REPORT OF FACILITY CONDITION ASSESSMENT

TC Henderson Elementary

Property Address:
11839 Rosman Hwy
Lake Toxaway, NC 28747

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

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BUILDING VALUE




Building: TC Henderson Elementary
GSF: 28000
Age: 1956 (67 years)
Address: 11839 Rosman Hwy
Lake Toxaway, NC 28747

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 original building was constructed around 1956 with an addition being built in 1989, before the implementation of the Americans with Disabilities Act 1991 (ADA). This section of the building is considered grandfathered. A further extension forming the Gym and two additional classrooms were built in 2000 after the act had been established. Externally, ADA parking spaces have been provided adjacent to the main entrance.	Future renovations will require accessible upgrades throughout the school.																								$0
Site Systems																										
Required																										
1	Asphalt to the parking lot is in poor condition. There is moderate amount of alligator cracking. It is recommended to complete full depth replacement at as needed locations and then mill and overlay the asphalt pavement. Includes the asphalt court.	Mill and overlay asphalt paved sections.	II	DM	4	2	3	5	14	Medium	15	1	5,200	SY	$15.00	$78,000										$78,000
2	The pump house building is original to the construction of the school and sits to the east of the building. It is in poor to fair condition with extensive corrosion on the door and several punctures in the roof. The CMU block exterior has efflorescence and the removable roof system is in poor condition.	Replace door, removable roof system, and paint exterior walls.	II	DM	3	2	3	4	12	High	50	1	1	ALLOW	$12,000	$12,000										$12,000
3	A pressure treated wood pedestrian foot bridge is provided over to the playground area. Areas of deterioration and damaged wood decking. It is recommended to budget for repairs to the pedestrian bridge.	Allowance for repairs to the pedestrian bridge,	III	DM	4	3	3	4	14	Medium	50	1	1	ALLOW	$3,500	$3,500										$3,500
4	A playground area is provided at the south end of the school. Playground equipment typically has a 15 to 20 years. It is recommended to replace the playground equipment and install a pour-in-place type surface. It is believed that the lower playground equipment is no longer utilized. Replacement of the basketball goals should also be included.	Replace playground equipment.	IV	CR	4	3	5	5	17	Low	15	6	1	EA	$300,000						$300,000					$300,000
5	Play areas are typically provided with mulch beds throughout. Several areas were noted that may not be provided with the sufficient coverage as recommended by industry standards. It is recommended that mulch bed depths at play areas are maintained per industry standards as part of on going maintenance activities.	The depth of playground surfacing should be maintained as part of routine maintenance to comply with playground safety requirements.																								$0
6	A physical security assessment was provided by Safe Havens International. As part of their assessment, they identified areas around the site where additional fencing should be provided. It is recommended to budget an allowance for the installation of additional perimeter fencing per the Physical Security Assessment. Cost is a placeholder and could fluctuate.	Install additional site fencing.	III	CI	3	3	4	4	14	Medium	15	2	400	LF	$90.00		$36,000									$36,000

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															Year	1	2	3	4	5	6	7	8	9	10	
Structural Systems																										
Required																										
1	The building structural systems appeared to be in fair condition.	No anticipated capital expenditures.																								$0
Roofing Systems																										
Required																										
1	Low-slope roof sections are covered with a modified bitumen roof covering which has been coated to extend its life. Replacement based on age and condition is needed in the near-term.	Remove modified bitumen roof and replace with TPO roof covering.	III	CR	4	3	4	4	15	Medium	25	3	848	SF	$25.00			$21,200								$21,200
2	Asphalt shingle roof coverings to sloped roofs were in fair to good condition. Its believed that the shingles were replaced in circa 2015 based on the observed condition. Based on a typical service life of 20 years, the asphalt shingled roofs should remain serviceable with the completion on routine maintenance. The metal roof should also be included in a routine maintenance plan.	No anticipated capital expenditures.																								$0
3	A mechanically fastened metal roof is provided over the main portion of the original school. The roof appeared to be in fair condition with areas of corrosion noted. The date of installation is unknown. It is recommended to complete an inspection and as needed repairs in the near-term as part of routine maintenance so the service life can be extended. Based on the age and condition of the roof, it is recommended to budget for the replacement of the roof during the study period.	Replace metal roof along with the gutters and downspouts.	III	CR	4	3	4	4	15	Medium	30	5	16,500	SF	$22.00					$363,000						$363,000
Exterior Elements																										
Required																										
1	Exterior walls consist of brick veneer with steel lintels supporting the masonry above openings. At the 2000s extension, brickwork is topped with profiled metal sheeting finishing at roof cap. It is also recommended to pressure wash all exterior elements to remove exterior staining before painting.	Repaint all exterior painted elements including profiled metal sheeting, gutters, downpipes, lintels, and canopies.	III	SM	4	4	3	4	15	Medium	10	1	8,610	SF	$6.00	$51,660										$51,660
2	Exterior windows and doors are powder coated aluminum storefront frames fitted with double pane insulated glazing units with sealant between the frame and the masonry walls. Sealants were noted to be in poor condition and should be replaced in conjunction with the cleaning and repainting of the exterior elements.	Replace caulk seals to perimeter of windows and doors.	III	DM	4	2	4	4	14	Medium	10	1	3,000	LF	$10.00	$30,000										$30,000

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															Year	1	2	3	4	5	6	7	8	9	10	
Interiors																										
Required																										
1	Interiors appeared to be typical finishes and fair condition for an educational establishment. Allowance for interior finishes renewal. Timing and scope will vary based on future program needs. 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.	V	CR	5	3	5	5	18	Low	15	5	28,000	SF	$75.00					$2,100,000						$2,100,000
2	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	28,000	SF	$3.00		$84,000									$84,000
Mechanical																										
Required																										
1	Heating hot water is provided by a Peerless 1,077-MBH oil fired boiler installed in 2000. This system appeared to be in fair condition, but replacement based on age is expected.	Replace heating hot water boiler.	III	CR	4	4	4	4	16	Medium	25	5	1,077	MBH	$110					$118,470						$118,470
2	Air conditioning is provided by a combination of split system units, package units, and air handling units with chilled and hot water coils. Two of the split systems were manufactured by McQuay in 2000 with a rated capacity of 10-tons. An additional 2-ton split system was also noted on site. Based on the age of the split systems, it is recommended to budget for the replacement of the condensing units and interior fan coil units.	Replace 10-ton McQuay and 2-ton split systems.	III	CR	3	3	4	4	14	Medium	20	1	22	TON	$3,750	$82,500										$82,500
3	Air conditioning is provided by a combination of split system units, package units, and air handling units with chilled and hot water coils. One of the split systems was manufactured by International Comfort System in 1999 with a rated capacity of 5-tons. Based on the age of the split system, it is recommended to budget for the replacement of the condensing unit and interior fan coil unit.	Replace 5-ton ICS split system.	III	CR	3	3	4	4	14	Medium	20	1	5	TON	$3,750	$18,750										$18,750
4	Air conditioning is provided by a combination of split system units, package units, and air handling units with chilled and hot water coils. The package unit was manufactured by Carrier in 2013 with a rated capacity of 7.5-tons. Based on the age of the split system, it is recommended to budget for the replacement of the package unit in the late-term.	Replace 7.5-ton Carrier package unit.	IV	CR	4	4	4	5	17	Low	20	9	7.5	TON	$35,750									$268,125		$268,125

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															Year	1	2	3	4	5	6	7	8	9	10	
5	Air conditioning is provided by a combination of split system units, package units, and air handling units with chilled and hot water coils. The air handling units appear to have been manufactured in the early 2000's. The units appeared to be in fair condition with some corrosion noted to the housings. Based on the age and condition, it is recommended to budget for replacing the air handling units.	Replace air handling units.	III	CR	4	3	4	4	15	Medium	25	1	5	EA	$45,000	$225,000										$225,000
6	Air conditioning for select classrooms is provided by cabinet type fan coil units. The fan coil units appeared to be in fair condition and likely installed in circa 2000. With a typical service life of 20 to 25 years, depending on maintenance practices, it is recommended to replace the fan coil units in conjunction with the air handling units.	Replace cabinet fan coil units.	III	CR	4	3	4	4	15	Medium	20	1	9	EA	$12,000	$108,000										$108,000
7	The HVAC system is controlled by a Johnson Controls system. The system was likely installed at the time of the 2000's addition. The system utilizes obsolete components and should be upgrade in conjunction with the replacement of the air handling units and cabinet fan coil units.	Upgrade HVAC control system.	III	CR	4	3	4	4	15	Medium	15	1	28,000	SF	$3.25	$91,000										$91,000
Electrical																										
Required																										
1	The building electrical systems appeared to be in fair condition with equipment being updated through the life of the building.	Subject to routine inspections and testing, no capital expenditures are anticipated.																								$0
2	An access control and security system is provided. These systems typically have a service life of 10-years before becoming obsolete. It is recommended to evaluate the existing system for adequacy and then upgrade as necessary.	Allowance to improve school security systems and school safety.	II	CI	2	3	3	4	12	High	15	2	28,000	SF	$6.00		$168,000									$168,000

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															Year	1	2	3	4	5	6	7	8	9	10	
Plumbing																										
Required																										
1	Domestic water is provided via a well system. Pressure tanks and a water treatment system are provided in the boiler room and a water treatment system is located in the pump house. Th system appeared to be in fair to good condition with no reported issues. It is recommended to budget an allowance for as needed pump, pressure tanks, and water treatment system replacements in the mid-term.	Allowance for as needed well system replacements.	III	CR	4	4	4	5	17	Low	15	5	1	ALLOW	$15,000					$15,000						$15,000
2	Domestic hot water is provided by a electric storage tank type water heaters. Two smaller capacity water heaters were manufactured by AO Smith while the larger capacity, approximate 125-gallons, was manufactured by PVI. We anticipate that the smaller capacity water heaters will be replaced as routine maintenance, but given the cost of the PVI water heater, it is recommended to budget for its replacement.	Replace PVI water heater.	III	CR	3	4	4	5	16	Medium	15	3	1	EA	$40,000			$40,000								$40,000
3	The school has one 8,000-gallon underground storage tank which stores No. 2 fuel oil. The tank was reportedly installed in 1956 and reported to be a single wall type tank. 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 tank and install new above ground code/regulation compliant storage tank.	III	CR	3	3	4	4	14	Medium	30	3	1	ALLOW	$110,000			$110,000								$110,000
Fire & Life Safety																										
Required																										
1	A fire detection and alarm system is provided within the building. The system is NFS-320 manufactured by Notifier. The panel is reportedly still supported by the manufacturer. However, given the potential for component obsolescence, it is recommended to upgrade the fire alarm panel during the study period.	Replace/upgrade the fire alarm control panel, annunciator panel, and as needed devices.	III	CR	3	4	4	4	15	Medium	15	4	1	EA	$25,000				$25,000							$25,000
Conveyance Systems																										
Required																										
1	The building has no conveyance systems.	N/A																								$0
															Required Cost (2023 US-Dollars)	$700,410	$288,000	$171,200	$25,000	$2,596,470	$300,000	$0	$0	$268,125	$0	$4,349,205
															Required Cost (Inflated @ 8% for 1st 3 years then 3% Per Yr.)	$756,443	$335,923	$215,663	$28,138	$3,010,020	$358,216	$0	$0	$349,842	$0	$5,054,245
															Total Cost (2023 $/ SF/ Yr.)	$25.01	$10.29	$6.11	$0.89	$92.73	$10.71	$0.00	$0.00	$9.58	$0.00	$155.33

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)




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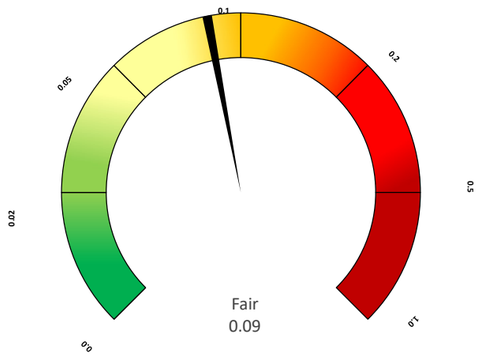
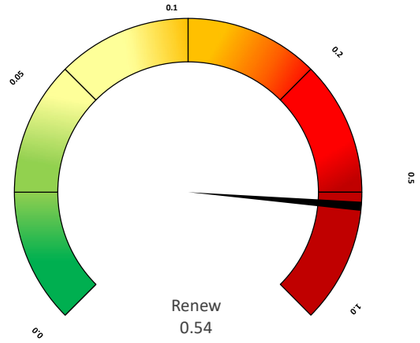
Financial Summary

Facility Condition Index



10 Year Facility Condition Index

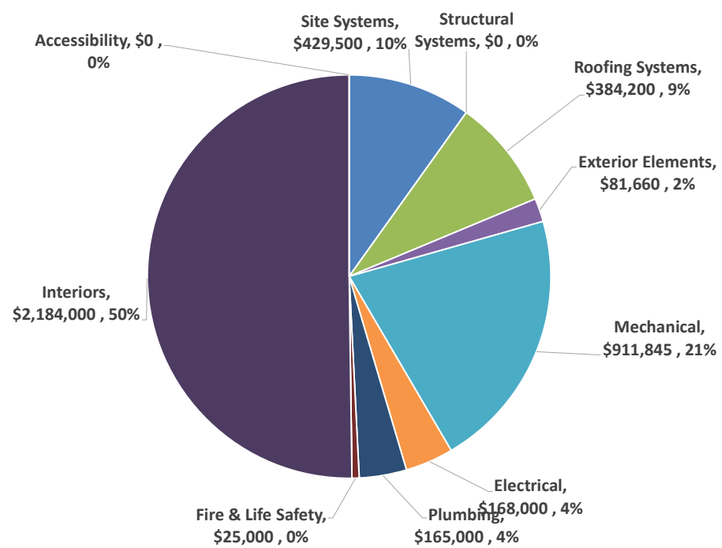


FCI Range	Condition Description
0.00 – 0.02	Excellent condition, typically new construction
0.02 – 0.05	Good Condition, renovations occur on schedule
0.05 – 0.1	Fair Condition, in need of normal renovation
0.1 – 0.2	Below average condition, major renovationrequired
0.2 – 0.5	Poor condition, total renovation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

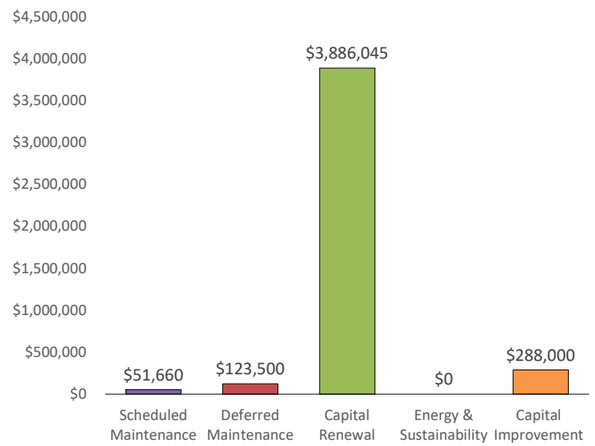
Risk	Definition
Critical	Critical (4-8)
High	High (9-13)
Medium	Medium (14-16)
Low	Low (17-20)

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

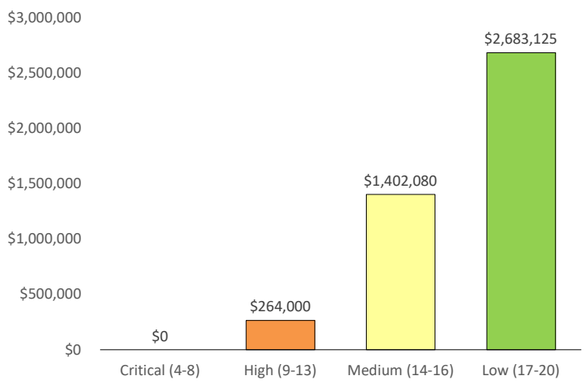
Summary by System



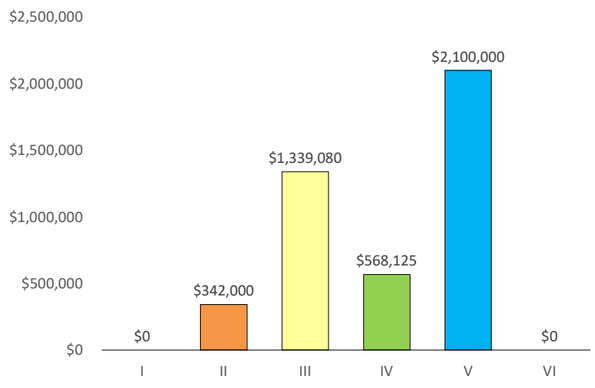
Expenditures by Deficiency Category



Expenditures by Risk



Expenditures by Priority Category



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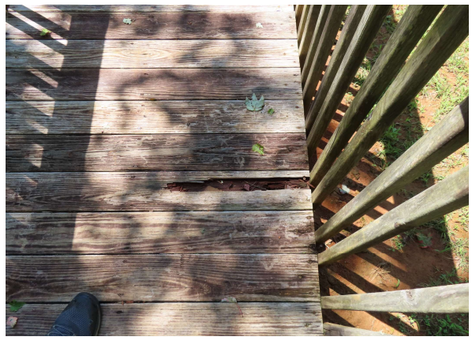
Representative Photos



Wooden bridge walkway towards lower play area with some deterioration.

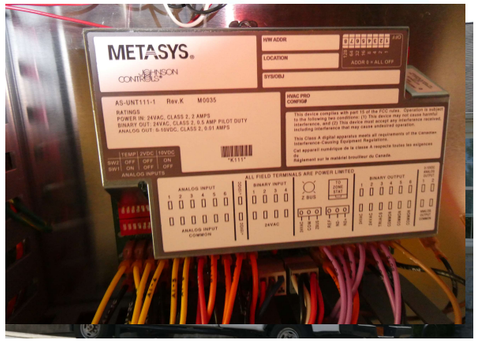
Damaged asphalt in front of school.

Overview of pump house.

Overview of corrugated metal pitch roof and asphalt shingle roof

Exterior brick façade with aluminum framed doors and windows along with surface staining.

Exterior brick façade with aluminum framed doors and metal canopy.



Obsolete Johnson Controls HVAC controller.

Typical condition of exterior sealnats.

Typical interior with vinyl tile flooring, CMU block walls and acoustical ceiling.

Peerless boiler unit.

Carrier packaged Unit.

NFS-320 fire alarm control panel (FACP).