MADISON ELEMENTARY SCHOOL

9075 Chance Place, Ruther Glen, Virginia 22546

Facility Condition Assessment

Caroline County Public Schools

April 2, 2024

RRMM ARCHITECTS

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SECTION ONE

Overview

Caroline County Public Schools

OVERVIEW

Purpose

RRMM Architects is pleased to present this Facility Condition Assessment to Caroline County Public Schools. The overall purpose of this assessment is to document the present condition of the Madison Elementary School to assist Caroline County Public Schools ("CCPS") in forecasting funding requirements to address deficiencies, upgrades, renovations and/or replacement. RRMM Architects was asked to produce an assessment for Madison Elementary School in order to provide CCPS a summary of current school and site deficiencies with a method to forecast future costs pertaining to potential upgrades, replacement, renovations and/or building additions.

Methodology

RRMM Architects assembled a highly-experienced team of design professionals that have experience working together on many projects over many years for this assessment. Our team includes:

RRMM Architects, Prime Consultant and Team Leader, Richmond, VA;

VHB, Inc., Civil Engineers, Richmond, VA;

Speight, Marshall & Francis, Structural Engineers, Richmond, VA;

Thompson Consulting Engineers, Mechanical, Electrical, and Plumbing Engineers, Glen Allen, VA;

Foodservice Consultants Studio, Foodservice Consultants, Richmond, VA.

This study is built around the following primary components:

1. Assessment of the condition of all building systems and site features.
2. Assessment of each facility in comparison to modern standards for safety, security, energy conservation, accessibility and code compliance.

Limits of this Study

This assessment is focused on a physical inspection of the existing building (interior and exterior) and site conditions to include the areas or building systems noted below;

- Exterior Site Conditions
- Exterior Building Envelope
- Interior Finishes
- ADA Accessibility Compliance
- Building Code and Safety/Security (OSHA) Concerns
- Roofing System
- Mechanical Systems
- Electrical Systems
- Plumbing Systems
- Structural Assessment

- Fire Protection System Assessment
- Food Service (Kitchen) Assessment
- Hazardous Materials Assessment

Physical inspections were limited to analyzing the condition of building systems, components and/or elements that were visible. Destructive investigation was not a part of this assessment.

Basis for Recommendations / How to use this Study

It is important to note that our evaluations and recommendations offered herein involve professional judgment, practical experience, and generally-accepted design industry practices. However, the consideration of renovating or maintaining buildings can be a complex and tedious undertaking. The various systems within a building are inter-connected; therefore, a decision or recommendation on one system can easily have a "ripple" effect on other systems. We also want to emphasize that our recommendations are not complete without active and thorough discussions with you as our client, to make sure we carefully consider the values and priorities of Caroline County Public Schools.

Assessment Format

Following this Overview are individual sections that focus on the condition of Madison Elementary School. Each section is divided into the following areas:

Introduction

The introduction (and executive summary) includes a brief description of the facility, its age and a brief summary of the primary concerns at the facility.

Civil Assessment (Site and Outdoor Facilities)

An overview of the existing site and outdoor facilities conditions.

Architectural Assessment

This assessment reviews the physical condition of the exterior and interior of each school structure and evaluates the condition of building systems, materials and finishes.

ADA (Americans with Disabilities Act) Compliance

As part of this assessment, we conducted a limited visual observation for ADA compliance. It should be noted that the limited observations described herein do not comprise a full ADA Compliance Survey, but only a general comparison of the existing facility to the requirements of the 2010 ADA Standards for Accessible Design requirements for altered and new construction.

Building Code and Safety/Security (OSHA) Concerns

This assessment evaluates those items that are most deficient in comparison to modern building standards, that are considered reasonably achievable, and that have the most detrimental impact on health, safety or accessibility if not remedied. Building Code "compliance" is a subjective consideration since most existing facilities are "grandfathered" due to their compliance at the time of their original construction.

This assessment also evaluates building conditions that create and/or potentially create safety/security concerns relative to OSHA regulations and standards.

Roof Systems Assessment

This assessment investigates the roof assemblies and their condition. This includes materials, performance, active leaks (if any) and remaining life.

Mechanical Systems Assessment

This assessment evaluates the types of heating, ventilating and cooling systems that are operating within the school. The study evaluates these components based on age and condition and describes shortcomings and/or recommendations compared to the current building code requirements.

Electrical Systems Assessment

This assessment evaluates the electrical service to the building and power distribution throughout, the interior and exterior lighting needs, energy conservation and the emergency power and fire alarm systems. This study also includes intercom and clock systems, surveillance systems and provides information on compliance with fire alarm code requirements.

Plumbing Systems Assessment

The plumbing evaluation focuses on the domestic water service and plumbing components distributed throughout the facility. This evaluation also includes domestic hot water equipment and sanitary systems.

Structural Assessment

This assessment provides a visual structural survey of the existing building structure based on the structural components and as-built drawings provided by CCPS.

Fire Protection System Assessment

An overview of the existing fire protection (fire alarm and sprinkler) system conditions.

Food Service (Kitchen) Assessment

This assessment evaluates the age and condition of the kitchen equipment and kitchen/equipment finishes relative to code compliance.

Hazardous Materials Assessment

A hazardous materials assessment was not completed as a part of this study. A copy of a previously completed Hazardous Materials Assessment or AHERA Report was not provided to the design/evaluation team for review.

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SECTION TWO

Executive Summary

Caroline County Public Schools

EXECUTIVE SUMMARY

Snapshot Overview

The overall objective of this assessment is to document the present condition of the Madison Elementary School to assist Caroline County Public Schools (CCPS) in forecasting funding requirements to address deficiencies, upgrades, renovations and/or replacement. A physical review and analysis of the existing site and building conditions was performed with the overall condition snapshot of significant building systems, equipment and/or issues identified in the table below.

Summary

As summarized in the table below, the Facility Condition Assessment completed for Madison Elementary School indicates the school is overall in **fair condition** and identified several exterior and interior concerns along with ADA and code compliance issues that should be considered in further detail for performance by the school system.

	OVERALL CONDITION				
ASSESSED AREA	**Very Poor**	**Poor**	**Fair**	**Good**	**Excellent**
Civil Assessment				✖	
Architectural Assessment (Exterior)			✖		
Architectural Assessment (Interior)			✖		
ADA Compliance			✖		
Code Compliance (and Safety/Security)				✖	
Roof Systems Assessment		✖			
Mechanical Systems Assessment			✖		
Electrical Systems Assessment		✖			
Plumbing Systems Assessment			✖		
Structural Assessment			✖		
Fire Protection System Assessment				✖	
Food Service (Kitchen) Assessment		✖			
Hazardous Materials Assessment	**N/A**				
TOTALS	**0**	**3**	**6**	**3**	**0**

An " ✖ " positioned on the line between two overall condition ratings (i.e. poor and fair) indicates the overall assessed area condition is between ratings. Typically, this reveals an equal split in the ranking of several systems or components within an assessed area. In this case, the overall condition is always accounted for in the lesser of the two overall condition totals at the bottom of the matrix.

Overall Condition Rankings

The overall purpose of this section is to provide greater clarity as to the rating categories (i.e. Excellent, Good, Fair, Poor and Very Poor) used above to categorize building assets or systems for Caroline County Public Schools. Each rating category identifies the level of maintenance, deficiency, upgrade, renovation and/or replacement required per building asset or system. The below rating categories were used by the assessor to represent the general condition of each building asset or system.

CONDITION RANKINGS		
5	EXCELLENT	**New or Like-New Condition** (no issues to report; normal scheduled maintenance required)
4	GOOD	**Good Condition** (no reported issues/concerns; minimal minor repairs needed)
3	FAIR	**Average Wear for Building Age** (some functional challenges; minor/major repairs needed)
2	POOR	**Worn from Use** (functional challenges; major repairs needed; close to end of life cycle)
1	VERY POOR	**Extremely Worn or Damaged** (immediate replacement required; system unsafe)
N/A	N/A	**Not Applicable**

Excellent

System is in "like new" condition and operating as designed.

- No defects
- As new condition and appearance

Works that:

- can be reasonably deferred beyond 10 years and reassessed at a future date.

Good

System is operating as designed with minor maintenance and/or remedial work recommended. Newer system and well maintained and/or little or no observed items of concern requiring attention in the near future.

- Minor defects
- Superficial wear and tear
- Some deterioration to finishes
- Major maintenance not required

Works that:

- have minimal effect on the operational functionality of the system
- are likely to need attention if not properly maintained in 6-10 years.

Fair

System is aging with noteworthy corrective action required. Older item and/or some observed items of concern requiring attention, repair or replacement in the near future.

- Average condition
- Defects are evident
- Worn finishes require maintenance
- Services are functional but need attention
- Significant deferred maintenance work exists

Works that:

- affect the operational functionality of the system
- are likely to lead to serious deterioration and higher future repair costs if not addressed between 3-6 years.

Poor

System replacement and/or major corrective action is required. Projects requiring immediate action to provide safety and protection to people and/or protection against costly damage. Numerous items of concern observed and/or general overall deterioration of the system requiring attention, repair or replacement in the near future.

- Significant defects are evident
- Functional challenges exist
- Potential structural problems
- Inferior appearance
- Major repairs are needed
- Components fail frequently

Works needed to:

- Meet maintenance and/or code related statutory obligation and due diligence requirements
- Prevent serious disruption of building activities and/or may incur higher costs if not addressed within 1-3 years.

Very Poor

Immediate system replacement is required. Projects requiring immediate action to provide safety and protection to people and/or protection against costly damage. Significant overall deterioration of the system requiring attention, repair or replacement immediately.

- Badly deteriorated
- Structural problems
- Inferior appearance
- Major defects are evident
- Components fail frequently
- Not operational or viable

Works needed to:

- Meet maintenance and/or code related statutory obligation and due diligence requirements
- Ensure the health and safety of building occupants and users
- Prevent serious disruption of building activities and/or may incur higher costs if not addressed within 0-1 year.

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SECTION THREE

Assessments

Caroline County Public Schools

CONDITION ASSESSMENT

Introduction

Maddison Elementary School was originally constructed in 1962 with building additions and renovations completed over the last 62 years and comprises approximately 63,026 square feet while situated on an approximately 16.92 acre site.

Below is a breakdown of academic and operational functions currently housed within the school structure as a result of the additions and renovations experienced over the years.

Original Building (1962)

The original 1962 school structure totaling approximately 44,073 square feet (shown below in yellow) currently houses most major functions to include the dining/kitchen area, play area (gym), teachers' lounge/workroom, guidance offices, two (2) special education classrooms, twenty-one (21) general classrooms, four (4) elective classrooms and main electrical room.

Building Additions and Renovations (2016)

In 2016, a significant building addition totaling approximately 18,953 square feet (shown below in blue) incorporated a new media center along with four (4) general classrooms, clinic, and expanded administrative office suite.

Original Building (Yellow) 1962 Building Additions (Blue) 2016

Civil Assessment (Site and Outdoor)

Overall, the site is in good condition.

As a part of this Facility Condition Assessment, an inspection of existing civil site conditions was completed and documented. Refer to the numbered site maps within this section for items identified within parenthesis.

Key Plan

General

- Located at 9075 Chance Place, the 17 acre site contains the school facilities, playground, small baseball/softball field, asphalt trail, parking lot and bus loop/parking.
- Site is completely developed other than +/- 5 acres of forest along the north edge of the property. (1.1)
- +/- 2 acres of the site are occupied by playgrounds, asphalt play court, and lawn. (1.2)
- There is a cemetery (roughly 500sf) fenced off in the middle of playground area. (1.3)
- Fenced in BMP pond, +/- .45 acres, is located at the southwest corner of site. (1.4)
- Chain link fencing is provided around the perimeter of the playground area.

Utilities

- No issues observed during assessment.

Drainage

Overall, the site drainage appears to be in good condition.

- Site drains to piped storm sewer system that discharges into an existing piped storm sewer system.
- Majority of the building downspouts are tied to underground storm pipes, but several are disconnected and/or broken. (2.1)
- Repair rip rap along the NW staircase where there is erosion occurring along the sloped hillside. (2.2)

Traffic/Vehicular Circulation

Overall, the traffic/vehicular circulation patterns are in good condition with sufficient site size to provide ideal configuration and separation of required services (i.e. visitor parking, staff parking, bus parking, student drop-off lanes and bus drop-off lanes). The current circulation patterns seem to work well and meet the requirements of the school.

- Bus loop and parking is located at the west side of the school. Bus loop enters from the far west entrance from Chance Place and exits the same way. (3.1)
- Visitor & staff parking is located on the south and east side of the school. There are only two handicap spaces provided near the front entry. Two additional handicap spaces are required, for a total of four. (+/-90 parking spaces & 4 are required). (3.2)
- Overall circulation appears to work well.

ADA Accessibility

Overall, the exterior ADA accessibility to the school is provided and appears to meet ADA accessibility requirements with some exceptions.

- Provide an additional two ADA handicap spaces near the front entry (4.1).
- Curb ramps are appropriately provided with truncated domes and meet maximum ADA slope requirements (4.2).
- Provide handrails at three site stairs as required by ADA. (4.3)

Outdoor Recreational Areas

Overall, the outdoor recreational areas are in good condition for a typical elementary school.

- Playground equipment was in good condition. (5.1)
- Playground surface was eroded under the shade structures. (5.2)
- Facilities appear to meet the needs for outdoor recreational use for an elementary school.

Asphalt and Hardscape General Condition

Overall, the site pavement and concrete walks are in good condition.

- Asphalt throughout the site is in good condition. (6.1)
- Concrete walking paths for staff, students and visitors are in good condition. (6.2)
- Curb and gutter is in good condition.

PHOTO C2.1
REPLACE/REPAIR DOWN SPOUT CONNECTIONS

Condition: Fair
Quantity: See Architectural - Exterior

PHOTO C2.2
REPAIR/REPLACE RIP RAP ALONG STEEP SLOPE

Condition: Fair
Quantity: Approx. 100 SF

PHOTO C4.1
PROVIDE 2 ADDITIONAL ADA PARKING SPACES

Condition: Poor
Quantity: Stripping / Signage (2 ADA spaces)

PHOTO C4.3
INTALL HANDRAILS AT THREE STAIR LOCATIONS

Condition: Poor
Quantity: Approx. 100 LF of Railing

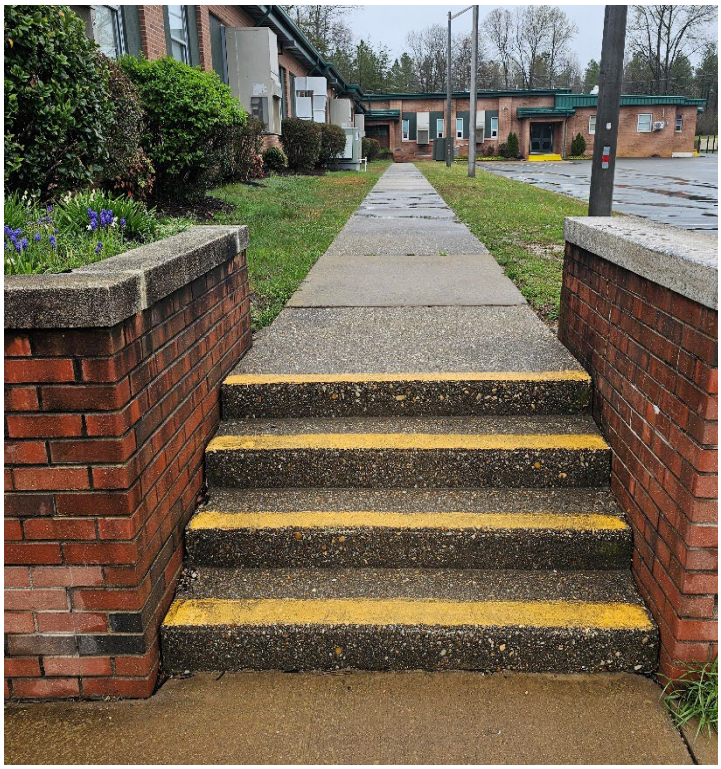

PHOTO C5.2
MULCH PLAY AREAS THAT GETS HEAVY USE

Condition: Fair
Quantity: Approx. 20 CY

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Architectural Assessment

Exterior

The building is generally in fair to good condition.

The exterior brick and block masonry walls are in fair condition with some deterioration to the exterior façade elements including mortar deterioration, general exterior caulking failure, exposed/rusted lintels, peeling exterior paint, exterior dirt/algae growth, and damaged downspouts and building coverings. The steel lintels at several masonry openings are exposed with moderate rust and should be sanded and painted to prevent further expansion and cracking of brick masonry. The exterior brick and block masonry has some staining and dirt build-up due primarily to roof water runoff over the years. These envelope deficiencies allow significant water penetration which can cause further deterioration of building materials and unhealthy indoor conditions.

PHOTO AE.01
MORTAR DETERIORATION @ STONE SILLS

Condition: Fair
Quantity: Approx. 40 LF

PHOTO AE.02
EXTERIOR CAULKING FAILURE
(CONTROL JOINTS)

Condition: Poor
Quantity: Approx. 500 LF

PHOTO AE.03
EXTERIOR CAULKING MISSING (DOOR FRAMES)

Condition: Poor
Quantity: Approx. 100 LF

PHOTO AE.04
EXPOSED/RUSTED STEEL LINTELS

Condition: Fair
Quantity: Approx. 440 LF

PHOTO AE.05
EXTERIOR CANOPY FRAME/DECK PAINT (PEELING)

Condition: Poor / Fair
Quantity: Approx. 450 SF (5 Canopies)

PHOTO AE.06
EXTERIOR DIRT / ALGAE GROWTH

Condition: Fair
Quantity: Approx. 63,026 SF

PHOTO AE.07
DAMAGED DOWNSPOUTS

Condition: Poor
Quantity: Approx. 180 LF

PHOTO AE.08
CAULKING FAILURE @ LOUVER

Condition: Very Poor
Quantity: Approx. 20 LF

PHOTO AE.09
DAMAGED LOADING DOCK CANOPY

Condition: Poor
Quantity: (1) Location

PHOTO AE.10
EXTERIOR DOOR PAINT (PEELING)

Condition: Poor / Fair
Quantity: (12) Exterior Doors

PHOTO AE.11
EXTERIOR JOINT FAILURE
(SIDEWALK TO EXTERIOR WALL)

Condition: Poor
Quantity: Approx. 100 LF

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Interior

Overall, the school interior and building finishes appear to be in fair to good condition. The main corridors have flooring materials consisting of terrazzo flooring in good condition. The main corridor walls are painted CMU with ceramic tile wainscoting and appear to be in fair to good condition, with limited areas in need of maintenance and tile replacement. General classrooms have flooring materials consisting of vinyl composition tile (VCT) in fair to good condition. Typical ceilings throughout the school are acoustical ceiling tile (ACT) with minimal gypsum wall board soffit ceilings or exposed ceilings and are in fair condition. Acoustical ceilings are showing signs of their age and beginning to sag with water staining in numerous areas. Painted wall finishes throughout are typically in fair to good condition with noted areas in need of maintenance. Exterior windows are in need of interior caulking with signs of water infiltration.

Group toilets and single toilets have ceramic floor tile which appears to generally be in good condition with limited areas in need of repair. The walls are painted CMU and appear to be in fair to good condition with limited areas in need of maintenance. The ceilings are acoustical ceiling tile (ACT). Sinks and toilet compartments are in fair to good condition.

The gymnasium is in good condition with signs of normal wear and tear as expected resulting from time and usage. The gymnasium's vinyl composition tile floor both appear to be in fair condition. The ceiling is exposed painted structure with building insulation in good condition. The walls are painted CMU and metal framed structure and appear to be in good condition. The wall mounted crash pads are in good condition.

The floors of the administrative areas are carpet tile that are in good condition. The walls are painted gypsum wall board (GWB) and are in good condition. The ceilings are acoustical ceiling tile (ACT) and are in generally good condition.

The media center (library) consists of carpet flooring and painted CMU masonry walls. The carpet flooring and CMU masonry walls appear to be in good condition. The ceiling is acoustical ceiling tile (ACT) with minimal gypsum wall board soffit ceilings and in fair condition. The casework and library shelving are in good condition.

The cafeteria has terrazzo flooring that is in good condition. The cafeteria walls are painted concrete masonry unit (CMU) with ceramic tile wainscoting and are in fair condition. The ceilings are acoustical ceiling tile (ACT) with partially exposed painted structure and metal deck and are in generally good condition.

The main kitchen and serving areas have flooring materials consisting of quarry tile with painted concrete masonry unit (CMU) or ceramic tile kitchen walls with quarry tile wall base and are in good condition. The ceilings are a non-porous acoustical ceiling tile (ACT) and is in fair to good condition (see Food Service (Kitchen) Assessment).

PHOTO AI.01
SCHOOL ENTRY VESTIBULE

PHOTO AI.02
TYPICAL CORRIDOR FLOORING (TERRAZZO)

Condition: Good
Quanitity: Approx. 12,987 SF

PHOTO AI.03
TYPICAL CLASSROOM FLOORING (VCT)

Condition: Fair / Good
Quanitity: Approx. 33,260 SF

PHOTO AI.04
TYPICAL ACOUSTICAL TILE CEILINGS (ACT)

Condition: Fair
Quanitity: Approx. 47,870 SF

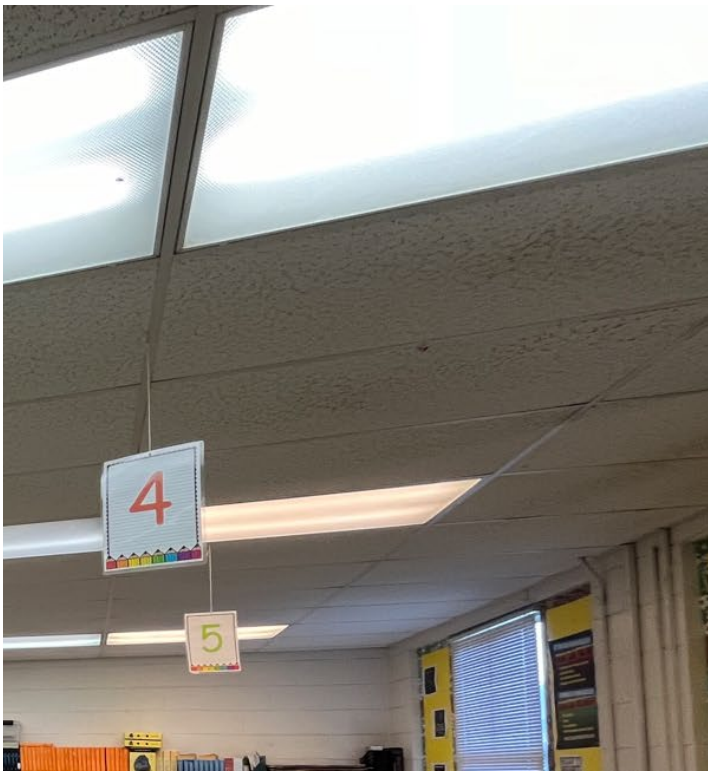


PHOTO AI.05
DAMAGED GYPSUM WALL AND PAINT PEELING

Condition: Poor
Quanitity: Approx. 17,180 SF

PHOTO AI.06
DOOR FRAME PAINT PEELING

Condition: Fair
Quanitity: Approx. (75) Doors

PHOTO AI.07
WALL PAINT PEELING

Condition: Fair
Quanitity: Approx. 800 SF

PHOTO AI.08
DAMAGED TILE WAINSCOTING

Condition: Poor / Fair
Quanitity: Approx. 5,014 SF

PHOTO AI.09
WINDOW SILL CAULK DETERIORATION

Condition: Poor / Fair
Quanitity: Approx. 280 LF

PHOTO AI.10
TILE WAINSCOT CRACKING
(INSTALL CONTROL JOINT)

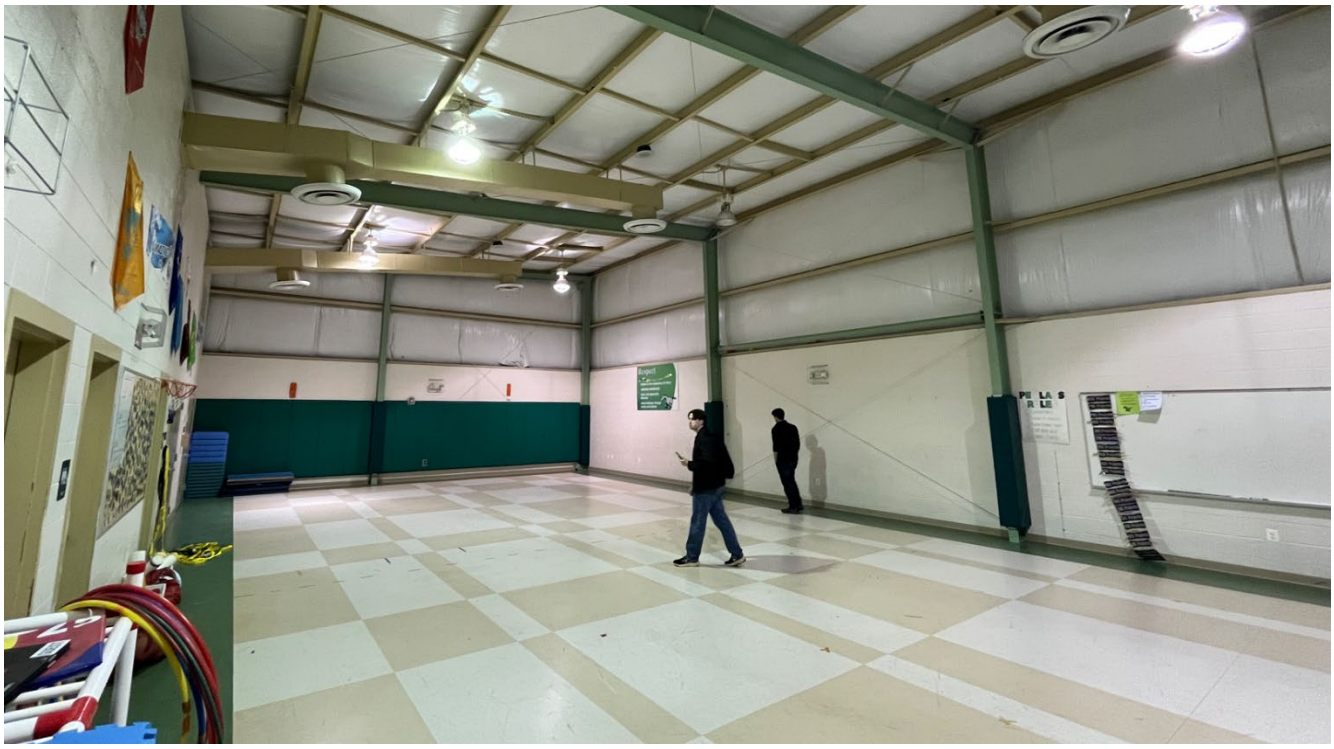
Condition: Fair
Quanitity: Approx. 20 LF

PHOTO AI.11
TYPICAL GROUP TOILET ROOMS

Condition: Fair / Good
Quanitity: Approx. 925 SF

PHOTO AI.12
TYPICAL SINGLE TOILET ROOMS

Condition: Fair / Good
Quanitity: Approx. 700 SF



PHOTOS AI.13
GYMNASIUM

PHOTO AI.14
ADMINISTRATION OFFICE

PHOTOS AI.15 & AI.16
MEDIA CENTER (LIBRARY)

PHOTOS AI.17 & AI.18
CAFETERIA AND CAFETERIA STAGE

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ADA (Americans with Disabilities Act) Compliance

A limited ADA Compliance Assessment of Madison Elementary School (built in 1962) was conducted as part of the Facility Condition Assessment. The following requirements to provide additional accessible accommodations for students, staff and visitors were noted:

1. Provide accessible egress and compliant handrail extensions at building entrances and exits.
2. Provide adequate/proper maneuvering clearances on pull and push sides of manual swinging doors.
3. Provide accessible pathway and install handrails (both sides) at rear stage stairs.
4. Install compliant wall mounted drinking fountains.
5. Provide clear floor space at countertop sinks with knee and toe clearances
6. Provide guards on exposed under sink piping.
7. Upgrade restrooms to meet accessibility standards.
8. Provide compliant handrails (both sides) at interior stairs and ramps.

PHOTO AA.01
BUILDING ENTRANCE - ACCESSIBILE EGRESS AND HANDRAIL EXTENSIONS (ADAAG 402, 505.10.2, 505.10.3)

Condition: Poor / Fair
Quantity: (2) Locations

PHOTO AA.02
MANUEVERING CLEARANCES - CLASSROOMS AND WORKROOMS (ADAAG 404.2.4.1)

Condition: Fair
Quantity: Approx. (6) Locations

PHOTO AA.03
STAGE STAIRS - ACCESSIBLE EGRESS, HANDRAILS EXTENSIONS (ADAAG 402, 505.10.2, 505.10.3)

Condition: Fair
Quantity: (1) Location

PHOTO AA.04
DRINKING FOUNTAINS - PROTRUSION LIMITS (ADAAG 307.2)

Condition: Fair
Quantity: (6) Locations

PHOTO AA.05
CLASSROOM CASEWORK SINKS- CLEAR FLOOR SPACE (ADAAG 606.2)

Condition: Fair / Good
Quantity: (5) Locations

PHOTO AA.06
LAVATORIES & SINKS - EXPOSED PIPES
(ADAAG 606.5)

Condition: Poor / Fair
Quantity: Approx. (8) Sinks

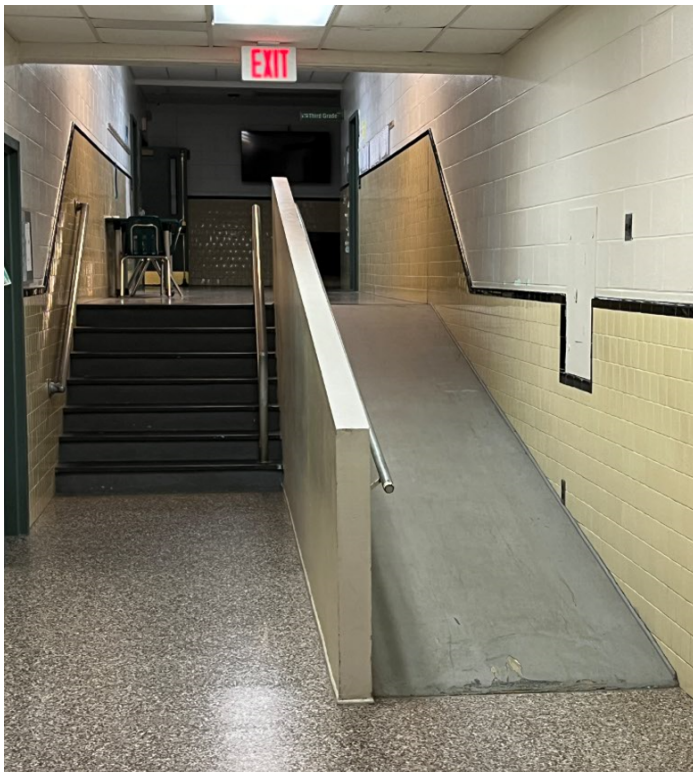
PHOTO AA.07
TOILET ROOM(S) - FIXTURE CLEARANCES, GRAB BAR SPACE & EXPOSED PIPES
(ADAAG 604.3.1, 604.5, 606.5 & 609.3)

Condition: Fair / Good
Quantity: Approx. 700 SF (Individual); Approx. 497 SF (Group)

PHOTO AA.08
TOILET ROOM(S) - DOOR CLEAR WIDTH, GRAB BAR SPACE
(ADAAG 404.2, 604.5, 606.5 & 609.3)

Condition: Fair
Quantity: See Item AA.07

PHOTO AA.09
STAIRS AND RAMPS - HANDRAILS EXTENSIONS
(ADAAG 505.10)
Condition: Fair
Quantity: Approx. 12 LF



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Building Code Compliance (and Safety/Security) Assessment

A limited Building Code Compliance and Safety/Security assessment of Madison Elementary School (built in 1962) was conducted as part of the Facility Condition Assessment. The following code compliance and safety/security concerns were noted during our site visit.

1. Door pull hardware possible to be chained together as trap hazard.
2. Use of multi-plug adapters and extension cords.
3. Unsecured electrical panels.
4. Stored items around electrical panel boards and within panelboard clearances.
5. Improperly stored materials in mechanical rooms and on equipment / piping.
6. Stored materials in path of egress travel from stage.

PHOTO AB.01
PANIC EXIT DOOR HARDWARE (TRAP HAZARD)

Condition: Fair
Quantity: (4) Double Doors

PHOTO AB.02
USE OF MULTI-PLUG ADAPTERS
(NFPA 11.1.3)

Condition: Fair
Quantity: Multiple (School-Wide)

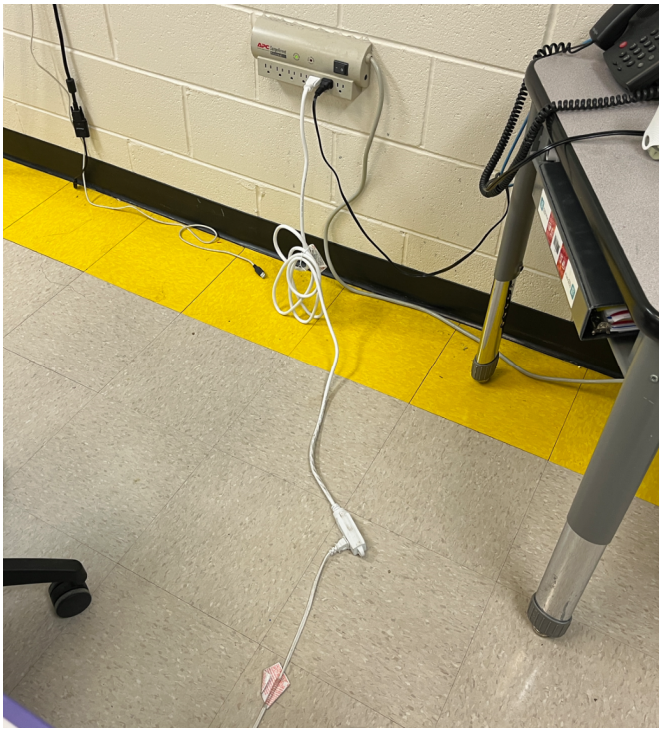

PHOTO AB.03
UNSECURED ELECTRICAL PANELS

Condition: Poor / Fair
Quantity: Multiple (School-Wide)

PHOTO AB.04
PROPER ELECTRICAL PANEL CLEARANCE (NEC 110-26)

Condition: Poor / Fair
Quantity: All Electrical rooms

PHOTO AB.05
IMPROPERLY STORED MATERIALS

Condition: Fair
Quantity: (1) Location

PHOTO AB.06
BLOCKED EGRESS FROM STAGE

Condition: Fair
Quantity: (1) Location

Roof Systems Assessment

Overall, the roof is in poor to fair condition.

The overall roof consists of three different types of roofing systems: standing seam metal panel, EPDM, and polyvinyl chloride (PVC) membrane. The standing seam metal panel roof consisting of multiple different roof sections and elevations covers much of the school building with a roof area totaling approximately 44,073 square feet. The PVC membrane pitched roof covers much of the 2014 Addition totaling approximately 18,120 square feet of roof area. The EDPM pitched roof covers the original building's group restrooms and electrical room totaling approximately 833 square feet.

The sloped standing seam metal panel roof is showing significant evidence of deterioration. There are numerous panels showing oxidation (rust) that will continue to degrade the panels over time. Panel joints and seams have been maintained with sealers over the years and are starting to show sealant cracking and deterioration in select areas. The oxidation of the panels and deteriorated sealant will allow moisture to penetrate the roof resulting in eventual failure of the roof system. This deterioration is consistent with the roof's age, as the typical life of standing seam metal panel roofs is 30 to 50 years.

The polyvinyl chloride (PVC) roof shows limited signs of ponding water on the roof surface. Roof ponding is the result from depressed insulation board and/or inadequate slope for run off. Ponding water erodes the roof membrane more quickly resulting in the premature failure of the roof system. Water sitting on the roof surface for extended periods of time allows moisture to penetrate the roof membrane allowing moisture into the insulation compromising its integrity and effectiveness. There is significant evidence of algae/mildew growth on the shaded portions of the roof behind the high entrance vestibule and behind roof parapets.

The EDPM roof shows limited evidence of deterioration and generally shows very limited ponding water with adequate drainage to the roof gutters.

Additional issues discovered during our inspection consisted of roof drain coverage/building up, vegetative debris build-up, gutter debris build up and gutter rusting and deterioration.

PHOTO AR.01
STANDING SEAM METAL PANEL ROOF

Condition: Poor
Quantity: Approx. 44,073 SF

PHOTO AR.02
POLYVINYL CHLORIDE (PVC) ROOF

Condition: Good
Quantity: Approx. 18,120 SF

PHOTO AR.03
EPDM ROOF

Condition: Fair / Good
Quantity: Approx. 833 SF

PHOTO AR.04
ALGAE / MILDEW GROWTH (PVC ROOF)

Condition: Poor / Fair
Quantity: Approx. 18,120 SF

PHOTO AR.05
DEBRIS BUILD UP (GUTTER)

Condition: Poor / Fair
Quantity: Approx. 1,620 LF

PHOTO AR.06
GUTTER RUSTING AND HOLES

Condition: Poor
Quantity: Included in Item AR.01

PHOTO AR.07
ROOF DRAIN COVERAGE / BUILD-UP

Condition: Fair
Quantity: Included in Item AR.04

PHOTO AR.08
VEGETATIVE DEBRIS BUILD-UP

Condition: Fair
Quantity: Included in Item AR.04

PHOTO AR.09
RIPPED/TORN PVC ROOF

Condition: Poor
Quantity: (1) Location

Mechanical Systems Assessment

Overall, the mechanical system is in fair condition.

The original building was constructed in 1962 and building additions were added in 2015. Several renovations have taken place. The 2015 addition/renovation saw the addition of the admin area heating and cooling system with a VRF system with packaged DOAS units on the roof providing outside air to the admin area. A 2009 renovation saw the abandonment of the central heating plant and it associated pumps and piping with single zone packaged exterior wall mounted Bard style heat pump units.

Central heating for the building was at one point provided by a boiler system but has since been abandoned in place.

Decentralized HVAC equipment provides air conditioning and ventilation for the entire building. Every classroom has a single zone packaged exterior wall mounted Bard style heat pump unit that was installed in 2009. The auditorium/cafeteria is heated and cooled by two (2) packaged exterior wall mounted Bard style heat pump units. The Bard units are in fair condition but will likely need to be replaced within the next five years. Some Bard units have already been replaced with packaged DX heat pumps mounted to grade. The admin area is served by a VRF system with packaged DOAS units on the roof. This system is in good condition and has at least 15 years of its expected life left. The kitchen is served by a mini-split unit. The admin area is served by a packaged rooftop unit with DX cooling. The gymnasium is heated and cooled by a packaged heat pump unit set on grade with external ductwork routed into the gymnasium. This unit was replaced in 2023 and is in good condition. There are a few offices with PTAC units that are in fair condition. Exhaust fans on the roof provide exhaust air to the group toilets and are generally in fair condition and should be replaced within the next five years. The kitchen exhaust fan is showing signs of rust and damage and should be replaced. There is a teacher breakroom that has two vending machines but no air conditioning. There is a ceiling fan in this room to circulate air.

Ductwork and air terminals. The ductwork and air terminals in the admin office were installed in 2016 and are in good condition. There is only one classroom Bard style unit that has a duct connection. This ductwork is in good condition. Several air terminals in the classrooms are rusty and need to be replaced. The ductwork serving the gymnasium is in fair condition.

Piping and pipe insulation is original to the building and in poor condition. It has all been abandoned in place in favor of air-cooled HVAC equipment.

Building Controls. The building utilizes a building automation system with direct digital controls. Each Bard unit has stand-alone thermostats. It is assumed that the BAS system was installed in the 2009 renovation when the boilers were replaced. The BAS system is in working order.

PHOTO M.01
ADMIN AREA ROOFTOP DOAS UNIT

Condition: Good
Quantity: (5)

PHOTO M.02
AIR TERMINAL AND VRF IN ADMIN

Condition: Good
Quantity: 10,229 SF

PHOTO M.03
KITCHEN EXHAUST FAN

Condition: Poor
Quantity: (1)

PHOTO M.04
CLASSROOM AIR TERMINAL

Condition: Fair
Quantity: 42,672 SF

PHOTO M.05
EXHAUST FANS

Condition: Fair
Quantity: Approx. 12 Fans

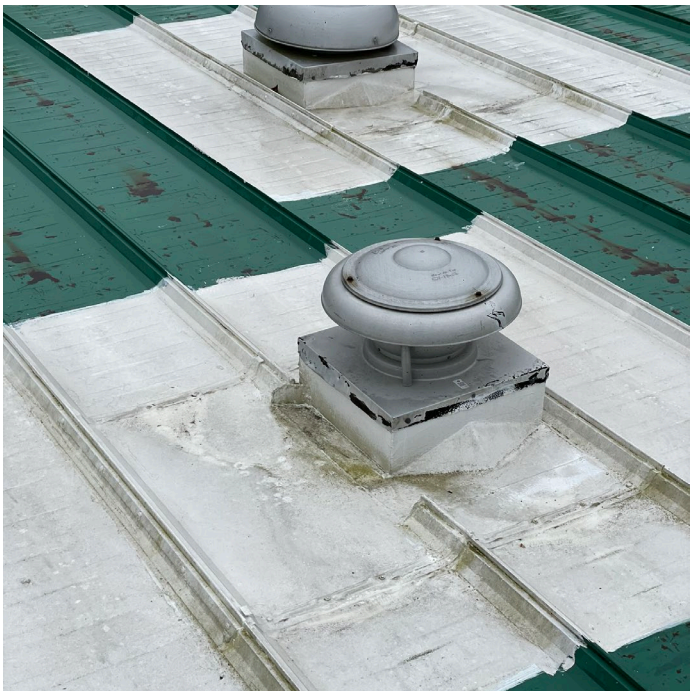

PHOTO M.06
DUCTWORK AND AIR TERMINALS

Condition: Fair
Quantity: 1,000 SF

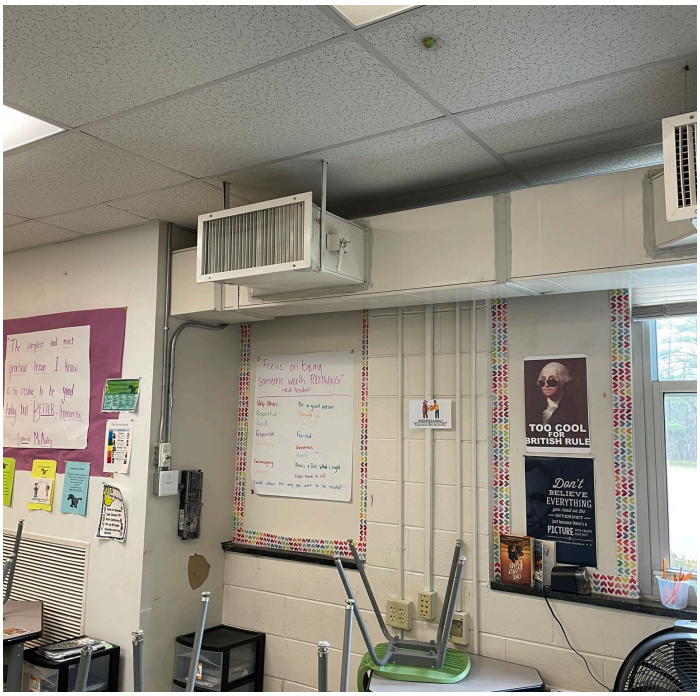

PHOTO M.07
HYDRONIC PIPING

Condition: Abandoned
Quantity: 1,865 SF

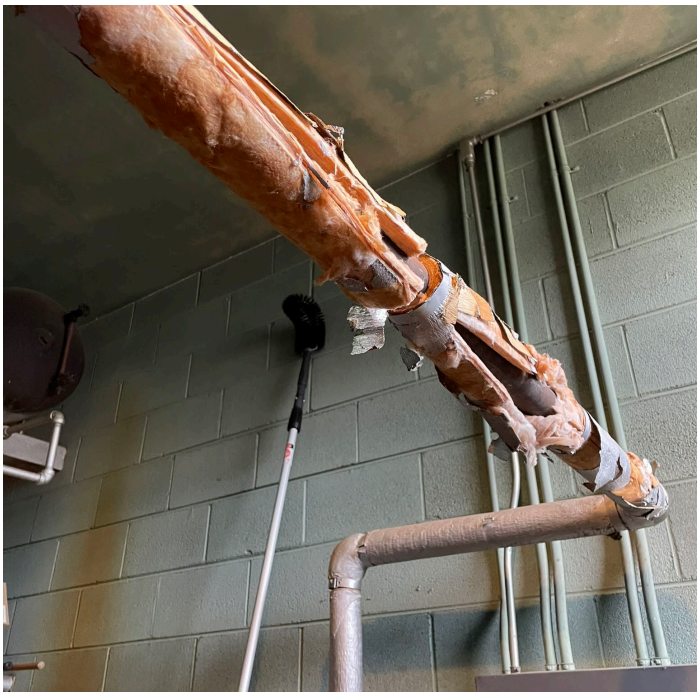

PHOTO M.08
OFFICE PTAC

Condition: Fair
Quantity: (2)

PHOTO M.09
KITCHEN MINI-SPLIT

Condition: Good
Quantity: (1)

PHOTO M.10
CLASSROOM DX HEAT PUMP UNIT

Condition: Good
Quantity: (2)

PHOTO M.11
GYMNASIUM DX HEAT PUMP UNIT

Condition: Good
Quantity: (1)

PHOTO M.12
CLASSROOM BARD UNIT

Condition: Fair
Quantity: 42,672 sf

PHOTO M.13
BREAK ROOM CEILING FAN

Condition: Poor / Fair
Quantity: (1)

PHOTO M.14
GYMNASIUM DUCTWORK AND AIR TERMINALS

Condition: Fair
Quantity: 2,666 SF

Overall Recommendations

1. The central heating plant is abandoned in place and should be removed to utilize the space better. Before this work is completed, an asbestos report should be completed if one has not already been completed.

2. The rooftop units and VRF system are in good condition and have most of their expected life in them.

3. The Bard style units serving the classrooms should be replaced within the next 5 years as they will hit their 20-year expected lifespan. The air terminals should be replaced as well, as they are showing signs of rust.

4. The kitchen exhaust fan should be replaced as it is showing signs of damage and rust. The rest of the exhaust fans can be replaced in 5-10 years.

5. Provide a mini-split in the teacher break room and remove the circulation fan. There is nothing in the space to condition the heat put off by the 2 refrigerated vending machines.

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Electrical Systems Assessment

Overall, the electrical system is in poor to fair condition (poor in the original building area and fair in the addition areas).

Power distribution is by a single Square D 480V-3 Phase-1200A electrical service. The switchboard, which was installed about 30 years ago, and seems to be in fair condition considering its age and is currently operational without any problems. Nevertheless, it is worth noting that the switchboard is outdated.

PHOTO E.01
ELECTRICAL SWITCHBOARD (480V)

Condition: Fair
Quantity: (1) Electrical Room

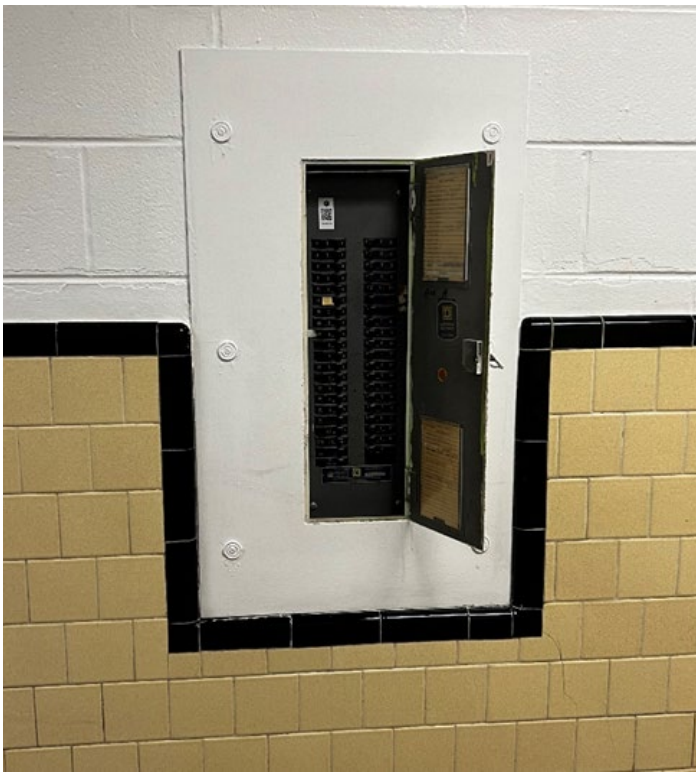
The remaining electrical equipment in the facility falls into three categories: original to the building, replaced, or added during renovations. The original equipment is in poor condition, and finding replacement parts will be challenging. There is also a lack of consistency in terms of brand, age, and condition, with equipment dating back to the 60s, early 90s, and the 2016 renovation. Additionally, some areas have unique one-off pieces of equipment. It is recommended to replace both the original equipment and the 90s installations, along with all associated wiring.

PHOTO E.02A
EXISTING 480V PANELS

Condition: Poor
Quantity: Approx. 44,073 SF

PHOTO E.02B
EXISTING 480V PANELS

Condition: Poor
Quantity: Approx. 44,073 SF



The facility currently has a standby emergency generator. The generator was installed within the last 30 years and seems to be getting close to the expiration of its anticipated service life of 25 years. There is only one transfer switch, and that is the “Life Safety” switch feeding emergency loads such as Emergency lighting. It does not appear that this generator is feeding any other loads, however the panel schedule was incorrect/incomplete and if there are standby loads that are Fed from the same transfer switch, these loads should be separated, and another transfer switch should be added to comply with code.

PHOTO E.03
GENERATOR

Condition: Poor
Quantity: (1)

PHOTO E.04
GENERATOR ATS

Condition: Poor
Quantity: (1)

PHOTO E.05
EQUIPMENT CLEARANCE

Condition: Poor
Quantity: See Code Compliance

Interior lighting consists of a mixture of fixture types and lamp types and are in fair condition. While the existing fixtures are functional, the controllability is very limited and doesn't meet the current energy code in many areas, namely the International Energy Conservation Code (IECC). The older section of the building has many fixtures that do not work or only partially work due to some of the light bulbs not working. They consume much higher levels of energy, thus costing more to operate, and they provide lower than recommended lighting levels in many locations in the building. Lighting controls are mostly manual type only and even though most of the classrooms have multi-level switching, it is still not fully operational in certain areas. There are no daylight harvesting or automatic lighting controls in most of the buildings, which are also now required per the IECC.

Emergency egress lighting is predominately provided by the generator. Additionally, original emergency wall pack light fixtures are still installed throughout the school. Most tested on site were not operational.

All florescent light fixtures should be replaced with efficient LED light fixtures and the existing battery-operated wall pack should be removed. Additionally, the associated occupancy sensing, dimming, and daylight harvesting lighting controls should be replaced/added to reduce energy usage of the building. The most exit signs should be upgraded, as applicable, to LED type and supplemental signs added where needed.

PHOTO E.08
LIGHT FIXTURES (TYPICAL)

Condition: Poor
Quantity: Approx. 63,026 SF

PHOTO E.06
ILLUMINATED EXIT SIGN(S)

Condition: Fair
Quantity: Approx. 12 Signs

Exterior building mounted lighting consists predominately of wall mounted fluorescent light fixtures. Some are LED, some are from the 90s and need to be updated for a more uniform lighting output around the building perimeter.

Parking lot lighting consists of pole mounted luminaires provided by the power company and they are distributed around the school's parking lot. The existing light fixtures might provide adequate lighting levels, but due to the age of these fixtures, associated high energy consumption, and lack of coverage in certain areas, it is recommended that they be replaced with LED, full cutoff type fixtures and supplemental light fixtures be added as needed.

PHOTO E.07
PARKING LOT LIGHT FIXTURES (TYPICAL)

Condition: Poor
Quantity: (20)

The **fire alarm system** consists of wall mounted audio/visual devices, manual pull stations located at most exit passages, but missing smoke/heat detectors located in mechanical rooms and missing devices throughout the old section of the building. Devices needed per code should be added to bring the rest of the building up to code where needed. The existing fire alarm control panel is outdated, but functional. A new system would be an addressable system that provides additional information to first responders and provides the ability to pinpoint any alarms down to the device that caused the alarm. The current system does not seem to have that ability.

PHOTO E.09
FIRE ALARM CONTROL PANEL

Condition: Fair
Quantity: (1)

Wiring devices consist of devices original to the building and newer devices added overtime. The majority of receptacles are grounding type. There are areas where a water source is present, and the receptacles are not GFCI protected as seen in the pictures. Both existing conditions related to grounding and ground-fault protection do not comply with current NEC requirements and associated devices should be replaced. There also appears to be a lack of power outlets within classrooms as there are multiple power strips throughout the classrooms, and outlets should be provided to avoid the use of power strips.

Local means of disconnects appear to be original to installation of equipment. Most of the mechanical equipment has been replaced, along with the associated disconnect. However there are several disconnects and pieces of equipment that should be replaced as they are way past their life expectancy.

PHOTO E.10
DISCONNECT

Condition: Poor
Quantity: (2) Outlets

The **intercom/clock system** is currently a functional system that controls all intercommunications and clock scheduling throughout the new parts of the facility but does not control most parts of the older side of the building. The system is in fair condition and does not need to be replaced in near future. Most of the clocks throughout the corridors have been updated. However, some classrooms and other areas utilize battery operated clocks that are not compatible with the clock system. It is recommended that the clock system be fully utilized and standardized clocks be located throughout the school where currently not installed.

PHOTO E.11A
SYSTEM CLOCK (TYPICAL)

Condition: Fair
Quantity: Approx. 63,026 SF

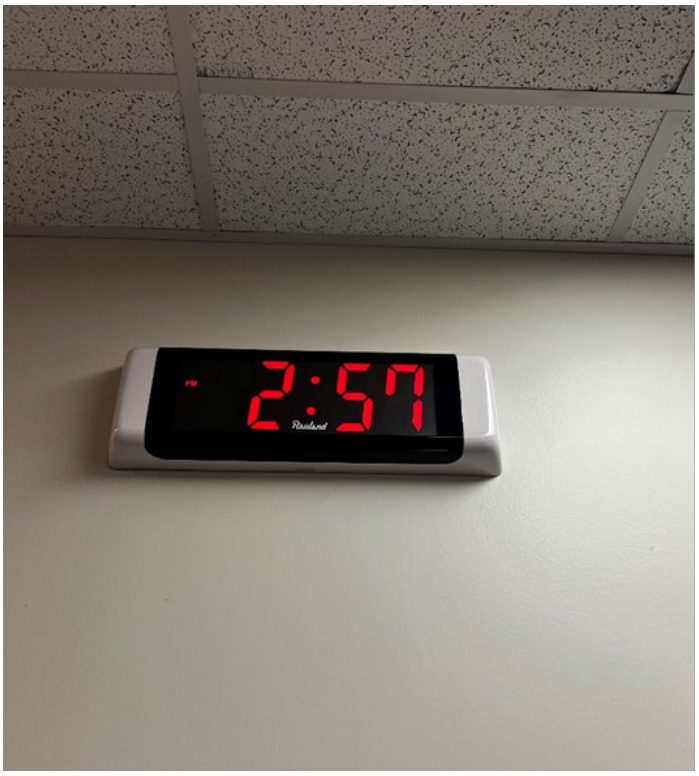


PHOTO E.11B
BATTERY OPERATED CLOCK (TYPICAL)

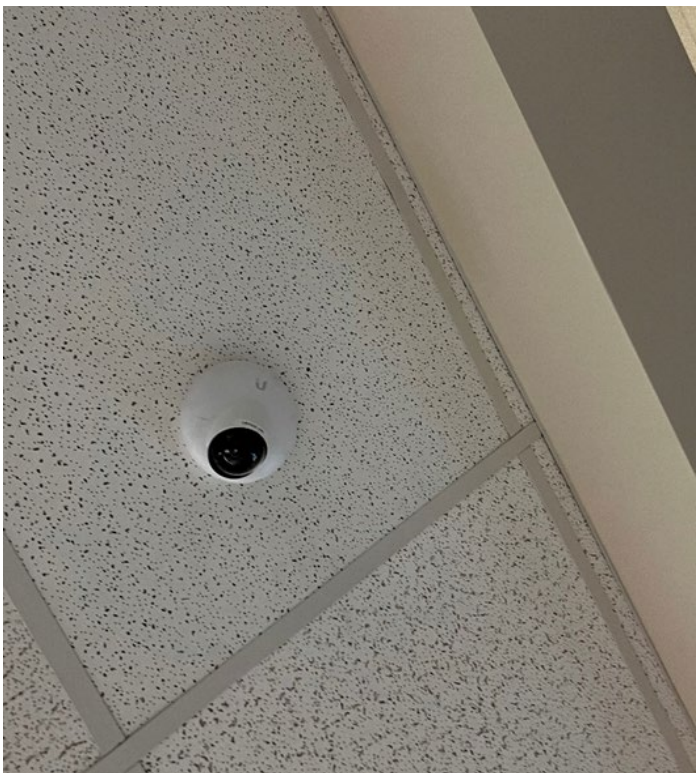
Condition: Fair
Quantity: Approx. 63,026 SF

The **data/phone/CATV/AV** systems have been upgraded, supplemented, and extended as necessary to support the educational needs of the school. Many outlets have been added throughout via surface raceway. The horizontal cabling is currently functioning without any issues. However, there were many areas where the ports were indicated as not working by the teachers and staff with a sharpie or tape, and those should be fixed/replaced as needed. Wireless access points are installed throughout the school. Most classrooms and core teaching spaces have wall mounted interactive projectors installed for instructional use. These appear to be in good condition.

The **closed-circuit security camera (CCTV) system** has been updated within the last 10 years.

PHOTO E.12
ANALOG CAMERA (TYPICAL)

Condition: Fair / Good
Quantity: Approx. 63,026 SF



The **security** system consists of card readers, door contacts, etc. and appears to be functional. The system has card readers some but not all exterior doors. The system could be utilized and extended and does not need to be replaced unless required by architectural or Owner requested changes.

The **gymnasium sound system** did not seem operational and should be replaced with a new system.

Overall Recommendations

1. The existing 480V switchboard is in fair condition and does not need to be replaced in the near future.

2. All panelboards that are original to the building and that no longer have replacement parts, should be replaced.

3. The existing generator should be replaced due to it being near the end of its life expectancy. Additionally, two (2) ATS units, associated panelboards, and revised wiring distribution will need to be provided to correct all code issues mentioned above if there are any standby loads.

4. All existing interior non-LED light fixtures should be upgraded to LED light fixtures that conform to the current version of the IECC.

5. It is recommended that existing toggle switch lighting controls be replaced with code compliant lighting controls consisting of dimming, occupancy sensing, and daylight harvesting controls as mentioned above.

6. All parking lot light fixtures, building and pole mounted, should be updated/replaced with LED light fixtures that conform to the IECC and local zoning ordinances.

7. The existing fire alarm system can remain but many associated peripheral equipment should be added in the older sections of the building to be brought up to code.

8. It is recommended that the clock system be utilized across all rooms, and all battery clocks be replaced.

9. It is recommended that nonoperational existing data wiring and associated outlets be replaced.

10. The CCTV system is in good condition and does not need to be replaced.

11. During a part of any major renovation, the existing gymnasium sound system should be upgraded with all associated cabling, outlets, and equipment installed for better capabilities as are currently typically installed in school facilities in Virginia.

Plumbing Systems Assessment

Overall, the plumbing system is in fair condition.

Domestic Water service enters the building into a small external enclosure and is then distributed throughout the building. There is a backflow preventer at the service entrance that is in poor condition. There are two (2) electric hot water heaters. One water heater serves the addition. One water heater provides domestic hot water for the original portion of the building. The hot water heaters were installed in 2016 and are in good condition. There are no recirculation pumps on the hot water heaters. Recirculation pumps will need to be added to comply with VPC 607.2.1.The insulation on the domestic hot water piping in the mechanical room is in good condition. All the domestic cold water and hot water piping distributed in the admin area was installed in 2016 and is good condition. The domestic cold water and hot water distributed to the rest of the building is original to the building and is in fair condition.

Sanitary drain piping is below the floor slab and general condition could not be determined. All the sanitary piping is original to the building has plenty of its expected life left.

Storm drains on the roof were added in the 2016 addition. The storm drain piping has an expected lifespan of 40-50 years. The original portion of the building has a gutter and downspout system and appears to be in poor condition.

Plumbing fixtures. Water closets are floor mounted white vitreous china with manual flush valves. The water closets appeared in fair condition. The lavatories in gang restrooms are a wall mounted white vitreous china with a mixture of manual and automatic flush valve. The lavatories in restrooms appeared in fair condition. The sinks in the classrooms are white vitrious china countertop drop in type with a mixture of faucet styles. The classroom sinks appeared in fair condition. The kitchen has stainless steel two and three compartment sinks that are in good condition.

PHOTO P.01
DOMESTIC BACKFLOW PREVENTER

Condition: Poor
Quantity: (1)

PHOTO P.02
CLASSROOM LAVATORY

Condition: Fair
Quantity: (30)

PHOTO P.03
DOMESTIC WATER HEATER

Condition: Good
Quantity: (2)

PHOTO P.4
LAVATORY

Condition: Poor
Quantity: (7)

PHOTO P.5
WATER CLOSET

Condition: Fair
Quantity: (44)

PHOTO P.6
LAVATORY

Condition: Good
Quantity: (7)

Recommendations:

1. The lavatories and sinks with manual faucets are at or near the end of their life and should be considered for replacement. The lavatories and sinks with automatic faucets are in good condition with significant life remaining.

2. The water closets and urinals are in fair condition and should be considered for replacement in five to ten years.

3. Recirculation pumps will need to be added to comply with VPC 607.2.1.

4. The sanitary piping below the kitchen was inaccessible and should be scoped with a camera to determine the condition. The sanitary piping in the kitchen was partially replaced in 2016. The portion of existing sanitary piping is original to the building and is at or near the end of its expected life expectancy. The grease interceptor should be cleaned and inspected to determine the condition.

5. The sanitary piping below the slab was inaccessible and should be scoped with a camera to determine the condition. The piping that was not replaced in 2016 is original to the building and is at or near the end of its expected life expectancy. The sanitary piping replaced in 2016 has a significant portion of its expected life expectancy of 40-50 years.

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Structural Assessment

Overall, the structural system is in fair to good condition.

Madison Elementary School is a single-story building constructed in the 1962 in Ruthers Glen, Caroline County, Virginia.

In 2015, several additions were added and built with similar construction to the original building.

The structure is primarily a steel-frame and concrete masonry unit (CMU) bearing wall construction. The roof is metal deck and gypsum deck supported by open-web steel joists. The exterior façade is brick masonry. The building is supported by shallow concrete foundations with slab-on-grade floors. The gymnasium is a pre-engineered metal building.

Interior structural issues were limited to CMU cracks in isolated locations, especially where the interior walls intersected the exterior walls (Photo S.01) and vertical cracks in CMU walls where no vertical control joints were installed (Photo S.02).

Exterior structural issues include corroded steel lintels (Photo S.03), corroded pipe columns at canopy (Photo S.04), corroded steel angles at canopy roof (Photo S.05) corroded HSS beams at the two-story front entrance (Photo S.06)

Areas of the gypsum deck were damaged (Photo S.07)

Masonry weeps were covered by grade (Photo S0.08).

The cracking is most likely due to the natural movement of the building over time and the insufficient number of control joints in the masonry and no horizontal reinforcement at the intersections. Control joints allow for the anticipated expansion and contraction of the walls, and without sufficient control joints, stresses are relieved through the creation of cracks. Clean corroded surfaces with a wire brush or wire wheel attachment to remove the corrosion from the surface to solid steel. Prepare surface in accordance with coating manufactures recommendations. Prime with epoxy precoat and epoxy topcoat paint approved for exposed structural steel. The lintels with corrosion must be repaired to ensure continued structural integrity and to minimize the potential for further corrosion/damage.

The gypsum roof deck damage occurs throughout the building. A thorough investigation of the integrity of the gypsum roof deck should be performed by a qualified roofing consultant. This type of investigation is outside our field of expertise. Have a roofing consultant perform an investigation on the entire gypsum roof deck including infrared testing. Also, have a plumbing consultant check the overhead plumbing in damaged areas to prevent further leaks and damage.

PHOTO S.01
INTERIOR CMU WALL CRACKING

Condition: Poor
Quantity: Approx. 300 LF

PHOTO S.02
CRACKS IN CMU DUE TO HORIZONTAL EXPANSION

Condition: Fair
Quantity: 48 LF

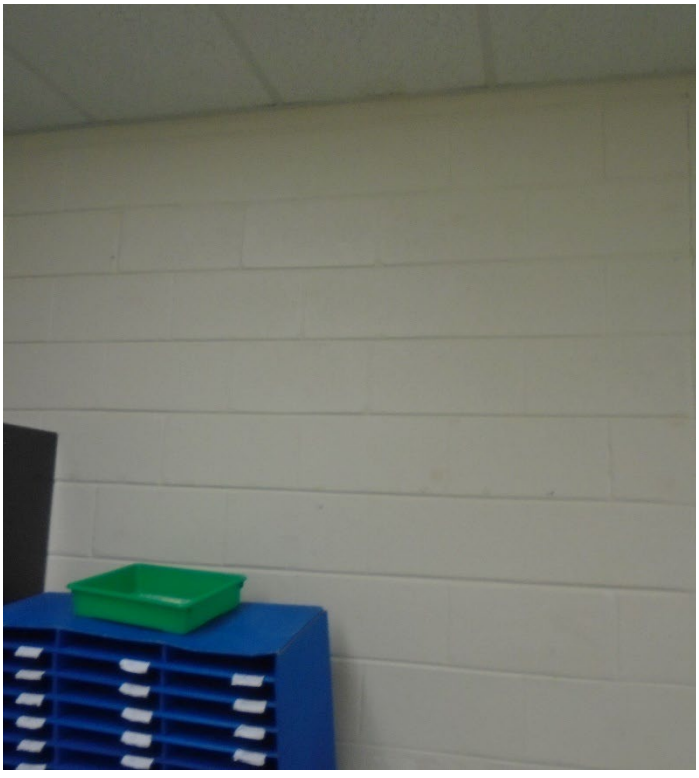

PHOTO S.03
MASONRY STEEL LINTEL CORROSION

Condition: Fair
Quantity: See Architectrual - Exterior

PHOTO S.04
HSS CORROSION (PIPE COLUMN)

Condition: Fair
Quantity: Approx. 108 LF

PHOTO S.05
STEEL CORROSION

Condition: Fair
Quantity: 40 LF

PHOTO S.06
HSS CORROSION

Condition: Fair
Quantity: Approx. 100 LF

PHOTO S.07
GYPSUM DECK DAMAGE

Condition: Fair
Quantity: 6 SF

PHOTO S.08
MASONRY VENEER WEEPS COVERED

Condition: Fair
Quantity: Approx. 64 LF

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Fire Protection System Assessment

Overall, the fire protection system is in good condition.

Madison Elementary School is partially protected with a fire suppression (sprinkler) system and has wall mounted fire extinguishers located in the corridors throughout the building. The original portion of the building is not protected with a fire suppression sprinkler system but has wall mounted fire extinguishers adjacent to exterior doors. The addition is protected by a fire suppression sprinkler system that is in good condition. It is recommended that the fire protection system be upgraded to provide adequate fire suppression coverage throughout the original portion of the school.

PHOTO FS.1
ADMIN AREA

Condition: Good
Quantity: Approx. 18,953 SF

PHOTO FS.2
ORIGINAL BUILDING CLASSROOMS

Condition: Not Applicable
Quantity: None

PHOTO FS.3
ORIGINAL BUILDING CORRIDOR WITH CORRIDOR FIRE EXTINGUISHER

Condition: Not Applicable
Quantity: None

PHOTO FS.4
ADDITION CORRIDOR

Condition: Good
Quantity: Approx. 18,953 SF

PHOTO FS.5
WALL MOUNTED FIRE EXTINGUISHERS

Condition: Good
Quantity: Approx. 63,026 SF

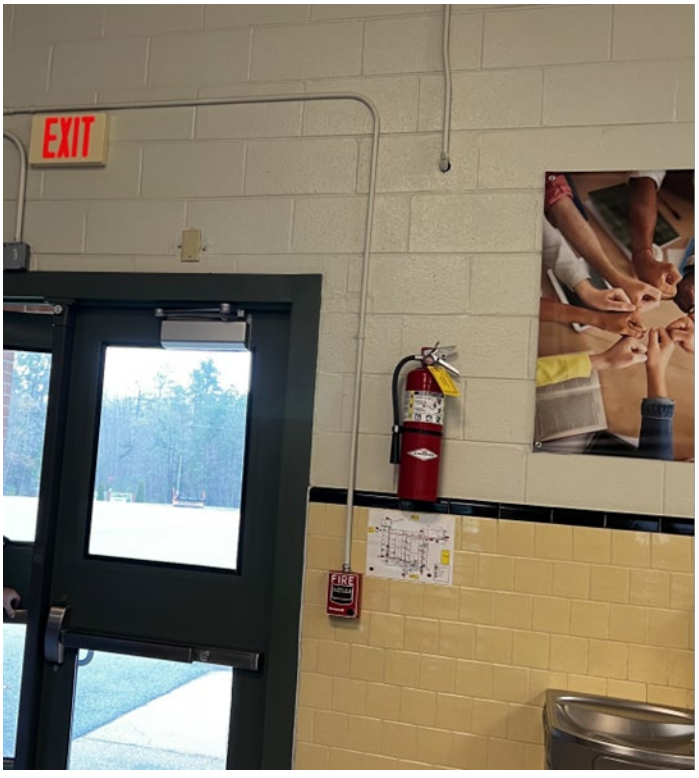

PHOTO FS.6
FIRE ALARM RISER WITH BACKFLOW PREVENTER

Condition: Good
Quantity: (1)

Food Service (Kitchen) Assessment

Overall, the kitchen is in poor condition. The kitchen was expanded and the serving lines were replaced in 2015. Some other existing equipment was rearranged within the kitchen at that time. The issues are mostly related to the age and finishes of some of the equipment (kitchen equipment finishes that are no longer code compliant). The issues are enumerated below and accompanied by an explanation of the issue and which code is impacted.

The kitchen is old and most of the equipment is past its useful life. Better cleaning procedures and preventive maintenance should be implemented. Compressors are dirty which affects the operation of the equipment.

List of Codes & Best Practices Referenced

The following codes and best practices are referenced in the General Issues Discussion below:

1. Americans with Disabilities Act (ADA)
2. Commonwealth of Virginia Board of Health Food Regulations
3. International Mechanical Code
4. National Electrical Code
5. ServSafe® Manager Training (a nationally-recognized certification provided by the National Restaurant Association and taught in conjunction with local environmental health service divisions)
6. Virginia Mechanical Code

Relevant excerpts, as well as links to the codes in their entirety (where applicable), can be found in the Appendix located at the end of this section.

General Issues Discussion

- Loading Dock: Is low with three steps but no ramp to ease delivery of product to the kitchen.

- Insect Fan: The existing one is old and ill-fitted to the receiving door. *Virginia Food Regulations require outer openings of a food establishment be protected against the entry of insects {Refer to §12 VAC 5-421-2930}*

- Ceilings and Walls: This kitchen facility includes exposed utilities—for example, pipes and electrical wiring—on the wall and ceiling surfaces, which makes cleaning these surfaces difficult. The walls and floor are very worn. There are missing ceiling tiles above the walk-ins. There are many surface mounted heaters, split systems and fans in the space. *Virginia Food Regulations require all non-food contact surfaces, such as walls and ceilings, to be smooth, non-porous, and easily cleanable. Exposed utility lines along surfaces should be minimized. {See §12 VAC 5-421-2810, §12 VAC 5-421-2820, §12 VAC 5-421-2860}*

- Handsinks: The hand sink closest to the receiving door has a residential style handle which is challenging to operate. There is no paper towel dispenser at this sink. The water line for the ice maker filter appears to be supplied by the cold water at this hand sink.

- Mop Sink: The mop sink is wall mounted making it nearly impossible to dump the soiled water from the mop bucket after the kitchen is cleaned. The utility room is cramped and dirty. The water heater takes up much of the space. The pipes are worn and the paint is peeling.

- Laundry: No washer or dryer was located. A linen service must be used if there is not a dedicated laundry for the kitchen. §12 VAC 5-421-1950. Use of laundry facilities.

- Ice Maker: The drain pipes are located on the floor which makes it impossible to clean beneath them. Water collects on the floor around the unit. The scoop was on the floor during the site visit.

- Walk-In Coolers/Freezer: Walk-In Coolers/Freezer: There is a newer walk-in freezer outside near the loading dock. The existing compressors are very noisy and the floor is worn and bowing in the old freezer. The interior walk-ins were relocated in 2015 during the kitchen renovation. There are steep ramps used to access both compartments. There is ice buildup in the freezer.

- Exhaust Hood: The exhaust hood is old and no longer code compliant for various reasons:
    - The hood is undersized for the operation. *International Mechanical Code requires a minimum overhang of six inches on all sides of the equipment underneath. {See §507.12}.*
    - *The hood appears to be "short-circuit", meaning the make-up replacement air is introduced internally in the hood. These hoods fail to capture and contain effluent adequately and are no longer code compliant. {See §506.3.1.2}*
    - *The equipment sits in the center of the double sided hood to allow space to work in front of the ovens and range.*

- Employee Lockers/Restrooms: The kitchen did not have an ADA-compliant restroom. The employee lockers are located in the manager's office. *{See §404.2.3 and §404.2.4}.*

- Dish Room: There is no dishroom or dishwasher.

- Serving Areas: The serving equipment was replaced in 2015. It is served by a load center.

Although the school kitchen is grandfathered and not required to comply with many of the above-mentioned codes and best practices until equipment is replaced or the facility is renovated, many of the cited conditions create employee hazards and/or food handling safety issues and expose the School Division to undue liability. **It is recommended that the kitchen be fully renovated to comply with current codes.**

Code Compliance Issues

- The exhaust hood appears to be short circuit
- There are a many exposed utilities
- The employee restroom is not ADA compliant
- The table bases are galvanized steel
- Chemicals are stored in the prep space
- Use of banned refrigerants – Refrigerants classified as “High Global Warming Potential Refrigerants” such as R134a, R410A, R407C, may be banned from use as of January 1, 2024 under Section 608 of the Clean Air Act

PHOTO K.1 THE INSECT AIR SCREEN FAN IS UNDERSIZED FOR THIS DOOR OPENING.

PHOTO K.2 THE HAND SINK FAUCET NEEDS TO BE REPLACED AND A TOWEL DISPENSER NEEDS TO BE INSTALLED.

PHOTO K.3 THERE ARE STEEP RAMPS UP TO THE WALK-INS AND THERE ARE MANY CEILING TILES AND TRIM MISSING.

PHOTO K.4 THERE ARE MANY EXPOSED UTILITIES AND MISSING CEILING TILES.

Recommended Equipment for Replacement / Minimum Suggestions for Improvement

Based on its age and condition, the following kitchen equipment is recommended for replacement;

- Exhaust Hood does not provide proper overhang over equipment/is not right-sized for the current amount of equipment.
- Refer to Deferred Maintenance schedule for list of equipment to be replace in the next 3-5 years

Appendix – Excerpts and Links – Codes & Best Practices

Applicable excerpts from the Americans with Disabilities Act, Commonwealth of Virginia Board of Health Food Regulations, ServSafe Manager, and Virginia Mechanical Code.

Americans with Disabilities Act

§403.5.2 Clear Width at Turn

Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

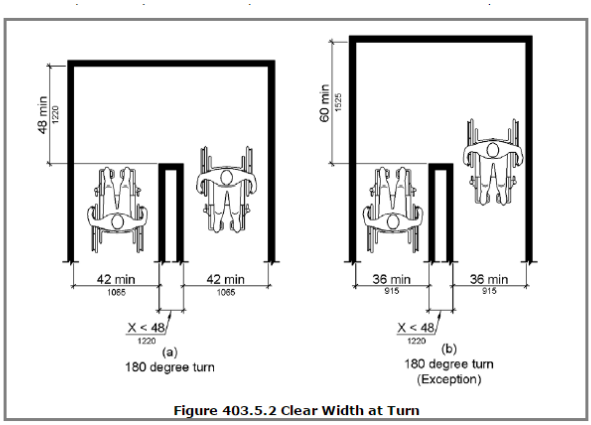

Figure 403.5.2 Clear Width at Turn

§404.2.3 Clear Width.

Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

§404.2.4 Maneuvering Clearances.

Minimum maneuvering clearances at doors and gates shall comply with 404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

§404.2.4.1 Swinging Doors and Gates.

Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.4.1.

404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates (text version)

Type of Use		Minimum Maneuvering Clearance	
Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch side unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm)1
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)2	22 inches (560 mm)3
From latch side	Pull	48 inches (1220 mm)4	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)4	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add 6 inches (150 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 6 inches (150 mm) if closer is provided.

Commonwealth of Virginia Board of Health Food Regulations 12 VAC 5-421

§12 VAC 5-421-1060. Nonfood-contact surfaces.

Nonfood-contact surfaces of equipment that are exposed to splash, spillage, or other food soiling or that require frequent cleaning shall be constructed of a corrosion-resistant, nonabsorbent, and smooth material.

§12 VAC 5-421-1210. Ventilation hood systems, drip prevention.

Exhaust ventilation hood systems in food preparation and warewashing areas including components such as hoods, fans, guards, and ducting shall be designed to prevent grease or condensation from draining or dripping onto food, equipment, utensils, linens, and single-service and single-use articles.

§12 VAC 5-421-1950. Use of laundry facilities.

A. Except as specified in subsection B of this section, laundry facilities on the premises of a food establishment shall be used only for the washing and drying of items used in the operation of the establishment.
B. Separate laundry facilities located on the premises for the purpose of general laundering such as for institutions providing boarding and lodging may also be used for laundering food establishment items.

§12 VAC 5-421-1460. Manual warewashing, sink compartment requirements.

A. Except as specified in subsection C of this section, a sink with at least three compartments shall be provided for manually washing, rinsing, and sanitizing equipment and utensils.

§12 VAC 5-421-1470. Drainboards.

Drainboards, utensil racks, or tables large enough to accommodate all soiled and cleaned items that may accumulate during hours of operation shall be provided for necessary utensil holding before cleaning and after sanitizing.

§12 VAC 5-421-2230. Handwashing Lavatory

A. Except as specified in subsection B of this section, at least one handwashing lavatory, or the number of handwashing lavatories necessary for their convenient use by employees in areas specified under §12 VAC 5-421-2280, and not fewer than the number of handwashing lavatories required by law shall be provided.

§12 VAC 5-421-2280. Handwashing sinks, location.

A handwashing sink shall be located:

A. To be readily accessible for use by employees in food preparation, food dispensing, and warewashing areas; and
B. In, or immediately adjacent to, toilet rooms.

§12 VAC 5-421-2520. Backflow prevention.

A. Except as specified in subsections B, C, and D of this section, a direct connection may not exist between the sewage system and a drain originating from equipment in which food, portable equipment, or utensils are placed.
B. Subsection A of this section does not apply to floor drains that originate in refrigerated spaces that are constructed as an integral part of the building.
C. If allowed by law, a warewashing machine may have a direct connection between its waste outlet and a floor drain when the machine is located within five feet (1.5 meters) of a trapped floor drain and the machine outlet is connected to the inlet side of a properly vented floor drain trap.
D. If allowed by law, a warewashing or culinary sink may have a direct connection.

§12 VAC 5-421-2600. Outdoor storage surface.

An outdoor storage surface for refuse, recyclables, and returnables shall be constructed of nonabsorbent material such as concrete or asphalt and shall be smooth, durable, and sloped to drain.

§12 VAC 5-421-2790. Indoor areas; surface characteristics.

A. Except as specified in subsection B of this section, materials for indoor floor, wall, and ceiling surfaces under conditions of normal use shall be:
    1. Smooth, durable, and easily cleanable for areas where food establishment operations are conducted.

§12 VAC 5-421-2810. Floors, walls, and ceilings - cleanability.

Except as specified under 12VAC5-421-2840 and except for anti-slip floor coverings or applications that may be used for safety reasons, floors, floor coverings, walls, wall coverings, and ceilings shall be designed, constructed, and installed so they are smooth and easily cleanable.

§12 VAC 5-421-2820. Floors, walls, and ceilings, utility lines.

A. Utility service lines and pipes shall not be unnecessarily exposed.
B. Exposed utility service lines and pipes shall be installed so they do not obstruct or prevent cleaning of the floors, walls, or ceilings.
C. Exposed horizontal utility service lines and pipes may not be installed on the floor.

§12 VAC 5-421-2860. Wall and ceiling coverings and coatings.

A. Wall and ceiling covering materials shall be attached so that they are easily cleanable.
B. Except in areas used only for dry storage, concrete, porous blocks, or bricks used for indoor wall construction shall be finished and sealed to provide a smooth, nonabsorbent, easily cleanable surface.

§12 VAC 5-421-2930. Outer openings, protected.

A. Except as specified in subsections B through E of this section, outer openings of a food establishment shall be protected against the entry of insects and rodents by:
    1. Filling or closing holes and other gaps along floors, walls and ceilings;
    2. Closed, tight-fitting windows; and
    3. Solid self-closing, tight-fitting doors.
B. Subsection A of this section does not apply if a food establishment opens into a larger structure, such as a mall, airport, or office building, or into an attached structure, such as a porch, and the outer openings from the larger or attached structure are protected against the entry of insects and rodents.
C. Exterior doors used as exits need not be self-closing if they are:
    1. Solid and tight-fitting;

2. Designated for use only when an emergency exists, by the fire protection authority that has jurisdiction over the food establishment; and
3. Restricted so they are not used for entrance or exit from the building for purposes other than the designated emergency exit use.

D. Except as specified in subsections B and E of this section, if the windows or doors of a food establishment, or of a larger structure within which a food establishment is located, are kept open for ventilation or other purposes of this section, the openings shall be protected against the entry of insects and rodents by:
   1. 16 mesh to 1-inch (16 mesh to 25.4mm) screens;
   2. Properly designed and installed air curtains to control flying insects; or
   3. Other effective means.

§12 VAC 5-421-3080. Lighting, intensity.

The light intensity shall be:

1. At least 10 foot candles (108 lux) at a distance of 30 inches (75 cm) above the floor, in walk-in refrigeration units and dry food storage areas and in other areas and rooms during periods of cleaning;
2. At least 20 foot candles (215 lux):
   a. At a surface where food is provided for consumer self-service such as buffets and salad bars or where fresh produce or packaged foods are sold or offered for consumption;
   b. Inside equipment such as reach-in and under-counter refrigerators;
   c. At a distance of 30 inches (75 cm) above the floor in areas used for handwashing, warewashing, and equipment and utensil storage, and in toilet rooms; and
3. At least 50 foot candles (540 lux) at a surface where a food employee is working with food or working with utensils or equipment such as knives, slicers, grinders, or saws where employee safety is a factor.

§12 VAC 5-421-3340. Storage, separation.

Poisonous or toxic materials shall be stored so they cannot contaminate food, equipment, utensils, linens, and single-service and single-use articles by:

1. Separating the poisonous or toxic materials by spacing or partitioning;
2. Locating the poisonous or toxic materials in an area that is not above food, equipment, utensils, linens, and single-service or single-use articles. This subsection does not apply to equipment and utensil cleaners and sanitizers that are stored in warewashing areas for availability and convenience if the materials are stored to prevent contamination of food, equipment, utensils, linens, and single-service and single-use articles;

International Mechanical Code

SECTION 507 COMMERCIAL KITCHEN HOODS

§507.2 Where required.

A Type I or Type II hood shall be installed at or above all commercial cooking appliances in accordance with Sections 507.2.1 and 507.2.2.

§507.2.1 Type I hoods.

Type I hoods shall be installed where cooking appliances produce grease or smoke as a result of the cooking process. Type I hoods shall be installed over medium-duty, heavy-duty and extra-heavy-duty cooking appliances. Type I hoods shall be installed over light-duty cooking appliances that produce grease or smoke.

Exception: A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m3 or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m3/s) in accordance with Section 17 of UL 710B

§507.2.2 Type II hoods.
Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of *combustion* and do not produce grease or smoke as a result of the cooking process. Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00033 m^3/s). For the purpose of determining the floor area required to be exhausted, each individual *appliance* that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m^2). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [.00356 $m^3/(s \bullet m^2)$].

§507.12 Canopy size and location.
The inside lower edge of canopy-type Type I and II commercial hoods shall overhang or extend a horizontal distance of not less than 6 inches (152 mm) beyond the edge of the top horizontal surface of the appliance on all open sides. The vertical distance between the front lower lip of the hood and such surface shall not exceed 4 feet (1219 mm).

Exception: The hood shall be permitted to be flush with the outer edge of the cooking surface where the hood is closed to the appliance side by a noncombustible wall or panel.

SECTION 509 FIRE SUPPRESSION SYSTEMS

§509.1 Where required.
Commercial cooking appliances required by Section 507.2.1 to have a Type I hood shall be provided with an *approved* automatic fire suppression system complying with the *International Building Code* and the *International Fire Code.*

ServSafe® Manager

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Virginia Mechanical Code

§506.3.1.2 Makeup air ducts.
Makeup air ducts connecting to or within 18 inches (457 mm) of a Type I hood shall be constructed and installed in accordance with Sections 603.1, 603.3, 603.4, 603.9, 603.10 and 603.

Hazardous Materials Assessment

A hazardous materials assessment was not completed as a part of this Facility Condition Assessment. Based on the year Madison Elementary School was built, it is presumed that hazardous materials were utilized in the construction of the school.

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SECTION FOUR

Deferred Maintenance Schedule

Caroline County Public Schools

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(As of April 2024)*
Gross Square Feet: 63,026

Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
SITE IMPROVEMENTS (Civil Assessment)																				
C.1 Replace/Repair Down Spout Connections	SEE ARCHITECTURAL - EXTERIOR																			
C.2 Repair Rip Rap Stone	100	SF	$ 35.00	$ 3,500				$ 3,990												
C.3 Restrip and Install HC Parking Spaces	2	LS	$ 2,500.00	$ 5,000		$ 5,250														
C.4 Install Handrails at Stairs	100	LF	$ 233.47	$ 23,347		$ 24,514														
C.5 Mulch Playground	20	CY	$ 55.00	$ 1,100				$ 1,254												
SUBTOTAL SITE IMPROVEMENTS				**$ 32,947**	$ -	$ 29,764	$ -	$ 5,244	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING EXTERIOR (Architectural Exterior Assessment)																				
AE.01 Remove/Replace Mortar at Stone Sill Joint	40	LF	$ 16.46	$ 658				$ 751												
AE.02 Remove/Replace Exterior Control Joint Caulk	500	LF	$ 27.87	$ 13,933		$ 14,629														
AE.03 Provide/Replace Caulking at Door Frames	100	LF	$ 4.23	$ 423		$ 444														
AE.04 Clean/Prep/Paint Steel Lintels	440	LF	$ 8.13	$ 3,579				$ 4,080												
AE.05 Clean/Prep/Paint Metal Frames/Decking	450	SF	$ 8.83	$ 3,972			$ 4,369													
AE.06 Perform Exterior Building Cleaning	63,026	SF	$ 0.14	$ 8,544					$ 9,996											
AE.07 Replace Damaged Downspouts	180	LF	$ 8.13	$ 1,463		$ 1,537														
AE.08 Provide/Replace Caulking at Louver	20	LF	$ 4.23	$ 85		$ 89														
AE.09 Repair/Replace Damaged Loading Dock Canopy	1	EA	$5,691.23	$ 5,691		$ 5,976														
AE.10 Clean/Prep/Paint Metal Doors and Frames	12	EA	$ 132.55	$ 1,591			$ 1,750													
AE.11 Remove/Replace Exterior Control Joint Caulk at Sidewalk	100	LF	$ 4.56	$ 456			$ 502													
SUBTOTAL BUILDING EXTERIOR				**$ 40,396**	$ -	$ 22,675	$ 6,621	$ 4,830	$ 9,996	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING INTERIOR (Architectural Interior Assessment)																				
AI.02 Refinish/Replace Terrazzo Corridor Flooring	12,987	SF	$ 31.59	$ 410,208										$ 541,475						
AI.03 Remove/Replace VCT Classroom	33,260	SF	$ 8.30	$ 276,039							$ 339,528									
AI.04 Remove/Replace Acoustical Ceilings	47,870	SF	$ 9.82	$ 470,119					$ 550,040											
AI.05 Repair/Sand/Prep/Paint Classroom Gypsum Walls	17,180	SF	$ 2.23	$ 38,299			$ 42,128													
AI.06 Sand/Prep/Paint Interior Door Frame	75	EA	$ 192.80	$ 14,460				$ 16,484												
AI.07 Clean/Prep/Paint CMU wall	800	SF	$ 3.18	$ 2,544					$ 2,976											
AI.08 Remove/Replace Corridor Tile Wainscoting	5,014	SF	$ 16.90	$ 84,737				$ 96,600												
AI.09 Remove/Replace Interior Sill Caulking	280	LF	$ 8.47	$ 2,370				$ 2,702												
AI.10 Install Control Joint @ Wainscoting	20	LF	$ 37.13	$ 743					$ 869											
AI.11 Remove/Replace Group Toilet Room Finishes	925	SF	$ 57.24	$ 52,945							$ 65,122									
AI.12 Remove/Replace Single Toilet Room Finishes	700	SF	$ 48.20	$ 33,740							$ 41,500									
SUBTOTAL BUILDING INTERIOR				**$ 1,386,203**	$ -	$ -	$ 42,128	$ 115,786	$ 553,885	$ -	$ 446,150	$ -	$ -	$ 541,475	$ -	$ -	$ -	$ -	$ -	
ADA COMPLIANCE (ADA Compliance Assessment)																				
AA.01 Provide Accessible Egress Route and Handrail Extensions at Building Entrances	2	EA	$ 4,375.00	$ 8,750			$ 9,625													
AA.02 Provide Maneuvering Clearances at Doors	6	EA	$ 3,406.25	$ 20,438				$ 23,299												
AA.03 Provide Accessible Route and Handrail Extensions at Stage Stairs	12	EA	$ 43,862.75	$ 526,353				$ 600,042												
AA.04 Install Compliant Wall Mounted Water Coolers	6	EA	$ 4,524.39	$ 27,146					$ 31,761											
AA.05 Install Accessible Casework Sinks	5	EA	$ 3,012.50	$ 15,063						$ 18,075										
AA.06 Install Compliant Sink Pipe Wrap	8	EA	$ 108.45	$ 868			$ 954			$ 1,041										

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(As of April 2024)*
Gross Square Feet: 63,026

	Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
AA.07	Upgrade Individual Restroom(s) Accessibility	700	SF	$ 154.83	$ 108,381						$ 130,057										
AA.08	Upgrade Group Restroom(s) Accessibility	497	SF	$ 104.83	$ 52,101						$ 62,521										
AA.09	Provide Compliant Handrail Extensions at Interior Stairs and Ramps	12	LF	$ 233.47	$ 2,802					$ 3,278											
SUBTOTAL ADA COMPLIANCE					**$ 761,900**	$ -	$ -	$ 10,579	$ 623,341	$ 35,039	$ 211,694	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING CODE COMPLIANCE (Building Code Compliance & Safety/Security Concerns Assessments)																					
AB.01	Update Door Hardware to Prevent Trap Hazard	4	EA	$ 1,265.25	$ 5,061				$ 5,770												
AB.02	Remove Multi-Plug Adapters from Classrooms	1	LS	$ 125.00	$ 125																Annual Operating Expense
AB.03	Secure Electrical Panels in Public Areas	1	LS	$ 500.00	$ 500																Annual Operating Expense
AB.04	Provide Proper Clearance at Electrical Panels	1	LS	$ 250.00	$ 250																Annual Operating Expense
AB.05	Properly Store Materials in Mechanical Room	1	LS	$ 150.00	$ 150																Annual Operating Expense
AB.06	Remove Stored Material from Egress Path	1	LS	$ 150.00	$ 150																Annual Operating Expense
SUBTOTAL BUILDING CODE COMPLIANCE					**$ 6,236**	$ -	$ -	$ -	$ 5,770	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ROOFING SYSTEM (Roofing System Assessment)																					
AR.01	Remove/Replace Standing Seam Metal Panel Roof	44,073	SF	$ 51.21	$ 2,256,978			$ 2,482,676													
AR.02	Remove/Replace PVC Roof	18,120	SF	$ 44.34	$ 803,513										$ 1,060,638						
AR.03	Remove/Replace EDPM Roofing	833	SF	$ 41.78	$ 34,806							$ 42,811									
AR.04	Clean and Monitor Algae Growth on PVC Roof	18,120	SF	$ 0.33	$ 5,980			$ 6,578													
AR.05	Clean Debris from Gutters	1,620	LF	$ 1.43	$ 2,318				$ 2,643												
AR.06	Replace Roof Gutters	INCLUDED IN ITEM AR.01																			
AR.07	Remove Debris Build-Up from Roof Drains	INCLUDED IN ITEM AR.04																			
AR.08	Remove Vegetative Debris Build-Up	INCLUDED IN ITEM AR.04																			
AR.09	Patch/Repair Ripped PVC Roof	1	EA	$ 835.00	$ 835	$ 835															
SUBTOTAL ROOFING SYSTEM					**$ 3,104,430**	**$ 835**	$ -	**$ 2,489,254**	**$ 2,643**	$ -	$ -	**$ 42,811**	$ -	$ -	**$ 1,060,638**	$ -	$ -	$ -	$ -	$ -	
MECHANICAL SYSTEM (Mechanical System Assessment)																					
M.1	Replace Kitchen Exhaust Fan	1	EA	$ 8,652.00	$ 8,652			$ 9,517													
M.2	Replace Air Terminals at Bard Units	43,672	SF	$ 0.97	$ 42,362						$ 50,834										
M.3	Replace Exhaust Fans	12	EA	$ 1,418.00	$ 17,016					$ 19,909											
M.4	Remove Abandoned Equipment	1,865	SF	$ 0.98	$ 1,828						$ 2,193										
M.5	Remove/Replace Office PTAC Units	2	EA	$ 1,345.69	$ 2,691					$ 3,149											
M.6	Replace External Bard Units	30	EA	$ 15,675.00	$ 470,250						$ 564,300										
M.7	Add Mini Split For Breakroom	1	EA	$ 6,523.00	$ 6,523			$ 7,175													
M.8	Remove/Replace Gymansium Ductwork/Terminals	2,666	SF	$ 15.83	$ 42,203						$ 50,643										
SUBTOTAL MECHANICAL SYSTEM					**$ 591,525**	$ -	$ -	**$ 16,693**	$ -	**$ 23,058**	**$ 667,971**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ELECTRICAL & TECHNOLOGY SYSTEMS (Electrical & Technology Systems Assessment)																					
ET.1	Replace Existing Panelboards	44,073	SF	$6.50	$ 286,475			$ 315,122													
ET.2	Replace Existing Generator, ATS units and all panelboard and associated wiring	1	EA	$300,000.00	$ 300,000			$ 330,000													
ET.3	Replace All Interior Non-LED Lighting	63,026	SF	$6.50	$ 409,669			$ 225,318	$ 233,511												
ET.4	Replace All Lighting Controls	63,026	SF	$2.00	$ 126,052			$ 69,329	$ 71,850												
ET.5	Replace All Illuminated Exit Signs	12	EA	$164.32	$ 1,972					$ 1,154											

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(As of April 2024)*
Gross Square Feet: 63,026

	Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
ET.6	Replace All Parking Lot and Pole Mounted Lights	20	EA	$9,790.63	$ 195,813		$ 205,603														
ET.7	Replace Fire Alarm System	63,026	SF	$4.14	$ 260,928					$ 305,285											
ET.8	Replace Electrical Disconnects	2	EA	$ 579.65	$ 1,159			$ 1,275													
ET.9	Replace Existing Clock System	63,026	SF	$2.50	$ 157,565						$ 189,078										
ET.10	Replace Existing Data Devices and Cabling	63,026	SF	$2.50	$ 157,565						$ 189,078										
ET.11	Replace Gym Sound System	1	EA	$30,000.00	$ 30,000						$ 36,000										
SUBTOTAL ELECTRICAL & TECHNOLOGY SYSTEMS					**$ 1,927,197**	**$ -**	**$ 205,603**	**$ 941,044**	**$ 305,361**	**$ 306,439**	**$ 414,156**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
PLUMBING SYSTEM (Plumbing System Assessment)																					
P.1	Remove/Replace Backflow Preventer	1	EA	$ 785.12	$ 785			$ 864													
P.2	Remove/Replace Classroom Lavatories	30	EA	$ 1,391.00	$ 41,730						$ 50,076										
P.3	Remove/Replace Domestic Water Heaters	2	EA	$ 4,785.00	$ 9,570								$ 12,058								
P.4	Remove/Replace Manual Faucet Lavatories	7	EA	$ 1,391.00	$ 9,737			$ 10,711													
P.5	Remove/Replace Water Closets	44	EA	$ 652.00	$ 28,688					$ 33,565											
P.6	Add Recirculation Pump	2	EA	$ 478.50	$ 957					$ 1,120											
P.7	Remove/Replace Sanitary Piping	44,073	SF	$ 4.75	$ 209,347			$ 230,281													
SUBTOTAL PLUMBING SYSTEM					**$ 300,814**	**$ -**	**$ -**	**$ 241,856**	**$ -**	**$ 34,685**	**$ 50,076**	**$ -**	**$ 12,058**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
STRUCTURAL SYSTEM (Structural System Assessment)																					
S.1	Remove/Repoint Interior CMU Joint	300	LF	$ 27.87	$ 8,361			$ 9,197													
S.2	Cut in Control Joint in CMU	48	LF	$ 60.00	$ 2,880					$ 3,370											
S.3	Clean/Prime/Paint Window Lintels	SEE ARCHITECTURAL - EXTERIOR																			
S.4	Clean/Prime/Paint HSS	248	LF	$ 8.13	$ 2,016					$ 2,359											
S.5	Repair Gypsum Deck	6	SF	$ 100.00	$ 600					$ 702											
S.6	Regrade Exterior Grade to Expose Weeps	64	LF	$ 100.00	$ 6,400					$ 7,488											
SUBTOTAL STRUCTURAL SYSTEM					**$ 20,257**	**$ -**	**$ -**	**$ 9,197**	**$ -**	**$ 13,919**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
FIRE PROTECTION SYSTEM (Fire Suppression System Assessment)																					
FS.1	Add Sprinkler System	44,073	SF	$ 6.18	$ 272,371						$ 326,845										
SUBTOTAL FIRE SUPPRESSION SYSTEM					**$ 272,371**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 326,845**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
FOOD SERVICE (Food Service (Kitchen) Assessment)																					
K.1	Full Kitchen Renovation	1	EA	$ 850,000	$ 850,000			$ 935,000											$ 1,224,000		
SUBTOTAL FOOD SERVICE					**$ 850,000**	**$ -**	**$ -**	**$ 935,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,224,000**	**$ -**	
HAZARDOUS MATERIALS (Hazardous Materials (HAZMAT) Assessment)																					
HM.1	Not Applicable (Allowance)	44,073	SF	$ 6.50	$ 286,475						$ 343,769										
SUBTOTAL HAZARDOUS MATERIALS					**$ 286,475**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 343,769**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
TOTAL ESTIMATED PROJECT COSTS PER CATEGORY						**$ 835**	**$ 258,043**	**$ 4,692,371**	**$ 1,062,975**	**$ 977,020**	**$ 2,014,511**	**$ 488,961**	**$ 12,058**	**$ -**	**$ 1,602,112**	**$ -**	**$ -**	**$ -**	**$ 1,224,000**	**$ -**	

TOTAL ESTIMATED DEFERRED MAINTENANCE COSTS - YEARS 2024 THRU 2025 *(USED TO CALCULATE FCI)* ***$ 4,951,249***

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(Amended – Reflects Deferred Maintenance Items Completed by the McClure Company through December 2024)*
Gross Square Feet: 63,026

	Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
SITE IMPROVEMENTS (Civil Assessment)																					
C.1	Replace/Repair Down Spout Connections	SEE ARCHITECTURAL - EXTERIOR																			
C.2	Repair Rip Rap Stone	100	SF	$ 35.00	$ 3,500				$ 3,990												
C.3	Restrip and Install HC Parking Spaces	2	LS	$ 2,500.00	$ 5,000		$ 5,250														
C.4	Install Handrails at Stairs	100	LF	$ 233.47	$ 23,347		$ 24,514														
C.5	Mulch Playground	COMPLETED (SUMMER 2024)																			
SUBTOTAL SITE IMPROVEMENTS					**$ 31,847**	$ -	$ 29,764	$ -	$ 3,990	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING EXTERIOR (Architectural Exterior Assessment)																					
AE.01	Remove/Replace Mortar at Stone Sill Joint	40	LF	$ 16.46	$ 658				$ 751												
AE.02	Remove/Replace Exterior Control Joint Caulk	500	LF	$ 27.87	$ 13,933		$ 14,629														
AE.03	Provide/Replace Caulking at Door Frames	COMPLETED (SUMMER 2024)																			
AE.04	Clean/Prep/Paint Steel Lintels	440	LF	$ 8.13	$ 3,579				$ 4,080												
AE.05	Clean/Prep/Paint Metal Frames/Decking	450	SF	$ 8.83	$ 3,972			$ 4,369													
AE.06	Perform Exterior Building Cleaning	63,026	SF	$ 0.14	$ 8,544					$ 9,996											
AE.07	Replace Damaged Downspouts	180	LF	$ 8.13	$ 1,463		$ 1,537														
AE.08	Provide/Replace Caulking at Louver	20	LF	$ 4.23	$ 85		$ 89														
AE.09	Repair/Replace Damaged Loading Dock Canopy	1	EA	$5,691.23	$ 5,691		$ 5,976														
AE.10	Clean/Prep/Paint Metal Doors and Frames	12	EA	$ 132.55	$ 1,591			$ 1,750													
AE.11	Remove/Replace Exterior Control Joint Caulk at Sidewalk	100	LF	$ 4.56	$ 456			$ 502													
SUBTOTAL BUILDING EXTERIOR					**$ 39,972**	$ -	$ 22,231	$ 6,621	$ 4,830	$ 9,996	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING INTERIOR (Architectural Interior Assessment)																					
AI.02	Refinish/Replace Terrazzo Corridor Flooring	12,987	SF	$ 31.59	$ 410,208										$ 541,475						
AI.03	Remove/Replace VCT Classroom	33,260	SF	$ 8.30	$ 276,039							$ 339,528									
AI.04	Remove/Replace Acoustical Ceilings	47,870	SF	$ 9.82	$ 470,119					$ 550,040											
AI.05	Repair/Sand/Prep/Paint Classroom Gypsum Walls	17,180	SF	$ 2.23	$ 38,299			$ 42,128													
AI.06	Sand/Prep/Paint Interior Door Frame	75	EA	$ 192.80	$ 14,460				$ 16,484												
AI.07	Clean/Prep/Paint CMU wall	800	SF	$ 3.18	$ 2,544					$ 2,976											
AI.08	Remove/Replace Corridor Tile Wainscoting	5,014	SF	$ 16.90	$ 84,737				$ 96,600												
AI.09	Remove/Replace Interior Sill Caulking	280	LF	$ 8.47	$ 2,370				$ 2,702												
AI.10	Install Control Joint @ Wainscoting	20	LF	$ 37.13	$ 743					$ 869											
AI.11	Remove/Replace Group Toilet Room Finishes	925	SF	$ 57.24	$ 52,945							$ 65,122									
AI.12	Remove/Replace Single Toilet Room Finishes	700	SF	$ 48.20	$ 33,740							$ 41,500									
SUBTOTAL BUILDING INTERIOR					**$ 1,386,203**	$ -	$ -	$ 42,128	$ 115,786	$ 553,885	$ -	$ 446,150	$ -	$ -	$ 541,475	$ -	$ -	$ -	$ -	$ -	
ADA COMPLIANCE (ADA Compliance Assessment)																					
AA.01	Provide Accessible Egress Route and Handrail Extensions at Building Entrances	2	EA	$ 4,375.00	$ 8,750			$ 9,625													
AA.02	Provide Maneuvering Clearances at Doors	6	EA	$ 3,406.25	$ 20,438				$ 23,299												
AA.03	Provide Accessible Route and Handrail Extensions at Stage Stairs	12	EA	$ 43,862.75	$ 526,353				$ 600,042												
AA.04	Install Compliant Wall Mounted Water Coolers	6	EA	$ 4,524.39	$ 27,146					$ 31,761											
AA.05	Install Accessible Casework Sinks	5	EA	$ 3,012.50	$ 15,063						$ 18,075										
AA.06	Install Compliant Sink Pipe Wrap	8	EA	$ 108.45	$ 868			$ 954			$ 1,041										

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(Amended – Reflects Deferred Maintenance Items Completed by the McClure Company through December 2024)*
Gross Square Feet: 63,026

	Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
AA.07	Upgrade Individual Restroom(s) Accessibility	700	SF	$ 154.83	$ 108,381						$ 130,057										
AA.08	Upgrade Group Restroom(s) Accessibility	497	SF	$ 104.83	$ 52,101						$ 62,521										
AA.09	Provide Compliant Handrail Extensions at Interior Stairs and Ramps	12	LF	$ 233.47	$ 2,802					$ 3,278											
SUBTOTAL ADA COMPLIANCE					**$ 761,900**	$ -	$ -	$ 10,579	$ 623,341	$ 35,039	$ 211,694	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
BUILDING CODE COMPLIANCE (Building Code Compliance & Safety/Security Concerns Assessments)																					
AB.01	Update Door Hardware to Prevent Trap Hazard	4	EA	$ 1,265.25	$ 5,061				$ 5,770												
AB.02	Remove Multi-Plug Adapters from Classrooms	1	LS	$ 125.00	$ 125																Annual Operating Expense
AB.03	Secure Electrical Panels in Public Areas	1	LS	$ 500.00	$ 500																Annual Operating Expense
AB.04	Provide Proper Clearance at Electrical Panels	1	LS	$ 250.00	$ 250																Annual Operating Expense
AB.05	Properly Store Materials in Mechanical Room	1	LS	$ 150.00	$ 150																Annual Operating Expense
AB.06	Remove Stored Material from Egress Path	1	LS	$ 150.00	$ 150																Annual Operating Expense
SUBTOTAL BUILDING CODE COMPLIANCE					**$ 6,236**	$ -	$ -	$ -	$ 5,770	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ROOFING SYSTEM (Roofing System Assessment)																					
AR.01	Remove/Replace Standing Seam Metal Panel Roof	44,073	SF	$ 51.21	$ 2,256,978			$ 2,482,676													
AR.02	Remove/Replace PVC Roof	18,120	SF	$ 44.34	$ 803,513										$ 1,060,638						
AR.03	Remove/Replace EDPM Roofing	833	SF	$ 41.78	$ 34,806							$ 42,811									
AR.04	Clean and Monitor Algae Growth on PVC Roof	18,120	SF	$ 0.33	$ 5,980			$ 6,578													
AR.05	Clean Debris from Gutters	1,620	LF	$ 1.43	$ 2,318				$ 2,643												
AR.06	Replace Roof Gutters	INCLUDED IN ITEM AR.01																			
AR.07	Remove Debris Build-Up from Roof Drains	INCLUDED IN ITEM AR.04																			
AR.08	Remove Vegetative Debris Build-Up	INCLUDED IN ITEM AR.04																			
AR.09	Patch/Repair Ripped PVC Roof	1	EA	$ 835.00	$ 835	$ 835															
SUBTOTAL ROOFING SYSTEM					**$ 3,104,430**	**$ 835**	$ -	**$ 2,489,254**	**$ 2,643**	$ -	$ -	**$ 42,811**	$ -	$ -	**$ 1,060,638**	$ -	$ -	$ -	$ -	$ -	
MECHANICAL SYSTEM (Mechanical System Assessment)																					
M.1	Replace Kitchen Exhaust Fan	1	EA	$ 8,652.00	$ 8,652			$ 9,517													
M.2	Replace Air Terminals at Bard Units	43,672	SF	$ 0.97	$ 42,362						$ 50,834										
M.3	Replace Exhaust Fans	12	EA	$ 1,418.00	$ 17,016					$ 19,909											
M.4	Remove Abandoned Equipment	1,865	SF	$ 0.98	$ 1,828						$ 2,193										
M.5	Remove/Replace Office PTAC Units	2	EA	$ 1,345.69	$ 2,691					$ 3,149											
M.6	Replace External Bard Units	30	EA	$ 15,675.00	$ 470,250						$ 564,300										
M.7	Add Mini Split For Breakroom	1	EA	$ 6,523.00	$ 6,523			$ 7,175													
M.8	Remove/Replace Gymansium Ductwork/Terminals	2,666	SF	$ 15.83	$ 42,203						$ 50,643										
SUBTOTAL MECHANICAL SYSTEM					**$ 591,525**	$ -	$ -	**$ 16,693**	$ -	**$ 23,058**	**$ 667,971**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ELECTRICAL & TECHNOLOGY SYSTEMS (Electrical & Technology Systems Assessment)																					
ET.1	Replace Existing Panelboards	44,073	SF	$6.50	$ 286,475			$ 315,122													
ET.2	Replace Existing Generator, ATS units and all panelboard and associated wiring	1	EA	$300,000.00	$ 300,000			$ 330,000													
ET.3	Replace All Interior Non-LED Lighting	COMPLETED (SUMMER 2024)																			
ET.4	Replace All Lighting Controls	COMPLETED (SUMMER 2024)																			
ET.5	Replace All Illuminated Exit Signs	12	EA	$164.32	$ 1,972					$ 1,154											

DEFERRED MAINTENANCE SCHEDULE (2024 - 2038)

School Name: Madison Elementary School *(Amended – Reflects Deferred Maintenance Items Completed by the McClure Company through December 2024)*
Gross Square Feet: 63,026

	Item Description	Qty	Units	Unit Rate	Item Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Notes
ET.6	Replace All Parking Lot and Pole Mounted Lights	20	EA	$9,790.63	$ 195,813		$ 205,603														
ET.7	Replace Fire Alarm System	63,026	SF	$4.14	$ 260,928					$ 305,285											
ET.8	Replace Electrical Disconnects	2	EA	$ 579.65	$ 1,159			$ 1,275													
ET.9	Replace Existing Clock System	63,026	SF	$2.50	$ 157,565						$ 189,078										
ET.10	Replace Existing Data Devices and Cabling	63,026	SF	$2.50	$ 157,565						$ 189,078										
ET.11	Replace Gym Sound System	1	EA	$30,000.00	$ 30,000						$ 36,000										
SUBTOTAL ELECTRICAL & TECHNOLOGY SYSTEMS					**$ 1,391,476**	**$ -**	**$ 205,603**	**$ 646,397**	**$ -**	**$ 306,439**	**$ 414,156**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
PLUMBING SYSTEM (Plumbing System Assessment)																					
P.1	Remove/Replace Backflow Preventer	1	EA	$ 785.12	$ 785			$ 864													
P.2	Remove/Replace Classroom Lavatories	30	EA	$ 1,391.00	$ 41,730						$ 50,076										
P.3	Remove/Replace Domestic Water Heaters	2	EA	$ 4,785.00	$ 9,570								$ 12,058								
P.4	Remove/Replace Manual Faucet Lavatories	7	EA	$ 1,391.00	$ 9,737			$ 10,711													
P.5	Remove/Replace Water Closets	44	EA	$ 652.00	$ 28,688					$ 33,565											
P.6	Add Recirculation Pump	2	EA	$ 478.50	$ 957					$ 1,120											
P.7	Remove/Replace Sanitary Piping	44,073	SF	$ 4.75	$ 209,347			$ 230,281													
SUBTOTAL PLUMBING SYSTEM					**$ 300,814**	**$ -**	**$ -**	**$ 241,856**	**$ -**	**$ 34,685**	**$ 50,076**	**$ -**	**$ 12,058**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
STRUCTURAL SYSTEM (Structural System Assessment)																					
S.1	Remove/Repoint Interior CMU Joint	300	LF	$ 27.87	$ 8,361			$ 9,197													
S.2	Cut in Control Joint in CMU	48	LF	$ 60.00	$ 2,880					$ 3,370											
S.3	Clean/Prime/Paint Window Lintels	SEE ARCHITECTURAL - EXTERIOR																			
S.4	Clean/Prime/Paint HSS	248	LF	$ 8.13	$ 2,016					$ 2,359											
S.5	Repair Gypsum Deck	6	SF	$ 100.00	$ 600					$ 702											
S.6	Regrade Exterior Grade to Expose Weeps	64	LF	$ 100.00	$ 6,400					$ 7,488											
SUBTOTAL STRUCTURAL SYSTEM					**$ 20,257**	**$ -**	**$ -**	**$ 9,197**	**$ -**	**$ 13,919**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
FIRE PROTECTION SYSTEM (Fire Suppression System Assessment)																					
FS.1	Add Sprinkler System	44,073	SF	$ 6.18	$ 272,371						$ 326,845										
SUBTOTAL FIRE SUPPRESSION SYSTEM					**$ 272,371**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 326,845**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
FOOD SERVICE (Food Service (Kitchen) Assessment)																					
K.1	Full Kitchen Renovation	1	EA	$ 850,000	$ 850,000			$ 935,000											$ 1,224,000		
SUBTOTAL FOOD SERVICE					**$ 850,000**	**$ -**	**$ -**	**$ 935,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,224,000**	**$ -**	
HAZARDOUS MATERIALS (Hazardous Materials (HAZMAT) Assessment)																					
HM.1	Not Applicable (Allowance)	44,073	SF	$ 6.50	$ 286,475						$ 343,769										
SUBTOTAL HAZARDOUS MATERIALS					**$ 286,475**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 343,769**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	
TOTAL ESTIMATED PROJECT COSTS PER CATEGORY						**$ 835**	**$ 257,598**	**$ 4,397,725**	**$ 756,360**	**$ 977,020**	**$ 2,014,511**	**$ 488,961**	**$ 12,058**	**$ -**	**$ 1,602,112**	**$ -**	**$ -**	**$ -**	**$ 1,224,000**	**$ -**	

TOTAL ESTIMATED DEFERRED MAINTENANCE COSTS - YEARS 2024 THRU 2026 *(USED TO CALCULATE FCI)* ***$ 4,656,158***

SECTION FIVE

Facility Condition Index

Caroline County Public Schools

FACILITY CONDITION INDEX (AS OF APRIL 2024)

Overview

A Facility Condition Index (FCI) is utilized to objectively measure and evaluate the current condition of a school or building in order to make one of two types of comparisons on the condition of that one building with:

- Other buildings within the same school division; or
- Against the same building at another point in time in the past.

The FCI provides a measure of the deferred maintenance costs for a building typically developed from the completion of a comprehensive Facility Condition Assessment (FCA).

Purpose

An FCI calculation provides an Owner with the means for comprehensively evaluating and defining the appropriate distribution of available funding to each school or building within a portfolio based on needs. The primary value of an FCI calculation for a school division, can be identified as:

- To assist in prioritizing resource allocation decisions amongst the schools or buildings within a school division, particularly with limited budgets that are not adequate to address the deferred maintenance in all the schools or buildings.
- To determine the annual reinvestment to prevent further accumulation of deferred maintenance.
- To assist in tracking continual deterioration of a single or multiple school(s) or building(s) despite efforts made to reduce the deferred maintenance items.
- A mechanism to monitor changing conditions over time.
- A means to demonstrate the level of effort, due diligence and responsible stewardship to various stakeholders.

Some limitations of the Facility Condition Index (FCI) as a measure, are listed below:

- It is often used as a snapshot in time to compare assets or as an index which quantifies the adequacy of appropriated/budgeted funds over a longer period of time.
- The standard FCI formula does not include a weighting system to prioritize the importance of each deferred maintenance item associated with each system or each deferred maintenance item within the school or building.
- The FCI does not comprise operational maintenance costs.

Formula

The FCI formula can be summarized as the ratio of all the Deferred Maintenance costs divided into the Current Replacement Cost for the school or building.

$$\textit{Facility Condition Index (FCI) Value} = \frac{\textit{Total Deferred Maintenance Costs}}{\textit{Total Current School/Building Replacement Cost}}$$

Definitions:

Total Deferred Maintenance Costs represents the total dollar value of deferred maintenance deficiencies identified in "Poor and Very Poor" condition within the comprehensive facilities condition assessment completed for the school/building and its integral building systems and equipment. Deferred Maintenance can be defined as unperformed maintenance, repairs and/or replacement of equipment or systems due to a lack of resources or a perceived low priority and deferral of the activity resulting in a progressive deterioration of the school/building condition or performance. The Total Deferred Maintenance Costs for each school/building are identified within the Deferred Maintenance Schedule (Section 4) of this report.

Total Current School/Building Replacement Cost represents the total dollar value to replace the school/building with the cost of replacement defined as the requirement to duplicate the external building envelope and internal building systems and components along with site enhancements to provide the same level of functionality based upon current local construction costs (i.e. labor and material costs). The Total Current School/Building Replacement Cost is calculated by multiplying the current school/building size in square feet by the current cost per square foot for new building construction for schools/buildings of similar type and size based on figures obtained from Downey & Scott and the Virginia Department of Education (VDOE) for new construction.

Condition Measure

The measure of the condition of a school(s) or building(s) is typically organized into a five-tiered condition ranking scale, as follows:

Condition Ranking	FCI Rating	Condition Description
Excellent	0.0 – 5.0%	Only normal scheduled maintenance is required.
Good	5.1 – 10.0%	Minimal minor repairs needed; School/Building functions as designed.
Fair	10.1 – 25.0%	Minor and major repairs needed; Some functional challenges.
Poor	25.1 – 50.0%	Major repairs needed; Regular operational and functional challenges; Does not meet all building codes.
Very Poor	>50.0%	Significant major repairs or replacement needed to restore function; Systems unsafe.

Calculation

Total Deferred Maintenance Costs = *$ 4,951,249*

Represents the total dollar value of deferred maintenance deficiencies identified within the Deferred Maintenance Schedule (Section 4) of this report as "Total Hard Construction Costs".

Total Current School/Building Replacement Cost = *$23,319,620*

Represents the total dollar value to replace the school/building calculated by multiplying the current school/building size in square feet (63,026 SF) by the current cost per square foot for new construction of a similar school/building ($370 SF).

Madison Elementary School - Facility Condition Index (FCI)

$$\textbf{21.23\%} = \frac{\$\ 4{,}951{,}249}{\$23{,}319{,}620}$$

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FACILITY CONDITION INDEX (AS OF DECEMBER 2024)

Overview

A Facility Condition Index (FCI) is utilized to objectively measure and evaluate the current condition of a school or building in order to make one of two types of comparisons on the condition of that one building with:

- Other buildings within the same school division; or
- Against the same building at another point in time in the past.

The FCI provides a measure of the deferred maintenance costs for a building typically developed from the completion of a comprehensive Facility Condition Assessment (FCA).

Purpose

An FCI calculation provides an Owner with the means for comprehensively evaluating and defining the appropriate distribution of available funding to each school or building within a portfolio based on needs. The primary value of an FCI calculation for a school division, can be identified as:

- To assist in prioritizing resource allocation decisions amongst the schools or buildings within a school division, particularly with limited budgets that are not adequate to address the deferred maintenance in all the schools or buildings.
- To determine the annual reinvestment to prevent further accumulation of deferred maintenance.
- To assist in tracking continual deterioration of a single or multiple school(s) or building(s) despite efforts made to reduce the deferred maintenance items.
- A mechanism to monitor changing conditions over time.
- A means to demonstrate the level of effort, due diligence and responsible stewardship to various stakeholders.

Some limitations of the Facility Condition Index (FCI) as a measure, are listed below:

- It is often used as a snapshot in time to compare assets or as an index which quantifies the adequacy of appropriated/budgeted funds over a longer period of time.
- The standard FCI formula does not include a weighting system to prioritize the importance of each deferred maintenance item associated with each system or each deferred maintenance item within the school or building.
- The FCI does not comprise operational maintenance costs.

Formula

The FCI formula can be summarized as the ratio of all the Deferred Maintenance costs divided into the Current Replacement Cost for the school or building.

$$\textit{Facility Condition Index (FCI) Value} = \frac{\textit{Total Deferred Maintenance Costs}}{\textit{Total Current School/Building Replacement Cost}}$$

Definitions:

Total Deferred Maintenance Costs represents the total dollar value of deferred maintenance deficiencies identified in "Poor and Very Poor" condition within the comprehensive facilities condition assessment completed for the school/building and its integral building systems and equipment. Deferred Maintenance can be defined as unperformed maintenance, repairs and/or replacement of equipment or systems due to a lack of resources or a perceived low priority and deferral of the activity resulting in a progressive deterioration of the school/building condition or performance. The Total Deferred Maintenance Costs for each school/building are identified within the Deferred Maintenance Schedule (Section 4) of this report.

Total Current School/Building Replacement Cost represents the total dollar value to replace the school/building with the cost of replacement defined as the requirement to duplicate the external building envelope and internal building systems and components along with site enhancements to provide the same level of functionality based upon current local construction costs (i.e. labor and material costs). The Total Current School/Building Replacement Cost is calculated by multiplying the current school/building size in square feet by the current cost per square foot for new building construction for schools/buildings of similar type and size based on figures obtained from Downey & Scott and the Virginia Department of Education (VDOE) for new construction.

Condition Measure

The measure of the condition of a school(s) or building(s) is typically organized into a five-tiered condition ranking scale, as follows:

Condition Ranking	FCI Rating	Condition Description
Excellent	0.0 – 5.0%	Only normal scheduled maintenance is required.
Good	5.1 – 10.0%	Minimal minor repairs needed; School/Building functions as designed.
Fair	10.1 – 25.0%	Minor and major repairs needed; Some functional challenges.
Poor	25.1 – 50.0%	Major repairs needed; Regular operational and functional challenges; Does not meet all building codes.
Very Poor	>50.0%	Significant major repairs or replacement needed to restore function; Systems unsafe.

Calculation

Total Deferred Maintenance Costs = *$ 4,656,158*

Represents the total dollar value of deferred maintenance deficiencies identified within the Deferred Maintenance Schedule (Section 4) of this report as "Total Hard Construction Costs".

Total Current School/Building Replacement Cost = *$23,319,620*

Represents the total dollar value to replace the school/building calculated by multiplying the current school/building size in square feet (63,026 SF) by the current cost per square foot for new construction of a similar school/building ($370 SF).

Madison Elementary School - Facility Condition Index (FCI)

(Amended – Reflects Deferred Maintenance Items Completed by the McClure Company)

$$\textbf{19.97\%} = \frac{\$\ 4{,}656{,}158}{\$23{,}319{,}620}$$

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ARCHITECTS