Needs-Based
Public School Capital Fund

2024-25 Grant Application

Application Deadline: September 13, 2024

Rev. 7/30/2024

NEEDS-BASED PUBLIC SCHOOL CAPITAL FUND FY2024-25 GRANT APPLICATION

PROGRAM CRITERIA

Date: 08/19/2024

BACKGROUND

The Needs-Based Public School Capital Fund was established to assist counties with their critical public school building capital needs. Grants from the NBPSCF are funded with revenue from the NC Education Lottery. Grant funds are available to eligible counties for construction of new school buildings and additions, repairs, and renovations of existing school facilities.

APPLICATION TIMELINE

- Guidance Issued — July 30, 2024
- Application Opens — August 1, 2024
- Application Deadline — September 13, 2024

ELIGIBILITY

Counties with an adjusted market value of taxable real property of less than $40 billion are eligible to apply for a grant under the NBPSCF program. The list of eligible counties is published by DPI annually prior to the NBPSCF application period. The list of eligible counties for FY2024-25 is available here: FY24-25 Eligibility

Grant funds must be used only for construction of new school buildings and additions, repairs, and renovations. Grant funds cannot be used for real property acquisition or for capital improvements to administrative buildings.

PROGRAM FUNDING

Funding appropriated for NBPSCF Grant awards exceeds $258 million for FY2024-25.

MATCHING FUNDS

Counties receiving a grant are required to provide local matching funds from county funds, other non-state funds, or a combination of these sources, in accordance with G.S. 115C-546.11.(a). Local matching fund requirements range from 0% to 35% of the grant amount, and are published by DPI annually prior to the NBPSCF application period. The local match requirement applicable to the project is the published local match requirement in effect at the time of the grant award. Local matching requirements for FY2024-25 grant applicants are available here: FY24-25 Local Matching Requirements

PROGRAM CRITERIA

Date: 08/19/2024

MAXIMUM AWARD Grant award maximums are as follows:

- Up to $42 million for an Elementary School
- Up to $52 million for a Middle School
- Up to $62 million for a High School

An applicant may not apply for projects that exceed an aggregate amount greater than the maximum grant award amounts listed above in any single year.

Applications will be reviewed in the context of projected enrollment to evaluate the reasonableness of project size and scope.

REPORTING

Grant recipients are required to submit a report by April 1 of each year, with each grant funds distribution request, and upon completion of the project, detailing: the use of grant funds, progress on the project, and impact of the project on the county's school capital plan.

Grant funds will be disbursed in a series of payments based on the progress of the project. To receive a distribution, the grant recipient must submit a request for distribution, along with documentation of the expenditures for which the distribution is requested, and evidence that the matching requirement has been met. DPI will provide grant recipients with Reporting and Distribution Request forms following announcement of awards.

AGREEMENT

A county receiving Needs-Based grant funds is required to enter into an agreement with the Department of Public Instruction detailing the use of grant funds, in accordance with G.S. 115C-546.12.(a). DPI will provide grant recipients with Agreement Forms following announcement of awards. Signed Agreements are due within 60 days of award announcement.

PROGRAM CRITERIA

Date: 08/19/2024

EVALUATION

Applications are evaluated on critical needs, budget detail, and the following criteria per G.S. 115C-546.10.:

Prioritization	Definition/Calculation/Data Source
Tier Designation	Counties designated as development tier one areas. (NC Department of Commerce, 2024 NC Development Tier Designations)
Ability to Generate Tax Revenue	Total revenue generated by a one-cent per $100 valuation increase in the county property tax rate. (NC State Treasurer, Analysis of Debt of North Carolina Counties 6-30-2023)
Ratio of Debt to Tax Revenue	Debt: Sum of County Debt from [General Obligation Bonds, Installment Purchase Debt, Special Obligation Bonds, QZABs and QSCBs, Certificates of Participation] (NC State Treasurer, Analysis of Debt of North Carolina Counties 6-30-2023) Revenue: Sum of County Revenues from Property Taxes, Other Taxes, and Sales Tax, FY 2022-23 (NC DOR, Statistical Abstract of North Carolina Taxes 2023, Advance Edition)
Critical Deficiency	The extent to which a project will address critical deficiencies in adequately serving the current and future student population.
Facility Construction	Projects with new construction or complete renovation of existing facilities.
Facility Replacement	Projects that will consolidate two or more schools into one new facility.
Applicant Status	Counties that have not received a grant in the previous three years.

CONTACT INFORMATION

Date: 08/19/2024

SUBMIT ONE APPLICATION PER SCHOOL CAMPUS – A PROJECT MAY INCLUDE MULTIPLE BUILDINGS

County: Transylvania

Primary Contact: Jaime Laughter

Title: County Manager

Address: 101 South Broad Street Brevard, NC 28712

Phone: 828-884-3100

email: jaime.laughter@transylvaniacounty.org

School Unit: Transylvania County Schools

Primary Contact: Lisa Fletcher

Title: Superintendent

Address: 225 Rosenwald Ln, Brevard, NC 28712

Phone: 828-884-6173

email: lfletcher@tcsnc.org

APPLICATION SUBMITTAL

Submit completed applications and supporting materials by Friday, September 13, 2024, via email to:

Nathan Maune | School Facilities Director | 984-236-2919 | SchoolPlanning-NBPSCF@dpi.nc.gov

SUBMITTAL CHECKLIST – SUBMIT ALL FILES IN PDF FORMAT

- Contact Information
- Application Form
- Project Narrative
- Budget Estimate
- Additional Documentation (as appropriate)
- Signed Assurance Page

PROJECT INFORMATION

Date: 08/19/2024

Project Title:
Brevard High School Construction and Repair

Location:
Brevard High School's Main Campus

Type of Facility:
Cafeteria/Gymnasium and Repairs to grades 9-12 facility

Short Description of Proposed School Construction Project:

This project will improve student safety by consolidating two deteriorating buildings. It will also allow for more academic opportunities for our students by remodeling our CTE, Exceptional Children, and Performing Arts wing, which will build corridors to enclose the campus. If funded, this grant will replace the current cafeteria and auxiliary gym that houses our MCJROTC program at Brevard High School. There are 34 exterior doors on Brevard High School's Campus between nine building wings. Each wing houses a specific academic area. (Continued on separate page)

Please see the attached documents for the following:

*Continuation of Short Description Proposed School Construction Project (Attachment A)

*Facility Condition Assessment Summary Report (March 1, 2024) (Attachment B)

*Report of Facility Condition Assessment for Brevard High School (February 26, 2024) (Attachment C)

*Fleetwood Daniels Group, LLC: Mold Assessment, Brevard High School (Attachment D)

*Medlock & Associates Engineering, PA's Additional repair recommendations for Cafeteria and Gymnasium roof glulams
(Attachment E)

*Current pictures of the existing buildings (Attachment F)

(please attach additional information as necessary)

PROJECT INFORMATION

Date: 08/19/2024

Was this project identified in the 5-year plan in the 2020-21 Facility Needs Survey? ☐ YES ☑ NO

If not, provide explanation and attach equivalent information:

No. This project was not identified in the 5-year need plan because a passed school bond was going to cover this project, among other renovations at Brevard High School and cover repairs at other schools throughout the district. The projects identified in the submitted 5-year plan were needed projects at other schools the bond would not cover. Due to the rising construction cost and time passed since the passing of the bond, the 68 million dollars in bond funds will not cover the 94 million needed for all the identified renovations and repairs.

Will this project replace any existing facilities? ☑ YES ☐ NO

If YES, which school(s): Yes, this project will replace the 1959-built cafeteria and the 1959-built auxiliary gym. These two buildings have structural needs that have lessened their lifespans.

How many students will be served by this project? 1,362 will be eligible for MCJROTC, &up to 803 students will eat in the cafeteria daily

Has Advanced Planning been done for this project? ☑ YES ☐ NO

Yes, planning for the replacement of the two buildings and remodeling the other buildings at BHS was completed in 2018 and plans were modified for cost escalation in 2022. In addition, a Capital Building Needs assessment was completed in July 2023.

Have Construction Documents been completed for this project? ☑ YES ☐ NO

Yes, construction documents have been completed but will need to be modified.

Anticipated or Actual Bid Date: February 3, 2025

Planned Start Date of Construction*: June 16, 2025

Planned Completion Date of Construction: August 1, 2027

*Construction must begin within 24 months of grant award under G.S. 115C-546.12.(b) .

PROJECT BUDGET

Date: 08/19/2024

Total NBPSCF Grant funding requested for this project: $62,000,000.00

Minimum NBPSCF Grant funding for project to proceed (optional): _____

Estimated Project Costs	Local (non-State)	NBPSCF Grant Funds	Total
Planning	$ 105,725.00	$ 1,298,547.00	$ 1,404,272.00
Construction	$ 3,100,000.00	$ 45,016,281.70	$ 48,116,287.70
Other Costs*	$ 26,197.95	$ 6,738,007.00	$ 6,764,204.95
Total	$ 3,231,923.00	$ 53,052,835.70	$ 56,284,764.65

*Project costs normally categorized as 'owner's direct costs' on a construction project – may include items such as site surveys, materials testing, site utilities, geotechnical reports, etc. Land acquisition costs are not eligible.

Source(s) of required Local Matching Funds:

Article 40 and Article 42, Transylvania County Commissioners

Have any of the Local Matching Funds been expended at the time of application? ☑ YES ☐ NO

If YES, provide amount expended: $2,129,587.85 from 2018 and $138,169.51 from FY24

If YES, provide description of work: The project design was completed in 2018 but will need to be modified.

Estimated Project Expenditures by Fiscal Year (show estimated period over which funds will be spent by Fiscal Year)

Total Planned Expenditures	2023-24 or earlier	2024-25	2025-26	2026-27 or later	Total
Local Matching Funds	$ 2,267,757.36	$ 1,033,333.00	$ 1,033,333.00	$ 1,033,334.00	$ 5,367,757.36
Requested NBPSCF Grant Funds*	$	$ 20,666,667.00	$ 20,666,667.00	$ 20,666,666.00	$ 62,000,000.00
Total Estimated Expenditures by Fiscal Year	$ 2,267,757.36	$ 21,700,000.00	$ 21,700,000.00	$ 21,700,000.00	67,367,757.36 $ 65,100,100.00

*Total requested grant funding cannot exceed maximum allowed under G.S. 115C-546.11.(c) .

ADDITIONAL DOCUMENTATION

Date: 08/19/2024

Any project funded with a grant from the Needs-Based Public School Capital Fund must follow the same review process as any other LEA capital project.

- A registered Architect and/or registered Engineer shall prepare the drawings and specifications in accordance with G.S. 133-1 through 133-4.1, as applicable.
- School Planning design review is required. Design documents must be submitted at appropriate intervals during design – SD, DD, and CD. Neither the LEA nor the County shall invest any funds in construction of the project until the review process is completed.
- Transmittal of drawings and specifications to School Planning must include the form at: https://www.dpi.nc.gov/documents/schoolplanning/project-submittal-form/download
- Design of the project should be in compliance with DPI School Planning Guidelines: https://www.dpi.nc.gov/districts-schools/district-operations/school-planning
- DPI Facility Design Guidelines can be found at: https://www.dpi.nc.gov/documents/schoolplanning/facility-design-guidelines/download
- DPI School Science Facility Requirements can be found at: https://www.dpi.nc.gov/documents/schoolplanning/science-facilities-planner/download https://www.dpi.nc.gov/documents/schoolplanning/science-safety-checklist/download
- For projects involving the closing of an existing school, the LEA must follow these procedures: https://www.dpi.nc.gov/documents/schoolplanning/school-closing-procedure/download
- For projects involving the demolition of an existing school building, the LEA must follow the closing procedure noted above and must submit a Feasibility and Cost Analysis: https://www.dpi.nc.gov/documents/schoolplanning/costfeas-1/download
- DPI Lottery Capital Funding FAQ can be found at: https://www.dpi.nc.gov/documents/schoolplanning/lottery-capital-funding-faq-document/download?attachment

ASSURANCE PAGE

Date: 08/19/2024

By signing below, we assure the North Carolina Department of Public Instruction that we are officials of our respective organizations and we are authorized to submit this application on behalf of these organizations.

We certify the following:

- The information provided in this proposal is correct and complete.
- The project described in the application is within the parameters of the Needs-Based Public School Capital Fund as required in Article 38B of G.S. 115C-546, and that all of the required local funding is available and designated as a match for this project.
- All Needs-Based Public School Capital Fund grant proceeds and the required Local Matching funds will be used for the construction project described in the application.
- We will work cooperatively with the North Carolina Department of Public Instruction in monitoring and evaluating the progress of the project to meet statutory reporting requirements. We will report on project status and State and local funds expended by April 1 of each year, at the time of each distribution request, and within 90 days of project completion.
- Within 60 days of receiving a Needs-Based Public School Capital Fund grant award, we will enter into an agreement with the Department of Public Instruction detailing the use of grant funds, in accordance with G.S. 115C-546.12.(a).
- All applicable federal and state laws will be adhered to, including promotion of equal opportunity without regard to race, color, religion, gender, age, disability, political affiliation, or national origin.
- Generally accepted fiscal control and accounting procedures will be followed to ensure proper disbursement and accounting of funds from the Needs-Based Public School Capital Fund grant proceeds and required Local Matching funds.
- All Needs-Based Public School Capital Fund grant proceeds are subject to forfeiture provisions, requiring full repayment, in accordance with G.S. 115C-546.12.(c).

(Signature – Chair, County Commissioners) (Date)

(Signature – Chair, Board of Education) (Date)

ATTACHMENT A

TRANSYLVANIA COUNTY SCHOOLS

225 Rosenwald Lane, Brevard, NC 28712-3299
828-884-6173 | www.tcsnc.org
Dr. Lisa Fletcher, Superintendent

Continuation of Short Description of Proposed Construction Project

This project will improve student safety by consolidating two deteriorating buildings. It will also allow for more academic opportunities for our students by remodeling our CTE, Exceptional Children, and Performing Arts wing, which will build corridors to enclose the campus. If funded, this grant will replace the current cafeteria and auxiliary gym that houses our MCJROTC program at Brevard High School. There are 34 exterior doors on Brevard High School's Campus between nine building wings. Each wing houses a specific academic area.

The construction project will build a 59,116-square-foot cafeteria and gym facility. The current square footage of the cafeteria is only 3,900, which is smaller than what DPI recommends. These current facilities were due to be replaced by a bond passed in 2018. Due to rising construction costs, COVID, and many facility needs across all campuses, there is no longer funding to replace these two buildings or complete the necessary repairs. This new facility will enable Transylvania County Schools to eliminate two outdated buildings that, according to an Engineer inspection from April 2024, have a life of 5 years. The five-year life is after current repairs to the beams. The proposed construction of a consolidated gym and cafeteria would allow for more seating and updated athletic facilities to accommodate our MCJROTC program, which currently serves all three of our high schools at this location.

The safety portion is threefold: creating a single-point entrance, replacing the deteriorating buildings, which is related to the safety of the students from structural failure, and remodeling the CTE and EC wing, which will address safety from threats from outside of the building. Having 9 distinct and separate buildings on campus creates a significant campus safety challenge, including unsecured access to classrooms, various entry points to the facility, and moving vehicles around the building. Students traveling outside between buildings on campus creates a significant campus safety challenge. Students travel outside between buildings during every class change, leaving as many as 34 exterior doors unsecured. This safety concern and a porous perimeter between buildings present a safety risk that can allow unauthorized access to campus buildings and high visibility and exposure of students to the surrounding public. The proposed construction project would restrict access and secure the campus and grounds. This project is critical in assisting in efforts to keep all students in a safe environment. Remodeling the CTE and Exceptional Children's wing will not only remove the need for students to travel outside between the buildings but also provide a critical investment in enhancing student performance and success in the workforce. Modernized facilities can provide students access to the latest technology and tools used in today's industries, bridging the gap between education and real-world applications. Current facilities are considerably smaller than the state recommendation for square footage for most of our program areas. We have also used all usable power sources and are due to a considerable

upgrade to our circuit boards and capacity within the CTE building. We cannot bring in new technology as we can not provide sufficient power to operate CNC tables and modern equipment. We do not have a sparse circuit anywhere in the building. Up-to-date classrooms foster an engaging and hands-on learning environment, allowing students to develop practical skills directly transferable to their future careers.

Additionally, well-designed spaces can improve collaboration, creativity, and critical thinking—essential skills needed in any profession. By aligning the educational environment with current industry standards, students are better prepared to meet the demands of the workforce, resulting in higher employability and greater long-term success. Also, it would allow for ADA-accessible classrooms with appropriate desks and tables for students who use wheelchairs. As students often require hospital beds to attend school, proper room size would allow for more individualized and inclusive learning.

In addition, remodeling the Exceptional Children's Wing will enhance student outcomes by creating more accessible, supportive, and adaptable learning environments tailored to their unique needs. Updated spaces can better accommodate sensory, mobility, and communication requirements, promoting engagement, comfort, and overall academic success.

Remodeling the art classroom and auditorium will elevate student outcomes by providing state-of-the-art spaces that inspire creativity, collaboration, and expression. Updated facilities will enhance the learning experience by offering students the proper tools and environments to fully explore and develop their artistic talents, leading to greater skill development and confidence in their craft.

Transylvania County and Transylvania County Schools have invested significant local financial resources and time to begin much-needed repairs throughout the district. In February 2023, the Transylvania County Commissioners and Transylvania County School Board jointly signed an agreement to conduct a facility needs assessment. The total cost of the facilities assessment showed that the district needs are over 94 million based on 2024 costs. The assessment report also identified increasing yearly maintenance costs because of aging buildings and utility infrastructure, a growing list of costly deferred maintenance items, and structural concerns in some buildings. Receiving the NBPSCF will allow for all needed renovations at Brevard High School to be met, and then the 68 million dollar bond can meet the needs of the other schools throughout the district.

The total repairs identified by Axias for Brevard High School were $29,896,843. The total estimated capital repairs for all 9 school buildings in Transylvania County is $94,338,781. The total bond funds available for the repairs is $68,000,000. If we receive the 62 million dollar grant, we can complete all the identified repairs to Brevard High School. We can also build a new consolidated facility for the cafeteria and gym, which is currently recommended for inspection of life every two years. With this grant, the CTE wing, Exceptional Children, Science, and Arts wing can all be renovated. This grant funding will mean the total bond fund will be available for the other school buildings that have identified needed repairs, including a planned renovation to Rosman High and Rosman Middle Schools.

A replacement gym and cafeteria will provide the following:

- Square footage of the program in accordance with NCDPI Facility Space Guidelines.

- Replaces two dilapidated structures, reducing the chance of a structural breakdown and improving campus security as a whole.
- Reducing the amount of external doors and entrance points by consolidating functions into a single building enhances campus security and lowers unwanted access.
- In order to better support athletic events and the MCJROTC program, the district's three high schools as well as all eighth students will benefit from the larger, more contemporary gym it offers.
- The cafeteria will be upgraded from its existing unsatisfactory 3,900 square feet to a larger space that complies with state regulations.

Remodel of our CTE, Exceptional Children, and Arts classrooms will provide the following:

- A single-point entry of the building
- Assure our students are not affected by outside weather conditions as they move throughout the campus.
- Provide a safe environment as our students move from class to class.
- Supports the implementation of state-of-the-art technology and tools in the CTE wing, enhancing hands-on learning and better preparing students for the workforce
- Provides ADA-accessible classrooms and appropriate furnishings to support students with disabilities, promoting an inclusive learning environment.
- Upgrades to the Exceptional Children's Wing to create adaptable and supportive spaces tailored to diverse student needs, improving engagement and academic success.

The entire construction project will provide the following long-term financial benefits:

- The new facility helps address immediate facility needs and safety concerns, allowing remaining bond funds to be allocated for other district-wide repairs and renovations.
- Ensures that Brevard High School's facilities remain functional and up-to-date, potentially extending their usable life and reducing future maintenance costs.

Attachment B

FACILITY CONDITION ASSESSMENT SUMMARY REPORT

Transylvania County Schools

Prepared For:

Transylvania County Board of Commissioners
101 South Broad Street
Brevard, NC 28712

Prepared By:

Axias
Project No. GA23-017
March 1, 2024

Axias
BUILDING VALUE

TABLE OF CONTENTS

SECTION

APPENDICES

EXECUTIVE SUMMARY

To stabilize and preserve the Transylvania County school facilities, significant investments are required over the next ten years. This report provides a summary of the financial requirements and key issues identified for the facilities included within the assessment. It should be noted that the assessment did not address improvement items related to educational adequacy, functionality, space utilization, student capacity, etc. and primarily focused on the core infrastructure supporting each existing school.

Overall, the school facilities are in Fair condition when assessing them from a systems and structural condition standpoint. Capital investments over the years have primarily focused on life cycle replacement of mechanical equipment and life extension measures to roofing systems along with some select roof replacements. Interior finishes within the schools typically date to the last renovation or addition and appeared to be dated but remain functional. The primary purpose of the condition assessment was to develop a strategic long range capital plan that the County could utilize to properly budget and plan for addressing the deferred maintenance backlog and future capital renewal requirements

A reactionary approach of repairing or replacing upon failure is one that comes with inherent risk. To fully comprehend the magnitude of these risks, one must weigh the cost of the system or component renewal versus the costs incurred at the time of a system failure along with potential collateral costs resulting from the failure. Reactionary spending carries a higher premium of sometimes up to 75% or more than typical proactive capital renewal projects.

A strategic proactive approach must be taken to help mitigate the inherent risks associated with aged systems and components. To accomplish this, a structured multiyear capital investment plan must be implemented. A strategic capital investment plan focusing on reducing the deferred maintenance backlog along with planning for future capital renewal items will help ensure that the operations and overall mission of Transylvania County Schools is not impacted.

FINANCIAL SUMMARY

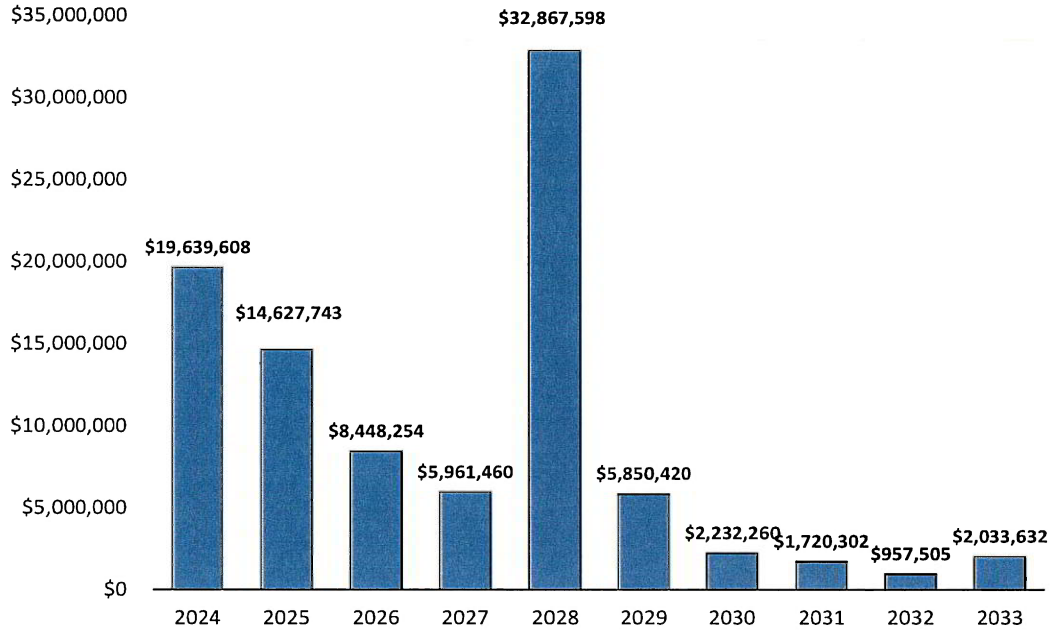
The following section provides a summary of the capital investment requirements over the ten-year study period for the school facilities included. All costs are provided in 2024 dollars and exclude design fees, insurance, permits, CM fees, etc., which can range from an additional 30-40%.

Total Expenditures by Buildings

School Facility	Ten Year Expenditures
Brevard Elementary	$11,487,210
Brevard Middle School	$11,466,210
Brevard High School	$29,896,843
Davidson River School	$2,173,724
Pisgah Forest Elementary	$7,623,303
Rosman Elementary	$6,907,940
Rosman Middle & High	$19,041,791
TC Henderson Elementary	$4,349,205
Plant Operations	$543,906
Morris Education Center	$848,750
TOTAL	**$94,338,781**

EXPENDITURES BY YEAR

Total Expenditures by Year



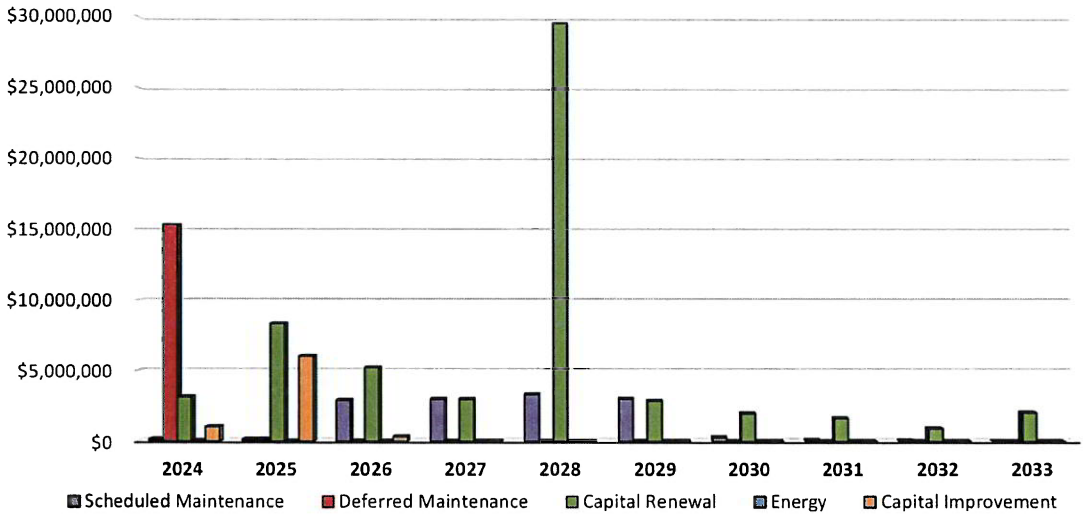
EXPENDITURES BY CATEGORY

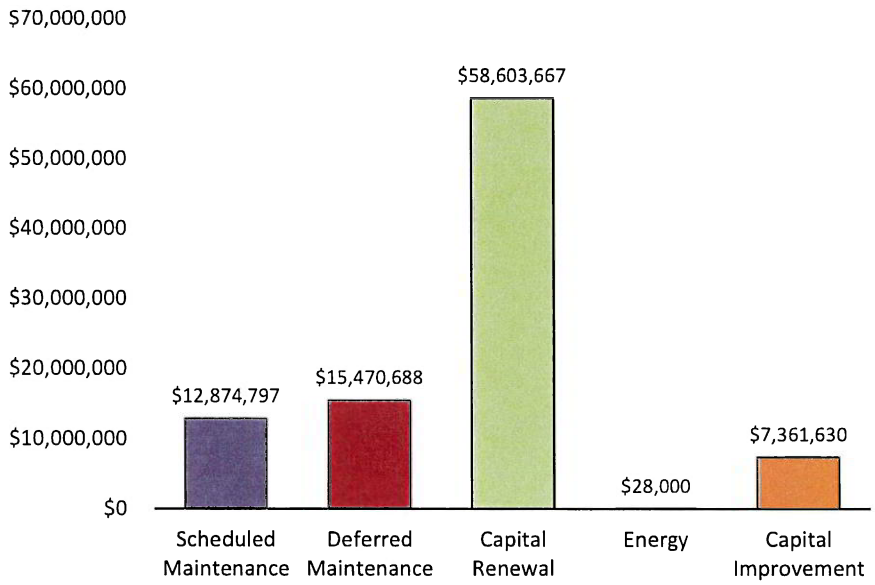
A classification category has been assigned for each recommendation which helps group expenditures based on why it should be completed. We have classified each recommendation by one of the five classifications:

Category	Definition	Description
SM	Scheduled Maintenance	Scheduled maintenance is major maintenance that is typically required to maintain effective operation of an asset and/or prolong the lifecycle. This does not include items related to preventative maintenance activities and typically have a requirement total of over $5,000.
CR	Capital Renewal	Capital Renewal projects correct unacceptable conditions caused by aged building components which will exceed their useful life cycle within the next ten years. These items generally function as originally intended. If execution of Capital Renewal projects is deferred for an inordinate amount of time, conditions may deteriorate, and the projects may be re-categorized as Deferred Maintenance.

Category	Definition	Description
DM	Deferred Maintenance	Deferred Maintenance is maintenance or repair that is past due. This work will return a component or system to an acceptable condition, prevent physical depreciation or loss in the value of a building, minimize or correct wear, and maintain the maximum reliability and current useful life of the facility or component.
EN	Energy	When the repair works, or replacement of equipment, or systems are recommended to improve energy and sustainability performance.
CI	Capital Improvement	When a recommendation to install or upgrade a system component improves or enhances the performance or functionality of the facility.

Total Expenditures by Category
Total Expenditures by Category by Year





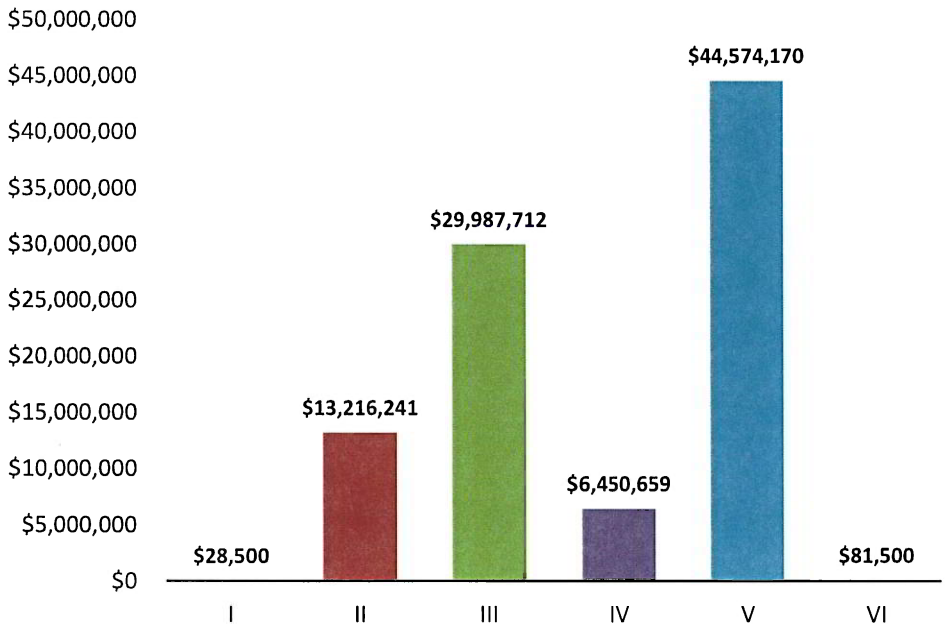
Most of the expenditures identified are considered to be Capital Renewal; however, the County will need to address the combined $15,470,688 of Deferred Maintenance in a timely manner or future Capital Renewal will become Deferred Maintenance. The greatest Deferred Maintenance expenditures are attributable to roof replacements which total approximately $7,500,000. A strategic approach to addressing the deferred maintenance backlog will need to be developed. The backlog will continue to increase annually if not addressed.

EXPENDITURES BY PRIORITY

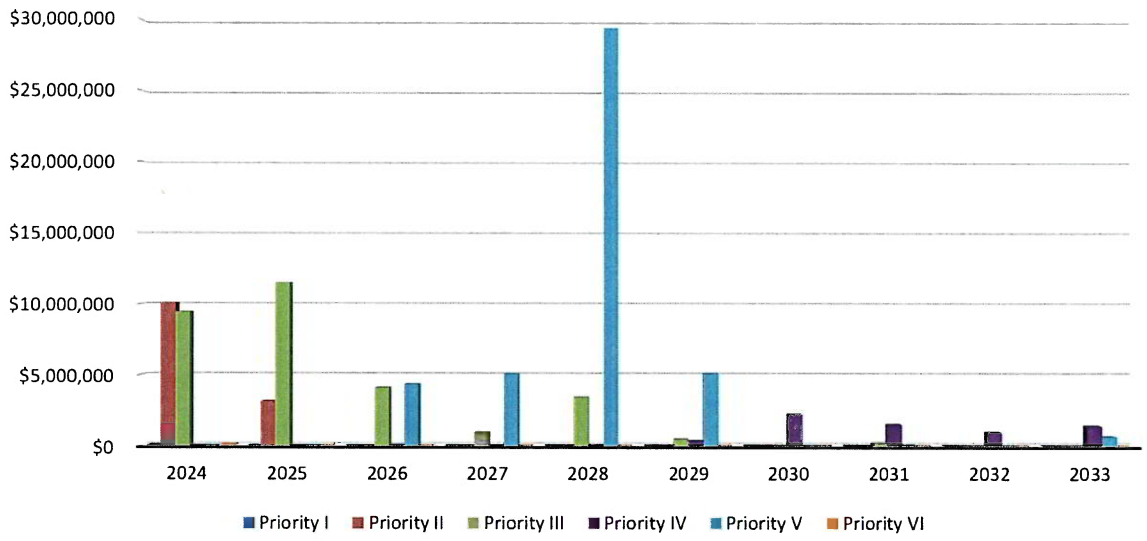
To provide ease of project prioritization within the expenditure forecast, we have prioritized each expenditure by criticality. These priorities are listed and described in the table below.

Priority	Definition	Description
I	Currently Critical	Conditions in this category require immediate action to either correct a cited safety hazard, stop accelerated deterioration, or return a facility/system to operation
II	Potentially Critical	Conditions in this category, if not corrected expeditiously, will become critical within a year.
III	Necessary / Not yet Critical	Conditions in this category require appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.
IV	Recommended	Conditions in this category include items that represent a sensible improvement to existing conditions. These are not required for the most basic function of the facility.
V	Appearance	Conditions in this category include finishes that have deteriorated and are required to maintain the required aesthetic standards.
VI	Does Not Meet Codes / Standards	Conditions in this category include items that do not conform to existing codes which maybe "grandfathered" in their condition.

Expenditures by Named Priority



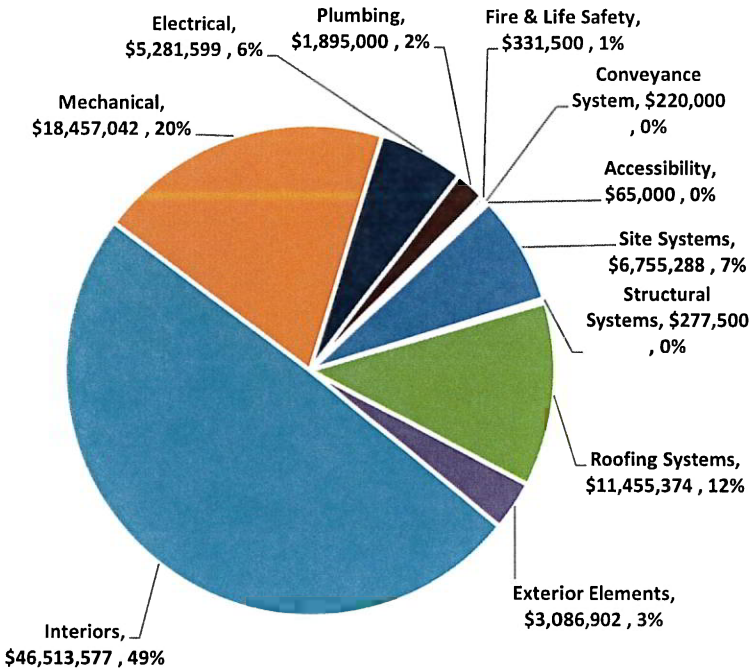
Expenditures by Named Priority by Year



EXPENDITURES BY SYSTEM

Each recommendation and expenditure are also grouped by system or facility element. This will allow the County to identify projects that could potentially be grouped into one project.

Expenditures by System

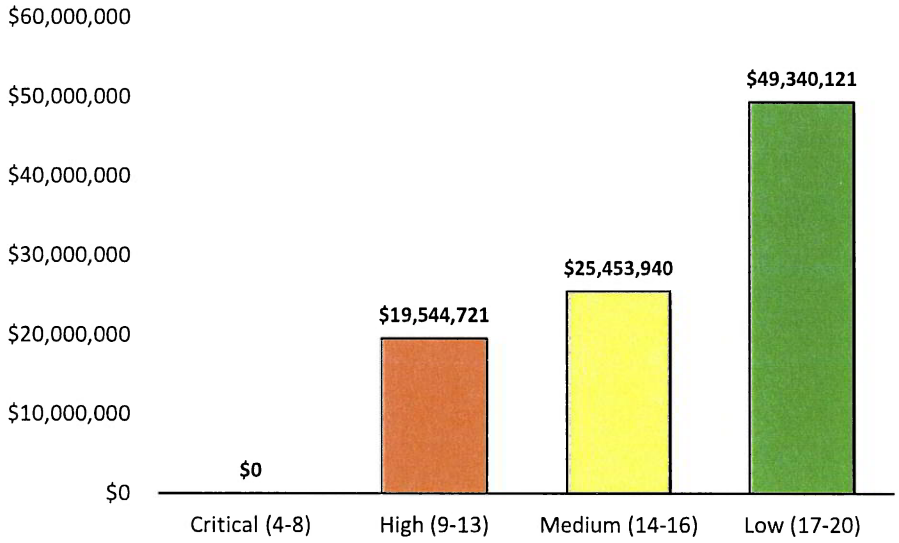


Most of the expenditures identified are attributable to renewal of the Interior finishes. Allowances for renewal of the interior finishes have been included at each school and generally exclude reconfiguration of space and/or improvements and only focus on renewing finishes in kind. Since the finishes are functional, the timing of these expenditures is not as critical as renewal of building systems or components and could potentially allow for flexibility for alternatives, such as improvements or enhancements not considered by this study. The second and third greatest needs relate to renewal of mechanical systems and roof replacements at each of the schools.

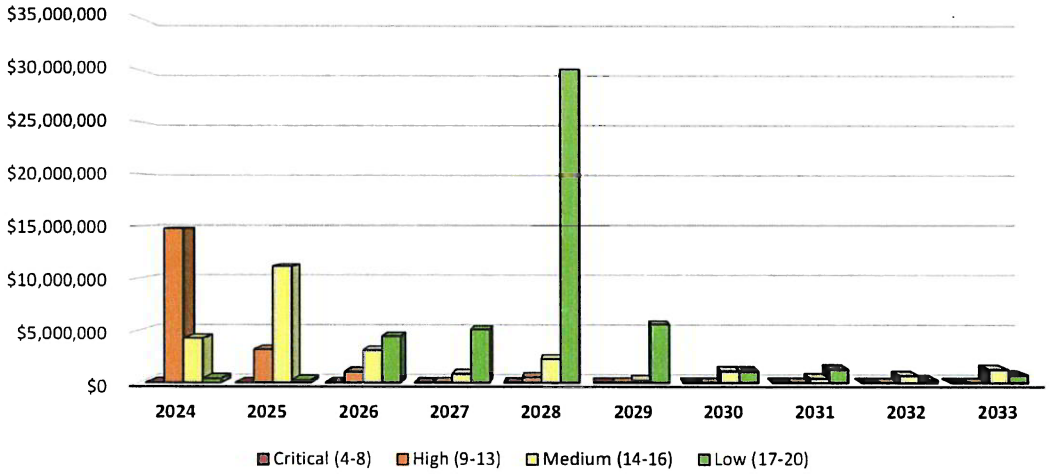
EXPENDITURES BY RISK PRIORITIZATION

To allow the County to weigh the risks of capital investment versus capital deferment, we have assigned each recommendation a risk number. The risk prioritization methodology is detailed in the Facility Condition Assessment Methodology section of this report. The table below shows the identified expenditures by risk category. A complete risk assignment for each recommended expenditure is included in each individual report provided to the County.

Expenditures by Risk Prioritization



Expenditures by Risk Prioritization by Year



FACILITY CONDITION INDEX COMPARISON

The Facility Condition Index (FCI) provides a relative measure for comparing one facility (or group of facilities) to another. This index is a calculation derived by dividing the total project cost for the first year of the study period by the total current replacement value of the building.

In addition, the Facility Condition Needs Index (FCNI) is similar to the FCI but helps assist in comparing the expenditure needs of one facility versus a group of facilities over a period of time. The FCNI also shows the cumulative effects if the deferred maintenance and capital renewal expenditures are not addressed in a timely manner. This index is a calculation, derived by dividing the total recommended expenditures over the entire 10-year study period by the total CRV of the building. The index is intended to show the current and future conditions of the building if no capital investment is made over the next 10 years.

Facility Condition Index & Facility Condition Needs Index

Facility	Current FCI	10-Year FCNI	Current FCI	10-Year FCNI
Brevard Elementary	0.10	0.47	Fair	Poor
Brevard Middle School	0.10	0.42	Below Average	Poor
Brevard High School	0.16	0.64	Below Average	Renew
Davidson River School	0.01	0.33	Excellent	Poor
Pisgah Forest Elementary	0.01	0.38	Excellent	Poor
Rosman Elementary	0.06	0.45	Fair	Poor
Rosman Middle & High	0.10	0.42	Below Average	Poor
TC Henderson Elementary	0.09	0.54	Fair	Renew
Plant Operations	0.04	0.27	Good	Poor
Morris Education Center	0.02	0.21	Good	Poor

FCI / FCNI Condition Ranges

Individual FCI Range	Condition Description
0.00 - 0.02	Excellent condition, major systems and components have recently been installed or upgraded.
0.02 - 0.05	Good condition, renovations have occurred on schedule
0.05 - 0.10	Fair condition, in need of normal renovation
0.10 - 0.20	Below average condition, major renovation required
0.2 - 0.5	Poor Condition, major renovation indicated
0.5 and above	Renew, complete facility renovation required, or potential replacement indicated

The current FCIs range significantly from Excellent to Below Average, typically reflecting whether a building has been subject to a substantial system replacement or refurbishment. Overall, the County's school facilities are in Fair condition when averaging the current condition indexes. The FCI does not consider the capacity or programmatic needs of the facility and typically only is utilized to understand the current condition of the major systems and components regardless of age of interior finishes. Future programmatic requirements, when identified, should be considered when evaluating a facility FCI to determine if the cost of the programmatic requirements and required expenditures is financially prudent, or does it make more sense to construct a new facility.

The table above further shows that if significant capital investment in the facilities is not made, the range of ratings changes from Good through to Renew by year ten. Anything considered to be in fair condition or worse will likely require significant investment / renovation.

CONCLUSIONS AND NEXT STEPS

As a result of the initial condition assessments, additional follow-up studies were identified and completed. This included indoor air quality testing, additional structural evaluations at the Brevard High Old Gymnasium, and a physical security assessment of all the schools. The assessments provided additional information that was vital in developing the recommendations. The initial facility assessments, along with the follow up assessments, are the first steps of the process in understanding the existing conditions of the schools so that a strategic plan can be developed to address the current deferred maintenance backlog and plan for future capital renewal needs. It should be noted that these expenditures are above and beyond typical operating and maintenance expenditures, and do not address needs related to educational adequacy, learning environments and technology, capacity, etc. and only focus on stabilization and preservation of the existing school facilities.

The results of the assessments were then presented to the Capital Work Group. After several working sessions, the group identified a listing of top priority projects which should be completed in the next five to seven years. The listing of projects is provided in Appendix A. These projects address current deferred maintenance as well as required capital renewal to stabilize and preserve the systems and major components of each school.

The table below provides a financial summary of the identified capital expenditures at each school as a result of the Capital Work Group.

Step One Investment Plan

Facility	Expenditures
Brevard Elementary	$4,687,788
Brevard Middle School	$4,339,430
Brevard High School	$17,823,962
Davidson River School	$717,084
Pisgah Forest Elementary	$3,025,833
Rosman Elementary	$4,452,310
Rosman Middle & High	$10,336,991
TC Henderson Elementary	$1,861,080
Plant Operations	$401,156
Morris Education Center	$178,240
TOTAL	**$47,823,874***

***Costs exclude design fees, insurance, permits, CM fees, etc.**

Now that the initial assessments are complete and required expenditures have been identified, additional project planning must be completed to determine how best to package and execute the projects. To do so, it is necessary to conduct a series of charettes to review the recommended projects at each school and identify projects that can be grouped together and/or may impact other work that needs to be completed. Each school should not be viewed independently but opportunities to group like projects across the portfolio should also be identified. For instance, grouping similar work packages for exterior facades or roofs across the portfolio can often achieve economy of scale cost savings. Once this is complete, work packages can then be developed and executed with a complete project budget.

In addition to addressing the identified expenditures, the County and school system will also need to begin planning on how to fund future capital renewal once existing funds have been expended. Current capital funding levels should be evaluated and adjusted now to assure reserves are sufficient to address capital requirements in a timely manner in conjunction with a joint multiyear capital renewal plan. This approach will allow the County and school system to implement a proactive capital program.

FACILITY CONDITION ASSESSMENT METHODOLOGY

The objective of this report is to produce a holistic facilities assessment and capital planning process that will result in a strong and well-developed plan to support strategic capital investment and to identify and reduce risk. In short, the objective is to assess the condition of all included buildings and site systems to develop a prioritized forecast of anticipated capital expenditures over the 10-year study period between 2024 and 2033. This will inform the long-term investment plan for the facilities by developing an array of projects that can be entered into a planning model from which sound management decisions can be made to best utilize funding resources. Specific objectives of this study are listed below:

- Identification and documentation of the present condition and risks of each facility
- Recommendation of corrections for all deficiencies
- Provision of cost estimates for such corrections
- Forecasting of future facility renewal costs based on documented methodology of the facilities and equipment in the facilities
- Obtaining a Facilities Condition Index (FCI) and Facility Condition Needs Index (FCNI) to illustrate the relative condition of the subject facility

The primary purpose of the facilities condition assessment was to identify visually apparent deficiencies in the building systems and site. The evaluation included site visits to observe the building and site systems, interviewing building management and maintenance personnel, reviewing available maintenance systems, design, and construction documents, and plans where provided. Axias was provided with limited existing documentation regarding as-built and/or design drawings.

OPINION OF COST

Opinions of cost presented within this report are based upon experience with past costs for similar projects, consulting with local specialty contractors, client provided information, city cost indexes, construction costs developed by construction resources such as RS Means and assumptions regarding future economic conditions. Actual cost estimates are determined by many factors including but not limited to, choice and availability of materials, choice and availability of qualified contractors, regional climate zone, quality of existing materials, site compatibility, and access to the subject property and buildings. If any cost items listed are considered critical in decision making regarding this property, we recommend that contractor or supplier quotations be obtained for those items before making final decisions about this property. Opinions of cost also typically exclude design fees, contractor markups, insurances, permits, etc.

Costs for work that we consider as normal maintenance for a facility, including items which can be completed for less than $4,000, work normally performed by the on-site maintenance staff, or work which is routinely contracted, may not be included in our cost evaluation but may be listed as maintenance/operational items.

The opinions of cost provided should be utilized for budgetary purposes and may fluctuate based on the final determined scope of work, contract delivery method, project schedule, economy of scale, phasing, etc. In addition, the opinions of cost do not include mark ups for design, engineering, contractor overhead and profit, general conditions, permitting and licensing, insurance, and other typical project mark ups.

USEFUL LIFE DEVELOPMENT

A fundamental part of any capital planning process is the development of the Estimated Useful Life (EUL) and Remaining Useful Life (RUL) for each piece of equipment. EUL considers the life of a system or component of that system while RUL considers the remaining life of that system.

We developed our EUL and RUL based upon the determined condition, our professional experience, and the criticality of the system. Additional factors can also impact the RUL of a system, such as the level of maintenance that is conducted. The EUL is typically derived from industry standard publications, while the RUL is typically derived by location specific factors.

RISK PRIORITIZATION METHODOLGY

To balance containment of capital investment with probability and consequence of failure, we have assigned each recommendation with a risk priority number. Risk priority numbers have been calculated based upon assignment of risk resulting from criticality, impact of failure, condition, and failure probability. Numerical scores from each element are added to provide an end risk priority number; the lower the number, the greater the risk if the recommendation is not completed. The risk priority numbers are based on a per year basis. By providing each expenditure recommendation with a risk priority number, it helps further prioritize expenditures so that funding can be directed to expenditures that could potentially have the most impact if not addressed in a timely manner. The sum of the numbers assigned to each category creates a total risk number, which equates to a risk category based upon its numerical range. Refer to the table below for details on each of the categories:

SCORE	IMPACT OF FAILURE	CONDITION/ OBSERVED DEFICIENCIES	FAILURE PROBABILITY
5	No impact on operations	VERY GOOD	No chance of failure
4	Intervention required to maintain operations	GOOD	Minimal probability of failure
3	Scaled back operations and interruption of activities	FAIR	Slight probability of failure
2	Interruption of facility's primary use and critical operations severely affected	POOR	Increased probability of failure
1	Major system/facility shutdowns	VERY POOR	In state of failure

Attachment B

Appendix A

Step One Investment Plan Projects

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Brevard Elementary	Repaint all exterior painted elements including profiled metal sheeting, lintels, doors and handrails where provided - Cycle 1.	Exterior Elements	III	DM	Medium	$30,870.
2024	Brevard Elementary	Replace exterior sealants.	Exterior Elements	III	DM	Medium	$23,000.
2024	Brevard Elementary	Upgrade fire alarm control panel and as needed devices.	Fire & Life Safety	III	CR	Medium	$20,000.
2024	Brevard Elementary	Provide additional exit signage and egress lighting.	Fire & Life Safety	VI	DM	Medium	$16,500.
2024	Brevard Elementary	Complete life safety and code evaluation.	Fire & Life Safety	III	CI	Medium	$10,000.
2024	Brevard Elementary	Replace stained and/or damaged ceiling tiles.	Interiors	III	DM	Low	$16,000.
2024	Brevard Elementary	Install new BMS system throughout building.	Mechanical	III	DM	Medium	$204,920.
2024	Brevard Elementary	Replace natural gas fired boiler along with the pumps, valves, and accessories..	Mechanical	II	CR	Medium	$108,350.
2024	Brevard Elementary	Replace Reznor MUA unit.	Mechanical	III	CR	High	$40,000.
2024	Brevard Elementary	Replace ICP R22 ICP complete cooling system.	Mechanical	III	CR	High	$18,000.
2024	Brevard Elementary	Replace built-up roof with TPO system.	Roofing Systems	II	DM	High	$1,712,500.
2024	Brevard Elementary	Replace profiled metal covering along walkways.	Roofing Systems	III	DM	Low	$126,000.
2024	Brevard Elementary	Repair sealants where disconnected and deteriorated.	Roofing Systems	III	DM	Medium	$8,500.
2024	Brevard Elementary	Full-depth replacement of damaged localized sections of asphalt pavement.	Site Systems	III	DM	High	$59,738.
2024	Brevard Elementary	Crack fill, seal coat and restripe asphalt surfaces - Cycle 1.	Site Systems	III	SM	Low	$26,550.
2024	Brevard Elementary	Replace localized sections of concrete sidewalks.	Site Systems	III	DM	Low	$7,800.
2025	Brevard Elementary	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$283,400.
2025	Brevard Elementary	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$174,400.
2025	Brevard Elementary	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	II	CR	High	$175,000.
2025	Brevard Elementary	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2026	Brevard Elementary	Replace 2001 Burnham Boiler along with the pumps, valves, and accessories..	Mechanical	III	CR	Medium	$304,640.
2028	Brevard Elementary	Replace original GE electrical equipment.	Electrical	III	CR	High	$523,200.
2028	Brevard Elementary	Replace air handling units throughout the building.	Mechanical	III	CR	Medium	$315,000.
2030	Brevard Elementary	Replace AO Smith commercial water heaters.	Plumbing	IV	CR	Low	$90,000.
2030	Brevard Elementary	Replace playground equipment.	Site Systems	IV	CR	Low	$300,000.
2031	Brevard Elementary	Repaint all exterior painted elements including profiled metal sheeting, lintels, doors and handrails where provided - Cycle 2.	Exterior Elements	IV	SM	Medium	$30,870.
2031	Brevard Elementary	Crack fill, seal coat and restripe asphalt surfaces - Cycle 2.	Site Systems	III	SM	Low	$26,550.
							$4,687,788.

Costs exclude design fees, permits, insurance, CM fees, etc.

Attachment B

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Brevard High School	Install floor drain system in the main boiler room.	Electrical	III	DM	Medium	$10,000.
2024	Brevard High School	Complete masonry restoration and repairs at the Old Gym.	Exterior Elements	III	DM	High	$356,250.
2024	Brevard High School	Replace windows at the English Wing and Office Area.	Exterior Elements	III	DM	High	$264,000.
2024	Brevard High School	Complete exterior restoration project to the building exteriors. Cycle One.	Exterior Elements	III	DM	High	$200,000.
2024	Brevard High School	Replace high level windows at the Old Gym and Old Gym Locker Rooms.	Exterior Elements	III	DM	High	$168,000.
2024	Brevard High School	Remove failed sealant joints and replace.	Exterior Elements	II	DM	High	$88,000.
2024	Brevard High School	Repoint brickwork on gable elevation at junction with lower roof and replace metal flashing. Repoint brickwork on southern elevation where cracked.	Exterior Elements	III	DM	High	$80,750.
2024	Brevard High School	Replace windows at the Media Center/Guidance Wing.	Exterior Elements	III	DM	High	$55,000.
2024	Brevard High School	Surface prep glulam beams and repaint the exposed exterior beams with a suitable exterior wood paint.	Exterior Elements	II	DM	High	$54,000.
2024	Brevard High School	Replace windows at the Home Economics Wing.	Exterior Elements	III	DM	High	$33,000.
2024	Brevard High School	Replace high level window panes at each side of the gable wall.	Exterior Elements	III	DM	Medium	$31,500.
2024	Brevard High School	Surface prep glulam beams and repaint the exposed exterior beams with a suitable exterior wood paint.	Exterior Elements	III	DM	High	$18,000.
2024	Brevard High School	Complete life safety and code evaluation.	Fire & Life Safety	III	CI	Medium	$15,000.
2024	Brevard High School	Construct pre-engineered metal building for wrestling teams.	Interiors	II	CI	High	$825,000.
2024	Brevard High School	Replace stained and/or damaged ceiling tiles.	Interiors	III	DM	Low	$20,000.
2024	Brevard High School	Remove damaged plaster, install new plaster, and repaint.	Interiors	III	DM	Low	$8,750.
2024	Brevard High School	Allowance for replacement of corroded piping, valves, and damaged insulation.	Mechanical	III	DM	Medium	$132,000.
2024	Brevard High School	Replace 10-ton split system units at the Media Center and New Gym.	Mechanical	III	DM	High	$84,000.
2024	Brevard High School	Replace roof to Old Gym with new TPO membrane, including as needed roof decking replacements.	Roofing Systems	II	DM	High	$540,000.
2024	Brevard High School	Replace standing seam metal roof at the Math Wing.	Roofing Systems	II	DM	High	$494,400.
2024	Brevard High School	Replace standing seam metal roof at Media Center/Guidance wing.	Roofing Systems	II	DM	High	$451,500.
2024	Brevard High School	Replace standing seam metal roof coverings.	Roofing Systems	II	DM	High	$310,000.
2024	Brevard High School	Replace the metal roof at the Boiler Room.	Roofing Systems	II	DM	High	$72,000.
2024	Brevard High School	Replace roof at EC wing with TPO membrane.	Roofing Systems	II	DM	High	$69,300.
2024	Brevard High School	Replace roof at Science Building Foyer with TPO membrane.	Roofing Systems	II	DM	High	$9,900.
2024	Brevard High School	Mill and overlay asphalt at the visitor gym/stadium parking.	Site Systems	III	DM	Medium	$85,125.
2024	Brevard High School	Install handrails at aisles and metal ramps.	Site Systems	II	DM	High	$79,200.
2024	Brevard High School	Repair spalled pre-cast concrete. Clean and coat metal connector plates.	Site Systems	III	DM	Medium	$60,000.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Brevard High School	Provide waterproofing membrane at concrete masonry unit walls of the dugouts.	Site Systems	III	DM	Medium	$36,000.
2024	Brevard High School	Repair clear chain link fencing and repair damaged sections at recreation field and stadium parking lot.	Site Systems	III	DM	Medium	$17,500.
2024	Brevard High School	Excavate externally and replace failed waterproofing membrane. Remove damaged plaster internally and repaint.	Structural Systems	II	DM	Medium	$112,500.
2025	Brevard High School	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$588,380.
2025	Brevard High School	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$220,642.
2025	Brevard High School	Application of auxiliary systems (4 areas) to control humidity should be engineered by a qualified mechanical engineer.	Mechanical	III	CR	Medium	$3,000,000.
2025	Brevard High School	Replace air handling units and unit ventilators.	Mechanical	III	DM	High	$2,647,710.
2025	Brevard High School	Upgrade building management system (BMS) and main controllers.	Mechanical	III	CR	Medium	$330,750.
2025	Brevard High School	Replace standing seam metal roof at the Auditorium and Auditorium Storage/Hall.	Roofing Systems	III	CR	Medium	$580,000.
2025	Brevard High School	Replace EPDM and standing seam metal roofs at the Band/Drama Rooms	Roofing Systems	III	CR	Medium	$180,000.
2025	Brevard High School	Replace softball field lighting.	Site Systems	III	CR	Medium	$120,000.
2025	Brevard High School	Mill and overlay asphalt at the parking lot across the street.	Site Systems	III	DM	Medium	$93,000.
2025	Brevard High School	Mill and overlay asphalt to the access road areas and staff/visitor parking lot.	Site Systems	III	CR	Low	$75,000.
2026	Brevard High School	Upgrade antiquated electrical panels throughout the building.	Electrical	III	CR	High	$660,000.
2026	Brevard High School	Complete exterior restoration project to the building exteriors. Cycle Two.	Exterior Elements	III	SM	High	$200,000.
2026	Brevard High School	Overhaul Boiler #1, #2, & #5 in the vocational wing	Mechanical	III	SM	Medium	$252,665.
2026	Brevard High School	Remove underground storage tanks and install new above ground code/regulation compliant storage tank.	Plumbing	III	CR	High	$275,000.
2026	Brevard High School	Replace the roof at the Vocational Wing and CTE Welding/Masonry	Roofing Systems	III	CR	Medium	$721,600.
2026	Brevard High School	Mill and overlay asphalt at the visitor gym/stadium parking.	Site Systems	III	CR	Low	$84,750.
2027	Brevard High School	Replace heating hot water pump packages and valve assemblies.	Mechanical	III	CR	Medium	$120,000.
2027	Brevard High School	Replace chilled water pump packages and valve assemblies.	Mechanical	III	CR	Medium	$90,000.
2027	Brevard High School	Crack fil, seal coat, and restripe the student/school bus parking lot.	Site Systems	III	SM	Low	$18,500.
2028	Brevard High School	Complete exterior restoration project to the building exteriors. Cycle Three.	Exterior Elements	III	SM	Medium	$200,000.
2028	Brevard High School	Repaint soffits and supporting structure of metal breezeways across the site.	Exterior Elements	III	SM	Low	$97,500.
2028	Brevard High School	Replace roof mounted chillers serving the Vocational wing.	Mechanical	III	CR	Medium	$315,000.
2028	Brevard High School	Replace pad mounted Chiller #2 at the north wing.	Mechanical	III	CR	Medium	$294,000.
2028	Brevard High School	Replace Boiler #1 and #2 along with associated controls, valves, etc.	Mechanical	III	CR	Medium	$127,390.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2030	Brevard High School	Complete exterior restoration project to the building exteriors. Cycle Four.	Exterior Elements	IV	SM	Medium	$200,000.
2030	Brevard High School	Replace PVI natural gas fired water heaters.	Plumbing	IV	CR	Medium	$135,000.
2030	Brevard High School	Replace standing seam metal roof at the English Wing and Office Area.	Roofing Systems	IV	CR	Low	$707,400.
2031	Brevard High School	Replace fire alarm control panel and as needed devices.	Fire & Life Safety	IV	CR	Low	$75,000.
2031	Brevard High School	Replace the standing seam metal roof at the Football Field House.	Roofing Systems	IV	CR	Low	$332,000.
2031	Brevard High School	Replace standing seam metal roof at the Home Economics Wing	Roofing Systems	IV	CR	Low	$302,000.
							$17,823,962.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Brevard Middle School	Create an ADA-compliant ramp from the lower parking lot/playground level up to the main school level.	Accessibility	VI	CI	Medium	$50,000.
2024	Brevard Middle School	Break out raised concrete at canopy, separating direct route from parking spaces to entrance, to provide level access route to main entrance.	Accessibility	VI	CI	Medium	$7,500.
2024	Brevard Middle School	Upgrade vintage GE electrical components throughout the school and replace 30-Kw emergency power generator.	Electrical	III	DM	High	$750,880.
2024	Brevard Middle School	Replace fogged IGU's where necessary.	Exterior Elements	III	DM	Medium	$80,000.
2024	Brevard Middle School	Remove aged and defective sealant joints and replace. Coordinate works with painting project.	Exterior Elements	III	DM	Medium	$24,660.
2024	Brevard Middle School	Complete life safety and code evaluation.	Fire & Life Safety	III	CI	Medium	$10,000.
2024	Brevard Middle School	Allowance for correcting potential air quality issues in the band and choir room.	Interiors	II	DM	High	$50,000.
2024	Brevard Middle School	Replace stained and/or damaged ceiling tiles.	Interiors	III	DM	Low	$16,000.
2024	Brevard Middle School	Complete indoor air quality testing in the band and choir room.	Interiors	II	DM	High	$5,000.
2024	Brevard Middle School	Replace built-up roof with a TPO roof.	Roofing Systems	II	DM	High	$1,820,170.
2024	Brevard Middle School	Repair concrete sidewalks, retaining walls, and planters.	Site Systems	III	CR	Medium	$7,000.
2024	Brevard Middle School	Crack fill, seal coat and re-stripe asphalt pavement at the north lot.	Site Systems	III	DM	Medium	$6,800.
2024	Brevard Middle School	Allowance for repairs to site brick planters and retaining walls.	Site Systems	III	DM	Low	$6,000.
2025	Brevard Middle School	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$328,510.
2025	Brevard Middle School	Replace the main fire alarm control panel along with the dialer, annunciator and as needed devices.	Fire & Life Safety	III	CR	High	$50,000.
2025	Brevard Middle School	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$187,720.
2025	Brevard Middle School	Replace heating hot water boiler.	Mechanical	III	CR	Medium	$420,200.
2025	Brevard Middle School	Replace 1995 McQuay air handling unit.	Mechanical	III	CR	Medium	$50,000.
2025	Brevard Middle School	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	II	CR	High	$175,000.
2025	Brevard Middle School	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2027	Brevard Middle School	Replace 2009 PVI water heater.	Plumbing	III	CR	Medium	$45,000.
2028	Brevard Middle School	Repaint all exterior painted elements including profiled metal panels and lintels .	Exterior Elements	III	SM	Medium	$44,388.
2029	Brevard Middle School	Crack fill, seal coat and re-stripe asphalt, including ADA parking spaces and playground markings.	Site Systems	IV	SM	Low	$24,220.
2031	Brevard Middle School	Replace asphalt shingle roofs.	Roofing Systems	IV	CR	Medium	$69,582.
2031	Brevard Middle School	Mill and overlay the north parking lot.	Site Systems	IV	CR	Medium	$74,800.
							$4,339,430.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Davidson River School	Excavate external perimeter of affected rooms and install French drain.	Interiors	III	DM	High	$18,000.
2024	Davidson River School	Replace VCT flooring following water remediation work.	Interiors	III	DM	High	$5,400.
2024	Davidson River School	Replace 3-ton split system unit.	Mechanical	III	CR	High	$8,400.
2024	Davidson River School	Replace exterior handrails and guardrails	Site Systems	II	DM	High	$10,450.
2025	Davidson River School	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$81,936.
2025	Davidson River School	Repaint and repair all exterior painted elements.	Exterior Elements	III	SM	Medium	$38,214.
2025	Davidson River School	Remove aged and defective sealant joints and replace. Coordinate with painting project.	Exterior Elements	III	SM	Medium	$15,480.
2025	Davidson River School	Remove damaged stucco and replace.	Exterior Elements	III	DM	Medium	$9,000.
2025	Davidson River School	Upgrade the fire alarm control panel and as needed devices	Fire & Life Safety	III	CR	High	$15,000.
2025	Davidson River School	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$54,624.
2025	Davidson River School	Replace VTAC unit with mini split system.	Mechanical	III	CR	Medium	$7,500.
2025	Davidson River School	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2025	Davidson River School	Mill and overlay asphalt paved sections due to surface deterioration	Site Systems	III	DM	Medium	$21,000.
2025	Davidson River School	Allowance for site wide concrete and masonry repairs to site features, including steps.	Site Systems	III	DM	Medium	$20,000.
2026	Davidson River School	Re-pave and restripe parking/ play area paint.	Site Systems	III	DM	Medium	$9,280.
2030	Davidson River School	Replace asphalt shingle roof along with the gutters and downspouts.	Roofing Systems	IV	CR	Medium	$90,000.
2025	Davidson River School	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	III	CR	High	$155,000.
2031	Davidson River School	Replace split system Carrier units.	Mechanical	III	CR	Medium	$121,800.
							$717,084.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Morris Education Center	Complete minor updates and reconfigurations to bathrooms to achieve ADA compliance where possible.	Accessibility	VI	DM	Low	$7,500.
2024	Morris Education Center	Repoint areas of cracked mortar across the exterior façades.	Exterior Elements	III	DM	Medium	$11,250.
2024	Morris Education Center	Prepare metalwork to lintels and woodwork, and repaint/re-stain as necessary.	Exterior Elements	IV	SM	Low	$3,800.
2024	Morris Education Center	Replace tile floor finishes to room and monitor exterior drains at outside stairwells.	Interiors	III	DM	Low	$8,450.
2024	Morris Education Center	Install new metal guardrail at the southern exterior wall at the yard area.	Site Systems	II	DM	High	$15,000.
2024	Morris Education Center	Crack fill, seal coat, and restripe the asphalt at the parking lot and driving lanes.	Site Systems	III	SM	Low	$7,290.
2024	Morris Education Center	Complete repairs to entrance steps on north-facing elevation.	Site Systems	II	DM	High	$6,500.
2024	Morris Education Center	Undertake repairs and repainting of metal site handrails.	Site Systems	III	SM	Low	$5,000.
2025	Morris Education Center	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$77,000.
2031	Morris Education Center	Mill and overlay the asphalt at the parking lot and driving lanes.	Site Systems	IV	CR	Low	$36,450.
							$178,240.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Pisgah Forest Elementary	Replace failed IGU's where necessary.	Exterior Elements	III	DM	Low	$37,500.
2024	Pisgah Forest Elementary	Repaint exterior painted surfaces.	Exterior Elements	III	DM	Medium	$30,500.
2024	Pisgah Forest Elementary	Replace exterior sealants.	Exterior Elements	III	DM	Medium	$11,000.
2024	Pisgah Forest Elementary	Complete life safety and code evaluation.	Fire & Life Safety	III	CI	Medium	$10,000.
2024	Pisgah Forest Elementary	Replace stained and/or damaged ceiling tiles.	Interiors	III	DM	Low	$8,000.
2024	Pisgah Forest Elementary	Allowance for inspection and repair of asphalt shingle roof.	Roofing Systems	III	DM	Medium	$10,000.
2024	Pisgah Forest Elementary	Allowance for rainwater gutter repairs and modifications.	Roofing Systems	III	DM	Medium	$5,000.
2024	Pisgah Forest Elementary	Mill and overlay asphalt pavement - Phase 1	Site Systems	III	DM	Medium	$45,000.
2024	Pisgah Forest Elementary	Complete full depth repair and repavement of the dumpster and kitchen loading areas.	Site Systems	III	DM	Medium	$28,000.
2024	Pisgah Forest Elementary	Replace localized sections of concrete sidewalks.	Site Systems	III	DM	Medium	$5,625.
2025	Pisgah Forest Elementary	Upgrade the fire alarm control panel, annunciator panel, and as needed devices.	Fire & Life Safety	II	CR	Medium	$25,000.
2025	Pisgah Forest Elementary	Replace McQuay air handling units.	Mechanical	III	CR	Medium	$880,000.
2025	Pisgah Forest Elementary	Replace HVAC control system, including BMS upgrades.	Mechanical	III	CR	Medium	$227,169.
2025	Pisgah Forest Elementary	Replace domestic water heater (125 gallon, 399,000 BTU/Hr.).	Plumbing	III	CR	Low	$40,000.
2025	Pisgah Forest Elementary	Mill and overlay asphalt pavement - Phase 2	Site Systems	III	CR	Medium	$45,000.
2025	Pisgah Forest Elementary	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2026	Pisgah Forest Elementary	Allowance to improve school security systems and school safety.	Electrical	III	CI	Medium	$321,419.
2026	Pisgah Forest Elementary	Replace emergency generator and associated ATS.	Electrical	III	CR	Medium	$15,000.
2026	Pisgah Forest Elementary	Mill and overlay asphalt pavement - Phase 3	Site Systems	III	CR	Medium	$45,000.
2027	Pisgah Forest Elementary	Replace platform lift.	Conveyance Systems	III	CR	Low	$20,000.
2027	Pisgah Forest Elementary	Replace heating hot water boilers.	Mechanical	III	CR	Medium	$298,760.
2028	Pisgah Forest Elementary	Replace playground equipment.	Site Systems	III	CR	Low	$450,000.
2029	Pisgah Forest Elementary	Replace air-cooled chiller.	Mechanical	III	CR	Medium	$240,000.
2030	Pisgah Forest Elementary	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	IV	CR	Medium	$175,000.
2030	Pisgah Forest Elementary	Crack fill, seal coat and restripe asphalt surfaces - Cycle 1	Site Systems	IV	SM	Low	$16,860.
							$3,025,833.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Plant Operations	Replace painted metal doors and frames.	Exterior Elements	II	DM	Medium	$34,000.
2024	Plant Operations	Replace perimeter window and door sealants.	Exterior Elements	II	DM	Low	$4,760.
2024	Plant Operations	Replace split system unit.	Mechanical	III	DM	Medium	$5,600.
2025	Plant Operations	Replace Westinghouse electrical panels and other as needed components.	Electrical	III	CR	Low	$122,796.
2025	Plant Operations	Provide life extension coating for the standing seam roof.	Roofing Systems	III	CR	Medium	$12,000.
2027	Plant Operations	Refresh gravel paved areas	Site Systems	III	SM	Low	$24,000.
2029	Plant Operations	Replace built-up roofing system down to the decking. Consideration over installing a TPO roof system should be reviewed.	Roofing Systems	III	CR	Low	$198,000.
							$401,156.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Rosman Elementary	Replace exterior sealant joints.	Exterior Elements	II	DM	High	$14,000.
2024	Rosman Elementary	Upgrade fire alarm control panel, annunciator, and as needed devices.	Fire & Life Safety	II	CR	High	$25,000.
2026	Rosman Elementary	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	III	CR	Medium	$175,000.
2024	Rosman Elementary	Fully strip off and replace the modified bitumen roof with a TPO membrane.	Roofing Systems	II	DM	High	$740,000.
2024	Rosman Elementary	Clean existing roof and paint with a suitable metal paint.	Roofing Systems	III	SM	Low	$18,900.
2024	Rosman Elementary	Replace athletic field bleachers.	Site Systems	III	DM	Low	$13,500.
2024	Rosman Elementary	Refurbish athletic field structures.	Site Systems	III	DM	Low	$10,000.
2025	Rosman Elementary	Upgrade 1974 vintage GE electrical panels.	Electrical	III	CR	Medium	$424,000.
2025	Rosman Elementary	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$225,250.
2025	Rosman Elementary	Install fire sprinkler system.	Fire & Life Safety	VI	CI	High	$424,000.
2025	Rosman Elementary	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$106,000.
2025	Rosman Elementary	Replace air handling units and associated ductwork.	Mechanical	III	CR	Medium	$720,000.
2025	Rosman Elementary	Replace heating hot water boiler.	Mechanical	III	CR	Medium	$247,280.
2025	Rosman Elementary	Upgrade BMS system.	Mechanical	III	CR	Medium	$172,250.
2025	Rosman Elementary	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2026	Rosman Elementary	Crack fill, seal coat, and restripe the parking lot and roadway areas.	Site Systems	III	SM	Low	$18,330.
2026	Rosman Elementary	Crack fill and seal coat the path/walkway areas.	Site Systems	III	SM	Low	$6,300.
2028	Rosman Elementary	Replace perimeter window sealant joints.	Exterior Elements	III	SM	Low	$18,500.
2028	Rosman Elementary	Replace the asphalt roof shingles on a like-for-like basis.	Roofing Systems	III	CR	Medium	$45,000.
2030	Rosman Elementary	Replace rooftop air-cooled chillers.	Mechanical	III	CR	Medium	$468,000.
2031	Rosman Elementary	Replace 2017 PVI water heater.	Plumbing	IV	CR	Medium	$45,000.
2031	Rosman Elementary	Replace playground equipment and swing set.	Site Systems	IV	CR	Low	$500,000.
							$4,452,310.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	Rosman Middle & High	Replace failed glazing units.	Exterior Elements	III	DM	Medium	$110,000.
2024	Rosman Middle & High	Clean and recoat the EIFS. Includes allowance for repairs to the EIFS due to potential moisture damage.	Exterior Elements	III	DM	Medium	$87,850.
2024	Rosman Middle & High	Replace elastomeric sealant joints across building exteriors.	Exterior Elements	III	DM	High	$63,000.
2024	Rosman Middle & High	Complete life safety and code evaluation.	Fire & Life Safety	III	CI	Medium	$15,000.
2024	Rosman Middle & High	Replace stained and/or damaged ceiling tiles.	Interiors	III	DM	Low	$20,000.
2024	Rosman Middle & High	Phased replacement of air handling units.	Mechanical	III	CR	Medium	$1,120,000.
2024	Rosman Middle & High	Phased replacement of unit ventilators.	Mechanical	III	CR	Medium	$600,000.
2024	Rosman Middle & High	Replace air-cooled chiller outside the Cafeteria.	Mechanical	III	CR	High	$462,000.
2024	Rosman Middle & High	Replace modified bitumen roof with new TPO roof at the High School.	Roofing Systems	II	DM	High	$710,000.
2024	Rosman Middle & High	Replace modified bitumen with new TPO roof at the Middle School.	Roofing Systems	II	DM	High	$264,000.
2024	Rosman Middle & High	Replace modified bitumen with new TPO roof at the Old Gym.	Roofing Systems	II	DM	High	$228,000.
2024	Rosman Middle & High	Allowance for the evaluation and follow up repairs of the segmental retaining wall.	Site Systems	II	DM	High	$715,000.
2024	Rosman Middle & High	The asphalt should be removed and full-depth asphalt repairs completed.	Site Systems	III	DM	Medium	$59,500.
2024	Rosman Middle & High	Fully mill and overlay the asphalt behind the Old Gym and upper parking lot.	Site Systems	III	DM	Medium	$49,500.
2024	Rosman Middle & High	Fully mill and overlay the asphalt behind the High School and below the Old Gym	Site Systems	III	DM	Medium	$21,300.
2024	Rosman Middle & High	Replace damaged sections of chain link fencing.	Site Systems	III	DM	Medium	$9,000.
2024	Rosman Middle & High	Further investigation by a Structural Engineer and provisional placeholder cost for repair works recommended.	Structural Systems	II	DM	High	$165,000.
2025	Rosman Middle & High	Modernize hydraulic elevator.	Conveyance Systems	III	CR	Medium	$200,000.
2025	Rosman Middle & High	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$457,828.
2025	Rosman Middle & High	Complete exterior repairs. Cycle one.	Exterior Elements	III	SM	Medium	$75,000.
2025	Rosman Middle & High	Replace Fieldhouse fire alarm control panel.	Fire & Life Safety	III	CR	Medium	$20,000.
2025	Rosman Middle & High	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$281,740.
2025	Rosman Middle & High	Allowance to complete a detailed indoor air quality study and provisional placeholder cost for repair works recommended.	Mechanical	III	CI	Medium	$750,000.
2025	Rosman Middle & High	Upgrade BMS system.	Mechanical	III	CR	Medium	$387,393.
2025	Rosman Middle & High	Complete study, design, and construction of a stormwater management system at the football field.	Site Systems	III	CI	Medium	$1,925,000.
2025	Rosman Middle & High	Replace damaged concrete at the amphitheater.	Site Systems	III	CR	Low	$7,000.
2026	Rosman Middle & High	Upgrade antiquated electrical panels throughout the building.	Electrical	III	CR	Medium	$216,000.
2026	Rosman Middle & High	Refurbish Boiler #3 along with associated pumps, valves, and accessories.	Mechanical	III	SM	Medium	$184,800.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2026	Rosman Middle & High	Replace Boiler #4 along with associated pumps, valves, and accessories.	Mechanical	III	CR	Medium	$119,240.
2026	Rosman Middle & High	Replace PVI water heater #1 and #2	Plumbing	III	CR	Medium	$110,000.
2026	Rosman Middle & High	Replace 250-gallon electric water heater.	Plumbing	III	CR	Medium	$45,000.
2027	Rosman Middle & High	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	III	CR	Medium	$265,000.
2028	Rosman Middle & High	Replace Boiler #1 and #2 along with associated pumps, valves, and accessories.	Mechanical	III	CR	Medium	$451,000.
2028	Rosman Middle & High	Crack fill, seal coat, and restripe asphalt (future cycle on asphalt which has been replaced).	Site Systems	IV	SM	Low	$12,840.
2030	Rosman Middle & High	Complete exterior repairs. Cycle two.	Exterior Elements	IV	SM	Medium	$50,000.
2031	Rosman Middle & High	Replace the Fieldhouse package units.	Mechanical	III	CR	Medium	$80,000.
							$10,336,991.

Costs exclude design fees, permits, insurance, CM fees, etc.

Transylvania County Schools
Focus Projects
2024-2031

Project Year	Building	Recommendation	System	Priority Category	Deficiency Category	Risk Category	Anticipated Cost
2024	TC Henderson Elementary	Replace air handling units.	Mechanical	III	CR	Medium	$225,000.
2024	TC Henderson Elementary	Replace cabinet fan coil units.	Mechanical	III	CR	Medium	$108,000.
2024	TC Henderson Elementary	Upgrade HVAC control system.	Mechanical	III	CR	Medium	$91,000.
2024	TC Henderson Elementary	Replace 10-ton McQuay and 2-ton split systems.	Mechanical	III	CR	Medium	$82,500.
2024	TC Henderson Elementary	Replace 5-ton ICS split system.	Mechanical	III	CR	Medium	$18,750.
2024	TC Henderson Elementary	Mill and overlay asphalt paved sections.	Site Systems	II	DM	Medium	$78,000.
2024	TC Henderson Elementary	Replace door, removable roof system, and paint exterior walls.	Site Systems	II	DM	High	$12,000.
2024	TC Henderson Elementary	Allowance for repairs to the pedestrian bridge	Site Systems	III	DM	Medium	$3,500.
2025	TC Henderson Elementary	Allowance to improve school security systems and school safety.	Electrical	II	CI	High	$168,000.
2025	TC Henderson Elementary	Repaint all exterior painted elements including profiled metal sheeting, gutters, downpipes, lintels, and canopies.	Exterior Elements	III	SM	Medium	$51,660.
2025	TC Henderson Elementary	Replace caulk seals to perimeter of windows and doors - Cycle 1.	Exterior Elements	III	DM	Medium	$15,000.
2025	TC Henderson Elementary	Construct vestibules per Physical Security Assessment.	Interiors	II	CI	High	$84,000.
2025	TC Henderson Elementary	Install additional site fencing.	Site Systems	III	CI	Medium	$36,000.
2026	TC Henderson Elementary	Replace PVI water heater.	Plumbing	III	CR	Medium	$40,000.
2026	TC Henderson Elementary	Remove underground storage tank and install new above ground code/regulation compliant storage tank.	Plumbing	III	CR	Medium	$110,000.
2026	TC Henderson Elementary	Remove modified bitumen roof and replace with TPO roof covering.	Roofing Systems	III	CR	Medium	$21,200.
2027	TC Henderson Elementary	Replace/upgrade the fire alarm control panel, annunciator panel, and as needed devices.	Fire & Life Safety	III	CR	Medium	$20,000.
2028	TC Henderson Elementary	Replace heating hot water boiler.	Mechanical	III	CR	Medium	$118,470.
2028	TC Henderson Elementary	Allowance for as needed well system replacements.	Plumbing	III	CR	Low	$15,000.
2028	TC Henderson Elementary	Replace metal roof along with the gutters and downspouts.	Roofing Systems	III	CR	Medium	$363,000.
2029	TC Henderson Elementary	Replace playground equipment.	Site Systems	III	CR	Low	$200,000.
Total							**$1,861,080.**

Attachment B

Costs exclude design fees, permits, insurance, CM fees, etc.

Attachment C

REPORT OF FACILITY CONDITION ASSESSMENT

Brevard High School

Property Address:
609 N Country Club Rd
Brevard, NC 28712

Prepared For:
Transylvania County
Board of Commissioners
101 South Broad Street
Brevard, NC 28712

Prepared By:
Axias
Project No. GA23-017
February 26, 2024

Axias
BUILDING VALUE

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147995
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
Accessibility																										
Required																										
1	The main building was constructed before the implementation of the Americans with Disabilities Act (ADA). The trailer and link were added after the implementation of the ADA Modifications have been made to achieve compliance where possible. Future renovations will need to comply with applicable guidelines.	No anticipated capital expenditures.																								$0
Site Systems																										
Required																										
1	Asphalt to the main access road and staff/visitor parking at the front of the building (northwest) is worn. The asphalt surface is cracked, and potholes are forming.	Mill and overlay asphalt to the access road areas and staff/visitor parking lot.	III	CR	5	3	4	5	17	Low	15	2	5,000	SY	$15.00		$75,000									$75,000
2	Asphalt to the student/school bus parking lot is deteriorating and line striping is fading. Complete a crack fill, seal coat, and restripe of the existing asphalt to prolong the life of the existing asphalt.	Crack fil, seal coat, and restripe the student/school bus parking lot.	III	SM	5	3	4	5	17	Low	7	4	9,250	SY	$2.00				$18,500							$18,500
3	The asphalt at the visitor gym/stadium parking (southwest of the site) is in a poor condition. The asphalt surface is cracked and worn extensively.	Mill and overlay asphalt at the visitor gym/stadium parking.	III	DM	4	2	4	5	15	Medium	25	1	5,675	SY	$15.00	$85,125										$85,125
4	The asphalt loop around the football field and in front of the concession stand was in poor to fair condition and is cracked and worn.	Mill and overlay asphalt at the visitor gym/stadium parking.	III	CR	5	3	4	5	17	Low	25	3	5,650	SY	$15.00			$84,750								$84,750
5	The asphalt paved parking lot across the street from the school was in poor condition with broken pavement noted throughout.	Mill and overlay asphalt at the parking lot across the street.	III	DM	5	3	3	3	14	Medium	25	2	6,200	SY	$15.00		$93,000									$93,000
6	The pre-cast concrete bleachers at the football field appeared to in fair condition with some exposed and corroded repair noted. It is recommended to budget for full depth concrete repairs to the concrete bleachers.	Repair spalled pre-cast concrete. Clean and coat metal connector plates.	III	DM	3	3	4	4	14	Medium	25	1	500	SF	$120.00	$60,000										$60,000
7	The concrete bleachers at the football stadium appeared to be in fair condition. It was noted that aisles are typically not provided with handrails per code requirements. Handrails should be installed per code requirements. A continuous graspable hand rail was also not provided at the ramp serving the metal bleachers.	Install handrails at aisles and metal ramps.	II	DM	2	3	3	3	11	High	25	1	720	LF	$110.00	$79,200										$79,200
8	The recreation field across the street is provided with chain linking fencing around the perimeter. Damaged sections of fencing were noted along with extensive overgrowth. The fence line is not maintained further damage to the fencing could occur.	Repair clear chain link fencing and repair damaged sections at recreation field and stadium parking lot.	III	DM	5	2	4	4	15	Medium	25	1	700	LF	$25.00	$17,500										$17,500

Attachment C

Axias
BUILDING VALUE




Building: **Brevard High School**
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
9	The football field consists of an artificial turf field. These types of field typically have a service life of 10-12 years depending on use and maintenance. The turf was replaced in 2023. It is recommended to budget for the replacement of the turf field during the study period.	Replace artificial turf field.	IV	CR	4	3	4	4	15	Medium	10	10	74,000	SF	$8.00									$592,000	$592,000
10	The softball field is provided with field lighting mounted on treated wood poles. The lighting appeared to be in poor to fair condition with deterioration noted. It is recommended to replace the softball field lighting.	Replace softball field lighting.	III	CR	4	3	4	4	15	Medium	25	2	4	EA	$30,000		$120,000								$120,000
11	Select dugouts are constructed into the side of the adjacent grade with the majority of the concrete masonry unit walls being below grade. Evidence of water infiltration through the walls was noted. Overtime this can lead to deterioration of the mortar joints and concrete masonry units. It is recommended to excavate behind the dugout walls and apply a waterproofing membrane to prevent further water infiltration. A stone backfill should also be provided along with the installation of a foundation drain pipe to direct water away from the dugout.	Provide waterproofing membrane at concrete masonry unit walls of the dugouts.	III	DM	3	3	4	4	14	Medium	25	1	3	EA	$12,000	$36,000									$36,000
Structural Systems																										
Required																										
1	Dampness and cracking to plaster finishes in the Auditorium was observed on either side (north and south-facing walls). Areas of dampness are understood to be below grade.	Excavate externally and replace failed waterproofing membrane. Remove damaged plaster internally and repaint.	II	DM	4	2	4	4	14	Medium	20	1	750	SF	$150.00	$112,500									$112,500
Roofing Systems																										
Required																										
1	The standing seam metal roof above the Media Center/Guidance is original to the building and is in poor condition, with water ingress a common occurrence. A section of the roof has been overlaid with rigid insulation and a TPO membrane, over the top of the original roof.	Replace standing seam metal roof at Media Center/Guidance wing.	II	DM	3	2	2	3	10	High	25	1	12,900	SF	$35.00	$451,500									$451,500
2	The low slope roof at the EC Wing (lower roof) was noted to be in very poor condition. The roof membrane is severely deteriorated and large areas of debris and standing water were noted.	Replace roof at EC wing with TPO membrane.	II	DM	3	1	2	3	9	High	20	1	3,150	SF	$22.00	$69,300									$69,300
3	The small section of TPO low-slope roof at the Science Building Foyer is in poor condition and reportedly leaks often. The roof has been coated and repaired several times, but continues to leak.	Replace roof at Science Building Foyer with TPO membrane.	II	DM	4	2	3	3	12	High	20	1	450	SF	$22.00	$9,900									$9,900

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
4	The Old Gym roof is in a state of failure. The TPO covering is at the end of its life and several areas of the wood tongue and groove wood roof deck have rotted away. At several locations, the deck has fallen to the ground or been removed. Other areas of the deck still in place appear to be saturated and are in a poor condition. Costs for this item could fluctuate deepening on actual conditions of the roof deck once roof repairs are undertaken.	Replace roof to Old Gym with new TPO membrane, including as needed roof decking replacements.	II	DM	3	2	2	3	10	High	20	1	13,500	SF	$40.00	$540,000										$540,000
5	The standing seam metal roofs to the Gym Foyer and Old Gym Locker Rooms (including outside restrooms) are original to the building and at the end of their useful life. As these areas of the building are connected to the Old Gym structure, works should only be completed if the gym is decided to be kept in use.	Replace standing seam metal roof coverings.	II	DM	3	2	2	3	10	High	25	1	7,750	SF	$40.00	$310,000										$310,000
6	The roof at the Band Room and Band/Drama Rooms consists of a standing seam metal roof, and two lower roofs with an EDPM membrane and integral box gutters. The standing seam metal roof is original to the building and is in a poor to fair condition. When the roof is replaced, if possible, the box gutters should be framed out, so the roof is level and drains to interior leaders, simplifying the roof design.	Replace EPDM and standing seam metal roofs at the Band/Drama Rooms	III	CR	4	3	3	4	14	Medium	25	2	4,500	SF	$40.00		$180,000									$180,000
7	The roof at the Vocational Wing and CTE Welding/Masonry building consist of modified bitumen roofs which were in a poor to fair condition. The roofs are at the end of their life and joints have been recoated/resealed at various points across the roofs. Recommend that the existing roof coverings are fully stripped off and a new TPO roof system is installed.	Replace the roof at the Vocational Wing and CTE Welding/Masonry	III	CR	4	3	4	4	15	Medium	20	3	32,800	SF	$22.00			$721,600								$721,600
8	The standing seam metal roof above the Math Wing is original to the building and in a poor condition. Recommend removing the roof covering and replacing with a new standing seam metal roof covering.	Replace standing seam metal roof at the Math Wing.	II	DM	3	2	2	3	10	High	25	1	12,360	SF	$40.00	$494,400										$494,400
9	The standing seam metal roof above the English Wing and Office Area are original to the building and in a fair condition, but approaching the end of their life. Recommend removing the roof coverings and replacing with a new standing seam metal roof covering.	Replace standing seam metal roof at the English Wing and Office Area.	IV	CR	5	3	4	5	17	Low	25	7	17,685	SF	$40.00							$707,400				$707,400

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
10	The standing seam metal roof above the Home Economics Wing are original to the building and in a fair condition, but approaching the end of their life. Recommend removing the roof covering and replacing with a new standing seam metal roof covering.	Replace standing seam metal roof at the Home Economics Wing	IV	CR	5	3	4	5	17	Low	25	8	7,550	SF	$40.00								$302,000			$302,000
11	The standing seam metal at the Auditorium and Auditorium Storage/Hall are original to the building and in a poor to fair condition and approaching the end of their life. Recommend removing the roof covering and replacing with a new standing seam metal roof covering.	Replace standing seam metal roof at the Auditorium and Auditorium Storage/Hall.	III	CR	4	3	3	4	14	Medium	25	2	14,500	SF	$40.00		$580,000									$580,000
12	The standing seam metal roof at the Football Field House is in fair condition. Recommend budgeting for replacement in the far-term.	Replace the standing seam metal roof at the Football Field House.	IV	CR	4	3	5	5	17	Low	25	8	8,300	SF	$40.00								$332,000			$332,000
13	The metal roof at the Boiler Room is original to the building and in a poor to fair condition. Recommend replacement with a standing seam metal roof.	Replace the metal roof at the Boiler Room.	II	DM	4	2	3	3	12	High	25	1	1,800	SF	$40.00	$72,000										$72,000
14	The TPO roof at the Kitchen and Cafeteria was in fair condition. Some areas of staining were noted and the roof would benefit from cleaning. Based on age, replacement of the TPO roof on a like-for-like basis is anticipated.	Replace TPO roof at the Kitchen and Cafeteria.	IV	CR	4	4	3	4	15	Medium	20	10	11,200	SF	$20.00										$224,000	$224,000
Exterior Elements Required																										
1	Brickwork to the Auditorium gable wall was stained and mortar joints were in poor condition. The flashing at the lower roof with the wall was in poor condition. Regular leaks at this area of the building were reported. Additional cracking in brickwork to the south-facing walls was also observed. Cost increased to include replacement of the flashing at the junction with the lower roof.	Repoint brickwork on gable elevation at junction with lower roof and replace metal flashing. Repoint brickwork on southern elevation where cracked.	III	DM	3	2	2	2	9	High	25	1	850	SF	$95.00	$80,750										$80,750
2	The windows at the high level of the cafeteria were in poor condition. Seals to the insulated glazed units (IGUs) have failed and moisture has fogged the panes.	Replace high level window panes at each side of the gable wall.	III	DM	5	2	3	4	14	Medium	25	1	9	EA	$3,500	$31,500										$31,500

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147,195
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
3	Deterioration to the exterior curved glulam wood beams at the Cafeteria have deteriorated. Structural repairs have been completed at the bases of the beams to strengthen the beams and works have been completed, per drawings and documents produced by Medlock Associates. However, paint finishes to the beams are in poor condition. Paint is flaking or missing across all beams, exposing the wood underneath which if left unaddressed will result in further deterioration to the wood beams. Costs for this item could fluctuate based on the condition of the wood beams once renovation works begin.	Surface prep glulam beams and repaint the exposed exterior beams with a suitable exterior wood paint.	III	DM	3	2	3	4	12	High	10	1	1,200	SF	$15.00	$18,000										$18,000
4	High level windows at the Old Gym and Old Gym Locker Rooms are the original single-glazed metal framed windows. Windows were in poor condition. Sealant joints at the perimeters of the windows have perished and several of the panes are cracked. As detailed elsewhere in this cost table, works should only be completed once the long-term future of the building has been decided.	Replace high level windows at the Old Gym and Old Gym Locker Rooms.	III	DM	4	2	2	3	11	High	25	1	1,400	SF	$120.00	$168,000										$168,000
5	Deterioration to the exterior curved glulam wood beams at the Old Gym have deteriorated. Structural repairs have been completed at the bases of the beams to strengthen the beams and works have been completed, per drawings and documents produced by Medlock Associates. However, paint finishes to the beams are in poor condition. Paint is flaking or missing across all beams, exposing the wood underneath which if left unaddressed will result in further deterioration to the wood beams. Costs for this item could fluctuate based on the condition of the wood beams once renovation works begin.	Surface prep glulam beams and repaint the exposed exterior beams with a suitable exterior wood paint.	II	DM	3	2	3	4	12	High	10	1	3,600	SF	$15.00	$54,000										$54,000
6	Brickwork to the Old Gym was stained, mortar joints were missing, and sealant joints at movement joints had perished. Recommend exterior masonry project to repair defective masonry including repointing, cleaning of stained brickwork, and replacement of failed sealant joints. As detailed elsewhere in this cost table, works should only be completed once the long-term future of the building has been decided.	Complete masonry restoration and repairs at the Old Gym.	III	DM	3	2	3	3	11	High	20	1	3,750	SF	$95	$356,250										$356,250

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
7	Windows at the Home Economics Wing were in poor condition. IGUs had failed and the windowpanes have fogged. Window frames are at the end of their useful life. Costs based on replacement with aluminum framed windows, approximate size 3' x 6'. Window sizes and quantities are an approximate budget inclusion only and should be accurately measured and counted prior to replacement.	Replace windows at the Home Economics Wing.	III	DM	4	2	3	3	12	High	20	1	12	EA	$2,750	$33,000										$33,000
8	Windows at the Media Center/Guidance Wing were in poor condition. IGUs had failed and the windowpanes have fogged. Window frames are at the end of their useful life. Costs based on replacement with aluminum framed windows, approximate size 3' x 6'. Window sizes and quantities are an approximate budget inclusion only and should be accurately measured and counted prior to replacement.	Replace windows at the Media Center/Guidance Wing.	III	DM	4	2	3	3	12	High	20	1	20	EA	$2,750	$55,000										$55,000
9	Windows at the English Wing and Office Area were in poor condition. IGUs had failed and the windowpanes have fogged. Window frames are at the end of their useful life. Costs based on replacement with aluminum framed windows, approximate size 3' x 6'. Window sizes and quantities are an approximate budget inclusion only and should be accurately measured and counted prior to replacement.	Replace windows at the English Wing and Office Area.	III	DM	4	2	3	3	12	High	20	1	96	EA	$2,750	$264,000										$264,000
10	Elastomeric sealant joints at movement joints in brickwork walls across the building were in poor condition. Where observed, all sealants had dried out, cracked, and perished.	Remove failed sealant joints and replace.	II	DM	4	2	2	3	11	High	10	1	8,800	LF	$10.00	$88,000										$88,000
11	Exterior breezeways were in fair condition, as were paint finishes, but future repainting is recommended to ensure metalwork is protected.	Repaint soffits and supporting structure of metal breezeways across the site.	III	SM	4	4	4	5	17	Low	10	5	19,500	SF	$5.00					$97,500						$97,500
12	Exterior walls had defects across all elevations including missing pointing, staining to brickwork, paint finishes in poor condition etc. Recommend carrying a cost for exterior renovations and stabilization on a two-yearly basis. Cost will cover generic exterior works including repointing, cleaning of brickwork, painting, and other small exterior work projects. Cycle one.	Complete exterior restoration project to the building exteriors. Cycle One.	III	DM	3	2	4	3	12	High	10	1	1	ALLOW	$200,000	$200,000										$200,000

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147,195
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
13	Exterior walls had defects across all elevations including missing pointing, staining to brickwork, paint finishes in poor condition etc. Recommend carrying a cost for exterior renovations and stabilization on a two-yearly basis. Cost will cover generic exterior works including repointing, cleaning of brickwork, painting, and other small exterior work projects. Cycle Two.	Complete exterior restoration project to the building exteriors. Cycle Two.	III	SM	3	2	4	3	12	High	10	3	1	ALLOW	$200,000			$200,000								$200,000
14	Exterior walls had defects across all elevations including missing pointing, staining to brickwork, paint finishes in poor condition etc. Recommend carrying a cost for exterior renovations and stabilization on a two-yearly basis. Cost will cover generic exterior works including repointing, cleaning of brickwork, painting, and other small exterior work projects. Cycle Three.	Complete exterior restoration project to the building exteriors. Cycle Three.	III	SM	3	3	4	4	14	Medium	10	5	1	ALLOW	$200,000					$200,000						$200,000
15	Exterior walls had defects across all elevations including missing pointing, staining to brickwork, paint finishes in poor condition etc. Recommend carrying a cost for exterior renovations and stabilization on a two-yearly basis. Cost will cover generic exterior works including repointing, cleaning of brickwork, painting, and other small exterior work projects. Cycle Four.	Complete exterior restoration project to the building exteriors. Cycle Four.	IV	SM	3	3	4	4	14	Medium	10	7	1	ALLOW	$200,000							$200,000				$200,000
Interiors Required																										
1	Title IX requires specific space allocation for sports teams. The wrestling teams currentlydon't have sufficient space per Title IX requirements.	Construct pre-engineered metal building for wrestling teams..	II	CI	3	3	3	3	12	High	30	1	5,000	SF	$180	$900,000										$900,000
2	Ceiling tiles were noted to be in general good condition. We did note numerous stained ceiling tiles throughout. It is recommended to budget for the replacement of the stained ceiling tiles in the near-term. Some ceiling tiles could protentially be fire rated and would need to be replaced with the same type of rated material.	Replace stained and/or damaged ceiling tiles.	III	DM	5	3	4	5	17	Low		1	2,500	SF	$8.00	$20,000										$20,000
3	Interiors appeared to be typical finishes and fair condition for an educational establishment. Allowance only includes renewal of interior finishes and minor renovations of restrooms. Does not include reconfiguration of space or address items related to educational adequacy.	Allowance for renewal of interior finishes. Timing and scope will vary based on future program needs. Cycle one.	V	SM	5	3	5	5	18	Low	10	3	36,775	SF	$60.00			$2,206,500								$2,206,500

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147,095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
4	Interiors appeared to be typical finishes and fair condition for an educational establishment. Allowance only includes renewal of interior finishes and minor renovations of restrooms. Does not include reconfiguration of space or address items related to educational adequacy.	Allowance for renewal of interior finishes. Timing and scope will vary based on future program needs. Cycle two.	V	SM	5	3	5	5	18	Low	10	4	36,775	SF	$80.00				$2,942,000							$2,942,000
5	Interiors appeared to be typical finishes and fair condition for an educational establishment. Allowance only includes renewal of interior finishes and minor renovations of restrooms. Does not include reconfiguration of space or address items related to educational adequacy.	Allowance for renewal of interior finishes. Timing and scope will vary based on future program needs. Cycle three.	V	SM	5	3	5	5	18	Low	10	5	36,775	SF	$80.00					$2,942,000						$2,942,000
6	Interiors appeared to be typical finishes and fair condition for an educational establishment. Allowance only includes renewal of interior finishes and minor renovations of restrooms. Does not include reconfiguration of space or address items related to educational adequacy.	Allowance for renewal of interior finishes. Timing and scope will vary based on future program needs. Cycle four.	V	SM	5	3	5	5	18	Low	10	6	36,775	SF	$80.00						$2,942,000					$2,942,000
7	Dampness and damage to plaster finishes in the Auditorium stage area which is understood to be as a result of leaking HVAC fan coil units which are currently out of service and awaiting repair.	Remove damaged plaster, install new plaster, and repaint.	III	DM	5	2	5	5	17	Low	20	1	250	SF	$35.00	$8,750										$8,750
8	A physical security assessment was provided by Safe Havens International. As part of their assessment, they identified areas within the school which should be provided with a vestibule to limit continued access throughout the school. Based on this recommendation, it is recommended to budget for the installation of vestibules to limit access throughout the school.	Construct vestibules per Physical Security Assessment.	II	CI	3	3	3	3	12	High		2	147,095	SF	$1.50		$220,643									$220,643
Mechanical Required																										
1	Unit ventilators in the Vocational, Social Studies, and Office wings of the building are becoming problematic and difficult to repair. Water-cooled AHUs in the Auditorium, Band and Math wings of the building are becoming problematic and difficult to repair. Three AHUs in the Auditorium were not operating at the time of the site visit. The majority of AHUs have reached the end of their recommended useful life and the rest will do so within the study period. It is recommended to budget for the replacement of the unit ventilators and AHUs during the term.	Replace air handling units and unit ventilators.	III	DM	4	3	3	3	13	High	20	1	147,095	SF	$18	$2,647,710										$2,647,710

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
2	Pad-mounted Chiller #2 located at the north wing and serving the Auditorium, Cafeteria, Office, History, Social Studies, and Band wing, was in fair condition. The chiller serves a large portion of the building and remains operational but will soon reach the end of its recommended useful life.	Replace pad mounted Chiller #2 at the north wing.	III	CR	3	3	4	4	14	Medium	25	5	70	TON	$4,200					$294,000						$294,000
3	The roof-mounted chillers serving the Vocational wing were in fair condition. The north-zone chiller was noted with active alarms at the control panel interface and was not running at the time of the site visit.	Replace roof mounted chillers serving the Vocational wing.	III	CR	3	3	4	4	14	Medium	25	5	70	TON	$4,500					$315,000						$315,000
4	Boilers #1 and #2 at the south corner of the Science wing and Boiler #4 at the south corner of the New Gym is in fair to good condition. The boilers have exceeded their recommended useful life and should be budgeted for replacement during the term.	Replace Boiler #1 and #2 along with associated controls, valves, etc.	III	CR	3	4	4	5	16	Medium	30	5	1,158	MBH	$110					$127,380						$127,380
5	Boilers #1 and #2 at the south corner of the Science wing and Boiler #4 at the south corner of the New Gym is in fair to good condition. The boilers have exceeded their recommended useful life and may remain serviceable with an effective overhaul.	Replace Boiler #4 and associated controls, valves, etc.	IV	CR	3	4	4	5	16	Medium	30	9	1,358	MBH	$110									$149,380		$149,380
6	Boiler #5 at the north end of the vocational wing is in good to fair condition with no major deficiencies noted. Boilers #1 and #2 serving the cafeteria and north corner of the building are in good condition with no major deficiencies noted. The boilers should be overhauled to extend the service life. This should include replacement of burners and controls along with other as needed maintenance items.	Overhaul Boiler #1, #2, & #5 in the vocational wing	III	SM	3	4	4	5	16	Medium	10	3	7,219	MBH	$35			$252,665								$252,665
7	Two 10-ton split systems serving areas in the Media Center and at the New Gym were in poor condition and not operating at the time of the site visit.	Replace 10-ton split system units at the Media Center and New Gym.	III	DM	4	2	3	4	13	High	15	1	20	TON	$4,200	$84,000										$84,000
8	Mechanical heating and cooling systems in the building utilize various pumps packages with motors ranging from 3-30-hp. Pumps should be replaced before they fail, and costs have been included as two occurrences within the study period.	Replace heating hot water pump packages and valve assemblies.	III	CR	3	3	4	4	14	Medium	20	4	8	EA	$15,000				$120,000							$120,000

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
9	Mechanical heating and cooling systems in the building utilize various pumps packages with motors ranging from 3-30-hp. Pumps should be replaced before they fail, and costs have been included as two occurrences within the study period.	Replace chilled water pump packages and valve assemblies.	III	CR	3	3	4	4	14	Medium	20	4	6	EA	$15,000				$90,000							$90,000
10	Sections of mechanical piping and valves for the heating and cooling systems throughout the building noted with localized accumulations of rust and areas with damaged or missing insulation, particularly in boiler rooms. We recommend that deteriorated valves and sections of pipe be replaced to prevent leaks. Areas where piping insulation is damaged or missing should be properly insulated to prevent condensation and further deterioration.	Allowance for replacement of corroded piping, valves, and damaged insulation.	III	DM	3	3	4	4	14	Medium	10	1	600	LF	$220	$132,000										$132,000
11	Humidity levels in select rooms of the Media Center, Social Studies, and Vocational wings were noted as moderate to excessive and reported to be a recuring issue during periods of warmer outside air temperatures. Numerous areas in these wings featured portable dehumidifiers. We recommend that humidity levels be monitored and tracked to determine the indoor air quality trends. Replacement of the unit ventilators and AHUs may resolve the issue; however, it is recommended to budget an allowance for an evaluation and corrective works.	Application of auxiliary systems (4 areas) to control humidity should be engineered by a qualified mechanical engineer.	III	CR	4	3	4	3	14	Medium	15	2	4	EA	$750,000		$3,000,000									$3,000,000
12	The building management system (BMS) is built on the Niagara framework with Johnson Controls Metasys control hardware installed in 1999. The BMS gives a broad overview of the Property with select items controlled via the web-based interface. The system is limited but remains operational. Resources and supplies for older BMS versions are difficult to obtain, so we recommend upgrading the control systems throughout the school. We recommend completing this project at the same time as other any other BMS upgrades within the school system.	Upgrade building management system (BMS) and main controllers.	III	CR	4	3	4	4	15	Medium	15	2	147,000	SF	$2.25		$330,750									$330,750

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
Electrical																										
Required																										
1	The 1,200-amp electrical distribution cabinet at the north end of the vocational wing was manufactured in 1975 and in fair condition. Multiple secondary electrical distribution panel boards are in electrical closets throughout the building and appeared to have exceeded their useful life. These antiquated electrical components can become unreliable and hard to maintain and should be replaced near the middle or end of the study period.	Upgrade antiquated electrical panels throughout the building.	III	CR	2	3	4	4	13	High	30	3	3,000	AMP	$220			$660,000								$660,000
2	The electrical room housing a 1,200-amp switchgear cabinet and 600-amp distribution panel serving the main boiler room at the north end of the Property was noted with an active water intrusion where the wall meets the floor. This water is reportedly due to the room being below grade in addition to heavy rain events that occur regularly. Corrosion at the cabinet base was observed and will eventually damage vital electrical components and casings.	Install floor drain system in the main boiler room.	III	DM	3	3	4	4	14	Medium	20	1	1	ALLOW	$10,000	$10,000										$10,000
3	Access control systems appeared to be limited to electronic card access systems. It is recommended to expand access control and security systems throughout the school.	Allowance to improve school security systems and school safety.	II	CI	2	3	3	4	12	High	20	2	147,095	SF	$4.00		$588,380									$588,380
Plumbing																										
Required																										
1	Domestic hot water is typically provided by natural gas fired storage tank type water heaters throughout the building. Larger commercial grade water heaters are provided for laundry and gym showers . The small non commercial water heaters will likely be replaced as needed by maintenance staff; however, given the cost associated with the larger commercial units it is recommended to budget for their replacement.	Replace PVI natural gas fired water heaters.	IV	CR	3	4	4	4	15	Medium	18	7	3	EA	$45,000							$135,000				$135,000
2	The school has two 20,000-gallon underground storage tanks which store No. 2 fuel oil. The tanks were reportedly installed in 1959 and 1962 and reported to be single wall type tanks.Based on the age of the tanks it is recommended to continue to monitor the condition of the tanks through annual testing and active monitoring. An allowance for removal of the tanks has been provided; however, the timing will be driven by monitoring and testing results.	Remove underground storage tanks and install new above ground code/regulation compliant storage tank.	III	CR	3	3	4	4	14	Medium	30	3	1	ALLOW	$275,000			$275,000								$275,000

Attachment C

Axias
BUILDING VALUE




Building: Brevard High School
GSF: 147695
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Item No.	Condition	Recommendation	Priority Category	Deficiency Category	Impact of Failure	Condition	Probability of Failure	Frequency of Failure	Risk Score	Risk Category	Estimated Useful Life	Remaining Useful Life	Quantity	Unit of Measure	Unit Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
															Year	1	2	3	4	5	6	7	8	9	10	
Fire & Life Safety																										
Required																										
1	The building is monitored by a Notifier NFS2-3030 alarm panel. At the time of the site visit, a trouble notification was noted which should be investigated and repaired. Fire alarm control panels typically have a 15 year service life due to obsolescence. It is recommended to budget for the replacement of the fire alarm control panel.	Replace fire alarm control panel and as needed devices.	IV	CR	3	4	5	5	17	Low	15	8	1	EA	$75,000								$75,000			$75,000
2	Existing drawings detailing to which codes the school was designed in accordance with were not available for review. The school is not provided with a fire-sprinkler system. Buildings of this size typically are required to either have a sprinkler system or an approved rated assembly to protect structural elements. It is recommended to complete a more detailed fire and life safety assessment to review the code enforced at construction and the last renovation along with any details on how these ratings were achieved.	Complete life safety and code evaluation.	III	CI	3	3	4	4	14	Medium		1	1	EA	$15,000	$15,000										$15,000
Conveyance Systems																										
Required																										
1	No conveyance systems installed at the building.																									$0

Deficiency	Definition
SM	Scheduled Maintenance
DM	Deferred Maintenance
CR	Capital Renewal
EN	Energy & Sustainability
CI	Capital Improvement

Priority	Definition
I	Currently Critical
II	Potentially Critical
III	Necessary / Not yet Critical
IV	Recommended
V	Appearance
VI	Does Not Meet Codes / Standards

Risk	Definition
Critical	Critical (4-8)
High	High (9-13)
Medium	Medium (14-16)
Low	Low (17-20)

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Required
Required Cost (2023 US-Dollars)	$7,503,385	$5,187,773	$4,400,515	$3,170,500	$3,975,880	$2,942,000	$1,042,400	$709,000	$149,380	$816,000	$29,896,833
Required Cost (Inflated @ 8% for 1st 3 years then 3% Per Yr.)	$8,103,656	$6,051,018	$5,543,382	$3,568,426	$4,609,135	$3,512,902	$1,282,021	$898,140	$194,907	$1,096,636	$34,860,221
Total Cost (2023 $/ SF/ Yr.)	$51.01	$35.27	$29.92	$21.55	$27.03	$20.00	$7.09	$4.82	$1.02	$5.55	$203.25

Attachment C

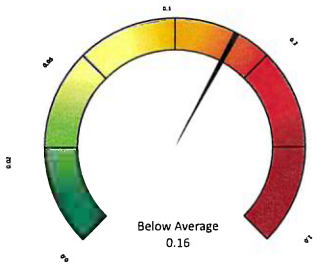
Axias
BUILDING VALUE



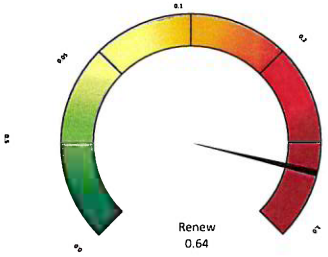

Building: Brevard High School
GSF: 147095
Age: 1959 (64 years), plus varying age additions
Address: 609 N Country Club Rd
Brevard, NC 28712

Financial Summary

Facility Condition Index



10 Year Facility Condition Index

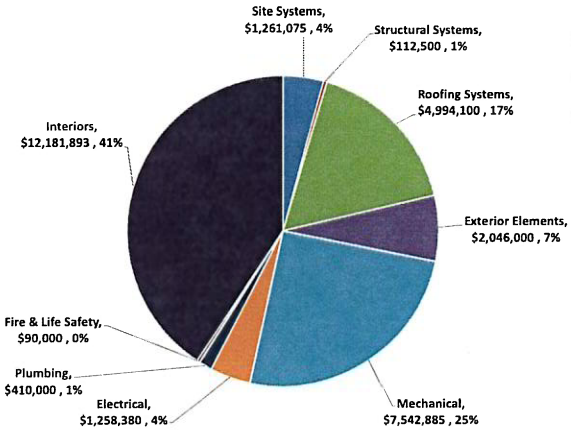


FCI Range	Condition Description
0.00 – 0.02	Excellent condition, typically new construction
0.02 – 0.05	Good Condition, renovations occur on schedule
0.05 – 0.1	Fair Condition, in need of normal renovation
0.1 – 0.2	Below average condition, major renovationrequired
0.2 – 0.5	Poor condition, total renovation needed
0.5 – 1	Complete facility replacement indicated

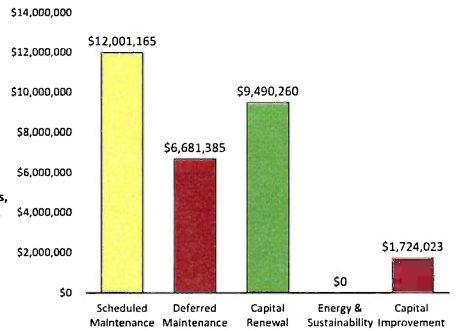
Risk	Definition
Critical	Critical (4-8)
High	High (9-13)
Medium	Medium (14-16)
Low	Low (17-20)

Priority	Definition
I	Currently Critical
II	Potentially Critical
III	Necessary / Not yet Critical
IV	Recommended
V	Appearance
VI	Does Not Meet Codes / Standards

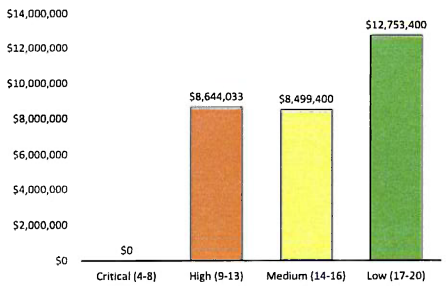
Summary by System



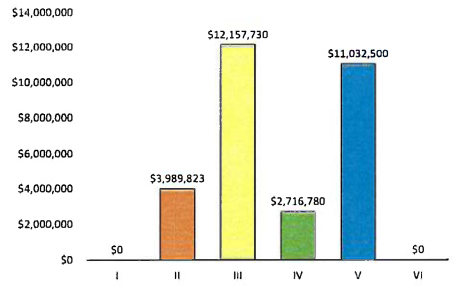
Expenditures by Deficiency Category



Expenditures by Risk



Expenditures by Priority Category



Attachment C

Axias
BUILDING VALUE

Building:	Brevard High School
GSF:	147095
Age:	1959 (64 years), plus varying age additions
Address:	609 N Country Club Rd Brevard, NC 28712

Representative Photos

Area of water ingress at Auditorium

Original standing seam metal roofs

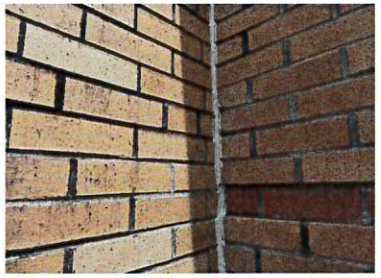
Poor drainage detailing and area of persistent water ingress

Roof covering at EC Wing in poor condition

Deteriorated paint finishes at glulam beams at Old Gym

Failed and missing roof deck at Old Gym

Fogged glazing at Cafeteria roof



Sealant joints in brickwork in poor condition

Pad mounted chiller

Older electrical equipment

Domestic water heaters

Fire alarm control panel

Attachment C

FLEETWOOD DANIELS GROUP LLC
PO Box 1144 Waynesville, NC 28786

December 5, 2023

Transylvania County
155 Public Safety Way
Brevard, NC 28712
Attn: David McNeill, Assistant County Manager

Subject: Mold Assessment
Brevard High School
Brevard, NC
Project Number: FDG231120

Mr. McNeill:

At your request, Fleetwood Daniels Group, LLC (FDG) performed an indoor air quality assessment at the above referenced project location on November 27, 2023. The assessment included collection of mold spore trap air samples throughout the school buildings. Sampling was conducted under the recommendations of FDG and was under the direction of the client representative. Additionally, FDG collected two exterior air samples to be averaged and used for comparative analysis. The sample locations are identified on the attached drawing.

Sampling was requested in order to assess the general conditions of the building as it relates to mold. The air sampling was performed by Mrs. Suzanne Hinson and Mr. Clay Hinson, Industrial Hygienists with FDG.

Results - Sampling & Analysis

AIRBORNE MOLD SAMPLES

SAMPLE NUMBER	LOCATON	LABORATORY RESULTS Total Mold
BH-1	Exterior #1	6430 count/m^3 (5800 count/m^3 - Average Exterior)
BH-2	Interior - Corridor at Front Office/Auditorium	3060 count/m^3
BH-3	Interior – Front Offices	3920 count/m^3
BH-4	Interior – Back of Auditorium	862 count/m^3
BH-5	Interior – Auditorium Stage Area	1180 count/m^3
BH-6	Interior – Corridor Along Side of Auditorium	5640 count/m^3
BH-7	Interior – Band Room	4780 count/m^3
BH-8	Interior – Classroom 802	627 count/m^3
BH-9	Interior – Corridor at 604	1960 count/m^3
BH-10	Interior – Corridor at 602	1490 count/m^3
BH-11	Interior – Corridor at 501	1570 count/m^3
BH-12	Interior – Corridor at 512	313 count/m^3

Count/m^3 = spore count per cubic meter of air

AIRBORNE MOLD SAMPLES

SAMPLE NUMBER	LOCATON	LABORATORY RESULTS Total Mold
BH-13	Interior – Corridor Between 500 and 700	6430 count/m3
BH-14	Interior – Classroom 514	1720 count/m^3
BH-15	Interior – Room 704	1180 count/m^3
BH-16	Interior – Classroom 708	3760 count/m^3
BH-17	Interior – Corridor at 700 Conference Rm	1330 count/m^3
BH-18	Interior – Corridor at 711	2900 count/m^3
BH-19	Interior – Corridor at 403/408	862 count/m^3
BH-20	Interior – Corridor at 718	1880 count/m^3
BH-21	Interior – Corridor at 402	5090 count/m^3
BH-22	Interior – Corridor Outside Media Center	2270 count/m^3
BH-23	Interior – Media Center	235 count/m^3
BH-24	Interior – Corridor at 302	549 count/m^3
BH-25	Interior – Corridor at 103	627 count/m^3
BH-26	Interior – Corridor at Cafeteria	5330 count/m^3
BH-27	Interior - Cafeteria	24,100 count/m^3
BH-28	Interior - Kitchen	11,600 count/m^3
BH-29	Interior – Lobby Between New and Old Gym	2190 count/m^3
BH-30	Interior – Old Gym	392 count/m^3
BH-31	Interior – Athletic Trainer Room	2190 count/m^3
BH-32	Exterior #2	5170 count/m^3 (5800 count/m^3 - Average Exterior)

Count/m^3 = spore count per cubic meter of air

Conclusions

The analysis of the air samples collected show total spore counts on the interior samples collected were lower than those on the exterior of the building (average of two samples) with the exception of the samples collected in the Corridor Between 500/700, Cafeteria and Kitchen.

Analysis shows that the spore types were generally consistent with those found on the exterior of the building. Common plant molds were present on the interior samples collected throughout the building. These common exterior genera of molds and are typically found in soils and decaying plant matter, but can also grow indoors given the right conditions. Given the right conditions, indoor growth can be widespread on damp substrates as some will grow indoors at low temperatures.

Sample analysis indicates counts of *Aspergillus/Penicillum-like* spores on the samples collected from the interior of the school that were not identified on the exterior sample. *Aspergillus/Penicillum-like* spores are typically indicators of water damaged building materials and are not commonly found naturally outside. These types of mold have been shown to have the possibility of causing respiratory issues especially in people with allergies or immune deficiencies when found in indoor areas. These spores were identified on the samples collected in the Front Office Area, Corridor at 501, Corridor Between 500/700 and the Cafeteria. These spores could

be from a current water loss, or from a previous water loss in these areas. FDG would recommend further investigation in the Front Office and Cafeteria as the counts of *Aspergillus/Penicillum-like* spores were higher in these areas. FDG did not observe mold growth in the Front Office area, but did see evidence of water loss on Thermal System Insulation in the Cafeteria and the client indicated that wood beams in the area had been repaired due to areas of deterioration in the past. These could be sources of the *Aspergillus/Penicillum-like* spores. Additionally, FDG observed mold growth around the vent in the Kitchen area. A sample of the growth indicated that it was Cladosporium (Loaded, >300 spores), which is a common exterior spore that can also be found growing indoors, even in lower temperature areas. The surface sample also contained smaller counts of other common mold spores. FDG recommends correction of the condensation around the vent and HEPA cleaning of the surface growth.

In general, all areas of potential moisture intrusion should be addressed and corrected prior to remediation efforts where recommended. All areas should have HVAC units that provide an indoor environment with temperature and humidity levels in accordance with ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) Standards. In the future all areas with visibly water damaged materials should be remediated as discovered to prevent an air quality concern in the future. Ways to reduce spore counts include, but are not limited to, HEPA air filtration, HEPA vacuum cleaning and/or surface cleaning with anti-microbial serum.

Observations, findings, results, and conclusions are limited to those conditions apparent at the time of the site visit. It should not be construed that actions taken as a result of this work will achieve complete compliance with every regulatory standard nor prevent every possible accident or loss. Neither should it be considered that any recommendations noted are the only possible actions to be taken.

QUALIFICATIONS

This report summarizes FDG's evaluation of the conditions observed at the subject building during the course of the survey. Our findings are based upon our observations at the building and analyses of the samples obtained at the time of this survey. Asbestos-containing materials may exist in the building, if materials are to be disturbed they should be tested for the presence of asbestos prior to disturbing. Any conditions discovered which deviate from the data contained in this report should be presented for our evaluation.

Attached with this report you will find the laboratory analytical results for each sample collected will be attached.

Fleetwood Daniels Group, L.L.C. is pleased to have provided our professional services for this project. If you have any questions or comments, please do not hesitate to call at (828) 400-1509.

Sincerely,
FLEETWOOD DANIELS GROUP, L.L.C.

Suzanne Hinson

Suzanne Hinson
Principal
Attachments: Laboratory Analytical Reports

Attachment D

Laboratory Analytical Reports

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-1			BH-2			BH-3			EXTERIOR		
Lab Sample ID	10037914_0001			10037914_0002			10037914_0003			AVERAGE		
Description	Exterior			Interior-corridor @ off.			Interior-office area			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria										<1	39.2	N/A
Ascospores	40	3130	48.8%	12	940.	30.8%	5	392	10.0%	36	2780	48.0%
Aspergillus/Penicillium-like							31	2430	62.0%			
Basidiospores	21	1650	25.6%	11	862	28.2%	5	392	10.0%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	14	1100	17.1%	4	313	10.3%	1	78.4	2.00%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum	2	157	2.44%	3	235	7.69%	2	157	4.00%	2	118	2.67%
Myxomycete/Rust/Smut-like	4	313	4.88%	9	705	23.1%	6	470.	12.0%	3	196	4.00%
Nigrospora												
Pithomyces										<1	39.2	N/A
Spegazzinia												
Unknown/Other	1	78.4	1.22%							<1	39.2	N/A
TOTAL	**82**	**6430**	**100.%**	**39**	**3060**	**100.%**	**50**	**3920**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	2	157	-	2	157	-	3	235	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**0-20%**			**20-40%**			**20-40%**			**N/A**	
Total Debris in Background		**40-60%**			**60-80%**			**40-60%**			**N/A**	

Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA EMPAT program for fungi. EMPAT Laboratory ID: 173190. Reporting Limit equals Analytical Sensitivity. Unless indicated, areas and volumes were provided by the customer.

Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-4			BH-5			BH-6			EXTERIOR		
Lab Sample ID	10037914_0004			10037914_0005			10037914_0006			AVERAGE		
Description	Interior-back of audit.			Interior-stage of audit.			Interior-corridor side of aduit			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria							1	78.4	1.39%	<1	39.2	N/A
Ascospores	3	235	27.3%	2	157	13.3%	14	1100	19.4%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	2	157	18.2%	2	157	13.3%	13	1020	18.1%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	2	157	18.2%	3	235	20.0%	12	940.	16.7%	13	981	17.3%
Curvularia							1	78.4	1.39%			
Drechslera/Bipolaris							1	78.4	1.39%			
Epicoccum	2	157	18.2%	1	78.4	6.67%	2	157	2.78%	2	118	2.67%
Myxomycete/Rust/Smut-like	2	157	18.2%	6	470.	40.0%	26	2040	36.1%	3	196	4.00%
Nigrospora							1	78.4	1.39%			
Pithomyces				1	78.4	6.67%	1	78.4	1.39%	<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**11**	**862**	**100.%**	**15**	**1180**	**100.%**	**72**	**5640**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	1	78.4	-	1	78.4	-	6	470.	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	1	78.4	-	-	-	-
Skin Cell % of Total Debris		**20-40%**			**20-40%**			**40-60%**			**N/A**	
Total Debris in Background		**20-40%**			**40-60%**			**60-80%**			**N/A**	

Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: 10037914
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-7			BH-8			BH-9			EXTERIOR		
Lab Sample ID	10037914_0007			10037914_0008			10037914_0009			AVERAGE		
Description	Interior-band room			Interior-classroom 802			Interior-corridor @ 604			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria										<1	39.2	N/A
Ascospores	10	784	16.4%	4	313	50.0%	9	705	36.0%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	11	862	18.0%	3	235	37.5%	5	392	20.0%	21	1610	28.0%
Cercospora-like				1	78.4	12.5%						
Chaetomium	1	78.4	1.64%									
Cladosporium	6	470.	9.84%				1	78.4	4.00%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum	1	78.4	1.64%				1	78.4	4.00%	2	118	2.67%
Myxomycete/Rust/Smut-like	31	2430	50.8%				9	705	36.0%	3	196	4.00%
Nigrospora												
Pithomyces	1	78.4	1.64%							<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**61**	**4780**	**100.%**	**8**	**627**	**100.%**	**25**	**1960**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	7	549	-	-	-	-	3	235	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**40-60%**			**20-40%**			**40-60%**			**N/A**	
Total Debris in Background		**60-80%**			**0-20%**			**60-80%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-10			BH-11			BH-12			**EXTERIOR**		
Lab Sample ID	10037914_0010			10037914_0011			10037914_0012			**AVERAGE**		
Description	Interior-corridor @ 602			Interior-corridor @ 501			Interior-corridor @ 512			**N/A**		
Lab Notes										**N/A**		
Volume (L)	75			75			75			**N/A**		
Analytical Sensitivity (counts/m³)	78			78			78			**N/A**		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria										<1	39.2	N/A
Ascospores	4	313	21.1%	6	470.	30.0%	3	235	75.0%	36	2780	48.0%
Aspergillus/Penicillium-like				3	235	15.0%						
Basidiospores	3	235	15.8%	2	157	10.0%	1	78.4	25.0%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	5	392	26.3%	3	235	15.0%				13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum				1	78.4	5.00%				2	118	2.67%
Myxomycete/Rust/Smut-like	7	549	36.8%	4	313	20.0%				3	196	4.00%
Nigrospora				1	78.4	5.00%						
Pithomyces										<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**19**	**1490**	**100.%**	**20**	**1570**	**100.%**	**4**	**313**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	5	392	-	2	157	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**40-60%**			**40-60%**			**20-40%**			**N/A**	
Total Debris in Background		**40-60%**			**40-60%**			**20-40%**			**N/A**	

Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-13			BH-14			BH-15			EXTERIOR		
Lab Sample ID	10037914_0013			10037914_0014			10037914_0015			AVERAGE		
Description	Interior-corridor betwn 500 & 700			Interior-classroom 514			Interior-room 704			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria	1	78.4	1.22%	1	78.4	4.55%	1	78.4	6.67%	<1	39.2	N/A
Ascospores	15	1180	18.3%	5	392	22.7%	4	313	26.7%	36	2780	48.0%
Aspergillus/Penicillium-like	5	392	6.1%									
Basidiospores	11	862	13.4%	5	392	22.7%	3	235	20.0%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium				3	235	13.6%	1	78.4	6.67%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris	1	78.4	1.22%									
Epicoccum	6	470.	7.32%				1	78.4	6.67%	2	118	2.67%
Myxomycete/Rust/Smut-like	40	3130	48.8%	8	627	36.4%	4	313	26.7%	3	196	4.00%
Nigrospora												
Pithomyces	3	235	3.66%				1	78.4	6.67%	<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**82**	**6430**	**100.%**	**22**	**1720**	**100.%**	**15**	**1180**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	16	1250	-	1	78.4	-	3	235	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	2	157	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**20-40%**			**20-40%**			**20-40%**			**N/A**	
Total Debris in Background		**60-80%**			**40-60%**			**40-60%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: 10037914
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-16			BH-17			BH-18			EXTERIOR		
Lab Sample ID	10037914_0016			10037914_0017			10037914_0018			AVERAGE		
Description	Interior-classroom 708			Interior-corridor @ 700 conf.			Interior-corridor @ 711			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria	1	78.4	2.08%							<1	39.2	N/A
Ascospores	7	549	14.6%	4	313	23.5%	9	705	24.3%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	4	313	8.33%	4	313	23.5%	4	313	10.8%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	3	235	6.25%	2	157	11.8%	2	157	5.41%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris							1	78.4	2.7%			
Epicoccum	6	470.	12.5%	1	78.4	5.88%	1	78.4	2.7%	2	118	2.67%
Myxomycete/Rust/Smut-like	24	1880	50.0%	6	470.	35.3%	19	1490	51.4%	3	196	4.00%
Nigrospora												
Pithomyces	2	157	4.17%				1	78.4	2.7%	<1	39.2	N/A
Spegazzinia	1	78.4	2.08%									
Unknown/Other										<1	39.2	N/A
TOTAL	**48**	**3760**	**100.%**	**17**	**1330**	**100.%**	**37**	**2900**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	6	470.	-	4	313	-	3	235	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	1	78.4	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**40-60%**			**40-60%**			**40-60%**			**N/A**	
Total Debris in Background		**60-80%**			**60-80%**			**60-80%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-19			BH-20			BH-21			**EXTERIOR**		
Lab Sample ID	10037914_0019			10037914_0020			10037914_0021			**AVERAGE**		
Description	Interior-corridor @ 403/408			Interior-corridor @ 718			Interior-corridor @ 402			**N/A**		
Lab Notes										**N/A**		
Volume (L)	75			75			75			**N/A**		
Analytical Sensitivity (counts/m³)	78			78			78			**N/A**		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria	1	78.4	9.09%	1	78.4	4.17%	2	157	3.08%	<1	39.2	N/A
Ascospores	3	235	27.3%	4	313	16.7%	6	470.	9.23%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	2	157	18.2%	4	313	16.7%	7	549	10.8%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium				10	784	41.7%	9	705	13.8%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris	1	78.4	9.09%									
Epicoccum				1	78.4	4.17%	2	157	3.08%	2	118	2.67%
Myxomycete/Rust/Smut-like	4	313	36.4%	4	313	16.7%	38	2980	58.5%	3	196	4.00%
Nigrospora							1	78.4	1.54%			
Pithomyces										<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**11**	**862**	**100.%**	**24**	**1880**	**100.%**	**65**	**5090**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	1	78.4	-	1	78.4	-	6	470.	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	1	78.4	-	-	-	-
Skin Cell % of Total Debris		**20-40%**			**40-60%**			**40-60%**			**N/A**	
Total Debris in Background		**40-60%**			**40-60%**			**80-100%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-22			BH-23			BH-24			EXTERIOR		
Lab Sample ID	10037914_0022			10037914_0023			10037914_0024			AVERAGE		
Description	Interior-corridor outside media			Interior-media center			Interior-corridor @ 302			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria							1	78.4	14.3%	<1	39.2	N/A
Ascospores	5	392	17.2%	1	78.4	33.3%	2	157	28.6%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	5	392	17.2%	1	78.4	33.3%				21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	7	549	24.1%							13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum	2	157	6.9%							2	118	2.67%
Myxomycete/Rust/Smut-like	9	705	31.0%	1	78.4	33.3%	4	313	57.1%	3	196	4.00%
Nigrospora	1	78.4	3.45%									
Pithomyces										<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**29**	**2270**	**100.%**	**3**	**235**	**100.%**	**7**	**549**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	3	235	-	-	-	-	1	78.4	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**20-40%**			**0-20%**			**0-20%**			**N/A**	
Total Debris in Background		**60-80%**			**20-40%**			**40-60%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-25			BH-26			BH-27			EXTERIOR		
Lab Sample ID	10037914_0025			10037914_0026			10037914_0027			AVERAGE		
Description	Interior-corridor @ 103			Interior-corridor @ cafe.			Interior-cafeteria			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria							1	78.4	0.325%	<1	39.2	N/A
Ascospores	3	235	37.5%	4	313	5.88%	9	705	2.92%	36	2780	48.0%
Aspergillus/Penicillium-like							16	1250	5.19%			
Basidiospores	1	78.4	12.5%	2	157	2.94%	11	862	3.57%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium				46	3600	67.6%	218	17100	70.8%	13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum				10	784	14.7%	23	1800	7.47%	2	118	2.67%
Myxomycete/Rust/Smut-like	4	313	50.0%	5	392	7.35%	28	2190	9.09%	3	196	4.00%
Nigrospora												
Pithomyces				1	78.4	1.47%	2	157	0.649%	<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**8**	**627**	**100.%**	**68**	**5330**	**100.%**	**308**	**24100**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	-	-	-	2	157	-	8	627	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	1	78.4	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**0-20%**			**40-60%**			**40-60%**			**N/A**	
Total Debris in Background		**40-60%**			**40-60%**			**60-80%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: **10037914**
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-28			BH-29			BH-30			EXTERIOR		
Lab Sample ID	10037914_0028			10037914_0029			10037914_0030			AVERAGE		
Description	Interior-kitchen			Interior-gym lobby btwn new/old gym			Interior-old gym			N/A		
Lab Notes										N/A		
Volume (L)	75			75			75			N/A		
Analytical Sensitivity (counts/m³)	78			78			78			N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria	2	157	1.35%							<1	39.2	N/A
Ascospores	4	313	2.7%	3	235	10.7%	4	313	80.0%	36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	6	470.	4.05%	3	235	10.7%	1	78.4	20.0%	21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	119	9330	80.4%	11	862	39.3%				13	981	17.3%
Curvularia												
Drechslera/Bipolaris				1	78.4	3.57%						
Epicoccum	9	705	6.08%							2	118	2.67%
Myxomycete/Rust/Smut-like	7	549	4.73%	9	705	32.1%				3	196	4.00%
Nigrospora												
Pithomyces	1	78.4	0.676%	1	78.4	3.57%				<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**148**	**11600**	**100.%**	**28**	**2190**	**100.%**	**5**	**392**	**100.%**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	6	470.	-	7	549	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**40-60%**			**40-60%**			**20-40%**			**N/A**	
Total Debris in Background		**40-60%**			**20-40%**			**0-20%**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Spore Trap Analysis

SAI Method B-SOP-003

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: 10037914
Analysis: STA
Date Received: 11/28/2023
Date Reported: 11/28/2023

Sample ID	BH-31			BH-32						EXTERIOR		
Lab Sample ID	10037914_0031			10037914_0032						AVERAGE		
Description	Interior-atheltic trainer off.			Interior-exterior						N/A		
Lab Notes										N/A		
Volume (L)	75			75						N/A		
Analytical Sensitivity (counts/m³)	78			78						N/A		
IDENTIFICATION	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**	**Raw Count**	**Concentration (counts/m³)**	**% Of Total**
Alternaria	1	78.4	3.57%	1	78.4	1.52%				<1	39.2	N/A
Ascospores	7	549	25.0%	31	2430	47.0%				36	2780	48.0%
Aspergillus/Penicillium-like												
Basidiospores	6	470.	21.4%	20	1570	30.3%				21	1610	28.0%
Cercospora-like												
Chaetomium												
Cladosporium	3	235	10.7%	11	862	16.7%				13	981	17.3%
Curvularia												
Drechslera/Bipolaris												
Epicoccum				1	78.4	1.52%				2	118	2.67%
Myxomycete/Rust/Smut-like	11	862	39.3%	1	78.4	1.52%				3	196	4.00%
Nigrospora												
Pithomyces				1	78.4	1.52%				<1	39.2	N/A
Spegazzinia												
Unknown/Other										<1	39.2	N/A
TOTAL	**28**	**2190**	**100.%**	**66**	**5170**	**100.%**	**-**	**-**	**-**	**75**	**5800**	**100.%**
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal Fragments	3	235	-	1	78.4	-	-	-	-	2	117.7	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-	-	-	-
Skin Cell % of Total Debris		**20-40%**			**0-20%**			**N/A**			**N/A**	
Total Debris in Background		**60-80%**			**40-60%**			**N/A**			**N/A**	

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Darrin Parrick (32)
Analyst

Approved Signatory

Attachment D

Direct Exam: Tape Lift Analysis

SAI Method B-SOP-005

Customer: Fleetwood Daniels Group
PO Box 1144
Waynesville, NC 28786

Attn: Suzanne Hinson

Project: FDG231120 - Brevard High

Lab Order ID: 10037920
Analysis: DET
Date Received: 11/28/2023
Date Reported: 11/29/2023

Sample ID	BH-T-1
Lab Sample ID	10037920_0001
Description	Kitchen ceiling ve
Lab Notes	
IDENTIFICATION	
Cladosporium	4
Epicoccum	2
Myxomycete/Rust/Smut-like	3
Fruiting Bodies	4
Hyphal Fragments	4
Pollen	
Debris	2

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LEGEND: 1=Trace (1-10 Spores); 2=Light (11-100 spores); 3=Abundant (101-300); 4=Loaded (>300 spores)

Palmer Hines (1)
Analyst

Palmer Hines
Approved Signatory

Attachment D

MEDLOCK & ASSOCIATES ENGINEERING, PA

April 10, 2024

Mr. David McNeil, Emergency Services Director
Transylvania County
101 South Broad Street
Brevard, NC 28712

Subject: **Additional repair recommendations for Cafeteria and Gymnasium roof glulams**
Brevard High School - 609 N Country Club Rd, Brevard, NC 28712
Project Number: 758221

Dear Mr. McNeil:

As requested, a Medlock & Associates Engineering, PA (MAE) representative met with an Arborist (Bill Hascher) on Thursday, December 21, 2023, at Brevard High School (609 N Country Club Rd) to conduct testing on the glulam ends adjacent to the baseplates for each glulam. Prior repairs had been provided to ensure the proper transfer of forces from the glulams to the typical bearing base (steel base "boot" with concrete buttress and footing). These repairs were completed in October and November of 2021 for the gymnasium and cafeteria, respectively.

We discovered in late 2023 that the steel flashing shown in our construction documents were not installed during repairs. At the time of this discovery, we discussed additional observations with the county to ensure the continuing structural capacity for the gymnasium and cafeteria glulams. Each system consists of glulams penetrating the exterior walls of the gymnasium and cafeteria. After issuance of our follow up report dated January 23, 2024, we have completed the recommended repairs to extend the lifetime of the structure. After completion of the proposed repairs, it is our opinion that the repairs shall be observed and assessed every three years during occupancy of the structures.

MAE's assessment is based on visual observations and testing of structural properties of the glulams in their existing condition concluded that the attachment of glulams to bases are structurally sound. Please see our following comments and recommendations below:

1. We visually observed the glulams with the worst physical conditions for testing.
2. We evaluated five (5) glulam locations of the cafeteria along the "southeast" of the cafeteria. The glulam ends along the "northwest" side of the cafeteria were enclosed in interior space years ago and do not display any damage as the exterior exposed glulams have.
3. We evaluated three glulams along the northeast side of the gymnasium and along the southwest side of the gymnasium (6 total glulam tests – 3 each side).
4. The wood strength tests were conducted with a IML North American RESI F-400 series resistance drill. These types of drills are typical utilized to test wooden bridge beams for strength characteristics.

Address: 53 Asheland Avenue, Suite 101 • Asheville, NC 28801 **Phone:** (828) 232-4448 • Fax: (828) 232-5224 **Web:** www.medlockengr.com

5. The typical testing location was approximately 16" above the top of the steel boot brackets. The testing holes were typically drilled perpendicularly to the top of each glulam at an angle to allow the testing locations between the lowest set of bolts and the adjacent row of bolts above. These tests were performed in this approximate location as the worst deterioration and rot in the glulams was nearest the steel boot brackets. Each test was performed by the arborist and observed and recorded by the Engineer of Record while on site.
6. **Based on the testing information and torque readings recorded by the resistance drill, it is our opinion that the glulam attachments at the typical steel base are stable and substantial to support the required 20 PSF roof live load. To prolong the useful life of the two structures, we recommend that the following recommendations shall be implemented (items 7, 8 and 9 below).**
7. The majority of rot damage observed in the curved glulam beam was typically observed in or near the original steel boots. The rotted wood shall be removed by hand tools to remove damaged and soft wood material. The voids and holes in the wood from the removal of rotted wood shall be filled with *Restore-Rite Non-Sag, High Strength Epoxy Wood Filler* (see the attached cut sheet for preparation and installation of the epoxy material. Alternative products may be submitted to replace the Restore-Rite epoxy based on review and approval by the engineer (MAE).
8. After the areas of rotted wood are addressed with the epoxy, we recommend installation of *Trex Self-Adhering Sheet Flashing* along the exposed top of each glulam that is exposed to the elements. The self-adhering tape shall be wrapped over the top of each glulam a minimum of 1" along each side (see detail sheet BD-1 for installation.
9. In addition to the treatment of rotted wood and installation of the top flashing, we recommend that a minimum 3/8" hole shall be drilled at the low point of each existing boot in accordance with the attached details 4 and 5 on sheet BD-1.
10. The primary purpose of addressing the rotted wood with epoxy and the installation of the flashing tape is to prolong the useful life of the two structures (cafeteria and gymnasium). The existing connection at the boot at each glulam location is currently sound with the installation of newer plates in 2021, but the rot shall be addressed to limit any future deterioration and the application of the proposed flashing is to redirect water from the top of each glulam and from the existing steel boots. As such, the flashing shall be extended a minimum of 2" over the steel boot.
11. **After all work has been completed, contact engineer for assessment and approval of the performed work. We highly recommend having an on-site meeting with a representative of the owner, the proposed contractor, and engineer prior to proceeding with the work to review and ensure that all rotted material near the glulam boots is rotted.**
12. **Due to the age and condition of the glulams for the cafeteria and gymnasium, we recommend a rough estimate of five (5) years of additional service once the repairs have been completed and approved. To ensure the proper performance of the life extension, we request and recommend that a visual inspection of the glulam base connections shall be confirmed by Medlock & Associates Engineering, or another professional engineer licensed in the state of North Carolina on a 2-year basis. This recommendation is based on the harsh exposure of the elements to the glulam beams and the possible abuse that can occur with occupancy. With the implementation of a recurring 2-year inspection program, the life of the structures (cafeteria and gymnasium) can be extended well beyond the 5 years quoted above. The purpose of the 2-year inspection is to ensure continuing performance of the repaired glulam beams (particularly regarding the weatherization taping / flashing).**

Please see the accompanying detail drawing (BD-1 dated 04-04-2024) and product information cut sheets for the proposed epoxy system and the proposed weatherization tape to ensure proper installation and performance of the proposed system. We further recommend that a contractor with experience shall provide the services for the rotted wood repair.

The scope of this report is limited to matters discussed herein. No opinion is offered, and none should be inferred, regarding other aspects of this structure or the structure taken as a whole. This report is based on presently known and available facts, data, and information. To the extent that additional or different facts, data, or information is developed or discovered after the issuance of this report, MAE reserves the right to amend, alter, or change the report as needed to reflect consideration of the additional or different facts, data, or information. Site observations are limited to visibly observable areas; we offer no opinion regarding structural conditions behind finishes or inaccessible areas. If signs of distress are observed or if new information is brought to our attention, invasive testing for further observations may be recommended. We are pleased to be of service. If you have any questions regarding this report or require further assistance, please call.

Sincerely,

Medlock & Associates Engineering, P.A., (Cert. #C3133):

NORTH CAROLINA PROFESSIONAL SEAL 25950 ENGINEER EDWARD K. MEDLOCK

04-10-24

Edward K Medlock, PE
President, Senior Engineer

RESTORE-RITE
"THE RIGHT WAY TO RESTORE WOOD"

TECHNICAL DATA SHEET

STRONGBOND EPOXY WOOD FILLER

NON-SAG, HIGH-STRENGTH EPOXY WOOD FILLER & REPAIR ADHESIVE

PRODUCT DESCRIPTION

STRONGBOND EPOXY WOOD FILLER is a two-component, rapid-curing, high-strength epoxy wood filler and multi-purpose repair adhesive. Its non-sag formula fills voids left by dry-rot, restoring strength and shape to damaged wood. It is moisture-insensitive and can be applied on damp surfaces. Because it is shrink-free and does not slump or sag, it is perfect for vertical and overhead repairs.

The Filler creates a high-strength, chemical bond to STRONGBOND EPOXY WOOD SEALER, making repairs to dry-rotted wood last longer. It can be used as a fairing compound to fill air bubbles and voids that may occur during the sanding process, then the repaired wood can be carved or machined to recreate the desired shape before applying a topcoat.

This product also is an excellent multi-purpose adhesive. It will bond to most surfaces, such as brick, ceramic tile, concrete, fiberglass, or stone.

USES

- Epoxy resin bonding for dry-rot repair. Fills voids left by dry-rot, nail holes, or missing wood
- Can be used as a fairing compound
- Cured filled surfaces may be carved or machined to restore the shape of the damaged wood
- Ideal for repairing wooden window frames and sills, rafter tails, exposed beams, decks, doors, floors, fences, boat hulls, and other wooden structural and decorative elements. The restored wood can be primed and painted with water-based paint or other epoxy-compatible topcoat
- As a multi-purpose adhesive, it creates a high-strength bond to most surfaces, such as stone, concrete, ceramic tile, and fiberglass
- Intended to be used outdoors or in well-ventilated indoor areas, in temperatures between 40 °F (4 °C) and 110 °F (43 °C)

FEATURES / ADVANTAGES

- Rapid initial 3-hour cure time at room temperature
- Non-sag, no-shrink formula makes it excellent for vertical and overhead applications
- Low VOC, low odor, and solvent-free

RESTORE-RITE
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STRONGBOND EPOXY WOOD FILLER

- Creates a high-strength, chemical bond to STRONGBOND EPOXY WOOD SEALER. Once the sealer is tacky, apply Filler over uncured sealer and the two will cure together, saving time to complete projects
- Moisture-insensitive; can be applied on damp surfaces and underwater
- Easy-dispensing with coaxial cartridges, which are packaged with a nozzle that automatically mixes the product in the precise ratio. Cartridges fit into standard 10 oz. caulking guns for flow-control installation

PRODUCT INFORMATION

Availability	**Restore-Rite™ products are available through select distributors.**
Available Sizes	**Coaxial Cartridge – 8.6 oz.** (256 ml) Includes one mixing nozzle that automatically mixes precise ratio of Parts A and B. (Cartridges fit into standard 10 oz. caulking guns.) **Bulk-Packaging – Quart Kit** Kit contains 16 oz. (473 ml) Part A and 16 oz. (473 ml) Part B for 1:1 mixing ratio **Bulk-Packaging – 102 oz. Kit** Kit contains 51 oz. (1.5L) Part A and 51 oz. (1.5L) Part B for 1:1 mixing ratio
Application Temperature	**40°F and 110°F (4°C and 43°C)**
Color	**Part A (Resin) White: Part B (Hardener) Dark Gray; Mixed: Gray**
Cure Time	**3 hours at 75°F initial cure; fully cured in 24 hours**
Mix Ratio	**1:1 by volume (refer to MPII in this TDS)**
Gel Time	**26 minutes at 75°F (based on 60 gram mass)**
Shelf Life	**24 months in unopened containers stored in dry and dark conditions.**
Storage	**Between 40°F (4°C) and 95°F (52°C). Store in closed containers, in a secure, dry place not exposed to direct sunlight or extremely low or high temperatures**
VOC Content	**17 g/L (mixed)**
Working Time	**45 minutes at 75°F (nozzle)**

RESTORE-RITE
"THE RIGHT WAY TO RESTORE WOOD"

LIMITATIONS & WARNINGS

- Cartridge balancing and other installation instructions must be strictly followed. (Refer to MPII)
- Do not thin with solvents, as this will prevent cure.
- Before applying Filler over STRONGBOND EPOXY WOOD SEALER, the sealer must first become tacky.
- Product will cure slower in thinner film and/or colder temperatures and faster in a larger mass and/or elevated temperatures.
- Best when applied in increments at a thickness of 1 inch or less. A larger mass will generate excessive heat. For filling larger voids, a dry piece of scrap wood treated with STRONGBOND EPOXY WOOD SEALER can be used as a filler block, and attach it inside the void with wood screws. This process will allow a smaller mass of Filler to be used.
- May discolor from UV exposure. Filler should cure at least 3 hours prior to sanding and coating with water-based paint or other epoxy-compatible topcoat to meet the desired appearance. Use of solvent-based coatings should be avoided. Coating in a small test area is recommended prior to completing the entire project.
- Product is not intended for repairing weight-bearing structural elements. Consult an architect.
- NEVER leave mixed epoxy in an unattended open container as its thermolytic process generates heat and it will eventually heat-up and produce smoke.
- When dispensing underwater, product may sag.

Clean Up: Always wear appropriate protective equipment such as chemical-resistant nitrile rubber gloves and splash-proof safety chemical goggles during cleanup. Clean uncured materials from tools and equipment with a mild solvent, such as mineral spirits. Cured material can only be removed mechanically. Dispose of product in accordance with federal, state and local regulations.

Safety:. Always refer to the Safety Data Sheet (SDS) for both Part A and Part B at www.restore-rite.com. Be sure to wear protective chemically-resistant gloves, clothing and goggles during application and clean-up. Ensure indoor areas are properly ventilated. For more information, call New Enterprises at 1-415-722-9098. In an emergency, contact CHEM-TEL 1-800 255-3924 (24 hours).

INSTRUCTIONS

In order to achieve maximum results, **proper application is imperative**. Carefully read the Manufacturer's Printed Installation Instructions (MPII) in this TDS. Always use the most current version of the MPII, due to occasional updates and revisions.

RESTORE-RITE
"THE RIGHT WAY TO RESTORE WOOD"

STRONGBOND EPOXY WOOD FILLER

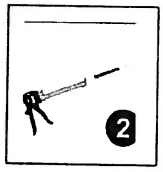
MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)

SURFACE PREPARATION

Surface preparation will depend upon the application of the product. The wood being treated must be clean of all dry-rot debris, paint, dust, oil, and wax. A clean surface free of loose material and dust is imperative for good adhesion. Always be sure the bonding surfaces are prepared and sealed with STRONGBOND EPOXY WOOD SEALER in advance before starting a new cartridge or mixing the Filler. To create a long-lasting bond, apply Filler over uncured Sealer once the sealer becomes tacky and the two will cure together. If possible, schedule dispensing to consume an entire cartridge at one time with no interruption of epoxy flow. For bulk, mix only enough product that can be used within the gel time.

CARTRIDGE PREPARATION

CAUTION: Always check the expiration date on the cartridge. **Do not use expired product!**



1. Remove the protective cap from the adhesive cartridge and insert the cartridge into the recommended dispensing tool. Before attaching the mixing nozzle, balance the cartridge by dispensing a small amount of material until both components are flowing evenly.
2. Screw on the mixing nozzle supplied with the cartridge after properly balancing the cartridge. Do not modify mixing nozzle. Confirm that the internal mixing element is in place prior to dispensing adhesive. Take note of the air and base material temperatures and review the working/full cure time prior to injection.
3. Dispense the initial amount of material from the mixing nozzle onto a disposable surface until the product is a uniform gray color with no streaks. Adhesive must be properly mixed in order to perform as published. Dispose of the initial amount of adhesive according to federal, state and local regulations.

   CAUTION: When changing cartridges, **never re-use nozzles**. A new nozzle should be used with each new cartridge and Steps 1 - 3 should be repeated.

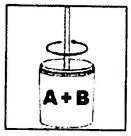
NOTE: When the work environment or substrate falls below 70°F (21°C) warm the cartridge to 70-75°F (21-24°C) prior to use. All usable material is completely dispensed when plunger reaches halfway. Schedule dispensing to consume an entire cartridge at one time with no interruption of flow to prevent material from hardening in mixing nozzle. If you have any problems in dispensing product, replace the nozzle; the product may have begun to cure in the nozzle which will affect the mix ratio. ***NEVER transfer a used nozzle to a new cartridge and DO NOT attempt to force adhesive out of a hardened nozzle.***

RESTORE-RITE
"THE RIGHT WAY TO RESTORE WOOD"

Mixing Without A Nozzle: Remove the protective cap from the cartridge and insert the cartridge into the recommended dispensing tool. Begin to dispense product through the opening until both products dispense equally and discard this small amount. Dispense equal portions of Part A and Part B onto a flat surface. Mix both components together using a putty knife or similar flat tool until a consistent gray color without streaks is achieved.

BULK MIXING

Thoroughly stir Part B with a mixing paddle (i.e. Jiffy mixer or similar) before mixing Parts A and B together. Smaller batches can be mixed by hand in a graduated mixing cup with a paint stir stick, or with a putty knife on scrap cardboard. Blend until a consistent gray color without streaks is achieved. **NOTE:** Cold product may become too thick. Product that is too warm will react faster than normal.



1. Before mixing Parts A and B together, thoroughly mix Part B in a clean pail with a low-speed drill (400 – 600 rpm) that has a paddle attachment.
2. Proportion equal parts by volume at an exact 1:1 mix ratio. STRONGBOND EPOXY WOOD FILLER uses 1 part by volume of component Part A and 1 part by volume of component Part B. Mix only the amount of material that can be used before the gel time expires (refer to Product Information in this TDS).
3. Mix thoroughly with a low-speed drill, carefully scraping the sides and the bottom of the container while mixing. Keep the paddle below the surface of the material to avoid entrapping air. Proper mixing will take at least 3 minutes. When well-mixed, the material will be free of streaks or lumps.
4. Smaller batches may be mixed by hand in a graduated mixing cup with a paint stir stick, or with a putty knife on scrap cardboard. Blend until a consistent color without streaks or lumps is achieved.

Once the product is mixed, immediately fill voids and trowel slightly above the surface level, leaving enough material to later sand the surface down to the desired shape. After voids are filled, use a putty knife or plastic spreader to reconstruct the desired shape. For a textured finish, sawdust may be added. Once the uncured Filler no longer sticks to the sandpaper, it may be mechanically sanded. Product can be used as a fairing compound during the sanding process to fill any air bubbles or voids that may occur.

USE AS A MULTI-PURPOSE ADHESIVE

STRONGBOND EPOXY WOOD FILLER is an excellent multi-purpose adhesive. It will bond to most surfaces, such as fiberglass, ceramic tile, concrete, stone, or brick. Use an appropriate amount of material for bonding to clean and prepared surfaces.

Trex Protect™
JOIST & BEAM TAPE

2190 West Bates Ave.
Englewood, Colorado 80110
Tel + 1-720-348-1385
www.TrexProtect.com
info@Trexrainescape.com

SECTION 07 65 26

Self-Adhering Sheet Flashing – TREX® Protect™

TREX® Protect™ products are manufactured and sold by IBP, LLC under a Trademark License Agreement with Trex Company, Inc. Protect™ is a federally registered trademark of IBP, LLC.

TREX® Protect™ our self-adhesive, non-skid deck flashing tape. This butyl-based tape is designed to shield joists and beams from moisture that can lead to wood rot and decay.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Construction Tapes.

1.2 REFERENCES

A. ASTM International:
1. ASTM D 1970/ D 1970 M - 20: Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
2. ASTM D 3330/D 3330 M - 04: Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
3. ASTM D 3767 – Standard Practice for Rubber – Measurement of Dimensions.
4. ASTM D 5034 - 09: Standard Test Method for Breaking Strength and Elongation of Textile Fabrics.
5. ASTM G154: Standard that is used as the basis for all other accelerated weathering standards that use fluorescent UV light sources to stimulate exposure to natural sunlight.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Experienced in installation of specified material type with working knowledge of specified products and Project specific application requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Material should be left in its original packaging until use.

B. Store indoors, between 40 – 100 degrees F.

C. Acclimate to installation temperature before use.

D. Do not lay butyl tape on side after removed from packaging.

E. Do not stack boxes above:
   1. Butyl tape 4 or fewer boxes tall
   2. Do not stack heaver boxes on lighter boxes

F. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.7 WARRANTY

A. Limited Warranty:
   1. Manufacturer warrants materials to not de-laminate, blister, peel, or dissolve from exposure to ultraviolet rays for a period of **twenty years** from the date of purchase when applied according to published directions.
   2. Specific terms for warranties can be found at: https://trexprotect.com/warranty/

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products supplied by; IBP, LLC, 2190 West Bates Ave., Englewood, CO 80110

B. Substitutions: Not permitted under Division 01

2.2 CONSTRUCTION TAPES

A. Self-Adhering Protective Wrap:

TREX® Protect™ is a self-adhering butyl-based deck flashing tape to protect wood decks and posts from premature rot and corrosion. Installation includes horizontal and vertical surfaces including all joists, rim joist, beams, steps, stair stringers, blocking, ledger board, under joists hangers and other surface. Apply at temperatures above 50° F (10°C). The product is self-sealing around fasteners to prevent water damage. Product comes packaged in individually wrapped and labeled rolls. Product offers a 20-year warranty.

1. Product: **TREX® Protect™** as manufactured by IBP, LLC.

   a. **Rim Tape: 11" wide x 50', 0035.**
   b. **Description: A self-adhering butyl-based deck flashing tape that protects the joists and beams from moisture that can lead to wood decay**
   c. **Sealing: Self-sealing around deck fasteners.**
   d. **Protective Release Liners: Removed when product is installed**
   e. **Technical Properties:**
      1) **Material Color: Black**
      2) **Material Thickness (ASTM D 3767): 20 mils (0.508mm) Nominal.**
      3) **Installation Temperature: Greater than 50 degrees F (10 degrees C).**

Performance	Method	Results	
Tensile strength (psi)	ASTM D 5034, modified	15 lbf/in @ 600% elongation	
Water penetration around nails	ASTM D 1970 section 7.9 modified 1.25" water / 24 hours	PASS	
Water penetration around nails after thermal cycling	ASTM D 1970 section 7.9 modified 1.25" water / 24 hours*	PASS	
Water penetration around screws (#10 x 3 1/2")	ASTM D 1970 section 7.9 modified 1.25" water / 24 hours	PASS	
Water penetration around screws (#10 x 3 1/2") after thermal cycling	ASTM D 1970 section 7.9 modified 1.25" water / 24 hours*	PASS	
Peel Adhesion to various substrates (lbf/in)	ASTM D 3330 Method F	OSB (APA-Smooth Side)	4.2
		Anodized Aluminum	2.9
		Extruded PVC	3.1
		Plywood (APA-B/C)	4.5
Accelerated aging	(ASTM G154, cycle 1 for 336 hours)	No Change PASS	
*Elevated temperature exposure AAMA 711-13 Level 3	(7days @ 176F) Thermal Cycling (10 cycles of 8 hours @120F/16 hour @ -40F)	PASS	
Peel adhesion after water Immersion	(7-day soak per AAMA 800 sect. 2.4.1.4.3)	PASS	

PART 3 EXECUTION

3.1 INSTALLATION

A. Install according to **TREX® Protect™** installation guidelines. https://trexprotect.com/#installation

END OF SECTION

Artifact 1

These pictures show one beam in the cafeteria building. Currently, the engineers suggest adding epoxy and enclosing it in metal. After this repair, the engineers said to inspect every two years; the life span can be five years. See Attachment E document from the engineers.

Artifact 2

These pictures represent the inside of the cafeteria. One photo shows an old two-pipe HVAC system, and the other shows a beam located within the cafeteria. Please note that the beam has already been repaired without outside weather conditions affecting its life.

Artifact 3

These pictures represent the eaves on the 1949 gym building.

Artifact 4

These pictures represent just some of the ceiling rot that has occurred from the roof leaks.

Artifact 5

These pictures represent the damage to the gym floor from the roof/ceiling leaks.

Artifact 6

One picture shows how, after a hard rain, parts of the ceiling fall onto the gym floor. The other picture shows how the beams support the building. This particular picture is of one side of the gym.

Artifact 7

These pictures represent the beams that are located on the gym.