville Elementary, Church Hill Elementary, Sudlersville Middle, Matapeake Middle and Kennard Elementary. They are started and tested on a regular schedule. The generators in these facilities only supply emergency lighting, fire alarms, PA system, phones, walk-in freezer/refrigerator and some service outlets.

As other buildings are renovated, it is anticipated that generators for emergency lighting will be installed.

6. Health and Safety Inspections

The facility administrator or designee performs health and safety inspections each month. There is a daily inspection made by the building service foreman. The Queen Anne's County Health Department performs bi-annual inspections.

7. Heating Equipment

The Maintenance Department cleans all boilers on an annual schedule. Both ends of the boilers are opened, gaskets checked/replaced and all controls tested and cleaned. Boilers are inspected by **Chubb** bi-annually. All boiler inspection certificates are posted behind glass near each boiler. When in use oil burners, boilers, motors, pumps and oil reservoirs are checked weekly by the Maintenance Department. The building service staff has the responsibility of inspecting and recording all gauges and equipment daily. The Maintenance Foreman keeps all boiler check logs in his files.

8. Pest Control

Pest control is contracted to a private vendor. The contract provides for

monthly service for pests and rodents. An Integrated Pest Management Plan in conjunction with the private vendor has been implemented. Upon request, the Queen Anne's County Health Department will assist in inspections and provide written recommendations.

9. Roofs

A preventive maintenance plan has been implemented for all roofs. Roofs are inspected; cleaned and minor repairs are made on a monthly schedule. Flashing and expansion joints are caulked regularly. Storm drains, gutters, and down piping are checked and cleared. All building roofs are inspected bi-annually.

10. Louvers and Grilles

To provide the best quality of indoor air, all facility louvers, grilles and fans are cleaned bi-monthly by building service staff / Maintenance Department.

11. Refrigeration

The Maintenance Department services walk-in boxes, refrigerators, freezers and milk coolers on a scheduled basis. We conduct annual preventative maintenance in the kitchens after the end of each school year. This is performed by the maintenance department.

12. Vehicles

Maintenance and building service vehicles are maintained and inspected on a scheduled basis. Maintenance of vehicles is performed by the Queen Anne's County Department of Public Works.

13. Testing

All federal and state required testing is contracted by the Board of Education to an approved/certified testing agency. All test results are sent to the agencies and a copy is on file in the Supporting Services office. The tests include asbestos, water tests as prescribed by MDE, and other testing as needed.

14. Energy Conservation

The Board of Education has taken steps to help reduce energy consumption in electric, heating oil and propane by adopting an energy

conservation policy and guidelines. All facilities have occupied and unoccupied temperature set points for heating and cooling. The temperature set points are in accordance with AHRAE 55 "Thermal Conditions for Human Occupancy". All employees are to conserve energy whenever possible by turning off computers, printers, classroom lights and other energy using devices when leaving their work area. A computer program allows many buildings to be monitored for energy usage. Each computer print out is analyzed and given to building level administrators.

All 14 school buildings are on an Energy Management System. This computer system allows the Maintenance Department to monitor/trouble shoot from the Maintenance Shop or the technician's home by use of a laptop. The thermostats are checked annually and replaced when needed. Microtherms have been installed on all boilers to control the amount of times the boilers fire which, in turn, conserves the consumption of heating oil and propane. Energy Management System controls the HVAC equipment being lowered/shutdown during periods when the facilities are not in use. Digital time clocks are installed to turn the lights on in the evening until the buildings are vacant and then back on in the morning before the staff arrives. Vending Misers have been placed on all soda machines to help conserve the amount of electricity used.

B. Scheduled Maintenance

Scheduled maintenance includes maintenance and repair activities that can be forecast and for which expenditures of parts and labor are based on a predictable timetable or use schedule. **See appendix E.** Scheduled maintenance involves proactive measures, which require schedules to be developed, to properly address maintenance of facilities. Scheduled maintenance includes items which will need replacing due to the expiration of its life cycle and include the following:

- Boilers
- Roof
- Compressors / Chillers
- Carpet

The Chief Operating Officer does a weekly energy audit of all Board of Education buildings. A print out is provided to each Building Administrator and the Chief Operating Officer works closely with building custodians and maintenance personnel in conserving energy usage.

1. Boilers

The Maintenance Department cleans and inspects boilers annually. Replacement of a boiler depends on age, cost and safety. They are also inspected by **Chubb** bi-annually.

2. Roof

A ten (10) year roofing maintenance program provides for semi-annual, as well as monthly checks and bi-annual inspections.

3. HVAC

Many facilities HVAC units are approaching 15 years of use. There will be a scheduled plan developed for the replacement of these units over a 10-year period.

4. Carpet

Most of the facilities have had the carpet replaced with VCT. There are still a few small areas that need to be replaced. Request for replacement is made annually in the capital budget.

5. Painting

The paint schedule is programmed to enable each school to be repainted inside and out every ten (10) years. Unfortunately, the capital budget provided by the Queen Anne's County Government has cut funding for this area.

6. Septic Tank and Grease Trap Cleaning

Grease traps are cleaned quarterly and there are no septic tanks in use by schools in Queen Anne's County.

7. Bleacher Repair/Replacement Schedule

All bleachers are inspected and repaired annually by contracted services.

8. Resurfacing Blacktop Schedule

Major replacement is requested annually in the capital budget.

9. Maintenance Vehicle Replacement Schedule

There is not a standard replacement schedule. The vehicles are replaced when monies are approved in the annual capital budget.

10. Oil Tank Testing Schedule

The Maryland State Department of Natural Resources approved the oil storage permit. All storage tanks are pressure tested according to Federal and State guidelines. During the summer of 1999, underground storage tanks were removed from all but one location (Bayside Elementary) and above ground tanks were installed.

C. Corrective Maintenance

Corrective Maintenance includes repairs or replacements that happen unexpectedly. Maintenance workers are assigned specific responsibilities. These responsibilities include:

1. Plumbing and Electrical
2. Air Conditioning
3. Heating
4. Carpentry / Minor Repairs
5. Roofing and Relocatables
6. Repair Kitchen Equipment

Corrections of day-to-day breakdowns or emergency repairs are based on work requests received from maintenance foreman. The subcategories include the following:

1. Unscheduled Repairs

Unscheduled repairs are actions taken to correct problems with building systems and equipment. These include routine repairs such as light fixtures, leaking pipes and boiler failure. In most instances, these repairs were either mechanical or electrical. Control failure on HVAC equipment; ground fault problems with compressors and loss of electricity during storms were the primary causes of the unscheduled repairs.

2. Vandalism and Security Related Repairs

A vandalism and security related repair item is one, which requires the expenditure of labor, and material to restore the building to its original condition after it has been damaged.

D. Deferred Maintenance

Deferred maintenance includes maintenance and repair activities, which have been delayed or postponed due to lack of funds. In some cases, repairs have been delayed pending renovation, disposal or change of building use. It may include any of the above-described categories of maintenance.

Maintenance Budget

The budget includes all expenditure categories and objects related to maintenance activities including maintenance of plant, fixed charges, capital outlay (maintenance of plant only).

For the purpose of defining which capital outlay and school construction fund projects to include, the following definitions have been utilized:

- (a) Any school site improvement, remodeling, equipment or other project in which the major intent is maintenance and at least 51% of the expenditures involve maintenance activities. (Examples may include a roof repair contract or a project, which mainly addresses fire and handicapped codes and secondarily minor functional modifications.) Fixed charges have been included only when applicable to maintenance of plant.
- (b) The budget information includes the number of full time equivalent positions provided for maintenance. It should be noted that any positions in the operation of plant and placed or pro-rated in the maintenance of plant category.
- (c) The total adjusted maintenance figures (as defined in item one above) are shown for the current year and two previous years in relationship to the total current expense and school construction fund.

Preventative Maintenance:

FY2021 Budget: \$1,786,000
FY2021 Budget per GSF: \$1.30
FY2022 Budget: \$2,215,000
FY2022 Budget per GSF: \$1.62

Corrective Maintenance:

FY2021 Budget: \$ 584,000
FY2021 Budget per GSF: \$.43
FY2022 Budget: \$ 617,000
FY2022 Budget per GSF: \$.45

All Maintenance:

FY2021 Budget: \$1,926,990
FY2021 Budget per GSF: \$1.41
FY2022 Budget: \$1,896,749
FY2022 Budget per GSF: \$1.38

All Operations:

FY2021 Budget: \$6,348,504
FY2021 Budget per GSF: \$4.63
FY2022 Budget: \$6,440,808
FY2022 Budget per GSF: \$4.70

SECTION D: PLANNED ACTIONS

Changes and Planned Improvements

Over the past year, there has been much more attention given to the future of the current CMMS system and how we intend to utilize the tools in the future. Staff training and professional development has begun and the district has invested in electronic devices that will give maintenance workers a better way to log their activities and time in the field. We are more cognizant of scheduling preventative maintenance in the system. There are initiatives underway to assure more funding for maintenance is available in the operating budget and not as a fluctuating capital expense.

Planned Capital Maintenance and Repairs

Please see Appendix D for the capital budget requests for FY2022.

Professional Development

Over the past year, we have provided 5 hours of professional development to our maintenance staff, with the assistance of vendors and professional trade organizations. We will continue to schedule these opportunities for learning as able. There is currently no budget item for professional development for this group. For the custodial staff, we are developing a mentoring program for first year custodians and exploring options for leadership training opportunities for our lead custodians.

SECTION E: OBSTACLES AND MISSING RESOURCES

Maintenance staffing: There has been addition of workforce to the maintenance personnel since 1998. The request for additional workers is offered during the budget cycle each fiscal year but has been unsuccessful to date. Given the multitude of low voltage equipment, in the form of security cameras and card access systems, a second electrician is in desperate need.

Custodial staffing: Given the additional cleaning and sanitizing requirements that have arisen during the COVID-19 pandemic, additional custodian positions are required. As with many other industries, there is much difficulty in getting workers to apply for the existing open positions.