Cumberland

LEA Summary

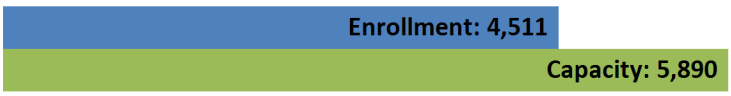
Cumberland totals 776,496 square feet and consists of the school type(s) detailed below. School(s) were visited three times during the Statewide Facilities Assessment by teams of specialists from March-May 2016. This report provides LEA summary findings for the statewide assessment program.

School Type by Count



School Type	SqFt
Elementary School	311,972
Middle School	149,679
High School	314,845
Total:	**776,496**

76.6 % Utilization



Demographics

Enrollment is projected to decrease by 7.3% over the next 10 years in Cumberland. The total LEA enrollment at 8 school(s) is 4,511 students with a total capacity of 5,890 as reported by the LEA. Utilization is calculated by dividing enrollment by capacity, resulting in 76.6% utilization at Cumberland.

Educational Program Space Analysis

In Cumberland there are 350 instructional spaces; of these spaces 25.7% meet or exceed the space size standards. Of the total current deficiencies identified, $3,875,261 are related to the educational program space assessment. Addressing these identified deficiencies will improve the learning environment and bring the school(s) in the district closer to 21st century learning facilities.

Five Year Need Summary

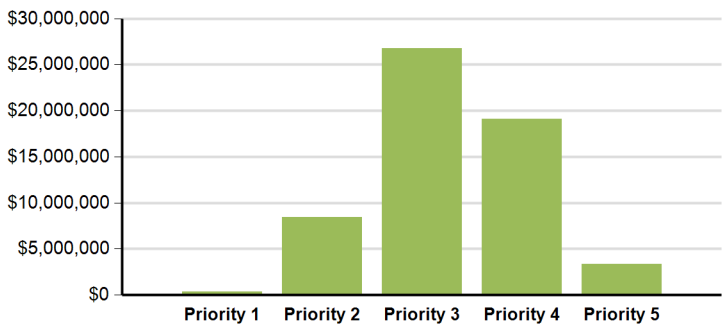
The current deficiencies total $57,995,578, with 46.1% categorized as Priority 3 and another 33.0% as Priority 4. The building systems with the highest current deficiency costs are Interior and Mechanical.

The projected life cycle need in Years 1 through 5 is $29,931,396. It is anticipated that the majority of the need will occur in Year 5. School(s) with the greatest need are represented in the adjacent table and make up 62.3% of the combined 5-Year need at Cumberland.

Five Year Facility Condition Index (FCI)

For master planning purposes, the total current deficiencies, less new construction, and the first 5 years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-Year FCI was calculated by dividing the 5-Year need by the total replacement cost. The 5-Year need is $87,926,974 with a district replacement value of $271,928,470. The resulting 5-Year FCI is 32.3%.

Total Current Deficiencies



School(s) with Greatest Need	Combined 5-Year Need
Cumberland High School	$26,329,088
North Cumberland Middle School	$14,408,319
Community School	$14,012,028

5-Year FCI Ranges

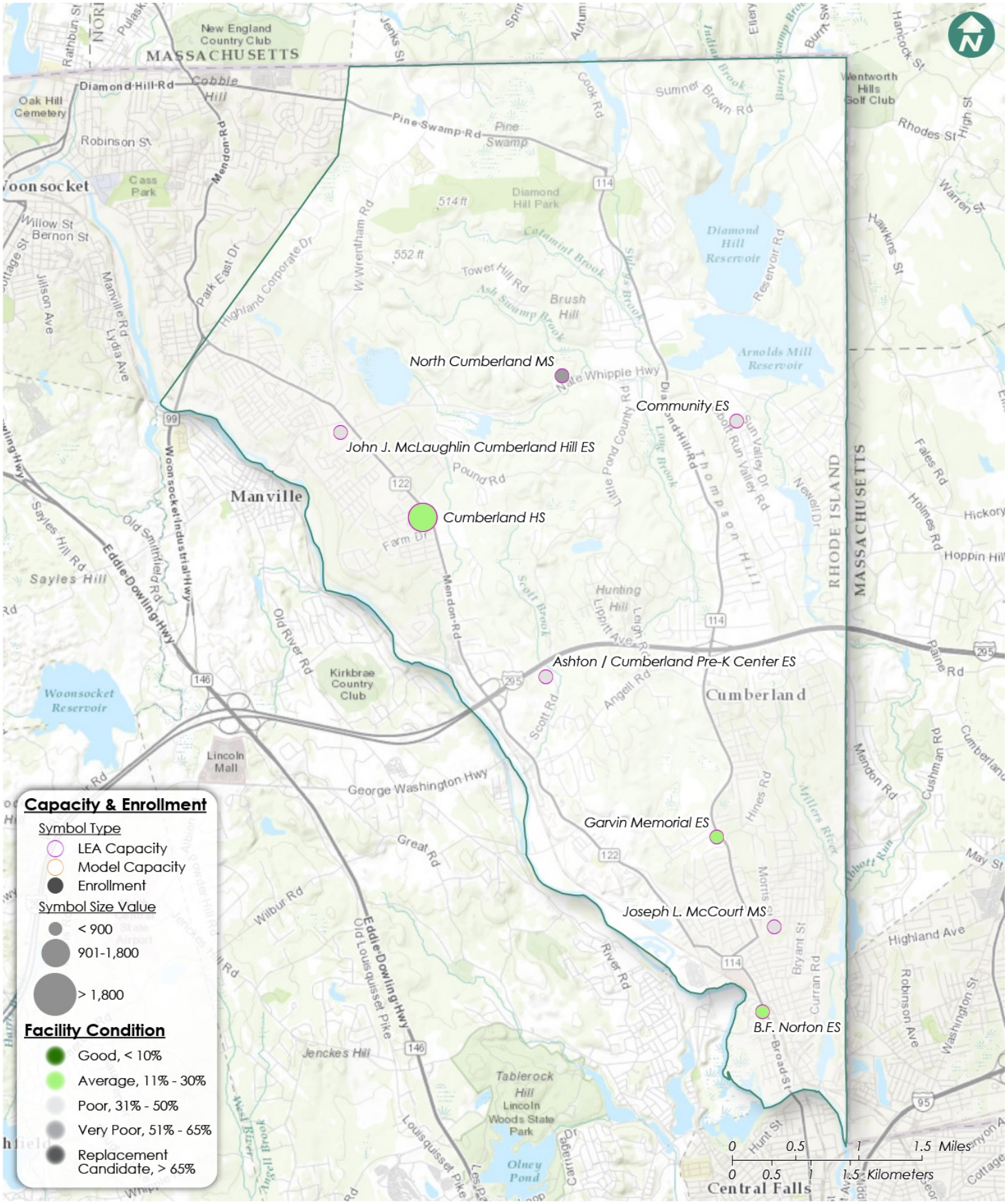


LEA Summary Data

Gross SqFt	Avg Year Built	Current Deficiencies (Less New Construction)	Life Cycle Year 1-5 Total	Total 5-Year Need (Year 1-5 + Current Defs)	5-Year FCI
776,496	1958	$57,995,578	$29,931,396	$87,926,974	32.3%

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Cumberland



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Facility Condition Assessment

Cumberland - Ashton School / Cumberland Pre-K Center | *June 2017*

130 Scott Road, Cumberland, RI 02864

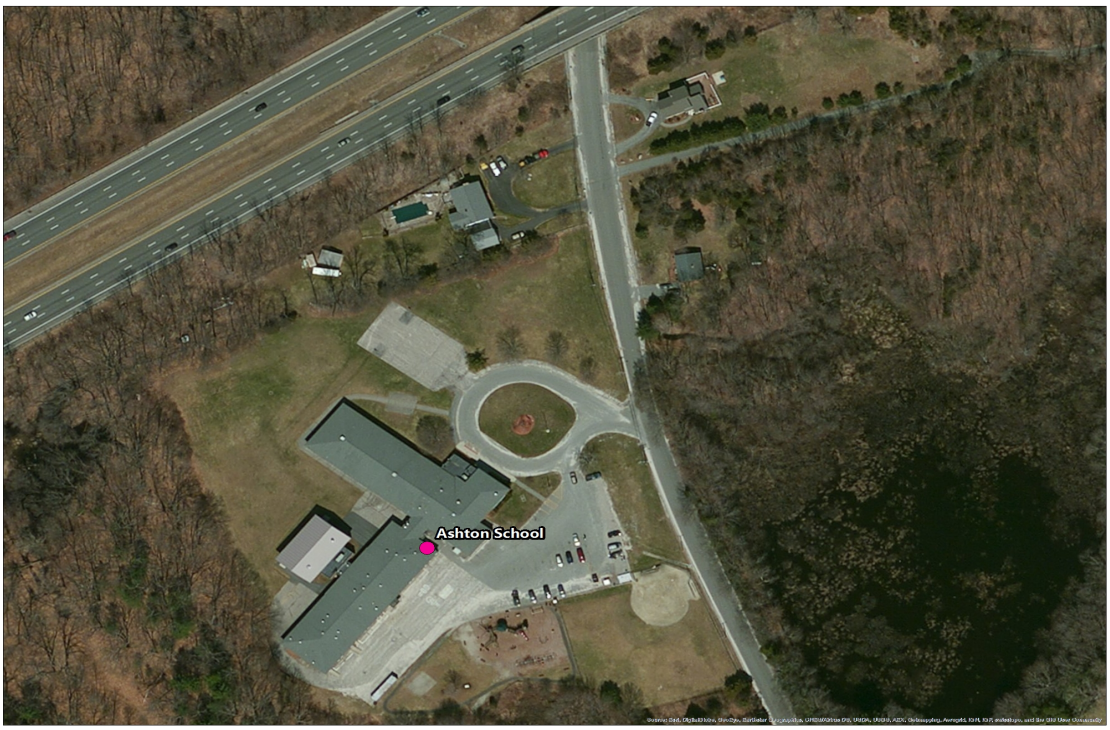


Introduction

Ashton School / Cumberland Pre-K Center, located at 130 Scott Road in Cumberland, Rhode Island, was built in 1958. It comprises 37,957 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Ashton School / Cumberland Pre-K Center serves grades KG - 5, has 25 instructional spaces, and has an enrollment of 338. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Ashton School / Cumberland Pre-K Center is 368 with a resulting utilization of 92%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Ashton School / Cumberland Pre-K Center the 5-year need is $5,342,162. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.



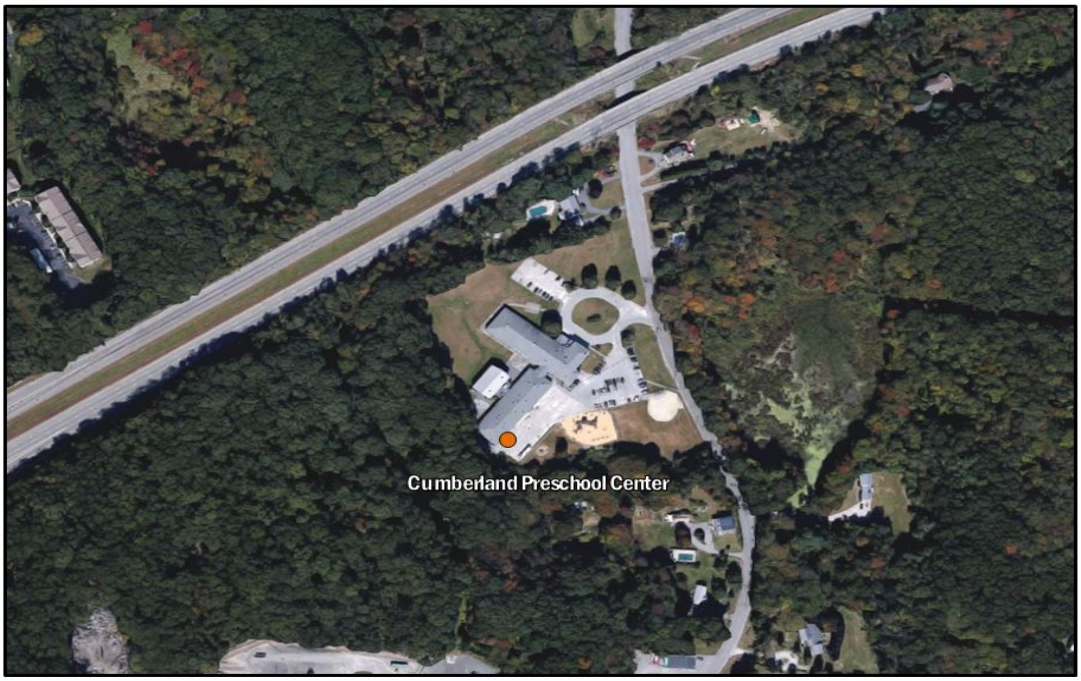


Figure 1: Aerial view of Ashton School / Cumberland Pre-K Center

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the Ashton School / Cumberland Pre-K Center campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Composition Shingle Roofing
	Metal Steep Slope Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Carpet

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	1,200 MBH Copper Tube Boiler

01 - Main Building:	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	20 MBH Gas Unit Heater
	Electronic Heating System Controls
	1 Ton Ductless Split System
	Window Units
	2-Pipe Hot Water Hydronic Distribution System
	5 HP Pump
	10,000 CFM Interior AHU
	10 Ton DX Gas Roof Top Unit
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	3/4" Backflow Preventers
	Gas Piping System
	40 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$228,142	$61,191	$156,895	$446,228	15.85 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	$47,535	-	-	-	-	$47,535	1.69 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$456,043	$581,229	-	$1,037,271	36.85 %
Mechanical	-	$285,209	$70,751	$256,388	-	$612,348	21.75 %
Electrical	-	-	-	$1,331	$47,641	$48,972	1.74 %
Plumbing	-	-	-	$9,543	$19,920	$29,463	1.05 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$593,033	-	-	$593,033	21.07 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	-	-	$0	0.00 %
Total	$47,535	$285,209	$1,347,968	$909,682	$224,456	$2,814,850	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Interior	-	$1,037,271
Mechanical	-	$612,348
Technology	-	$593,033

The chart below represents the building systems and associated deficiency costs.

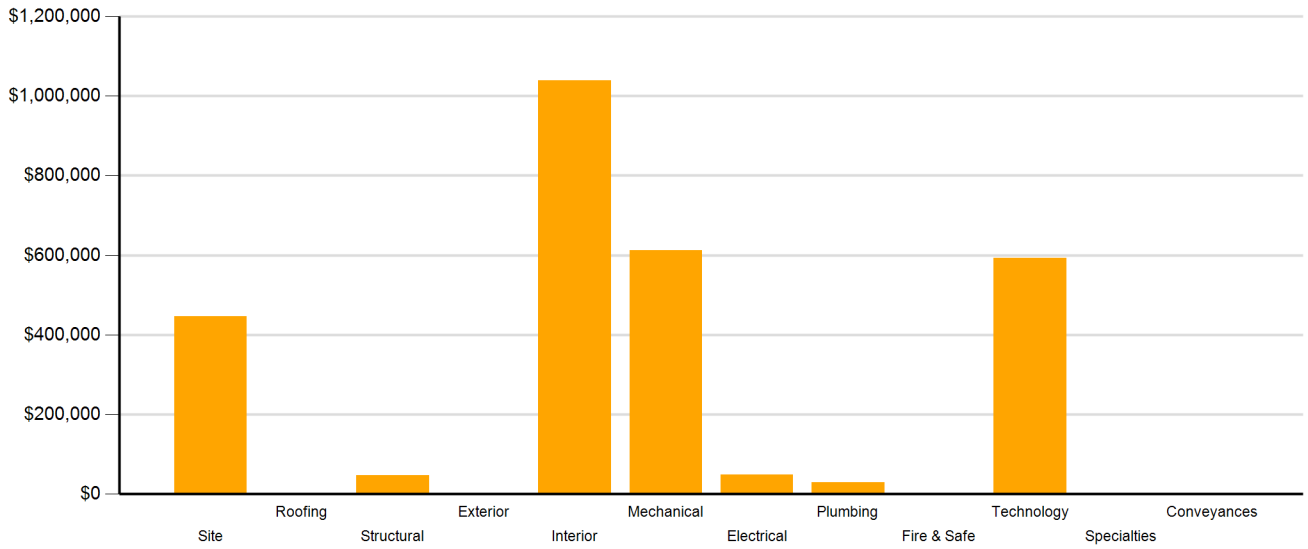


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$193,467	-	-	$193,467
Barrier to Accessibility	-	-	$144,316	-	-	$144,316
Capital Renewal	$47,535	$285,209	$189,011	$298,794	$151,087	$971,636
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	-	$111,129	$73,369	$184,497
Functional Deficiency	-	-	-	$1,331	-	$1,331
Hazardous Material	-	-	-	$498,429	-	$498,429
Technology	-	-	$593,033	-	-	$593,033
Traffic	-	-	$228,142	-	-	$228,142
Total	$47,535	$285,209	$1,347,968	$909,682	$224,456	$2,814,850

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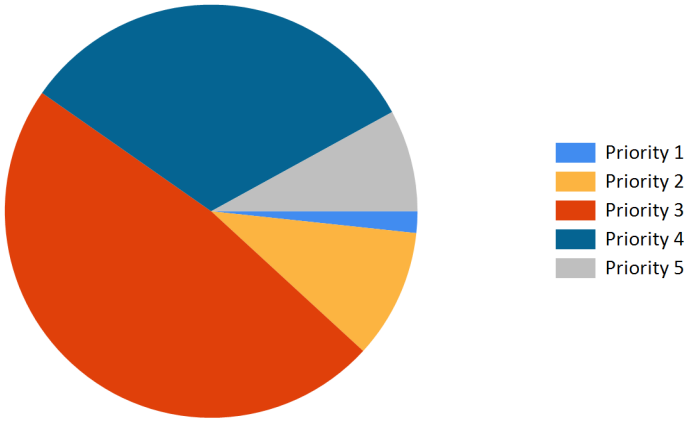


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$446,228	$0	$0	$0	$201,820	$43,645	$245,465	$691,693
Roofing	$0	$0	$0	$0	$0	$962,780	$962,780	$962,780
Structural	$47,535	$0	$0	$0	$0	$0	$0	$47,535
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$1,037,271	$0	$0	$0	$196,953	$0	$196,953	$1,234,224
Mechanical	$612,348	$0	$0	$0	$798,994	$159,325	$958,319	$1,570,667
Electrical	$48,972	$0	$0	$0	$32,381	$0	$32,381	$81,353
Plumbing	$29,463	$0	$0	$0	$14,755	$3,160	$17,915	$47,378
Fire and Life Safety	$0	$0	$0	$111,252	$0	$0	$111,252	$111,252
Technology	$593,033	$0	$0	$0	$0	$0	$0	$593,033
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$2,814,850**	**$0**	**$0**	**$111,252**	**$1,244,903**	**$1,168,910**	**$2,525,065**	**$5,339,915**

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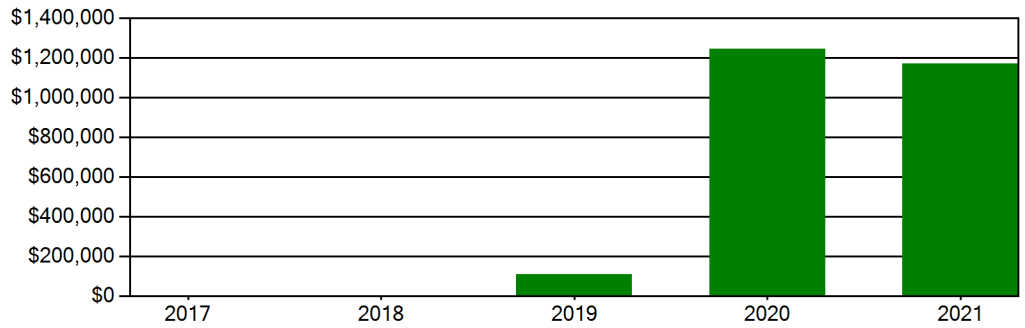
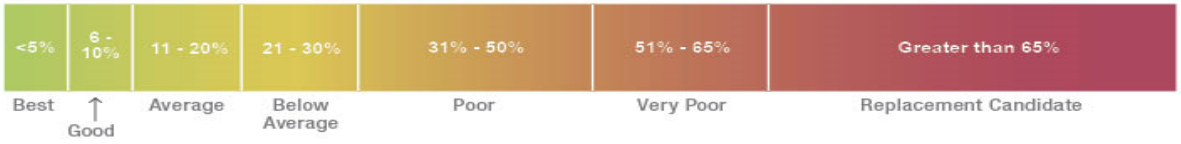


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $13,284,950. For planning purposes, the total 5-year need at the Ashton School / Cumberland Pre-K Center is $5,342,162 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Ashton School / Cumberland Pre-K Center facility has a 5-year FCI of 40.20%.

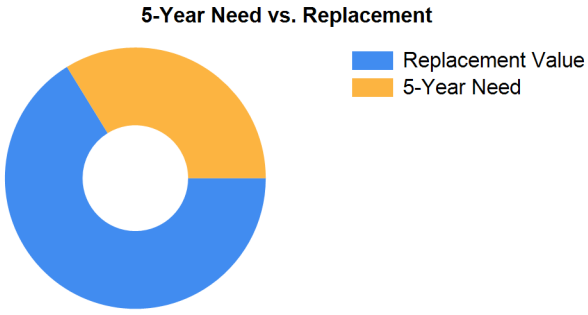


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 211 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the Ashton School / Cumberland Pre-K Center cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $263,466.

Summary of Findings

The Ashton School / Cumberland Pre-K Center comprises 37,957 square feet and was constructed in 1958. Current deficiencies at this school total $2,817,097. Five year capital renewal costs total $2,525,065. The total identified need for the Ashton School / Cumberland Pre-K Center (current deficiencies and 5-year capital renewal costs) is $5,342,162. The 5-year FCI is 40.20%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Ashton School / Cumberland Pre-K Center Totals	37,957	1958	$2,817,097	$2,525,065	$5,342,162	40.20%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

LEA Feedback

As part of the assessment process, LEAs were given several opportunities to provide feedback on the data. Jacobs performed a thorough review of the comments provided relating to the Facilities Condition Assessment. Based on information provided, some adjustments were made to improve or refine the dataset. In other situations, enough information was not provided, item was out of scope, or evidence provided by assessment team did not align with the feedback and no adjustment was made. Finally, deficiency priorities, costs, and educational space/technology standards are consistent throughout the state.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Pavement Markings: Words/Symbols Are Required	Traffic	4	Ea.	3	$1,511	10960
Note: Install arrow pavement markings in back parking lot to direct parent drop off/pick up traffic.						
Traffic Signage Is Required	Traffic	4	Ea.	3	$151,087	9349
Note: Add school zone warning signs on all approaches						
Traffic Signage Is Required	Traffic	2	Ea.	3	$75,544	9350
Note: Add flashing beacons to school zone speed limit signs						
Asphalt Paving Requires Replacement	Capital Renewal	10	CAR	4	$32,862	9241
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28456
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28726
Note: Exterior Basketball Goals are Required						
Paved Play Requires Recoating And Resurfacing	Capital Renewal	5,000	SF	5	$151,087	9242
Note: Paved play area is damaged and needs to be resurfaced						
	Sub Total for System	**7**	**items**		**$446,228**	
	Sub Total for School and Site Level	**7**	**items**		**$446,228**	

Building: 01 - Main Building

Structural

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Structural Condition Exists	Capital Renewal	1	Job	1	$47,535	53392
Note: Repair of masonry shall comply with SRC-1 Section 302. Exterior CMU walls of the 1966 Addition have cracks that affect the structural integrity of the building.						
	Sub Total for System	**1**	**items**		**$47,535**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	22	Ea.	3	$193,467	19677
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	13,094	SF	3	$118,260	9249
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	46	Door	3	$144,316	9245
Note: Non ADA hardware						
Acoustic ceiling tile - large area (>10%) of broken or falling broken tiles	Hazardous Material	190	SF	4	$2,224	Rollup
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	17,081	SF	4	$487,166	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	18	Ea.	4	$5,134	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - linear feet)	Hazardous Material	72	LF	4	$1,643	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	238	SF	4	$2,263	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	2,173	SF	4	$82,800	Rollup
	Sub Total for System	**9**	**items**		**$1,037,271**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Outdoor Air Handler HVAC Component Required Replacement	Capital Renewal	1	Ea.	2	$285,209	9246
Note: Air handler in constant repair cycle.						
Testing And Balancing Required	Capital Renewal	37,957	SF	3	$70,751	9248
Note: Perform air balance assuring that ventilation requirements are met.						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	37,957	SF	4	$256,388	9247
Note: Remote temperature control panel does not read actual room temperatures properly						
	Sub Total for System	**3**	**items**		**$612,348**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Circuit Capacity Is Inadequate	Functional Deficiency	2	EACH	4	$1,331	9244
Note: Classrooms and offices do not have enough power for all of their equipment. School circuit breakers turn off whenever circuits are overloaded.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	96	Ea.	5	$47,641	Rollup
	Sub Total for System	**2**	**items**		**$48,972**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	$9,543	9250
Note: Wash fountain requires constant maintenance and parts are no longer available. Replace existing wash fountain with an equivalent number of lavatories						
Room lacks a drinking fountain.	Educational Adequacy	13	Ea.	5	$14,337	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	5	Ea.	5	$5,583	Rollup
	Sub Total for System	**3**	**items**		**$29,463**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,507	10734
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	13	Ea.	3	$259,540	10729
Technology: Instructional spaces do not have local sound reinforcement.	Technology	13	Ea.	3	$61,795	10730
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,324	10723
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$45,253	10722
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10724
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	10721
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$50,197	10719
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	$38,028	10731
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$23,767	10732
Technology: Network system inadequate and/or near end of useful life	Technology	37,957	SF	3	$10,826	10733
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	2	Room	3	$38,028	10728
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,606	10720
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	10725
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	13	Ea.	3	$19,775	10727
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,225	10726
	Sub Total for System	**16**	**items**		**$593,033**	
	Sub Total for Building 01 - Main Building	**34**	**items**		**$2,368,622**	
	Total for Campus	**41**	**items**		**$2,814,850**	

Ashton School / Cumberland Pre-K Center - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Parking Lot Pavement	Asphalt	61	CAR	$201,820	4
Pedestrian Pavement	Sidewalks - Concrete	1,000	SF	$20,440	5
Parking Lot Lighting	Pole Lighting	3	Ea.	$23,205	5
	Sub Total for System	**3**	**items**	**$245,464**	
	Sub Total for Building -	**3**	**items**	**$245,464**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Steep Slope Roofing	Composition Shingle	33,757	SF	$962,780	5
	Sub Total for System	**1**	**items**	**$962,780**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	28,557	SF	$188,686	4
Carpeting	Carpet	380	SF	$8,267	4
	Sub Total for System	**2**	**items**	**$196,953**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	20	Ea.	$338,296	4
Note:	6' cabinet heaters				
Facility Hydronic Distribution	Pump - 5HP	2	Ea.	$19,060	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	2	Ea.	$33,830	4
Note:	5' cabinet heaters				
Decentralized Heating Equipment	Unit Heater Gas (20 MBH)	3	Ea.	$8,750	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	19	Ea.	$321,381	4
Note:	4' cabinet heaters				
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	2	Ea.	$33,830	4
Note:	2' cabinet heaters				
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	2	Ea.	$33,830	4
Note:	3' cabinet heaters				
Decentralized Cooling	Window Units	3	Ea.	$10,017	4
Exhaust Air	Roof Exhaust Fan - Small	13	Ea.	$34,284	5
Exhaust Air	Roof Exhaust Fan - Large	9	Ea.	$125,041	5
	Sub Total for System	**10**	**items**	**$958,318**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)	4	Ea.	$5,514	4
Lighting Fixtures	Building Mounted Fixtures (Ea.)	18	Ea.	$26,867	4
	Sub Total for System	**2**	**items**	**$32,381**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain	2	Ea.	$14,755	4
Domestic Water Equipment	Water Heater - Gas - 40 gallon	1	Ea.	$3,160	5
Note:	Input 199 MBH with a 500 gallon tank				
	Sub Total for System	**2**	**items**	**$17,915**	

Fire and Life Safety

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm	37,957	SF	$111,252	3
	Sub Total for System	**1**	**items**	**$111,252**	
	Sub Total for Building 01 - Main Building	**18**	**items**	**$2,279,599**	
	Total for: Ashton School / Cumberland Pre-K Center	**21**	**items**	**$2,525,063**	

Supporting Photos



Damaged Paved Play Area



Damaged Pavement



Site Aerial



Side Of School


Side Of School


Side Of School


Front Of School


Front Of School



School Sign


Playground


Side Of School


Side Of School


Rear Of School


Rear Of School


Front Of School


Old Corridor VCT


Old VCT


Electrical Distribution Board


Gymnasium Air Distribution


Unit Heater Open Panel


Humidifier


Damaged ACT


Wash Fountain


Exhaust Fans


Air Handler


Gym


Typical Restroom


Electrical Panels


Typical Restroom


Cabinet Heater


Cafeteria


Unit Heater


Backflow Preventer


School Hallway


Gas Piping


Cabinet Unit Heater


Hallway


Library


Typical Classroom



Site Aerial

Facility Condition Assessment

Cumberland - B.F. Norton Elementary School | *June 2017*

364 Broad Street, Cumberland, RI 02864



Introduction

B.F. Norton Elementary School, located at 364 Broad Street in Cumberland, Rhode Island, was built in 1994. It comprises 55,752 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

B.F. Norton Elementary School serves grades KG - 5, has 33 instructional spaces, and has an enrollment of 432. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for B.F. Norton Elementary School is 552 with a resulting utilization of 78%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For B.F. Norton Elementary School the 5-year need is $4,560,264. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.



Figure 1: Aerial view of B.F. Norton Elementary School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the B.F. Norton Elementary School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Built-Up Roofing With Ballast
	Aluminum Canopy Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Wood Ceilings
	Ceramic Tile Wall
	CMU Wall
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Quarry Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Rubber Tile Flooring
	Carpet

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	2,400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	Window Units
	Make-up Air Unit
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	Ductwork
	Kitchen Exhaust Hoods
	Wall Exhaust Fan
	Small Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	4" Backflow Preventers
	Gas Piping System
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Sump Pump
	Air Compressor (2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	150 kW Emergency Generator
	208/120v Switch
	800 Amp Switchgear
	225 KVA Transformer
	30 KVA Transformer
	Panelboard - 120/208 100A

01 - Main Building:	Panelboard - 120/208 225A
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$49,197	$302,334	$69,827	$421,359	15.97 %
Roofing	-	-	-	$113,315	-	$113,315	4.29 %
Structural	$13,031	-	-	-	-	$13,031	0.49 %
Exterior	-	$6,374	-	$5,194	-	$11,568	0.44 %
Interior	-	-	$524,788	$111,447	-	$636,236	24.11 %
Mechanical	-	$16,604	-	$392,983	-	$409,588	15.52 %
Electrical	-	-	-	-	$7,887	$7,887	0.30 %
Plumbing	-	-	-	-	$24,574	$24,574	0.93 %
Fire and Life Safety	$15,857	-	-	-	-	$15,857	0.60 %
Technology	-	-	$980,863	-	-	$980,863	37.17 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,533	-	-	$4,533	0.17 %
Total	$28,888	$22,978	$1,559,381	$925,274	$102,288	$2,638,810	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Technology	-	$980,863
Interior	-	$636,236
Site	-	$421,359

The chart below represents the building systems and associated deficiency costs.

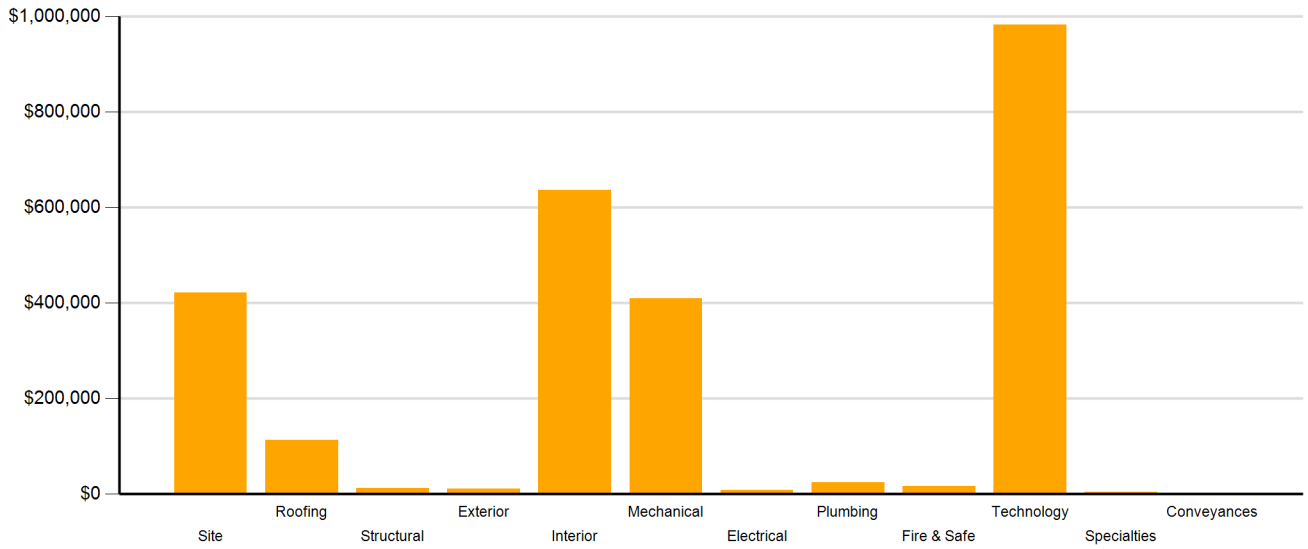


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

- **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

- **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

- **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

- **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

- **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

- **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

- **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

- **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$454,206	$91,219	-	$545,425
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	$28,888	$22,978	$115,246	$827,398	-	$994,511
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$123,514	-	$102,288	$225,802
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$6,657	-	$6,657
Technology	-	-	$861,882	-	-	$861,882
Traffic	-	-	$4,533	-	-	$4,533
Total	$28,888	$22,978	$1,559,381	$925,274	$102,288	$2,638,810

**Displayed totals may not sum exactly due to mathematical rounding*

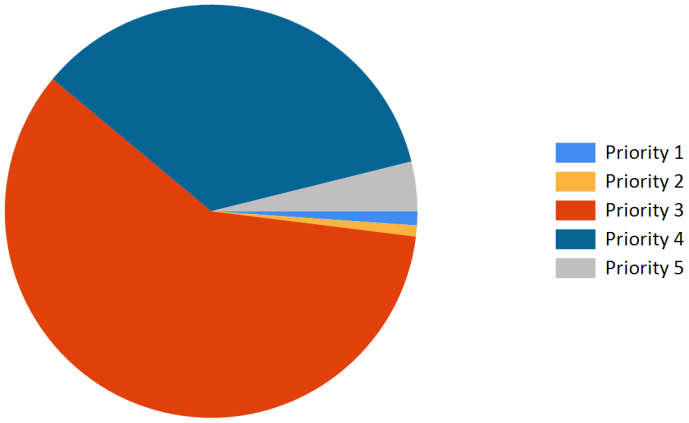


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$421,359	$0	$0	$0	$0	$0	$0	$421,359
Roofing	$113,315	$0	$0	$0	$0	$0	$0	$113,315
Structural	$13,031	$0	$0	$0	$0	$0	$0	$13,031
Exterior	$11,568	$0	$0	$0	$0	$0	$0	$11,568
Interior	$636,236	$0	$0	$0	$257,858	$0	$257,858	$894,094
Mechanical	$409,588	$0	$0	$1,212,024	$0	$0	$1,212,024	$1,621,612
Electrical	$7,887	$0	$0	$179,372	$0	$0	$179,372	$187,259
Plumbing	$24,574	$0	$0	$263,066	$6,383	$0	$269,449	$294,023
Fire and Life Safety	$15,857	$0	$0	$0	$0	$0	$0	$15,857
Technology	$980,863	$0	$0	$0	$0	$0	$0	$980,863
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$4,533	$0	$0	$0	$0	$0	$0	$4,533
Total	**$2,638,810**	**$0**	**$0**	**$1,654,462**	**$264,241**	**$0**	**$1,918,703**	**$4,557,513**

**Displayed totals may not sum exactly due to mathematical rounding*

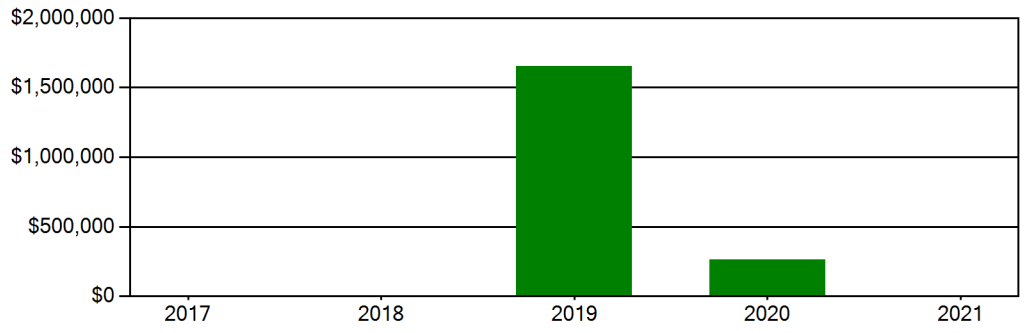
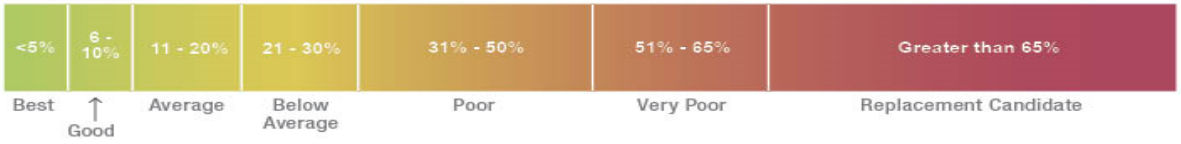


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $19,513,200. For planning purposes, the total 5-year need at the B.F. Norton Elementary School is $4,560,264 (Life Cycle Years 1-5 plus the FCI deficiency cost). The B.F. Norton Elementary School facility has a 5-year FCI of 23.36%.

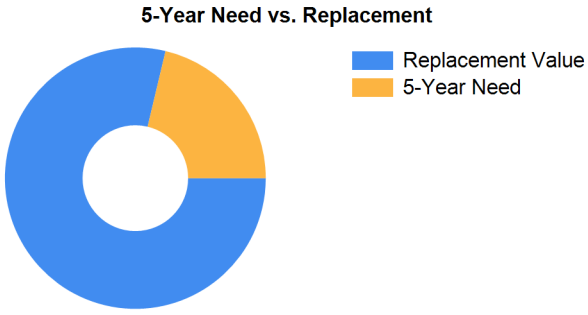


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 310 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the B.F. Norton Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $410,886.

Summary of Findings

The B.F. Norton Elementary School comprises 55,752 square feet and was constructed in 1994. Current deficiencies at this school total $2,641,561. Five year capital renewal costs total $1,918,703. The total identified need for the B.F. Norton Elementary School (current deficiencies and 5-year capital renewal costs) is $4,560,264. The 5-year FCI is 23.36%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
B.F. Norton Elementary School Totals	55,752	1994	$2,641,561	$1,918,703	$4,560,264	23.36%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

LEA Feedback

As part of the assessment process, LEAs were given several opportunities to provide feedback on the data. Jacobs performed a thorough review of the comments provided relating to the Facilities Condition Assessment. Based on information provided, some adjustments were made to improve or refine the dataset. In other situations, enough information was not provided, item was out of scope, or evidence provided by assessment team did not align with the feedback and no adjustment was made. Finally, deficiency priorities, costs, and educational space/technology standards are consistent throughout the state.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Concrete Walks Require Replacement	Capital Renewal	2,200	SF	3	$44,664	11682
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11628
Note: Add flashing beacon to school zone signs						
Asphalt Paving Requires Replacement	Capital Renewal	26	CAR	4	$85,442	9812
Note: Asphalt is weathered with large cracks.						
Asphalt Paving Requires Replacement	Capital Renewal	66	CAR	4	$216,892	9813
Note: Asphalt is weathered and alligatored.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28729
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,020	54888
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**6**	**items**		**$421,359**	
	Sub Total for School and Site Level	**6**	**items**		**$421,359**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Aluminum Panel Canopy Or Awning Requires Replacement	Capital Renewal	600	SF	4	$113,315	53604
Note: Per LEA review feedback. Metal roof requires intervention.						
	Sub Total for System	**1**	**items**		**$113,315**	

Structural

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Structural Condition Exists	Capital Renewal	1	Job	1	$13,031	53393
Note: Repair of masonry shall comply with SRC-1 Section 302. Exterior brick walls of the Gymnasium have cracks that affect the structural integrity of the building.						
	Sub Total for System	**1**	**items**		**$13,031**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	1	Door	2	$6,374	9816
Note: Door is cracked around the perimeter.						
Handrail Requires Repainting	Capital Renewal	500	LF	4	$5,194	9819
Note: Exterior handrails						
	Sub Total for System	**2**	**items**		**$11,568**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	31	Ea.	3	$270,777	19739
Note: All classrooms						
Classroom Interior Doors Provide Insufficient Sound Isolation	Acoustics	21	Ea.	3	$183,429	19740
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	1,152	SF	3	$10,334	9817
The Carpet Flooring Requires Replacement	Capital Renewal	2,788	SF	3	$60,248	9818
Ceiling Grid Requires Replacement	Capital Renewal	1,152	SF	4	$13,571	9822
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	1	Ea.	4	$283	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	525	SF	4	$4,958	Rollup
Paint (probable pre-1978 in base layer(s)) -large areas (> 10 sq. ft.)of peeling/damage & area in active use-adults only (measurement unit - square feet)	Hazardous Material	25	SF	4	$236	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	400	SF	4	$11,332	19741
Note: Wall between rooms 309/310						
Room Is Excessively Reverberant	Acoustics	3,600	SF	4	$79,887	19743
Note: Gym						

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	65	SF	4	$614	Rollup
Wall/ceiling materials - large areas (> 10 sq. ft.) of damage & area in active use - children	Hazardous Material	60	SF	4	$567	Rollup
	Sub Total for System	**12**	**items**		**$636,236**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Steam/HW Unit Heater Requires Replacement	Capital Renewal	7	Ea.	2	$16,604	11433
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	55,752	SF	4	$374,052	9820
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$18,931	11434
	Sub Total for System	**3**	**items**		**$409,588**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	16	Ea.	5	$7,887	Rollup
	Sub Total for System	**1**	**items**		**$7,887**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	15	Ea.	5	$16,431	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	8	Ea.	5	$8,143	Rollup
	Sub Total for System	**2**	**items**		**$24,574**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Kitchen Exhaust Hood	Capital Renewal	1	Ea.	1	$15,857	11435
	Sub Total for System	**1**	**items**		**$15,857**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	21	Ea.	3	$118,981	Rollup
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	27	Ea.	3	$535,415	10667
Technology: Instructional spaces do not have local sound reinforcement.	Technology	27	Ea.	3	$127,480	10668
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10662
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	10661
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$42,304	10659
Technology: Network system inadequate and/or near end of useful life	Technology	3	Ea.	3	$37,772	10670
Technology: Network system inadequate and/or near end of useful life	Technology	11	Ea.	3	$51,936	10671
Technology: Network system inadequate and/or near end of useful life	Technology	55,752	SF	3	$15,794	10672
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$18,886	10666
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,554	10660
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,232	10663
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,177	10664
	Sub Total for System	**13**	**items**		**$980,863**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,533	Rollup
	Sub Total for System	**1**	**items**		**$4,533**	
	Sub Total for Building 01 - Main Building	**37**	**items**		**$2,217,451**	
	Total for Campus	**43**	**items**		**$2,638,810**	

B.F. Norton Elementary School - Life Cycle Summary Yrs 1-5

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	39,026	SF	$257,858	4
	Sub Total for System	**1**	**items**	**$257,858**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Wall Exhaust Fan	1	Ea.	$2,678	3
Heat Generation	Boiler - Copper Tube (2400 MBH)	2	Ea.	$273,725	3
Note:	2100 MBH				
Air Distribution	Make-up Air Unit	1	Ea.	$15,899	3
HVAC Air Distribution	Ductwork (Bldg.SF)	20,000	SF	$294,023	3
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	35	Ea.	$592,018	3
Exhaust Air	Roof Exhaust Fan - Small	5	Ea.	$13,186	3
Decentralized Cooling	Ductless Split System (2 Ton)	3	Ea.	$20,495	3
	Sub Total for System	**7**	**items**	**$1,212,024**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Packaged Generator Assemblies	Emergency Generator (150 KW)	1	Ea.	$123,591	3
Note:	The generators supplies only a part of the building and a few emergency lights.				
Transfer Switches	208/120v Switch (Amps)	800	Amps	$26,800	3
Wiring Devices	Electrical Disconnect	3	Ea.	$5,499	3
Electrical Service	Switchgear - Main Dist Panel (800 Amps)	1	Ea.	$23,482	3
	Sub Total for System	**4**	**items**	**$179,371**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Backflow Preventers - 4 in. (Ea.)	1	Ea.	$9,245	3
Plumbing Fixtures	Restroom Lavatories	12	Ea.	$38,172	3
Plumbing Fixtures	Toilets	21	Ea.	$59,894	3
Plumbing Fixtures	Urinals	9	Ea.	$11,962	3
Plumbing Fixtures	Lavatories	2	Ea.	$6,362	3
Plumbing Fixtures	Restroom Lavatories	14	Ea.	$44,534	3
Building Support Plumbing System Supplementary Components	Sump Pump	1	Ea.	$1,449	3
Plumbing Fixtures	Classroom Lavatories	27	Ea.	$73,413	3
Plumbing Fixtures	Mop/Service Sinks	3	Ea.	$7,729	3
Plumbing Fixtures	Mop/Service Sinks	4	Ea.	$10,306	3
Note:	Kitchen sink				
Compressed-Air Systems	Air Compressor (2 hp)	1	Ea.	$6,383	4
	Sub Total for System	**11**	**items**	**$269,448**	
	Sub Total for Building 01 - Main Building	**23**	**items**	**$1,918,702**	
	Total for: B.F. Norton Elementary School	**23**	**items**	**$1,918,702**	

Supporting Photos


Panelboard


Cafeteria

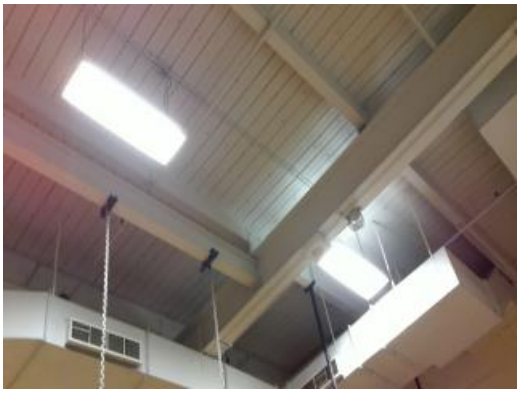

Transformer


Unit Ventilator


Mop Sink


Restroom Lavatories


Exterior Light


Lighting


Main Distribution Panel


Kitchen Hood


Exterior Finishes


Fire Alarm Control Panel


Alligatored Asphalt


Exterior Brick


Gymnasium


Weathered Asphalt



Typical Classroom



Renovation Plaque



Stained Ceiling Tiles



Drinking Fountains



Finned Tube Convectors



Exhaust Fans


Urinals


Backflow Preventer


Classroom Sink


Pumps



Media Center


Air Compressor


Rooftop Unit


Automatic Transfer Switch


Boilers


Chipped Handrail Paint


Window Unit


Weathered Roof Membrane



Pneumatic Thermostat



Front Elevation



Kitchen Exhaust Fan



Cracked Exterior Door



Corridor Finishes



Restroom Fixtures And Finishes



Site Aerial



Playground



School Signage

Facility Condition Assessment

Cumberland - Community School | *June 2017*

15 Arnold Mills Road, Cumberland, RI 02864



Introduction

Community School, located at 15 Arnold Mills Road in Cumberland, Rhode Island, was built in 1924. It comprises 120,000 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Community School serves grades KG - 5, has 39 instructional spaces, and has an enrollment of 572. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Community School is 750 with a resulting utilization of 76%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Community School the 5-year need is $14,012,028. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.



Figure 1: Aerial view of Community School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the Community School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Asphalt Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	CMU Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Composition Shingle Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	1,200 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	Electronic Heating System Controls
	Window Units
	5 Ton Package DX Unit
	Make-up Air Unit
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	10 HP Pump
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	4'x6' Ventilator/Relief Vent
	Wall Exhaust Fan
	Fire Sprinkler System

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	Gas Piping System
	40 Gallon Electric Water Heater
	66 Gallon Electric Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	800 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	800 Amp Distribution Panel
	Electrical Disconnect
	Light Fixtures

01 - Main Building:	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$29,996	$429,250	$69,827	$529,074	5.59 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$83,424	-	-	-	$83,424	0.88 %
Interior	-	-	$2,100,861	$2,035,116	$194,785	$4,330,761	45.74 %
Mechanical	-	$924,983	$190,349	-	-	$1,115,331	11.78 %
Electrical	-	-	-	-	$63,522	$63,522	0.67 %
Plumbing	-	-	$1,095,562	$308,910	$31,372	$1,435,843	15.16 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,892,283	-	-	$1,892,283	19.99 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$18,253	-	-	$18,253	0.19 %
Total	$0	$1,008,407	$5,327,303	$2,773,276	$359,505	$9,468,492	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Interior	-	$4,330,761
Technology	-	$1,892,283
Plumbing	-	$1,435,843

The chart below represents the building systems and associated deficiency costs.

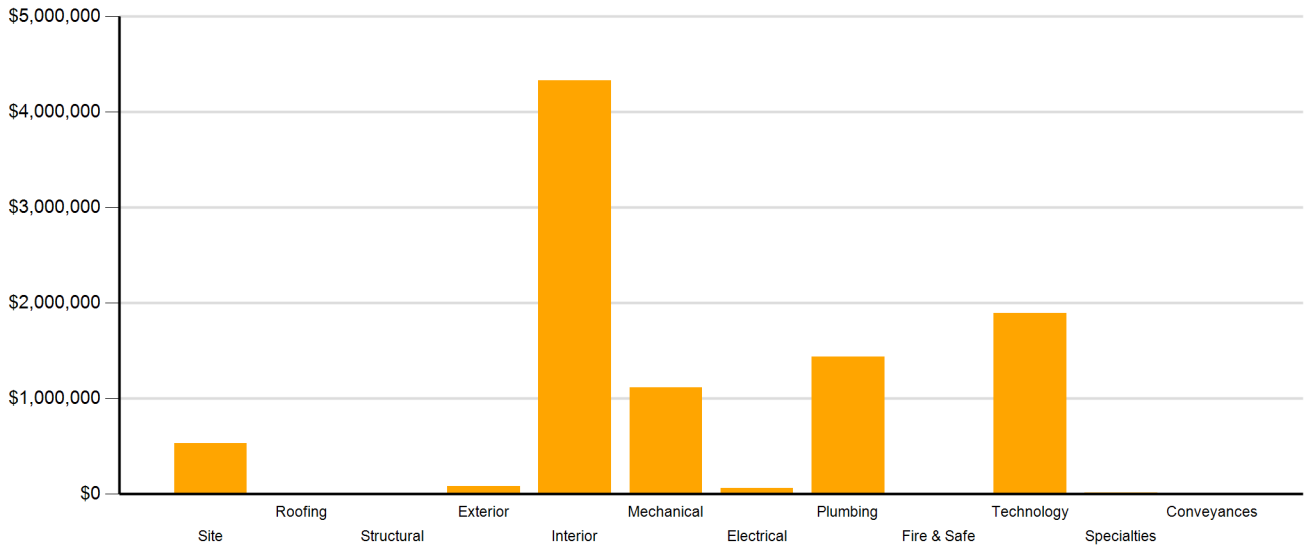


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$190,349	-	-	$190,349
Barrier to Accessibility	-	-	$25,098	-	-	$25,098
Capital Renewal	-	$1,008,407	$3,196,787	$1,990,766	$194,785	$6,390,744
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$58,183	$280,653	$164,721	$503,557
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$501,858	-	$501,858
Technology	-	-	$1,852,354	-	-	$1,852,354
Traffic	-	-	$4,533	-	-	$4,533
Total	$0	$1,008,407	$5,327,303	$2,773,276	$359,505	$9,468,492

**Displayed totals may not sum exactly due to mathematical rounding*

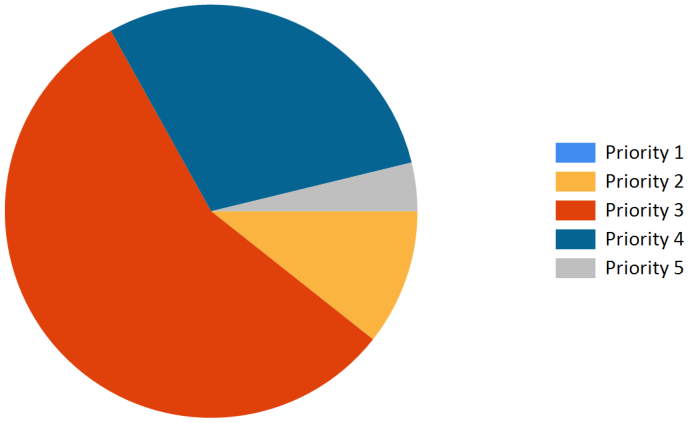


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$529,074	$0	$0	$0	$44,588	$23,920	$68,508	$597,582
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$83,424	$0	$0	$0	$0	$0	$0	$83,424
Interior	$4,330,761	$0	$0	$0	$0	$153,841	$153,841	$4,484,603
Mechanical	$1,115,331	$0	$0	$0	$0	$1,328,598	$1,328,598	$2,443,930
Electrical	$63,522	$0	$0	$0	$0	$23,482	$23,482	$87,004
Plumbing	$1,435,843	$0	$0	$2,616,458	$0	$0	$2,616,458	$4,052,301
Fire and Life Safety	$0	$0	$0	$0	$0	$351,720	$351,720	$351,720
Technology	$1,892,283	$0	$0	$0	$0	$0	$0	$1,892,283
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$18,253	$0	$0	$0	$0	$0	$0	$18,253
Total	**$9,468,492**	**$0**	**$0**	**$2,616,458**	**$44,588**	**$1,881,561**	**$4,542,607**	**$14,011,099**

**Displayed totals may not sum exactly due to mathematical rounding*

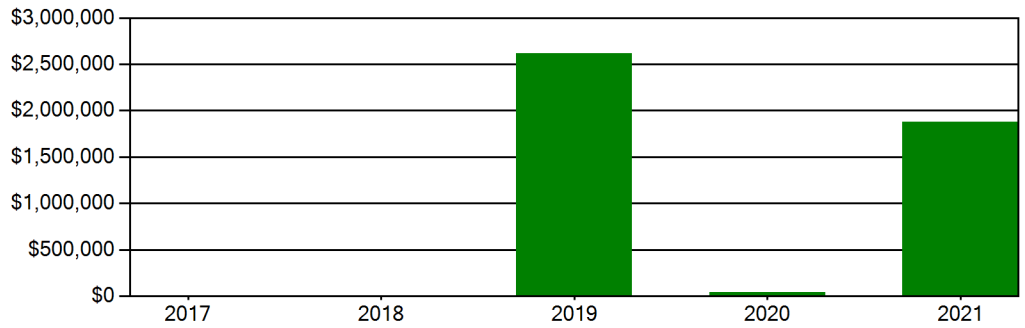
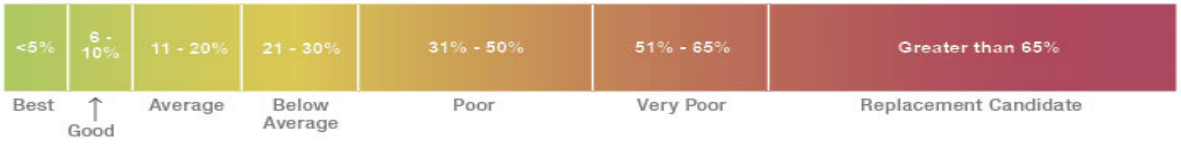


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $42,000,000. For planning purposes, the total 5-year need at the Community School is $14,012,028 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Community School facility has a 5-year FCI of 33.36%.

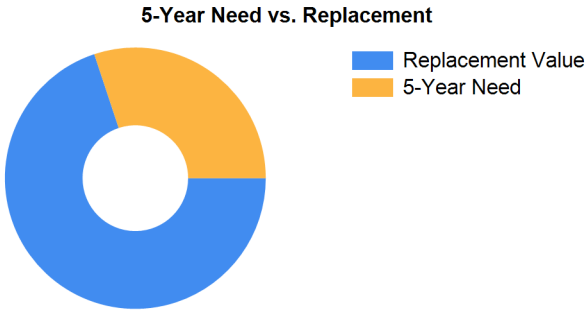


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 828 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the Community School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $1,395,583.

Summary of Findings

The Community School comprises 120,000 square feet and was constructed in 1924. Current deficiencies at this school total $9,469,421. Five year capital renewal costs total $4,542,607. The total identified need for the Community School (current deficiencies and 5-year capital renewal costs) is $14,012,028. The 5-year FCI is 33.36%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Community School Totals	120,000	1924	$9,469,421	$4,542,607	$14,012,028	33.36%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Asphalt Walks Require Replacement	Capital Renewal	3,000	SF	3	$25,463	11000
Note: Walkways are weathered and cracked.						
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11663
Note: Add school zone signs						
Asphalt Paving Requires Replacement	Capital Renewal	80	CAR	4	$262,899	10998
Asphalt Paving Requires Replacement	Capital Renewal	42	CAR	4	$138,022	10999
Note: Roadway is alligatored with large potholes and standing water.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28453
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28723
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,020	54887
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**7**	**items**		**$529,074**	
	Sub Total for School and Site Level	**7**	**items**		**$529,074**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	13	Door	2	$83,424	11003
	Sub Total for System	**1**	**items**		**$83,424**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	108,000	SF	3	$975,415	11004
Note: Ceiling tiles are aged, stained, missing, and broken.						
The Carpet Flooring Requires Replacement	Capital Renewal	12,000	SF	3	$261,074	11590
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	8	Door	3	$25,098	11011
Note: Non-compliant door hardware.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	73,160	SF	3	$839,273	11005
Note: VCT flooring is aged, cracked, and broken.						
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	360	LF	4	$6,845	Rollup
Ceiling Grid Requires Replacement	Capital Renewal	108,000	SF	4	$1,280,934	11016
Note: Grid is aged, stained, and damaged, and should be replaced with acoustic tiles.						
Glazing Putty is Broken or Deteriorating	Hazardous Material	480	LF	4	$9,127	Rollup
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	15,640	SF	4	$446,067	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	17	Ea.	4	$4,849	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	51	LF	4	$1,164	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - each)	Hazardous Material	1	Ea.	4	$285	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	53	Ea.	4	$15,116	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - linear feet)	Hazardous Material	90	LF	4	$2,053	Rollup
Paint (probable pre-1978 in base layer(s)) -large areas (> 10 sq. ft.)of peeling/damage & area in active use-adults only (measurement unit - square feet)	Hazardous Material	1,720	SF	4	$16,352	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	6,622	SF	4	$252,324	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	29,480	SF	5	$194,785	Rollup
	Sub Total for System	**16**	**items**		**$4,330,761**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	120,000	SF	2	$924,983	11691
Note: Original piping should be replaced.						
Unit Ventilators Are Excessively Noisy	Acoustics	30	Ea.	3	$190,349	19753
Note: All classrooms & gym						
	Sub Total for System	**2**	**items**		**$1,115,331**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	128	Ea.	5	$63,522	Rollup
	Sub Total for System	**1**	**items**		**$63,522**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	120,000	SF	3	$965,506	11013
Note: Plumbing leaks throughout the building.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$116,765	11015
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	10	Ea.	3	$13,291	11012
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	9	Ea.	4	$91,980	11008
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	39	Ea.	4	$106,041	11002
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	4	Ea.	4	$10,306	11009
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,153	11010
Note: Kitchen sinks						
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	30	Ea.	4	$95,431	11006
Note: Restroom lavatories are aged and require constant maintenance.						
Room lacks a drinking fountain.	Educational Adequacy	16	Ea.	5	$17,645	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	13	Ea.	5	$13,727	Rollup
	Sub Total for System	**10**	**items**		**$1,435,843**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	7	Ea.	3	$39,929	Rollup
Technology: Auditorium AV/Multimedia system is in need of minor improvements.	Technology	1	Room	3	$95,070	10742
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,507	10751
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	41	Ea.	3	$818,550	10746
Technology: Instructional spaces do not have local sound reinforcement.	Technology	41	Ea.	3	$194,893	10747
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,324	10740
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	10739
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	10738
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$50,197	10736
Technology: Network system inadequate and/or near end of useful life	Technology	3	Ea.	3	$38,028	10748
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$23,767	10749
Technology: Network system inadequate and/or near end of useful life	Technology	82,056	SF	3	$23,403	10750
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	82,000	SF	3	$140,323	10752
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	2	Room	3	$38,028	10745

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,606	10737
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	10741
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	41	Ea.	3	$62,366	10744
Technology: Telephone system is inadequate and/or non-existent.	Technology	41	Ea.	3	$296,237	10743
	Sub Total for System	**18**	**items**		**$1,892,283**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	4	Ea.	3	$18,253	Rollup
	Sub Total for System	**1**	**items**		**$18,253**	
	Sub Total for Building 01 - Main Building	**49**	**items**		**$8,939,418**	
	Total for Campus	**56**	**items**		**$9,468,492**	

Community School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Playfield Areas	ES Playgrounds		1	Ea.	$44,588	4
Fences and Gates	Fencing - Chain Link (4 Ft)		370	LF	$23,920	5
		Sub Total for System	**2**	**items**	**$68,507**	
		Sub Total for Building -	**2**	**items**	**$68,507**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Paneling	Wood Panel wall		14,400	SF	$131,424	5
Resilient Flooring	Rubber Tile Flooring		1,200	SF	$22,417	5
		Sub Total for System	**2**	**items**	**$153,842**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Water-Based Fire-Suppression	Fire Sprinkler System (Bldg.SF)		5,000	SF	$95,070	5
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		11	Ea.	$186,063	5
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)		120,000	SF	$810,564	5
Decentralized Heating Equipment	Unit Heater Steam/HW (12 MBH)		26	Ea.	$62,092	5
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)		2	Ea.	$15,257	5
Facility Hydronic Distribution	Pump- 10HP (Ea.)		2	Ea.	$30,225	5
	Note: 7.5 hp					
Exhaust Air	Wall Exhaust Fan		3	Ea.	$8,033	5
Exhaust Air	Roof Exhaust Fan		16	Ea.	$83,266	5
Exhaust Air	Ventilator/Relief Vent (4'x6')		2	Ea.	$38,028	5
		Sub Total for System	**9**	**items**	**$1,328,597**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Electrical Service	Switchgear - Main Dist Panel (800 Amps)		1	Ea.	$23,482	5
		Sub Total for System	**1**	**items**	**$23,482**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Electric - 40 gallon		1	Ea.	$3,540	3
Plumbing Fixtures	Refrigerated Drinking Fountain		2	Ea.	$14,755	3
Domestic Water Equipment	Gas Piping System (BldgSF)		120,000	SF	$2,598,163	3
		Sub Total for System	**3**	**items**	**$2,616,458**	

Fire and Life Safety

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm		120,000	SF	$351,720	5
		Sub Total for System	**1**	**items**	**$351,720**	
		Sub Total for Building 01 - Main Building	**16**	**items**	**$4,474,099**	
		Total for: Community School	**18**	**items**	**$4,542,606**	

Supporting Photos


Rear Of School


Cracked And Worn Asphalt Walkway


Restroom Fixtures And Finishes


Water Heater


Classroom Heater


Playground Equipment


Switches


Building Mounted Light


Alligatored Asphalt Paving


Hallway Finishes



Classroom Lavatory



Boiler



Stained, Missing, Broken Ceiling Tiles



Worn Exterior Door



Site Aerial



Entrance


Typical Classroom


Panelboard


Library



Cracked And Broken VCT


Unit Heater


Exterior Finishes


Wall Exhaust


Exterior Brick


Typical Restroom Lavatory


Aged And Stained Service Sink


Typical Urinals


Aged And Stained Ceiling Grid


Alligatored Asphalt


Pothole In Asphalt Paving

Facility Condition Assessment

Cumberland - Cumberland High School | *June 2017*

2600 Mendon Road, Cumberland, RI 02864



Introduction

Cumberland High School, located at 2600 Mendon Road in Cumberland, Rhode Island, was built in 1961. It comprises 314,845 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Cumberland High School serves grades 9 - 12, has 111 instructional spaces, and has an enrollment of 1,298. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Cumberland High School is 1,800 with a resulting utilization of 72%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Cumberland High School the 5-year need is $26,329,088. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.



Figure 1: Aerial view of Cumberland High School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the Cumberland High School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Asphalt Pedestrian Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	CMU Exterior Wall
	Fiber Cement Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Storefront Entrance Doors
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
02 - Building 02:	Brick Exterior Wall
	Metal Panel Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
	Overhead Exterior Utility Doors
03 - Building 03:	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
	Overhead Exterior Utility Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Single Ply Membrane Ballasted Roofing
02 - Building 02:	Composition Shingle Roofing
	EPDM Roofing
03 - Building 03:	Single Ply Membrane Ballasted Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	CMU Wall
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
02 - Building 02:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Carpet
	Metal Ceiling Panel
03 - Building 03:	Wood Interior Doors
	Steel Interior Doors

03 - Building 03:	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	CMU Wall
	Interior Wall Painting
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Rubber Tile Flooring
	Terrazzo Flooring
	Carpet
	Metal Ceiling Panel

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	1,200 MBH Copper Tube Boiler
	1,600 MBH Copper Tube Boiler
	400 MBH Copper Tube Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	8 Ton Outside Air Cooled Condenser
	Window Units
	Make-up Air Unit
	15 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	15,000 CFM Outdoor AHU
	Ductwork
	15 Ton DX Gas Roof Top Unit
	4'x6' Ventilator/Relief Vent
	Roof Exhaust Fan
	Kitchen Exhaust Hoods

01 - Main Building:	Fire Sprinkler System
02 - Building 02:	400 MBH Copper Tube Boiler
	750 MBH Copper Tube Boiler
	Radiant Water Heater
	12 MBH Steam Unit Heater
	DDC Heating System Controls
	40 Ton Outside Air Cooled Condenser
	5 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	10,000 CFM Outdoor AHU
	15,000 CFM Outdoor AHU
	Ductwork
	Roof Exhaust Fan
	Fire Sprinkler System
03 - Building 03:	1,600 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	Window Units
	5 HP VFD
	1 HP or Smaller Pump
	2-Pipe Hot Water Hydronic Distribution System
	Ductwork
	5 Ton DX Gas Roof Top Unit
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	500 Gallon Water Storage Tank
03 - Building 03:	500 Gallon Water Storage Tank
02 - Building 02:	500 Gallon Water Storage Tank
01 - Main Building:	Gas Piping System
	80 Gallon Electric Water Heater
03 - Building 03:	Gas Piping System
	100 Gallon Gas Water Heater
02 - Building 02:	Gas Piping System
	60 Gallon Gas Water Heater
01 - Main Building:	Domestic Water Piping System

03 - Building 03:	Domestic Water Piping System
02 - Building 02:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
03 - Building 03:	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
02 - Building 02:	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
01 - Main Building:	Sump Pump
	Air Compressor (2 hp)
03 - Building 03:	Air Compressor (2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	1200 kW Emergency Generator
	Automatic Transfer Switch
	1,200 Amp Switchgear
	2,000 Amp Switchgear
	112.5 KVA Transformer
	225 KVA Transformer
	30 KVA Transformer
	45 KVA Transformer
	75 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Panelboard - 120/240 225A

01 - Main Building:	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Panelboard - 277/480 600A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
02 - Building 02:	1200 kW Emergency Generator
	Automatic Transfer Switch
	45 KVA Transformer
	Panelboard - 120/208 225A
	Panelboard - 277/480 100A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
03 - Building 03:	1200 kW Emergency Generator
	Automatic Transfer Switch
	1,600 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$23,570	-	-	$23,570	0.15 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	$9,507	-	-	-	-	$9,507	0.06 %
Exterior	-	$129,951	-	-	-	$129,951	0.82 %
Interior	-	-	$1,784,448	$2,497,604	$18,805	$4,300,857	27.27 %
Mechanical	-	$2,143,357	-	$2,184,562	-	$4,327,919	27.44 %
Electrical	-	-	-	-	$176,630	$176,630	1.12 %
Plumbing	-	-	$2,469,038	-	$111,932	$2,580,970	16.36 %
Fire and Life Safety	$159,717	-	-	-	-	$159,717	1.01 %
Technology	-	-	$3,824,063	-	-	$3,824,063	24.24 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$82,140	$39,149	$119,788	$241,077	1.53 %
Total	$169,224	$2,273,308	$8,183,259	$4,721,315	$427,155	$15,774,261	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Mechanical	-	$4,327,919
Interior	-	$4,300,857
Technology	-	$3,824,063

The chart below represents the building systems and associated deficiency costs.

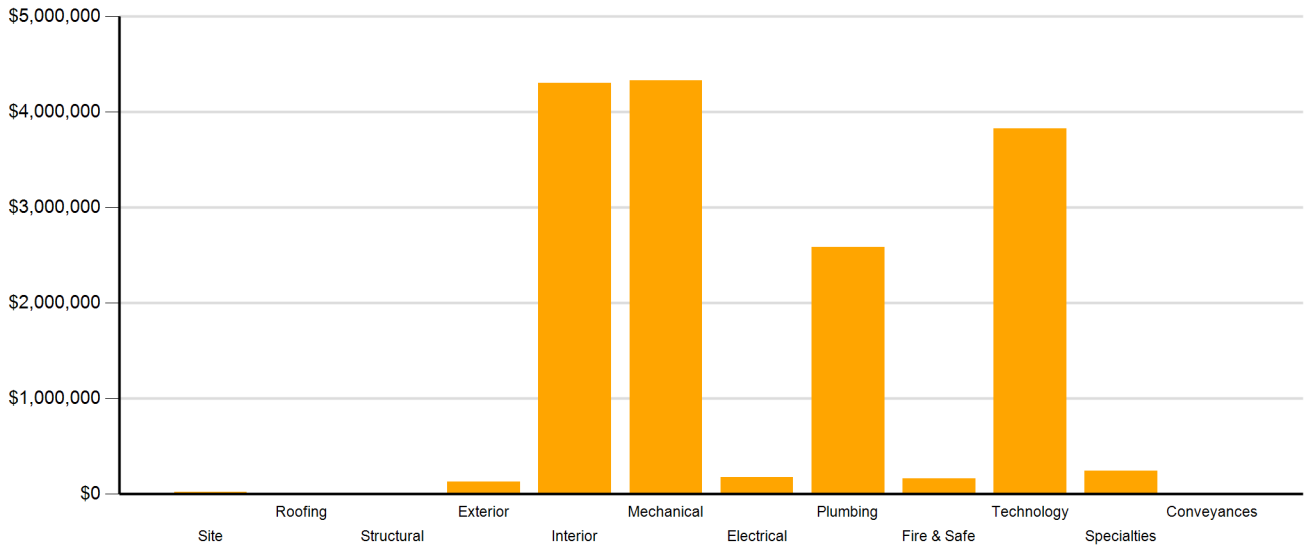


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$439,697	-	-	$439,697
Barrier to Accessibility	-	-	$18,824	-	-	$18,824
Capital Renewal	$9,507	$2,273,308	$3,794,965	$2,618,436	-	$8,696,216
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$159,717	-	$207,517	$347,284	$427,155	$1,141,673
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$1,755,595	-	$1,755,595
Technology	-	-	$3,698,687	-	-	$3,698,687
Traffic	-	-	$23,570	-	-	$23,570
Total	$169,224	$2,273,308	$8,183,259	$4,721,315	$427,155	$15,774,261

**Displayed totals may not sum exactly due to mathematical rounding*

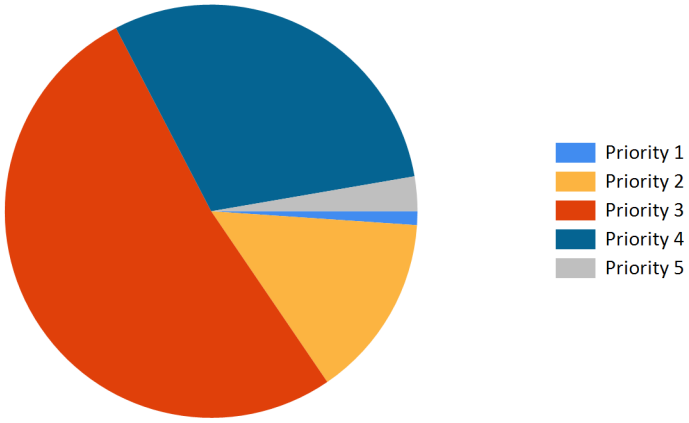


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$23,570	$0	$0	$1,015,716	$42,727	$599,931	$1,658,374	$1,681,944
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$9,507	$0	$0	$0	$0	$0	$0	$9,507
Exterior	$129,951	$0	$0	$0	$0	$0	$0	$129,951
Interior	$4,300,857	$0	$0	$0	$944,468	$645,944	$1,590,412	$5,891,269
Mechanical	$4,327,919	$0	$0	$1,142,427	$662,127	$4,303,386	$6,107,940	$10,435,860
Electrical	$176,630	$0	$0	$0	$0	$805,201	$805,201	$981,831
Plumbing	$2,580,970	$0	$0	$0	$38,066	$340,924	$378,990	$2,959,960
Fire and Life Safety	$159,717	$0	$0	$0	$0	$0	$0	$159,717
Technology	$3,824,063	$0	$0	$0	$0	$0	$0	$3,824,064
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$241,077	$0	$0	$0	$0	$0	$0	$241,077
Total	**$15,774,261**	**$0**	**$0**	**$2,158,143**	**$1,687,388**	**$6,695,386**	**$10,540,917**	**$26,315,178**

**Displayed totals may not sum exactly due to mathematical rounding*

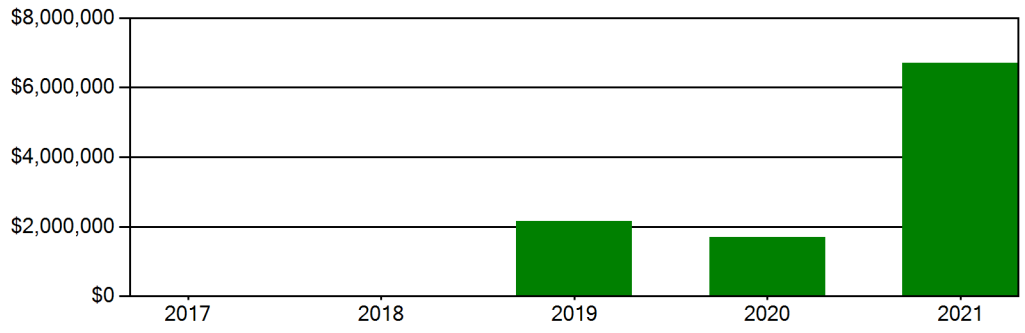
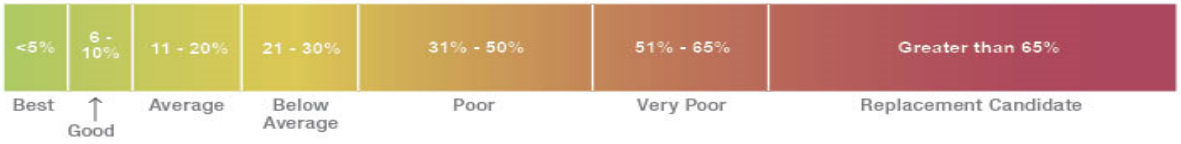


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $113,344,200. For planning purposes, the total 5-year need at the Cumberland High School is $26,329,088 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Cumberland High School facility has a 5-year FCI of 23.22%.

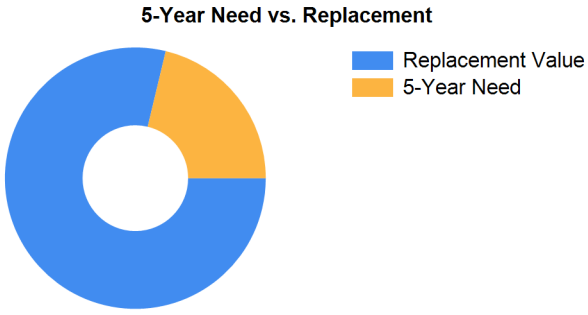


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 1,702 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the Cumberland High School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Cumberland High School comprises 314,845 square feet and was constructed in 1961. Current deficiencies at this school total $15,788,171. Five year capital renewal costs total $10,540,917. The total identified need for the Cumberland High School (current deficiencies and 5-year capital renewal costs) is $26,329,088. The 5-year FCI is 23.22%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Cumberland High School Totals	314,845	1961	$15,788,171	$10,540,917	$26,329,088	23.22%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
New Sidewalk Is Required	Traffic	840	SF	3	$19,037	11648
Note: Add sidewalk on campus along southwest driveway (140' long x 6' wide)						
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11649
Note: Add school zone signs with flashing beacon						
	Sub Total for System	**2**	**items**		**$23,570**	
	Sub Total for School and Site Level	**2**	**items**		**$23,570**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Panel Exterior Requires Replacement	Capital Renewal	2,236	SF Wall	2	$85,030	53396
Note: Exterior wall metal panels are rusting and failing, letting water inside the building and breaking the weather barrier required by SBC-1, Section 1405.2. Water infiltration into walls can lead to mold, damage to wall finishes, and damage to non-friable ACM causing it to become friable. RISBC 1504.6. 1507.13, 1508.2, and 1510.3.						
	Sub Total for System	**1**	**items**		**$85,030**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	50	Ea.	3	$439,697	19758
Note: All classrooms						
The Carpet Flooring Requires Replacement	Capital Renewal	4,003	SF	3	$87,090	11017
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	6	Door	3	$18,824	11019
Note: Non-compliant door hardware should be replaced.						
Asbestos 9x9 Tile is Present. Limited Areas of Lifting or Broken Tiles Exist	Hazardous Material	56,038	SF	4	$1,598,255	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	431	Ea.	4	$122,925	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	700	LF	4	$15,972	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	200	SF	4	$1,901	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	8	Ea.	4	$2,282	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	1,500	SF	4	$14,260	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	380	SF	4	$14,480	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	3	Ea.	5	$6,100	Rollup
Room lacks appropriate sound control.	Educational Adequacy	300	SF	5	$10,439	Rollup
	Sub Total for System	**12**	**items**		**$2,332,224**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	1	Ea.	2	$1,675	11021
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	200,135	SF	2	$1,542,679	11022
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	200,135	SF	4	$1,351,852	11023
Lab lacks an appropriate fume hood.	Educational Adequacy	14	Ea.	4	$307,801	Rollup
	Sub Total for System	**4**	**items**		**$3,204,008**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	264	Ea.	5	$131,014	Rollup
	Sub Total for System	**1**	**items**		**$131,014**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	200,135	SF	3	$1,610,263	11020
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$116,765	11024
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	$6,617	Rollup
Room lacks a private shower area.	Educational Adequacy	3	Ea.	5	$30,706	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	45	Ea.	5	$68,022	Rollup
	Sub Total for System	**5**	**items**		**$1,832,373**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks shut-off valves for utilities. (International Fuel Gas Code, Section 409.6)	Educational Adequacy	14	Ea.	1	$159,717	Rollup
	Sub Total for System	**1**	**items**		**$159,717**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	17	Ea.	3	$96,971	Rollup
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,507	10795
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	91	Ea.	3	$1,816,782	10790
Technology: Instructional spaces do not have local sound reinforcement.	Technology	91	Ea.	3	$432,567	10791
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,324	10782
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,324	10788
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	10774
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	10776
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,732	10779
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,732	10781
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,732	10784
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$4,753	10785
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10775
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10778
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10780
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10783
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,324	10787
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$42,591	10773
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	$91,267	10792
Technology: Network system inadequate and/or near end of useful life	Technology	44	Ea.	3	$209,153	10793

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Network system inadequate and/or near end of useful life	Technology	319,000	SF	3	$90,982	10794
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	319,000	SF	3	$545,890	10796
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	15	Room	3	$285,209	10789
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	10777
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	10786
	Sub Total for System	**25**	**items**		**$3,795,658**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	16	Ea.	3	$73,014	Rollup
The Metal Student Lockers Require Replacement	Capital Renewal	65	Ea.	4	$31,979	11025
Location: Pool locker rooms						
Work Tables Are Required	Educational Adequacy	2	Ea.	4	$7,170	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	14	Ea.	5	$119,788	Rollup
	Sub Total for System	**4**	**items**		**$231,951**	
	Sub Total for Building 01 - Main Building	**53**	**items**		**$11,771,975**	

Building: 02 - Building 02

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,266	Rollup
	Sub Total for System	**1**	**items**		**$2,266**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	12	Ea.	5	$5,915	Rollup
	Sub Total for System	**1**	**items**		**$5,915**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	4	Ea.	5	$4,382	Rollup
	Sub Total for System	**1**	**items**		**$4,382**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$16,997	Rollup
	Sub Total for System	**1**	**items**		**$16,997**	
	Sub Total for Building 02 - Building 02	**4**	**items**		**$29,560**	

Building: 03 - Building 03

Structural

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Foundation Study Recommended	Capital Renewal	1	Job	1	$9,507	11440
Note: Structural damage (cracks) in brick columns and CMU in the corners of second floor classrooms. Investigate further to address structural condition.						
	Sub Total for System	**1**	**items**		**$9,507**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	7	Door	2	$44,920	11026
	Sub Total for System	**1**	**items**		**$44,920**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior CMU Walls Require Repair	Capital Renewal	313	SF	3	$11,367	11031
Note: Cracked CMU in Rooms 200, 201, 202 and 203.						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	59,837	SF	3	$540,425	11027
The Carpet Flooring Requires Replacement	Capital Renewal	6,994	SF	3	$152,163	11028
The Vinyl Composition Tile Requires Replacement	Capital Renewal	46,626	SF	3	$534,882	11029
Ceiling Grid Requires Replacement	Capital Renewal	59,837	SF	4	$709,697	11036
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	468	SF	4	$17,833	Rollup
	Sub Total for System	**6**	**items**		**$1,966,366**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	77,710	SF	2	$599,004	11032
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	77,710	SF	4	$524,908	11034
	Sub Total for System	**2**	**items**		**$1,123,911**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	$39,701	Rollup
	Sub Total for System	**1**	**items**		**$39,701**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	77,710	SF	3	$625,246	11030
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$116,765	11035
Room lacks a drinking fountain.	Educational Adequacy	2	Ea.	5	$2,206	Rollup
	Sub Total for System	**3**	**items**		**$744,216**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,408	Rollup
	Sub Total for System	**1**	**items**		**$11,408**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,127	Rollup
	Sub Total for System	**1**	**items**		**$9,127**	
	Sub Total for Building 03 - Building 03	**16**	**items**		**$3,949,157**	
	Total for Campus	**75**	**items**		**$15,774,261**	

Cumberland High School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Parking Lot Pavement	Asphalt		307	CAR	$1,015,716	3
Pedestrian Pavement	Sidewalks - Asphalt		5,000	SF	$42,727	4
Roadway Pavement	Asphalt		156	CAR	$516,129	5
Pedestrian Pavement	Sidewalks - Concrete		4,100	SF	$83,802	5
		Sub Total for System	**4**	**items**	**$1,658,374**	
		Sub Total for Building -	**4**	**items**	**$1,658,374**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		80,054	SF	$528,944	4
Carpeting	Carpet		14,009	SF	$304,783	4
Wall Paneling	Wood Panel wall		8,002	SF	$73,032	5
Resilient Flooring	Rubber Tile Flooring		12,008	SF	$224,324	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		14,009	SF	$126,524	5
		Sub Total for System	**5**	**items**	**$1,257,606**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Ventilator/Relief Vent (4'x6')		6	Ea.	$114,084	4
Decentralized Cooling	Window Units		16	Ea.	$53,422	5
Decentralized Cooling	Ductless Split System (2 Ton)		25	Ea.	$170,793	5
Facility Hydronic Distribution	Pump - 5HP		8	Ea.	$76,238	5
Decentralized Heating Equipment	Radiant Heater - Radiator Water		107	Ea.	$552,771	5
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		109	Ea.	$1,843,713	5
Decentralized Heating Equipment	Unit Heater Steam/HW (12 MBH)		37	Ea.	$88,362	5
Exhaust Air	Roof Exhaust Fan		66	Ea.	$343,472	5
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)		21	Ea.	$160,196	5
Air Distribution	Make-up Air Unit		3	Ea.	$47,698	5
Note:	Heating hot water coil					
		Sub Total for System	**10**	**items**	**$3,450,749**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Electrical Service	Switchgear - Main Dist Panel (1200 Amps)		2	Ea.	$138,117	5
Electrical Service	Switchgear - Main Dist Panel (2000 Amps)		1	Ea.	$72,339	5
		Sub Total for System	**2**	**items**	**$210,456**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Compressed-Air Systems	Air Compressor (2 hp)		2	Ea.	$12,766	5
Plumbing Fixtures	Mop/Service Sinks		16	Ea.	$41,222	5
Plumbing Fixtures	Refrigerated Drinking Fountain		14	Ea.	$103,284	5
		Sub Total for System	**3**	**items**	**$157,272**	
		Sub Total for Building 01 - Main Building	**20**	**items**	**$5,076,083**	

Building: 02 - Building 02

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet		370	SF	$8,050	4
Wall Painting and Coating	Painting/Staining (Bldg SF)		5,550	SF	$36,671	5
		Sub Total for System	**2**	**items**	**$44,721**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)		2	Ea.	$15,257	5

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Facility Hydronic Distribution	Pump - 5HP	2	Ea.	$19,060	5
Note:	7.5 HP				
Other HVAC Distribution Systems	VFD (5 HP)	4	Ea.	$24,049	5
	Sub Total for System	**3**	**items**	**$58,365**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 60 gallon	1	Ea.	$3,797	5
Note:	55 gallon				
	Sub Total for System	**1**	**items**	**$3,797**	
	Sub Total for Building 02 - Building 02	**6**	**items**	**$106,883**	

Building: 03 - Building 03

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	15,542	SF	$102,691	4
Wall Paneling	Wood Panel wall	15,542	SF	$141,847	5
Resilient Flooring	Rubber Tile Flooring	2,331	SF	$43,546	5
	Sub Total for System	**3**	**items**	**$288,084**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
HVAC Air Distribution	Ductwork (Bldg.SF)	77,710	SF	$1,142,427	3
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	30	Ea.	$507,444	4
Decentralized Heating Equipment	Unit Heater Steam/HW (12 MBH)	17	Ea.	$40,599	4
Decentralized Heating Equipment	Radiant Heater - Radiator Water	139	Ea.	$718,086	5
Decentralized Cooling	Window Units	25	Ea.	$83,471	5
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)	14	Ea.	$106,798	5
	Sub Total for System	**6**	**items**	**$2,598,825**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)	77,710	SF	$461,742	5
Lighting Fixtures	Building Mounted Fixtures (Ea.)	10	Ea.	$14,926	5
Power Distribution	Panelboard - 120/208 100A	10	Ea.	$48,486	5
Power Distribution	Panelboard - 120/208 225A	12	Ea.	$69,591	5
	Sub Total for System	**4**	**items**	**$594,744**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories	14	Ea.	$38,066	4
Plumbing Fixtures	Non-Refrigerated Drinking Fountain	6	Ea.	$61,320	5
Plumbing Fixtures	Toilets	16	Ea.	$45,633	5
Plumbing Fixtures	Urinals	4	Ea.	$5,316	5
Plumbing Fixtures	Mop/Service Sinks	4	Ea.	$10,306	5
Plumbing Fixtures	Restroom Lavatories	16	Ea.	$50,897	5
Compressed-Air Systems	Air Compressor (2 hp)	1	Ea.	$6,383	5
	Sub Total for System	**7**	**items**	**$217,921**	
	Sub Total for Building 03 - Building 03	**20**	**items**	**$3,699,574**	
	Total for: Cumberland High School	**50**	**items**	**$10,540,913**	

Supporting Photos


Generator


Building Mounted Fixture



Boiler


Typical VFD



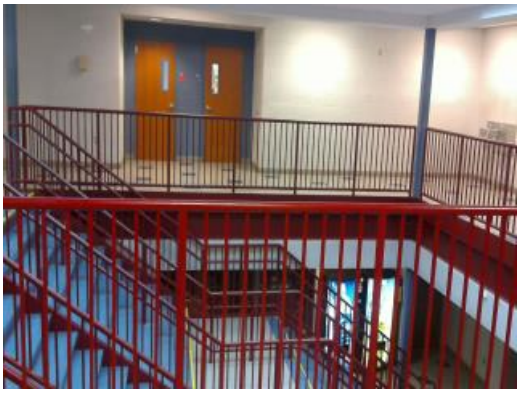
Pumps



Radiant Heater



Corroded Exterior Metal Door



Typical Corridor



Site Aerial



Disconnects


Exhaust Fans


Stained Ceiling Tiles

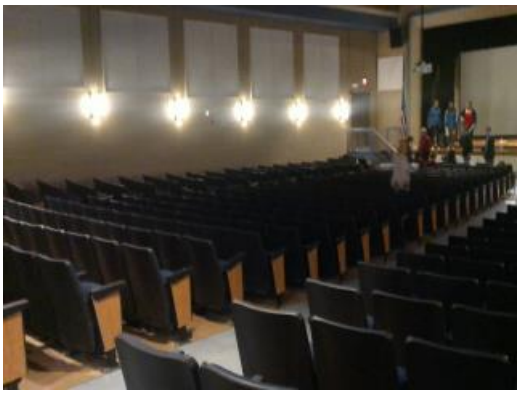

Typical Boiler


Typical Restroom


Kitchen Hood


Cafeteria


Typical Science Lab


Auditorium


Canopy Mounted Fixture


Finned Wall Heater


Typical VCT


Computer Lab


Restroom Lavatory


Cracked CMU


Elevation


Air Handling Unit


Fire Alarm Panel


Transformer


Elevation


Pumps


Gymnasium



Elevation


Hot Water Storage Tank



Ductless Split System


Old Cafeteria



Elevation


Corridor Finishes


Weight Room


Elevation


Unit Heater


Typical Drinking Fountain


Air Compressor


Elevation


Cabinet Heater


Elevation


Restroom Finishes


Exterior Finishes


Exterior Brick


Exhaust Fan


Panelboards


Brick Exterior


Pool



Condensing Unit And Exhaust Fan



Transformer



Transfer Switch



Aged Pool Lockers

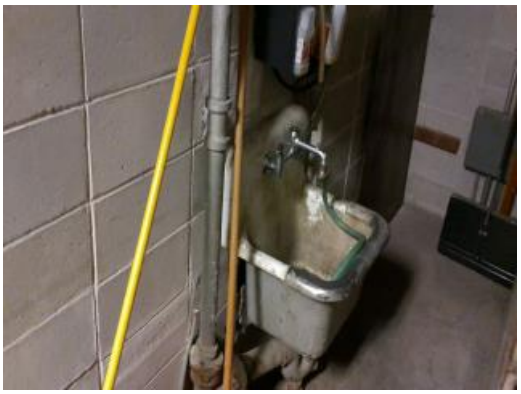


Rooftop AHU



Restroom Lavatories


Window Unit


Mop Sink


Mop Sink


Backflow Preventers


Worn VCT


Elevation



Typical Classroom

Facility Condition Assessment

Cumberland - Garvin Memorial School | *June 2017*

1364 Diamond Hill Road, Cumberland, RI 02864



Introduction

Garvin Memorial School, located at 1364 Diamond Hill Road in Cumberland, Rhode Island, was built in 1930. It comprises 48,700 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Garvin Memorial School serves grades KG - 5, has 27 instructional spaces, and has an enrollment of 396. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Garvin Memorial School is 437 with a resulting utilization of 91%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Garvin Memorial School the 5-year need is $4,892,863. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.



Figure 1: Aerial view of Garvin Memorial School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the Garvin Memorial School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Aluminum Exterior Windows
	Storefront Entrance Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Composition Shingle Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	CMU Wall
	Interior Wall Painting
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	2,400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	20 MBH Steam Unit Heater
	DDC Heating System Controls
	10 Ton Fan Coil - DX Cool w/Electric Heat
	Make-up Air Unit
	10 HP Pump
	2-Pipe Steam Hydronic Distribution System
	2,000 CFM Interior AHU
	5,000 CFM Interior AHU
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	4'x6' Ventilator/Relief Vent
	Fire Sprinkler System

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	Gas Piping System
	30 Gallon Electric Water Heater
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$1,511	$28,329	$5,807	$35,647	1.08 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$1,244,747	$980,264	$4,563	$2,229,574	67.76 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	-	-	-	$51,612	$51,612	1.57 %
Plumbing	-	-	-	-	$21,462	$21,462	0.65 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$952,311	-	-	$952,311	28.94 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	-	-	$0	0.00 %
Total	$0	$0	$2,198,569	$1,008,593	$83,444	$3,290,606	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Interior	-	$2,229,574
Technology	-	$952,311
Electrical	-	$51,612

The chart below represents the building systems and associated deficiency costs.

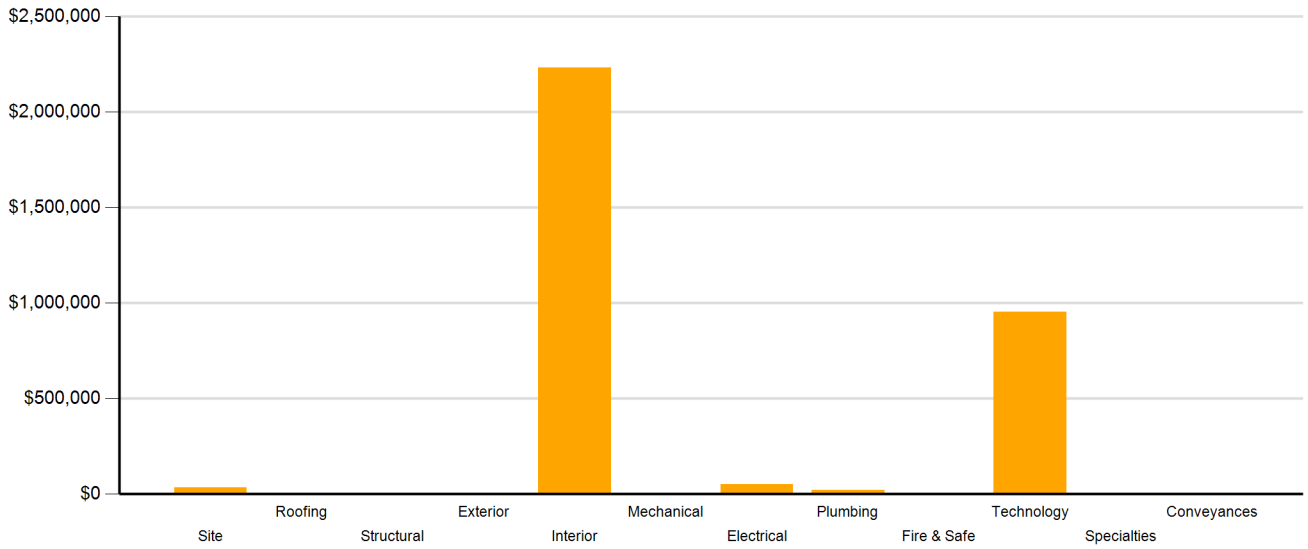


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$256,490	-	-	$256,490
Barrier to Accessibility	-	-	$42,484	-	-	$42,484
Capital Renewal	-	-	$945,772	$350,589	-	$1,296,361
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$34,225	$80,036	$83,444	$197,705
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$577,968	-	$577,968
Technology	-	-	$918,086	-	-	$918,086
Traffic	-	-	$1,511	-	-	$1,511
Total	$0	$0	$2,198,569	$1,008,593	$83,444	$3,290,606

**Displayed totals may not sum exactly due to mathematical rounding*

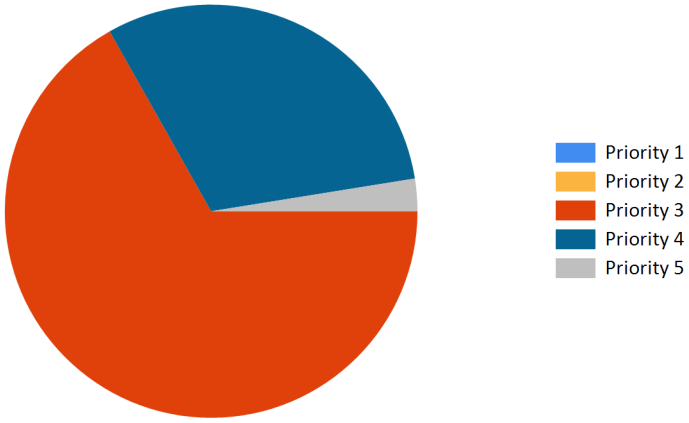


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$35,647	$0	$0	$0	$0	$361,465	$361,465	$397,112
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$2,229,574	$0	$0	$0	$0	$22,223	$22,223	$2,251,798
Mechanical	$0	$0	$0	$0	$543,312	$491,222	$1,034,534	$1,034,534
Electrical	$51,612	$0	$16,419	$0	$0	$0	$16,419	$68,031
Plumbing	$21,462	$0	$5,845	$0	$14,755	$1,867	$22,467	$43,929
Fire and Life Safety	$0	$0	$142,740	$0	$0	$0	$142,740	$142,740
Technology	$952,311	$0	$0	$0	$0	$0	$0	$952,311
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$3,290,606**	**$0**	**$165,004**	**$0**	**$558,067**	**$876,777**	**$1,599,848**	**$4,890,454**

**Displayed totals may not sum exactly due to mathematical rounding*

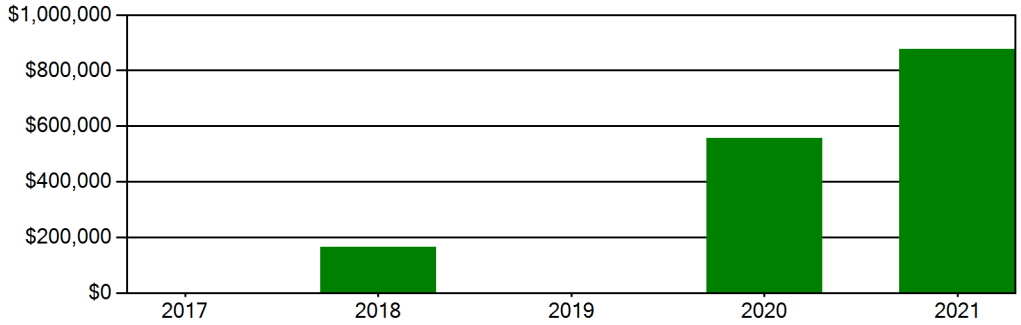
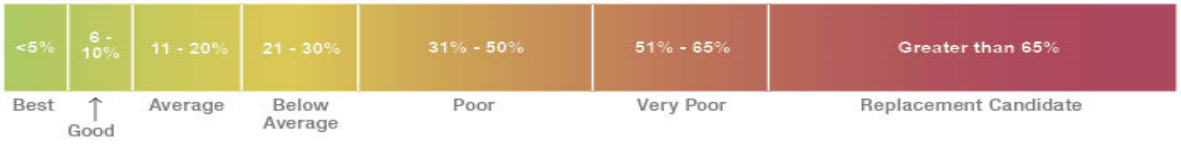


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $17,045,000. For planning purposes, the total 5-year need at the Garvin Memorial School is $4,892,863 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Garvin Memorial School facility has a 5-year FCI of 28.69%.

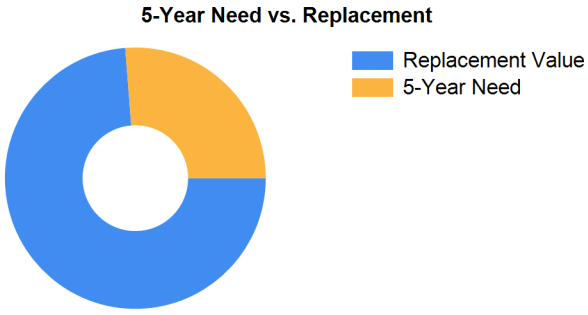


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 271 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the Garvin Memorial School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $390,852.

Summary of Findings

The Garvin Memorial School comprises 48,700 square feet and was constructed in 1930. Current deficiencies at this school total $3,293,015. Five year capital renewal costs total $1,599,848. The total identified need for the Garvin Memorial School (current deficiencies and 5-year capital renewal costs) is $4,892,863. The 5-year FCI is 28.69%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Garvin Memorial School Totals	48,700	1930	$3,293,015	$1,599,848	$4,892,863	28.69%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Crosswalk: Needs to be added	Traffic	2	Ea.	3	$1,511	11610
Note: Add crosswalks at intersection of Diamond Hill Rd and N Garden St						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28454
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28724
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**3**	**items**		**$35,647**	
	Sub Total for School and Site Level	**3**	**items**		**$35,647**	

Building: 01 - Main Building

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	28	Ea.	3	$256,490	19767
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	28,377	SF	3	$266,969	9543
The Carpet Flooring Requires Replacement	Capital Renewal	3,896	SF	3	$88,294	9544
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	13	Door	3	$42,484	9547
Note: Non ADA						
The Terrazzo Flooring Requires Replacement	Capital Renewal	4,870	SF	3	$376,179	9546
The Vinyl Composition Tile Requires Replacement	Capital Renewal	17,936	SF	3	$214,330	9545
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	300	LF	4	$5,942	Rollup
Ceiling Grid Requires Replacement	Capital Renewal	28,377	SF	4	$350,589	9548
Glazing Putty is Broken or Deteriorating	Hazardous Material	144	LF	4	$2,852	Rollup
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	17,614	SF	4	$523,299	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	20	Ea.	4	$5,942	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	301	LF	4	$7,154	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	1,200	SF	4	$11,884	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - square feet)	Hazardous Material	1,900	SF	4	$18,816	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	7	Ea.	4	$2,080	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	1,357	SF	4	$51,707	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,563	Rollup
	Sub Total for System	**17**	**items**		**$2,229,574**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	104	Ea.	5	$51,612	Rollup
	Sub Total for System	**1**	**items**		**$51,612**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	13	Ea.	5	$14,337	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	7	Ea.	5	$7,125	Rollup
	Sub Total for System	**2**	**items**		**$21,462**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	6	Ea.	3	$34,225	Rollup
Technology: Auditorium AV/Multimedia system meets standards.	Technology	1	Room	3	$9,507	10712
Technology: Auditorium AV/Multimedia system meets standards.	Technology	1	Room	3	$9,507	10717
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,903	10716
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	20	Ea.	3	$415,930	10710
Technology: Instructional spaces do not have local sound reinforcement.	Technology	20	Ea.	3	$99,031	10711
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,546	10705
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$47,139	10703
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,952	10706
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,366	10701
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$39,612	10713
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$39,612	10714
Technology: Network system inadequate and/or near end of useful life	Technology	48,700	SF	3	$14,468	10715
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	48,700	SF	3	$86,811	10718
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	2	Room	3	$39,612	10709
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,922	10702
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	10704
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	20	Ea.	3	$31,690	10708
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,526	10707
	Sub Total for System	**19**	**items**		**$952,311**	
	Sub Total for Building 01 - Main Building	**39**	**items**		**$3,254,959**	
	Total for Campus	**42**	**items**		**$3,290,606**	

Garvin Memorial School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Parking Lot Pavement	Asphalt	73	CAR	$241,522	5
Roadway Pavement	Asphalt	30	CAR	$99,256	5
Fences and Gates	Fencing - Chain Link (4 Ft)	320	LF	$20,687	5
	Sub Total for System	**3**	**items**	**$361,465**	
	Sub Total for Building -	**3**	**items**	**$361,465**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Paneling	Wood Panel wall	2,435	SF	$22,223	5
	Sub Total for System	**1**	**items**	**$22,223**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Unit Heater Steam/HW (12 MBH)	41	Ea.	$97,914	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	25	Ea.	$422,870	4
Decentralized Heating Equipment	Unit Heater Steam/HW (20 MBH)	8	Ea.	$22,528	4
Exhaust Air	Roof Exhaust Fan	10	Ea.	$52,041	5
Note:	Roof mounted exhaust fans				
Exhaust Air	Ventilator/Relief Vent (4'x6')	6	Ea.	$114,084	5
Note:	Roof vents				
Heating System Supplementary Components	Controls - DDC (Bldg.SF)	48,700	SF	$293,234	5
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	$15,964	5
Note:	Kitchen hood with suppression				
Air Distribution	Make-up Air Unit	1	Ea.	$15,899	5
	Sub Total for System	**8**	**items**	**$1,034,535**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)	11	Ea.	$16,419	2
	Sub Total for System	**1**	**items**	**$16,419**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 75 Gallons	1	Ea.	$5,845	2
Note:	81 gal				
Plumbing Fixtures	Refrigerated Drinking Fountain	2	Ea.	$14,755	4
Domestic Water Equipment	Water Heater - Electric - 30 gallon	1	Ea.	$1,867	5
Note:	81 gal				
	Sub Total for System	**3**	**items**	**$22,467**	

Fire and Life Safety

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm	48,700	SF	$142,740	2
	Sub Total for System	**1**	**items**	**$142,740**	
	Sub Total for Building 01 - Main Building	**14**	**items**	**$1,238,383**	
	Total for: Garvin Memorial School	**17**	**items**	**$1,599,848**	

Supporting Photos


Damaged ACT


Damaged ACT



Damaged ACT


Carpet



VCT



Damaged Terazzo



Site Aerial



Media Center



Side Elevation



Corridor


Classroom


Gym


Cafeteria


Playground



Marquee


Side Elevation


Side Elevation


Side Elevation


Front Elevation


Typical Restroom


Exterior Finishes

Facility Condition Assessment

Cumberland - John J. McLaughlin Cumberland Hill School | *June 2017*

205 Manville Hill Road, Cumberland, RI 02864



Introduction

John J. McLaughlin Cumberland Hill School, located at 205 Manville Hill Road in Cumberland, Rhode Island, was built in 1955. It comprises 49,563 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

John J. McLaughlin Cumberland Hill School serves grades KG - 5, has 27 instructional spaces, and has an enrollment of 339. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for John J. McLaughlin Cumberland Hill School is 483 with a resulting utilization of 70%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For John J. McLaughlin Cumberland Hill School the 5-year need is $7,590,919. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.

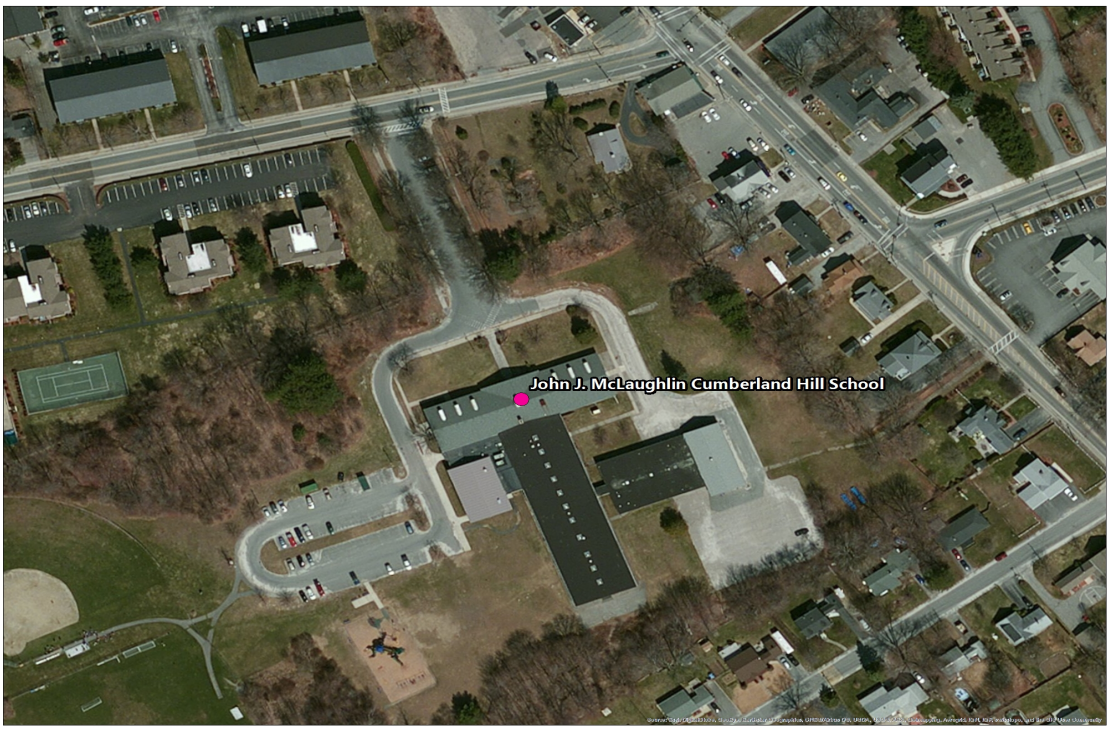


Figure 1: Aerial view of John J. McLaughlin Cumberland Hill School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the John J. McLaughlin Cumberland Hill School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Asphalt Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
02 - Storage Building:	Brick Exterior Wall
	Wood Siding Exterior Wall
	Overhead Exterior Utility Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Composition Shingle Roofing
	Metal Steep Slope Roofing
	EPDM Roofing
02 - Storage Building:	Composition Shingle Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Quarry Tile Flooring

01 - Main Building:	Wood Flooring
	Vinyl Composition Tile Flooring
	Rubber Tile Flooring
	Terrazzo Flooring
	Carpet
	Metal Ceiling Panel
02 - Storage Building:	Wood Ceilings
	Interior Wall Painting
	Concrete Flooring

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	2,400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	20 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	Window Units
	Make-up Air Unit
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	4'x6' Ventilator/Relief Vent

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	66 Gallon Electric Water Heater
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

01 - Main Building:	Air Compressor (2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	150 kW Emergency Generator
	Automatic Transfer Switch
	1,200 Amp Switchgear
	1600 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$89,410	$363,525	$5,807	$458,743	7.78 %
Roofing	-	$82,245	$44,683	-	-	$126,928	2.15 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$39,190	-	-	$1,101	$40,291	0.68 %
Interior	-	-	$555,277	$1,614,743	$7,568	$2,177,588	36.92 %
Mechanical	-	$1,422,798	-	$348,439	-	$1,771,237	30.03 %
Electrical	-	$93,301	-	-	$45,656	$138,958	2.36 %
Plumbing	-	-	$10,633	$189,248	$30,762	$230,643	3.91 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$953,336	-	-	$953,336	16.16 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	-	-	$0	0.00 %
Total	$0	$1,637,534	$1,653,338	$2,515,956	$90,895	$5,897,723	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Interior	-	$2,177,588
Mechanical	-	$1,771,237
Technology	-	$953,336

The chart below represents the building systems and associated deficiency costs.

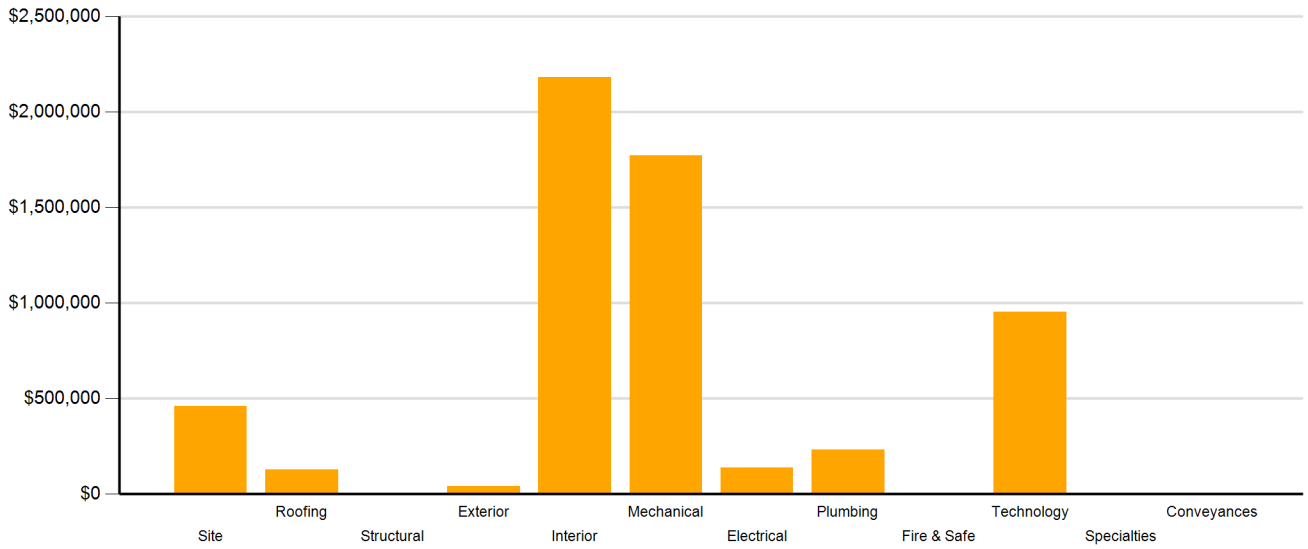


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$263,818	-	-	$263,818
Barrier to Accessibility	-	-	$87,844	-	-	$87,844
Capital Renewal	-	$1,637,534	$343,807	$1,539,497	$6,387	$3,527,225
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	-	$310,222	$84,508	$394,730
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$666,237	-	$666,237
Technology	-	-	$953,336	-	-	$953,336
Traffic	-	-	$4,533	-	-	$4,533
Total	$0	$1,637,534	$1,653,338	$2,515,956	$90,895	$5,897,723

**Displayed totals may not sum exactly due to mathematical rounding*

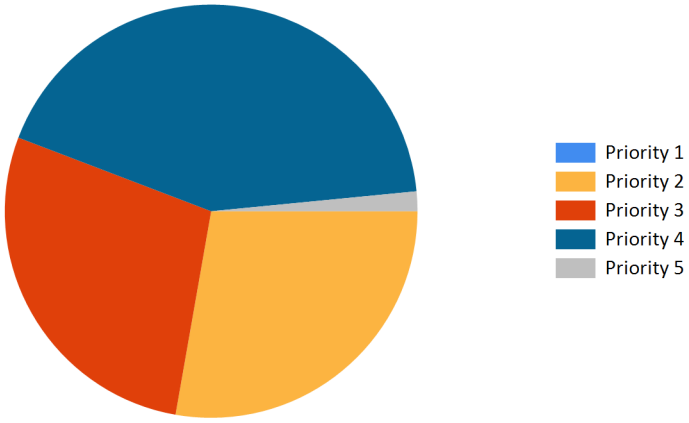


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$458,743	$0	$0	$0	$0	$23,205	$23,205	$481,948
Roofing	$126,928	$0	$0	$0	$0	$0	$0	$126,928
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$40,291	$0	$0	$0	$0	$0	$0	$40,291
Interior	$2,177,588	$0	$0	$0	$128,876	$0	$128,876	$2,306,464
Mechanical	$1,771,237	$0	$0	$42,610	$0	$643,404	$686,014	$2,457,251
Electrical	$138,958	$0	$0	$0	$152,285	$123,591	$275,876	$414,834
Plumbing	$230,643	$0	$14,755	$0	$403,051	$13,686	$431,492	$662,135
Fire and Life Safety	$0	$0	$0	$0	$142,924	$0	$142,924	$142,924
Technology	$953,336	$0	$0	$0	$0	$0	$0	$953,336
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$5,897,723**	**$0**	**$14,755**	**$42,610**	**$827,136**	**$803,886**	**$1,688,387**	**$7,586,110**

**Displayed totals may not sum exactly due to mathematical rounding*

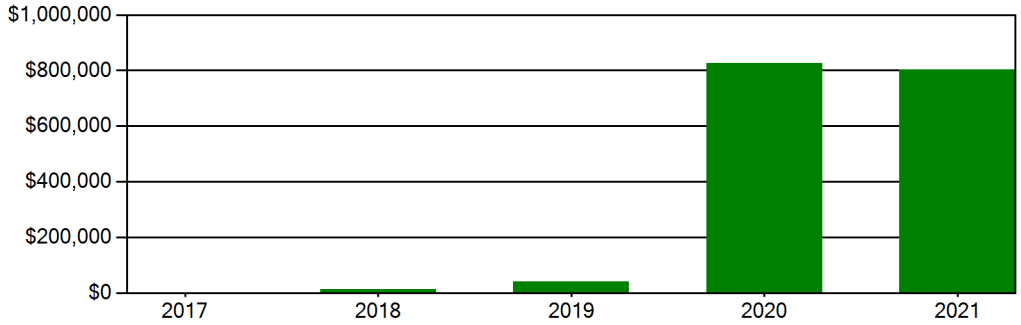
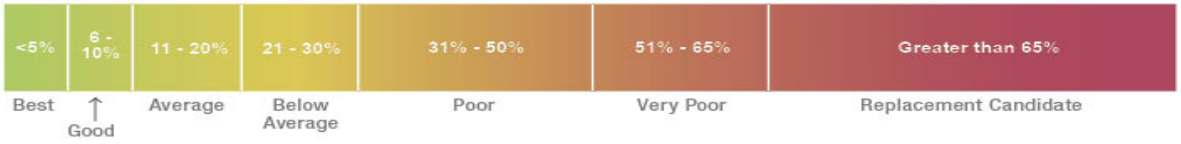


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $17,347,050. For planning purposes, the total 5-year need at the John J. McLaughlin Cumberland Hill School is $7,590,919 (Life Cycle Years 1-5 plus the FCI deficiency cost). The John J. McLaughlin Cumberland Hill School facility has a 5-year FCI of 43.73%.

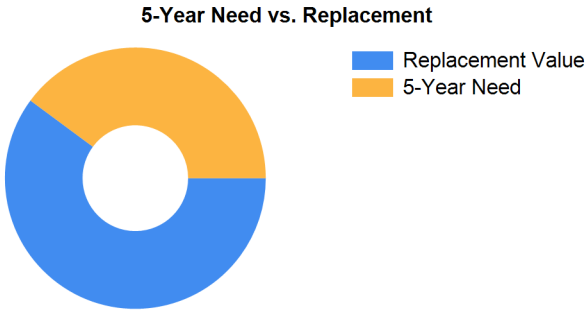


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 275 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the John J. McLaughlin Cumberland Hill School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The John J. McLaughlin Cumberland Hill School comprises 49,563 square feet and was constructed in 1955. Current deficiencies at this school total $5,902,532. Five year capital renewal costs total $1,688,387. The total identified need for the John J. McLaughlin Cumberland Hill School (current deficiencies and 5-year capital renewal costs) is $7,590,919. The 5-year FCI is 43.73%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
John J. McLaughlin Cumberland Hill School Totals	49,563	1955	$5,902,532	$1,688,387	$7,590,919	43.73%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Asphalt Walks Require Replacement	Capital Renewal	10,000	SF	3	$84,878	9359
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11603
Note: Add flashing beacons to school zone speed limit signs						
Asphalt Paving Requires Replacement	Capital Renewal	18	CAR	4	$59,152	9357
Asphalt Paving Requires Replacement	Capital Renewal	84	CAR	4	$276,044	9358
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28455
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28725
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**6**	**items**		**$458,743**	
	Sub Total for School and Site Level	**6**	**items**		**$458,743**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	4,700	SF	2	$59,428	53606
Note: Allowance for repair per LEA review feedback. In addtion to shingles roof needs repair (cafeteria and book room).						
Gutters Require Replacement	Capital Renewal	940	LF	3	$44,683	11538
Note: Gutters are damaged. Water infiltration into walls and ceilings can lead to mold, damage to ceiling and wall finishes, and damage to non-friable ACM causing it to become friable. RISBC 1504.6, 1507.13, 1508.2, and 1510.3.						
	Sub Total for System	**2**	**items**		**$104,111**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	30	Ea.	3	$263,818	19780
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	14,323	SF	3	$129,360	9370
The Carpet Flooring Requires Replacement	Capital Renewal	3,413	SF	3	$74,254	9372
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	28	Door	3	$87,844	9381
Note: Non-compliant door hardware should be replaced.						
Ceiling Grid Requires Replacement	Capital Renewal	14,323	SF	4	$169,878	9390
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	22,207	SF	4	$633,364	Rollup
Metal Ceiling Panels Require Replacement	Capital Renewal	12,191	SF	4	$463,598	9392
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	79	Ea.	4	$22,532	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	322	LF	4	$7,347	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	250	SF	4	$2,377	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	65	SF	4	$618	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	7,398	SF	4	$281,893	Rollup
The Gypsum Board Ceilings Require Replacement	Capital Renewal	2,438	SF	4	$27,814	9371
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,282	Rollup
	Sub Total for System	**14**	**items**		**$2,166,978**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	4,000	SF	2	$58,805	9388
Replace Unit Vent	Capital Renewal	22	Ea.	2	$372,126	9391
Steam/HW Unit Heater Requires Replacement	Capital Renewal	11	Ea.	2	$30,976	9393
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	186	Ea.	2	$960,892	9387
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	48,763	SF	4	$329,380	11539

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$19,060	9383
Note: Pumps are old and one was missing the shaft.						
	Sub Total for System	**6**	**items**		**$1,771,237**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$69,059	9389
The Panelboard Requires Replacement	Capital Renewal	5	Ea.	2	$24,243	9386
Room Has Insufficient Electrical Outlets	Educational Adequacy	92	Ea.	5	$45,656	Rollup
	Sub Total for System	**3**	**items**		**$138,958**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	8	Ea.	3	$10,633	9382
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	3	Ea.	4	$30,660	9378
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	22	Ea.	4	$59,818	9369
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	5	Ea.	4	$12,882	9379
Note: Fixtures are aged and corroded.						
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	$9,543	9375
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	24	Ea.	4	$76,345	9376
Room lacks a drinking fountain.	Educational Adequacy	15	Ea.	5	$16,542	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	13	Ea.	5	$14,220	Rollup
	Sub Total for System	**8**	**items**		**$230,643**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,507	10813
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	20	Ea.	3	$399,293	10807
Technology: Instructional spaces do not have local sound reinforcement.	Technology	20	Ea.	3	$95,070	10808
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,324	10802
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	10800
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	10803
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	10799
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$50,197	10797
Technology: Network system inadequate and/or near end of useful life	Technology	3	Ea.	3	$38,028	10810
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$38,028	10811
Technology: Network system inadequate and/or near end of useful life	Technology	48,763	SF	3	$13,908	10812
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	48,763	SF	3	$83,446	10815
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	48,763	SF	3	$83,446	24944
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	2	Room	3	$38,028	10806
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,606	10798
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	10801

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	20	Ea.	3	$30,422	10805
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,225	10804
	Sub Total for System	**18**	**items**		**$953,336**	
	Sub Total for Building 01 - Main Building	**51**	**items**		**$5,365,262**	

Building: 02 - Storage Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Shingle Roof Requires Replacement	Capital Renewal	800	SF	2	$22,817	9367
	Sub Total for System	**1**	**items**		**$22,817**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Wood Requires Replacement (Bldg SF)	Capital Renewal	80	SF	2	$2,398	11543
The Overhead Door Requires Replacement	Capital Renewal	1	Door	2	$36,792	9368
Note: Garage door is inoperable.						
The Exterior Requires Painting	Capital Renewal	200	SF Wall	5	$1,101	11542
Note: Fascia and wood siding have paint worn and peeling.						
	Sub Total for System	**3**	**items**		**$40,291**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Wood Ceiling Tiles Require Replacement	Capital Renewal	800	SF	4	$5,324	11540
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	800	SF	5	$5,286	Rollup
	Sub Total for System	**2**	**items**		**$10,610**	
	Sub Total for Building 02 - Storage Building	**6**	**items**		**$73,718**	
	Total for Campus	**63**	**items**		**$5,897,723**	

John J. McLaughlin Cumberland Hill School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Parking Lot Lighting	Pole Mounted Fixtures (Ea.)		3	Ea.	$23,205	5
		Sub Total for System	**1**	**items**	**$23,205**	
		Sub Total for Building -	**1**	**items**	**$23,205**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		19,505	SF	$128,876	4
		Sub Total for System	**1**	**items**	**$128,876**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Air Distribution	Make-up Air Unit		1	Ea.	$15,899	3
Note:	Cafeteria					
Decentralized Cooling	Window Units		8	Ea.	$26,711	3
Exhaust Air	Roof Exhaust Fan		13	Ea.	$67,654	5
Exhaust Air	Ventilator/Relief Vent (4'x6')		8	Ea.	$152,112	5
Air Distribution	Make-up Air Unit		2	Ea.	$31,799	5
Note:	Gym and media center					
Facility Hydronic Distribution	2-Pipe Water System (Hot)		48,763	SF	$375,875	5
Exhaust Air	Kitchen Exhaust Hoods		1	Ea.	$15,964	5
		Sub Total for System	**7**	**items**	**$686,013**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Transfer Switches	Automatic Transfer Switch (Amps)		600	Amps	$21,431	4
Lighting Fixtures	Building Mounted Fixtures (Ea.)		22	Ea.	$32,837	4
Power Distribution	Panelboard - 120/208 225A		7	Ea.	$40,595	4
Power Distribution	Distribution Panel (1600 Amps)		1	Ea.	$51,908	4
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)		4	Ea.	$5,514	4
Packaged Generator Assemblies	Emergency Generator (150 KW)		1	Ea.	$123,591	5
		Sub Total for System	**6**	**items**	**$275,875**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain		2	Ea.	$14,755	2
Domestic Water Equipment	Water Heater - Electric - 66 gallon		1	Ea.	$4,326	4
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)		48,763	SF	$392,342	4
Compressed-Air Systems	Air Compressor (2 hp)		1	Ea.	$6,383	4
Domestic Water Equipment	Water Heater - Gas - 75 Gallons		1	Ea.	$5,845	5
Domestic Water Equipment	Backflow Preventers - 2 in. (Ea.)		2	Ea.	$7,841	5
		Sub Total for System	**6**	**items**	**$431,491**	

Fire and Life Safety

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm		48,763	SF	$142,924	4
		Sub Total for System	**1**	**items**	**$142,924**	
		Sub Total for Building 01 - Main Building	**21**	**items**	**$1,665,180**	
		Total for: John J. McLaughlin Cumberland Hill School	**22**	**items**	**$1,688,384**	

Supporting Photos


Cracked Asphalt Parking


Alligatored Asphalt Paving


Site Aerial

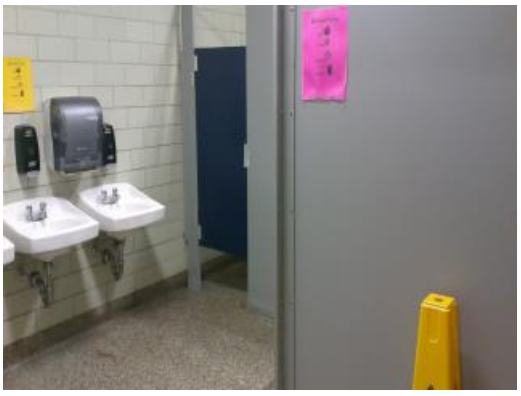

Block Cracked Asphalt Walkway


Typical Windows


Paved Play Area


Playground Equipment


Typical Classroom


Restroom Fixtures And Finishes


Exterior Brick


Site Lighting


Media Center


Front Elevation


Gymnasium


Storage Exterior


Storage Exterior


Classroom Lavatory


Stained Ceiling Tiles


Stained And Broken Ceiling Tiles


Damaged Gypsum Board Ceiling


Worn And Stained Carpet


Aged And Cracked VCT


Non-Refrigerated Drinking Fountain


Aged And Corroded Service Sink


Typical Urinals


Aged Pumps


Aged Panelboard


Aged Classroom Radiant Heater



Switchgear


Heating Unit


Stained Ceiling Panels


Unit Heater


Building Mounted Light


Generator


Kitchen Exhaust Hood


Boilers


Electrical Service


Damaged Window Unit

Facility Condition Assessment

Cumberland - Joseph L. McCourt Middle School | *June 2017*

45 Highland Avenue, Cumberland, RI 02864



Introduction

Joseph L. McCourt Middle School, located at 45 Highland Avenue in Cumberland, Rhode Island, was built in 1969. It comprises 71,079 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Joseph L. McCourt Middle School serves grades 6 - 8, has 40 instructional spaces, and has an enrollment of 451. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Joseph L. McCourt Middle School is 750 with a resulting utilization of 60%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Joseph L. McCourt Middle School the 5-year need is $10,791,332. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.

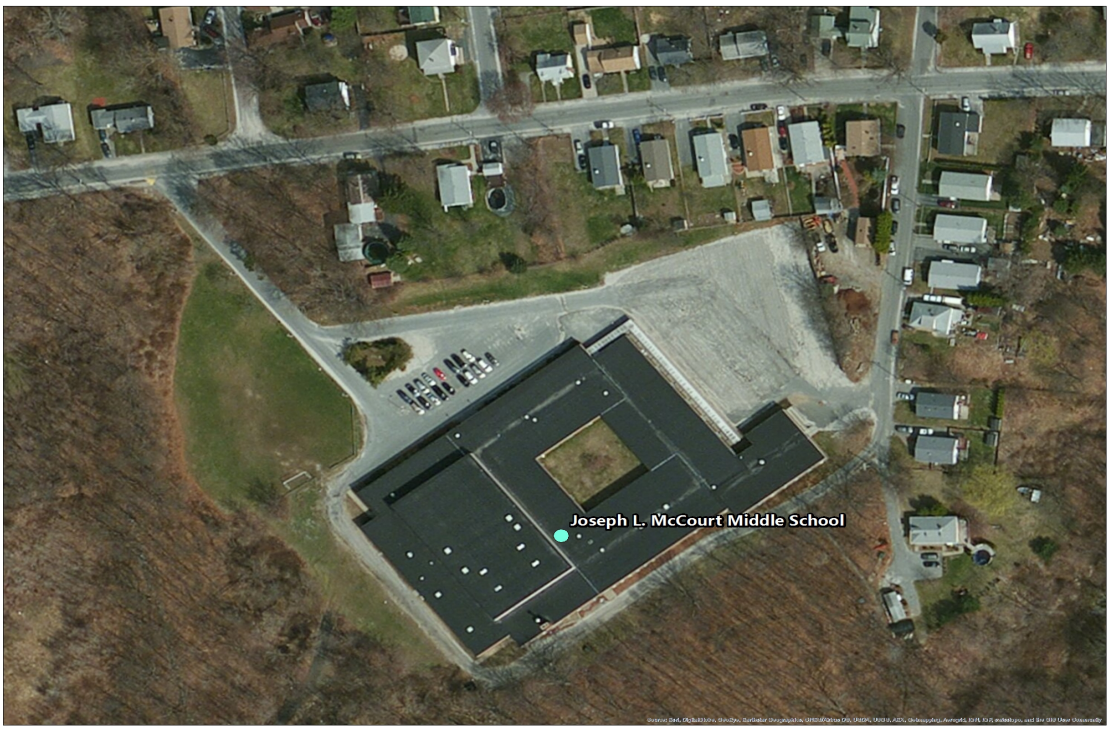


Figure 1: Aerial view of Joseph L. McCourt Middle School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the Joseph L. McCourt Middle School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Asphalt Pedestrian Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Modified Bitumen Roofing
	Aluminum Canopy Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Ceramic Tile Wall
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Quarry Tile Flooring
	Wood Flooring

01 - Main Building:	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	2,400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	20 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	5 Ton Condensing Unit
	Window Units
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	2,000 CFM Interior AHU
	5,000 CFM Interior AHU
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	4'x6' Ventilator/Relief Vent
	Wall Exhaust Fan

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	1,000 Gallon Water Storage Tank
	Gas Piping System
	52 Gallon Electric Water Heater
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals

01 - Main Building:	Air Compressor (2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	150 kW Emergency Generator
	Automatic Transfer Switch
	1,200 Amp Switchgear
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Panelboard - 120/240 100A
	Panelboard - 120/240 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$41,596	$28,329	$333,704	$403,629	4.83 %
Roofing	-	-	$35,959	-	-	$35,959	0.43 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$833,035	$648,446	-	$1,481,481	17.74 %
Mechanical	-	$1,505,207	$12,680	$476,884	$1,127,608	$3,122,380	37.40 %
Electrical	$4,208	$273,445	-	-	$70,981	$348,634	4.18 %
Plumbing	-	-	$428,405	$203,286	$27,309	$659,000	7.89 %
Fire and Life Safety	$33,995	-	-	-	-	$33,995	0.41 %
Technology	-	-	$1,443,377	-	-	$1,443,377	17.29 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$45,326	$749,624	$25,496	$820,446	9.83 %
Total	$38,203	$1,778,652	$2,840,378	$2,106,569	$1,585,099	$8,348,901	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Mechanical	-	$3,122,380
Interior	-	$1,481,481
Technology	-	$1,443,377

The chart below represents the building systems and associated deficiency costs.

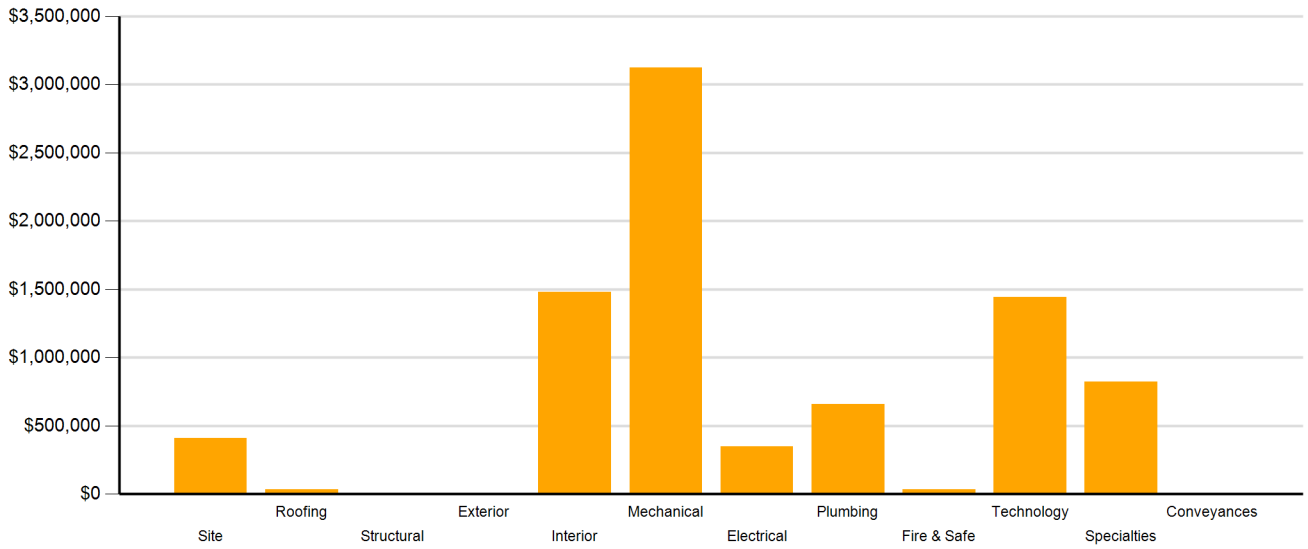


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$436,736	$21,247	-	$457,983
Barrier to Accessibility	-	-	$306,149	-	-	$306,149
Capital Renewal	-	$1,778,652	$601,991	$1,429,794	$1,130,668	$4,941,105
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$38,203	-	$56,658	$44,414	$454,431	$593,705
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$611,114	-	$611,114
Technology	-	-	$1,432,046	-	-	$1,432,046
Traffic	-	-	$6,799	-	-	$6,799
Total	$38,203	$1,778,652	$2,840,378	$2,106,569	$1,585,099	$8,348,901

**Displayed totals may not sum exactly due to mathematical rounding*

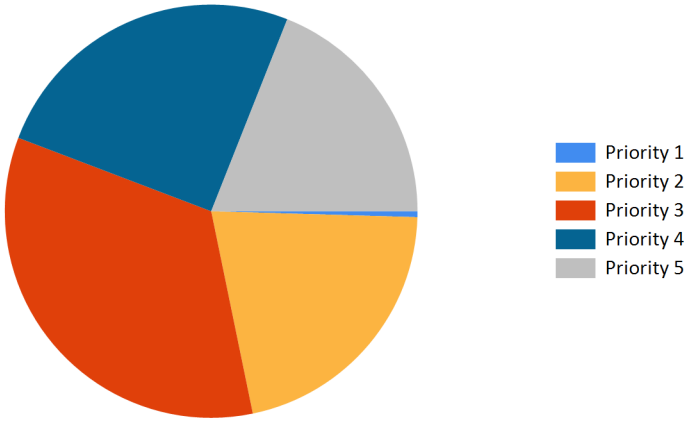


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$403,629	$0	$0	$0	$0	$0	$0	$403,629
Roofing	$35,959	$0	$0	$0	$0	$0	$0	$35,959
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$1,481,481	$0	$0	$0	$46,384	$485,279	$531,663	$2,013,144
Mechanical	$3,122,380	$0	$0	$16,033	$1,060,908	$200,605	$1,277,546	$4,399,926
Electrical	$348,634	$0	$0	$0	$0	$0	$0	$348,634
Plumbing	$659,000	$0	$0	$620,667	$5,322	$0	$625,989	$1,284,989
Fire and Life Safety	$33,995	$0	$0	$0	$0	$0	$0	$33,995
Technology	$1,443,377	$0	$0	$0	$0	$0	$0	$1,443,377
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$820,446	$0	$0	$0	$0	$0	$0	$820,446
Total	**$8,348,901**	**$0**	**$0**	**$636,700**	**$1,112,614**	**$685,884**	**$2,435,198**	**$10,784,099**

**Displayed totals may not sum exactly due to mathematical rounding*

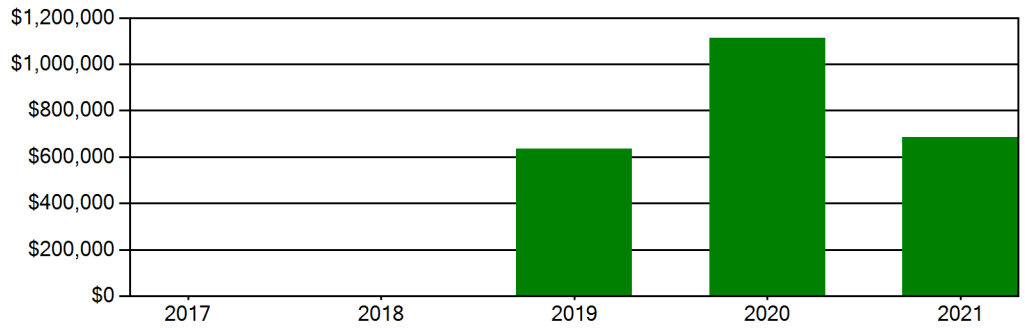
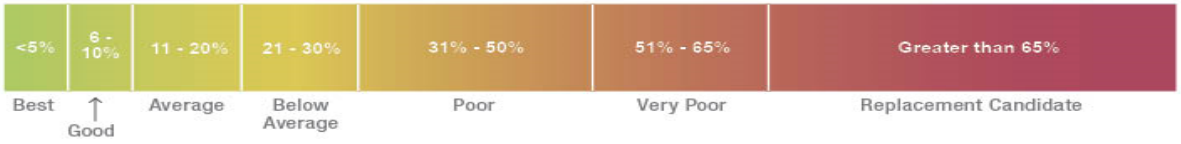


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $23,456,070. For planning purposes, the total 5-year need at the Joseph L. McCourt Middle School is $10,791,332 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Joseph L. McCourt Middle School facility has a 5-year FCI of 45.98%.

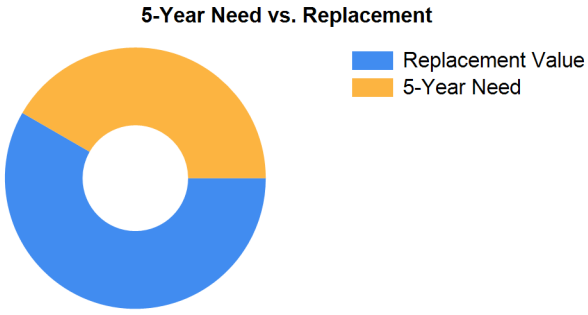


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 374 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the Joseph L. McCourt Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Joseph L. McCourt Middle School comprises 71,079 square feet and was constructed in 1969. Current deficiencies at this school total $8,356,134. Five year capital renewal costs total $2,435,198. The total identified need for the Joseph L. McCourt Middle School (current deficiencies and 5-year capital renewal costs) is $10,791,332. The 5-year FCI is 45.98%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Joseph L. McCourt Middle School Totals	71,079	1969	$8,356,134	$2,435,198	$10,791,332	45.98%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

LEA Feedback

As part of the assessment process, LEAs were given several opportunities to provide feedback on the data. Jacobs performed a thorough review of the comments provided relating to the Facilities Condition Assessment. Based on information provided, some adjustments were made to improve or refine the dataset. In other situations, enough information was not provided, item was out of scope, or evidence provided by assessment team did not align with the feedback and no adjustment was made. Finally, deficiency priorities, costs, and educational space/technology standards are consistent throughout the state.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Concrete Walks Require Replacement	Capital Renewal	300	SF	3	$6,091	9624
Crosswalk Requires Repainting	Traffic	3	Ea.	3	$2,266	11612
Note: Repaint crosswalks at intersection of Highland Ave and High St						
Parking Or Roadway Curbs Require Replacement	Capital Renewal	300	LF	3	$22,663	9625
Parking Or Roadway Curbs Require Replacement	Capital Renewal	80	LF	3	$6,043	9626
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11613
Note: Add school zone signs on Highland Ave						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28457
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28727
Note: Exterior Basketball Goals are Required						
Paving Requires Restriping	Capital Renewal	54	CAR	5	$3,060	11611
Note: Repaint parking spaces on campus (quantity provided is an estimate)						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$324,837	28236
Note: School lacks a competition track.						
	Sub Total for System	**9**	**items**		**$403,629**	
	Sub Total for School and Site Level	**9**	**items**		**$403,629**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ballast Coating Should Be Replaced	Capital Renewal	2,380	SF	3	$35,959	9623
Note: Exterior wall surface ballast.						
	Sub Total for System	**1**	**items**		**$35,959**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	50	Ea.	3	$436,736	19781
Note: All classrooms						
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	33	Door	3	$102,834	9606
Note: Non-compliant door hardware						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	25,755	SF	3	$293,465	9597
12 x 12 Floor Tiles Are Lifting or Broken and Highly Likely Contain Asbestos	Hazardous Material	20,290	SF	4	$574,792	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	52	Ea.	4	$14,731	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	821	LF	4	$18,606	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	316	SF	4	$2,984	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	750	SF	4	$21,247	19782
Note: Classrooms with partitions						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	425	SF	4	$16,085	Rollup
	Sub Total for System	**9**	**items**		**$1,481,481**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	52	Ea.	2	$873,647	9621
Steam/HW Unit Heater Requires Replacement	Capital Renewal	8	Ea.	2	$18,977	9615
Steam/HW Unit Heater Requires Replacement	Capital Renewal	4	Ea.	2	$11,188	9622
The Air Handler HVAC Component Requires Replacement	Capital Renewal	4	Ea.	2	$171,386	9608
The Air Handler HVAC Component Requires Replacement	Capital Renewal	3	Ea.	2	$301,728	9609
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	25	Ea.	2	$128,282	9616

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Air Compressor Is Inoperable And Requires Replacement	Capital Renewal	2	Ea.	3	$12,680	9610
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	71,079	SF	4	$476,884	9618
Duct Cleaning Required	Capital Renewal	71,079	SF	5	$1,127,608	11690
	Sub Total for System	**9**	**items**		**$3,122,380**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	3	Ea.	1	$4,208	Rollup
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$68,594	9617
Note: Federal Pacific						
The Electrical Disconnect Requires Replacement	Capital Renewal	12	Ea.	2	$21,847	9598
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$11,520	9611
Note: Federal Pacific panelboards.						
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$18,697	9612
Note: Federal Pacific panelboards						
The Panelboard Requires Replacement	Capital Renewal	13	Ea.	2	$123,986	9613
Note: Federal Pacific panelboards.						
The Panelboard Requires Replacement	Capital Renewal	5	Ea.	2	$28,801	9614
Note: Federal Pacific panelboards.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	144	Ea.	5	$70,981	Rollup
	Sub Total for System	**8**	**items**		**$348,634**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Restroom Is Not ADA Compliant	Barrier to Accessibility	734	SF	3	$203,315	53394
Note: Bathrooms to comply with RI-SBC 2013 Section 1101 and ICC A117.1-2009.						
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	27	Ea.	3	$203,968	9602
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	16	Ea.	3	$21,122	9607
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	9	Ea.	4	$91,361	9603
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	$8,102	9596
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	6	Ea.	4	$15,354	9604
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	27	Ea.	4	$85,310	9599
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	1	Ea.	4	$3,160	9600
Room lacks a drinking fountain.	Educational Adequacy	3	Ea.	5	$3,286	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	16	Ea.	5	$24,023	Rollup
	Sub Total for System	**10**	**items**		**$659,000**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks shut-off valves for utilities. (International Fuel Gas Code, Section 409.6)	Educational Adequacy	3	Ea.	1	$33,995	Rollup
	Sub Total for System	**1**	**items**		**$33,995**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,332	Rollup
Technology: Auditorium AV/Multimedia system is in need of minor improvements.	Technology	1	Room	3	$94,430	10699
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,443	10698
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	37	Ea.	3	$733,717	10692
Technology: Instructional spaces do not have local sound reinforcement.	Technology	37	Ea.	3	$174,695	10693

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,288	10679
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,288	10683
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,288	10687
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,394	10677
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,394	10685
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,620	10681
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10676
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10680
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10684
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10688
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	10675
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,859	10673
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$37,772	10695
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$37,772	10696
Technology: Network system inadequate and/or near end of useful life	Technology	71,079	SF	3	$20,136	10697
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	3	Room	3	$56,658	10691
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$7,554	10674
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	10678
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	10682
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	10686
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	37	Ea.	3	$55,902	10690
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,177	10689
	Sub Total for System	**27**	**items**		**$1,443,377**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	10	Ea.	3	$45,326	Rollup
The Metal Student Lockers Require Replacement	Capital Renewal	1,534	Ea.	4	$749,624	9620
Room lacks an appropriate refrigerator.	Educational Adequacy	3	Ea.	5	$25,496	Rollup
	Sub Total for System	**3**	**items**		**$820,446**	
	Sub Total for Building 01 - Main Building	**68**	**items**		**$7,945,271**	
	Total for Campus	**77**	**items**		**$8,348,901**	

Joseph L. McCourt Middle School - Life Cycle Summary Yrs 1-5

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet	2,132	SF	$46,384	4
Wall Painting and Coating	Painting/Staining (Bldg SF)	66,103	SF	$436,765	5
Interior Operable Partitions	Foldable partition (Bldg SF)	420	SF Wall	$48,514	5
	Sub Total for System	**3**	**items**	**$531,664**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units	4	Ea.	$13,355	3
Exhaust Air	Wall Exhaust Fan	1	Ea.	$2,678	3
HVAC Air Distribution	Ductwork (Bldg.SF)	71,079	SF	$1,044,944	4
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	$15,964	4
Decentralized Cooling	Ductless Split System (2 Ton)	2	Ea.	$13,663	5
Exhaust Air	Roof Exhaust Fan	14	Ea.	$72,858	5
Exhaust Air	Ventilator/Relief Vent (4'x6')	6	Ea.	$114,084	5
	Sub Total for System	**7**	**items**	**$1,277,546**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Facility Potable-Water Storage Tanks	Water Storage Tank - 1000 Gallon	1	Ea.	$45,519	3
Domestic Water Equipment	Water Heater - Electric - 52 gallon	1	Ea.	$3,255	3
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)	71,079	SF	$571,893	3
Domestic Water Equipment	Water Heater - Gas - 100 Gallon	1	Ea.	$5,322	4
	Sub Total for System	**4**	**items**	**$625,990**	
	Sub Total for Building 01 - Main Building	**14**	**items**	**$2,435,199**	
	Total for: Joseph L. McCourt Middle School	**14**	**items**	**$2,435,199**	

Supporting Photos


Roof Exhaust Fan


Emergency Generator


Window A/C Unit


Building Mounted Light



Rooftop Unit


Circulation Pumps



Water Heater


Air Compressor


Roof and Ventilator


Fire Alarm Control Panel


Boilers


Roof Condition


Cracked Sidewalk


Ductless Unit


Spalled Curbing


Deteriorated Curbing



Site Aerial



School Sign



Restroom Fixtures And Finishes



Exterior Finishes



Front Elevation



Cafeteria


Weathered Roofing


Cracked And Bubbled Roof


Restroom Lavatories


Stained Classroom Sink


Drinking Fountain


Showers


Media Center


Aged Service Sink


Urinal


Federal Pacific Panelboard


Federal Pacific Panel


Aged Heating Unit


Baseboard Radiator


Federal Pacific Switchgear


Hallway Finishes


Parking Lot


Old Lockers


Gymnasium



Unit Ventilator



Gym Lockers



Air Handling Unit



Entry

Facility Condition Assessment

Cumberland - North Cumberland Middle School | *June 2017*

400 Nate Whipple Highway, Cumberland, RI 02864



Introduction

North Cumberland Middle School, located at 400 Nate Whipple Highway in Cumberland, Rhode Island, was built in 1971. It comprises 78,600 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

North Cumberland Middle School serves grades 6 - 8, has 48 instructional spaces, and has an enrollment of 685. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for North Cumberland Middle School is 750 with a resulting utilization of 91%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For North Cumberland Middle School the 5-year need is $14,408,319. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.

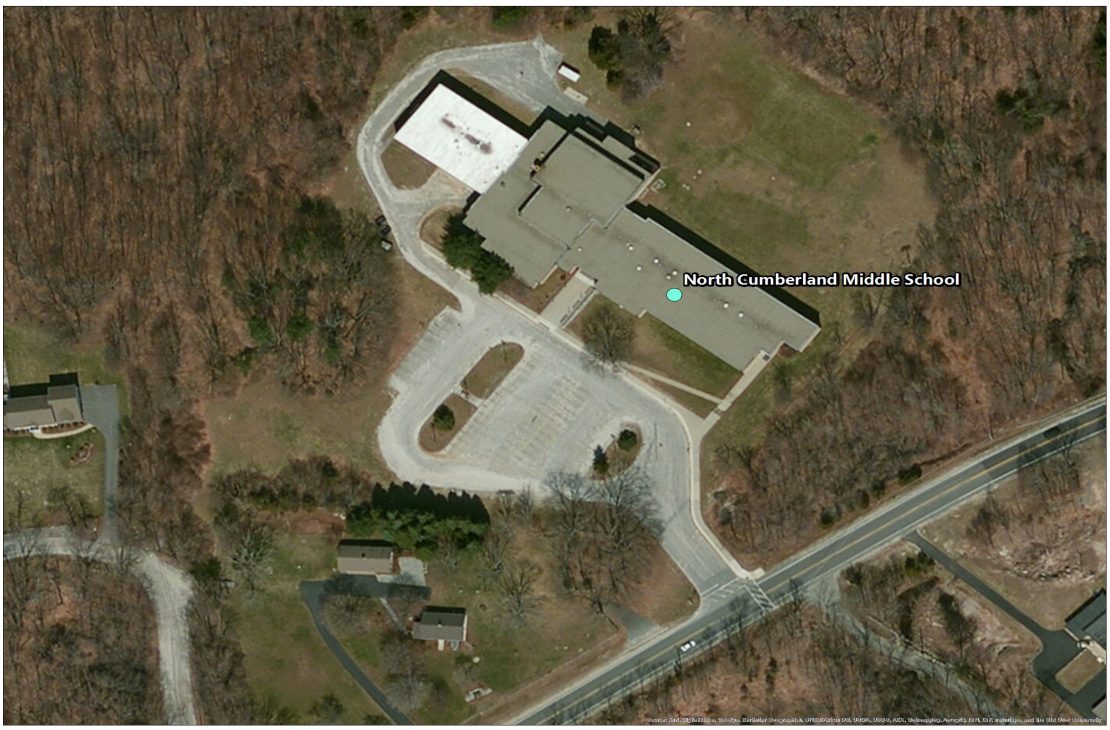


Figure 1: Aerial view of North Cumberland Middle School

Approach and Methodology

A facility condition assessment evaluates each building's overall condition. Two components of the facility condition assessment are combined to total the cost for facility need. The two components of the facility condition assessment are current deficiencies and life cycle forecast.

Current Deficiencies: Deficiencies are items in need of repair or replacement as a result of being broken, obsolete, or beyond useful life. The existing deficiencies that currently require correction are identified and assigned a priority. An example of a current deficiency might include a broken lighting fixture or an inoperable roof top air conditioning unit.

Life Cycle Forecast: Life cycle analysis evaluates ages of a building's systems to forecast system replacement as they reach the end of serviceable life. An example of a life cycle system replacement is a roof with a 20-year life that has been in place for 15 years and may require replacement in five years.

Discipline Specialists

All assessment teams produced current deficiencies associated with each school. The assessment for the school facilities at the Rhode Island Department of Education included several specialties:

Facility Condition Assessment: Architectural, mechanical, and electrical engineering professionals observed conditions via a visual observation that did not include intrusive measures, destructive investigations, or testing. Additionally, the assessment incorporated input provided by district facilities and maintenance staff where applicable. The assessment team recorded existing conditions, identified problems and deficiencies, documented corrective action and quantities, and identified the priority of the repair in accordance with parameters defined during the planning phase. The team took digital photos at each school to better identify significant deficiencies.

Technology: Technology specialists visited RIDE facilities and met with technology directors to observe and assess each facility's technology infrastructure. The assessment included network architecture, major infrastructure components, classroom instructional systems, necessary building space and support for technology. The technology assessment took into account the desired technology outcome and best practices and processes to ensure results can be attained effectively.

Hazardous Materials: Schools constructed prior to 1990 were assessed by specialists to identify the presence of hazardous materials. The team focused on identifying asbestos containing building materials (ACBMs), lead-based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. If sampling and analysis was required, these activities were recommended but not included in the scope of work.

Traffic: A traffic specialist performed an in-office review of aerial imagery of the traffic infrastructure around the facilities in accordance with section 1.05-7 in the Rhode Island School Construction Regulations and reviewed data collected on site during the facility condition assessment. Based on this information, deficiencies and corrective actions were identified. High problem areas were identified for consideration of more detailed site-specific study and analysis in the future.

Acoustics: Specialists assessed each school's acoustics, including architectural acoustics, mechanical system noise and vibration, and environmental noise. The assessment team evaluated room acoustics with particular attention to the intelligibility of speech in learning spaces, interior and exterior sound isolation, and mechanical system noise and vibration control.

Educational Program Space Assessment: Teams evaluated schools to ensure that that all spaces adequately support the districts educational program. Standards are established for each classroom type or instructional space. Each space is evaluated to determine if it meets those standards and a listing of alterations that should be made to make the space a better environment for teaching and learning was created.

System Summaries

The following tables summarize major building systems at the North Cumberland Middle School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

The exterior systems for the building(s) at this campus includes:

01 - Main Building:	Brick Exterior Wall
	Metal Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront Entrance Doors
	Overhead Exterior Utility Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	Built-Up Roofing With Ballast
	Metal Low-Slope Roofing
	Modified Bitumen Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Quarry Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Rubber Tile Flooring

01 - Main Building:	Terrazzo Flooring
	Carpet
	Metal Ceiling Panel

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	2,400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	12 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	5 Ton Outside Air Cooled Condenser
	Window Units
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	Ductwork
	2,000 CFM Interior AHU
	Roof Exhaust Fan

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	52 Gallon Electric Water Heater
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
	Sump Pump
	Air Compressor (2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	100 kW Emergency Generator
	1,200 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$46,837	$363,525	$330,645	$741,007	7.62 %
Roofing	-	-	$35,703	-	-	$35,703	0.37 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$1,066,373	$2,529,441	$17,782	$3,613,595	37.18 %
Mechanical	-	$1,160,497	$321,451	$527,344	-	$2,009,293	20.67 %
Electrical	$4,208	$261,985	-	-	$27,604	$293,797	3.02 %
Plumbing	-	$7,789	$426,806	$381,437	$42,607	$858,638	8.83 %
Fire and Life Safety	$45,326	-	-	-	-	$45,326	0.47 %
Technology	-	-	$1,725,727	-	-	$1,725,727	17.75 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,065	$354,288	$33,995	$397,348	4.09 %
Total	$49,534	$1,430,271	$3,631,962	$4,156,035	$452,632	$9,720,434	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Interior	-	$3,613,595
Mechanical	-	$2,009,293
Technology	-	$1,725,727

The chart below represents the building systems and associated deficiency costs.

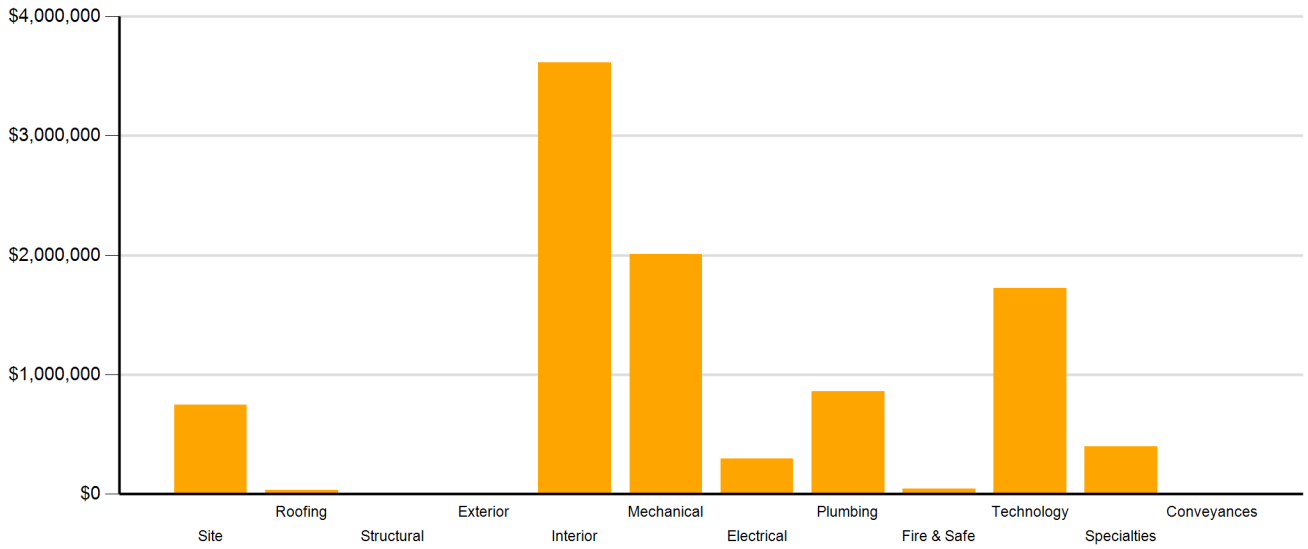


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

• **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

• **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

• **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

• **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

• **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

• **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

• **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$743,113	-	-	$743,113
Barrier to Accessibility	-	-	$24,929	-	-	$24,929
Capital Renewal	-	$1,430,271	$1,124,595	$2,403,849	$9,793	$4,968,507
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$49,534	-	$71,389	$28,329	$442,838	$592,090
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$1,723,858	-	$1,723,858
Technology	-	-	$1,663,404	-	-	$1,663,404
Traffic	-	-	$4,533	-	-	$4,533
Total	$49,534	$1,430,271	$3,631,962	$4,156,035	$452,632	$9,720,434

**Displayed totals may not sum exactly due to mathematical rounding*

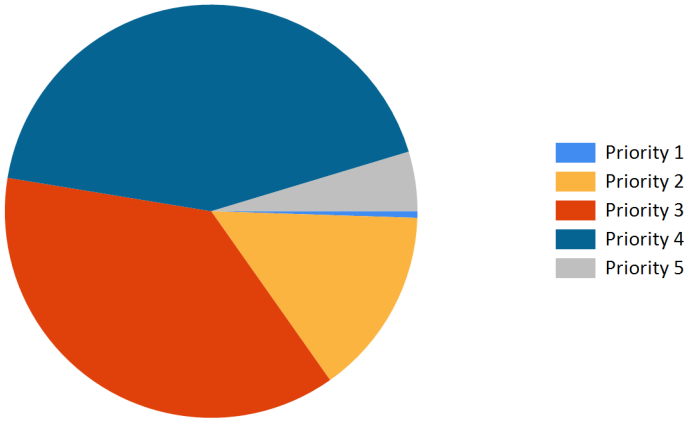


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$741,007	$0	$0	$0	$0	$84,468	$84,468	$825,475
Roofing	$35,703	$0	$0	$0	$0	$2,191,357	$2,191,357	$2,227,060
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$3,613,595	$0	$0	$85,502	$0	$363,529	$449,031	$4,062,626
Mechanical	$2,009,293	$0	$0	$43,405	$0	$1,266,518	$1,309,923	$3,319,216
Electrical	$293,797	$0	$0	$0	$0	$7,332	$7,332	$301,129
Plumbing	$858,638	$0	$0	$2,898	$3,255	$632,407	$638,560	$1,497,198
Fire and Life Safety	$45,326	$0	$0	$0	$0	$0	$0	$45,326
Technology	$1,725,727	$0	$0	$0	$0	$0	$0	$1,725,728
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$397,348	$0	$0	$0	$0	$0	$0	$397,348
Total	**$9,720,434**	**$0**	**$0**	**$131,805**	**$3,255**	**$4,545,611**	**$4,680,671**	**$14,401,105**

**Displayed totals may not sum exactly due to mathematical rounding*

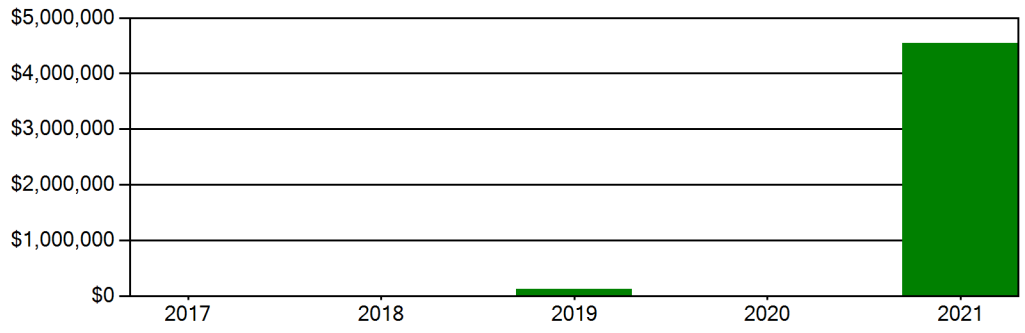
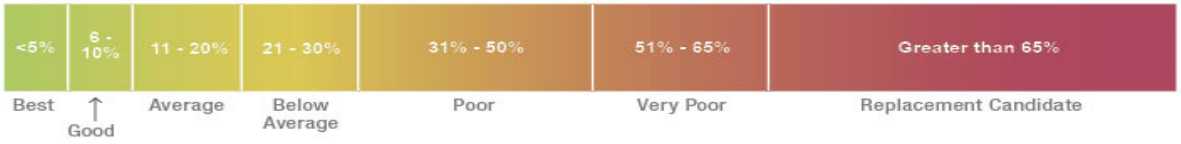


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

The Facility Condition Index (FCI) is used throughout the facility condition assessment industry as a general indicator of a building's health. Since 1991, the facility management industry has used an index called the FCI to benchmark the relative condition of a group of schools. The FCI is derived by dividing the total repair cost, including educational adequacy and site-related repairs, by the total replacement cost. A facility with a higher FCI percentage has more need, or higher priority, than a facility with a lower FCI. It should be noted that costs in the New Construction category are not included in the FCI calculation.



Financial modeling has shown that over a 30-year period, it is more cost effective to replace than repair schools with a FCI of 65 percent or greater. This is due to efficiency gains with facilities that are more modern and the value of the building at the end of the analysis period. It is important to note that the FCI at which a facility should be considered for replacement is typically debated and adjusted based on property owners and facility managers approach to facility management. Of course, FCI is not the only factor used to identify buildings that need renovation, replacement, or even closure. Historical significance, enrollment trends, community sentiment, and the availability of capital are additional factors that are analyzed when making school facility decisions.

For master planning purposes, the total current deficiencies and the first five years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-year FCI was calculated by dividing the 5-year need by the total replacement cost. Costs associated with new construction are not included in the FCI calculation.

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $25,938,000. For planning purposes, the total 5-year need at the North Cumberland Middle School is $14,408,319 (Life Cycle Years 1-5 plus the FCI deficiency cost). The North Cumberland Middle School facility has a 5-year FCI of 55.52%.

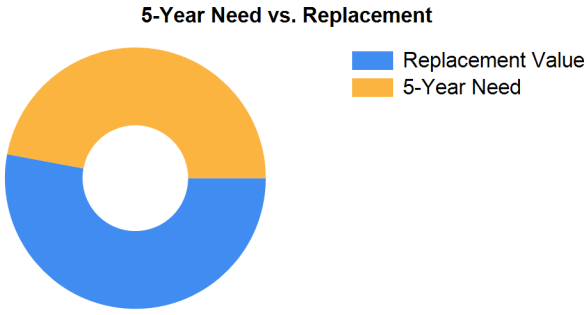


Figure 5: 5-Year FCI

It is important to reiterate that this FCI replacement threshold is not conclusive, but is intended to initiate planning discussion in which other relevant issues with regard to a facility's disposition must be incorporated. This merely suggests where conversations regarding replacement might occur.

Rhode Island Aspirational Capacity

The capacity of a school reflects how many students the school's physical facility can effectively serve. There are various methodologies that exist to calculate capacity. It is not uncommon to review an existing building only to find that the capacity that had once been assigned is greater than what can be reasonably accommodated today. This is primarily because of a change in how programs are delivered.

The Rhode Island Aspirational Capacity is based on the Rhode Island School Construction Regulations (SCRs) and is an aspirational goal of space use. The capacity for each individual public school in the state of Rhode Island was designed to conform to Section 1.06-2 Space Allowance Guidelines of the Rhode Island Department of Education (RIDE) SCRs. These regulations outline the allowed gross square feet (GSF) per student at each school type (ES, MS, HS) by utilizing a sliding scale based on projected enrollment. The resulting capacities reflect how school capacities align to the SCRs for new construction. The existing enrollment was multiplied by the GSF per student for the appropriate bracket. For the purposes of this analysis, Pre-K centers were rolled into the elementary totals, and K-8 facilities were counted as middle schools.

The most consistent and equitable way a state can determine school capacities across a variety of districts and educational program offerings is to use square-foot-per-student standards. In contrast, in the 2013 Public Schoolhouse Assessment Report, LEAs self-reported capacities for their elementary, middle and high schools. Districts typically report "functional capacity," which is defined as the number of students each classroom can accommodate. Functional capacity counts how many students can occupy a space, not how much room students and teachers have within that space. For example, a 650-square-foot classroom and a 950-square-foot classroom can both have a reported capacity of 25 students, but the actual teaching and learning space per student varies greatly.

The variation in square feet per student impacts the kinds of teaching practices possible in each space. The lowest allocation of space per student restricts group and project-based learning strategies and requires teachers to teach in more traditional, lecture-style formats, due to a lack of space. Furthermore, the number of students that can be accommodated in a classroom does not account for access to sufficient common spaces such as libraries, cafeterias, and gymnasiums. When cafeterias are undersized relative to the population, schools must host four or more lunch periods a day, resulting in some students eating lunch mid-morning and some mid-afternoon. Similarly, undersized libraries and gymnasiums create scheduling headaches for schools and restrict student access. Finally, a classroom count-only approach to school capacity does not consider the inherent scheduling challenges schools face.

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 418 students.

Facility New Construction

As part of the Educational Program Space Assessment, select core spaces were compared to the RI School Construction Regulations. If it was determined that a facility was in need of square footage related to a cafeteria or library/media center, a cost for additional space was estimated. This cost is not included in the total 5-year need or the 5-year FCI calculation.

The New Construction cost to bring the North Cumberland Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The North Cumberland Middle School comprises 78,600 square feet and was constructed in 1971. Current deficiencies at this school total $9,727,648. Five year capital renewal costs total $4,680,671. The total identified need for the North Cumberland Middle School (current deficiencies and 5-year capital renewal costs) is $14,408,319. The 5-year FCI is 55.52%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
North Cumberland Middle School Totals	78,600	1971	$9,727,648	$4,680,671	$14,408,319	55.52%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

LEA Feedback

As part of the assessment process, LEAs were given several opportunities to provide feedback on the data. Jacobs performed a thorough review of the comments provided relating to the Facilities Condition Assessment. Based on information provided, some adjustments were made to improve or refine the dataset. In other situations, enough information was not provided, item was out of scope, or evidence provided by assessment team did not align with the feedback and no adjustment was made. Finally, deficiency priorities, costs, and educational space/technology standards are consistent throughout the state.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Parking Or Roadway Curbs Require Replacement	Capital Renewal	560	LF	3	$42,304	9980
Note: Concrete curbs and steps are spalled and damaged.						
Traffic Signage Is Required	Traffic	2	Ea.	3	$4,533	11638
Note: Add school zone signs with flashing beacon on Nate Whipple Hwy						
Asphalt Paving Requires Replacement	Capital Renewal	58	CAR	4	$190,602	9978
Asphalt Paving Requires Replacement	Capital Renewal	44	CAR	4	$144,595	9979
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28458
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28728
Note: Exterior Basketball Goals are Required						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$324,837	28237
Note: School lacks a competition track.						
	Sub Total for System	**7**	**items**		**$741,007**	
	Sub Total for School and Site Level	**7**	**items**		**$741,007**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Built Up Roofing (Bur) Covering Has Blisters That Should Be Repaired	Capital Renewal	158	Ea.	3	$20,075	53605
Note: Per LEA review feedback - roof to be repaired as needed. Cumberland cost $20,000.						
Gutters Require Replacement	Capital Renewal	331	LF	3	$15,628	53395
Note: Gutters are damaged. Water infiltration into walls and ceilings can lead to mold, damage to ceiling and wall finishes, and damage to non-friable ACM causing it to become friable. RISBC 1504.6, 1507.13, 1508.2, and 1510.3.						
	Sub Total for System	**2**	**items**		**$35,703**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	43	Ea.	3	$375,593	19787
Note: All classrooms						
Classroom Interior Doors Provide Insufficient Sound Isolation	Acoustics	6	Ea.	3	$52,408	19788
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	68,382	SF	3	$613,441	9984
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	8	Door	3	$24,929	9992
Note: Non-compliant hardware.						
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	22	LF	4	$415	Rollup
Ceiling Grid Requires Replacement	Capital Renewal	68,382	SF	4	$805,583	10014
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	58,165	SF	4	$1,647,748	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	97	Ea.	4	$27,479	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - linear feet)	Hazardous Material	65	LF	4	$1,473	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - square feet)	Hazardous Material	1,460	SF	4	$13,787	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - each)	Hazardous Material	3	Ea.	4	$850	Rollup
Paint (probable pre-1978 in base layer(s)) -large areas(> 10 sq. ft.)of peeling/damage & area in active use-adults only (measurement unit - each)	Hazardous Material	112	Ea.	4	$31,728	Rollup
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	10	SF	4	$94	Rollup
Wall/ceiling materials - large areas (> 10 sq. ft.) of damage & area in active use - children	Hazardous Material	30	SF	4	$283	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,533	Rollup
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	$3,456	Rollup

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Gypsum Board Ceilings Require Repainting	Capital Renewal	2,357	SF	5	$9,793	Rollup
	Sub Total for System	**17**	**items**		**$3,613,595**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Steam/HW Unit Heater Requires Replacement	Capital Renewal	19	Ea.	2	$45,069	10003
Note: Unit heaters are old and are schedule for replacement in the near future.						
The Air Handler HVAC Component Requires Replacement	Capital Renewal	6	Ea.	2	$257,079	9997
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	78,600	SF	2	$601,784	10007
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	50	Ea.	2	$256,565	10005
Air Compressor Is Inoperable And Requires Replacement	Capital Renewal	1	Ea.	3	$6,340	9998
Unit Ventilators Are Excessively Noisy	Acoustics	50	Ea.	3	$315,111	19789
Note: All classrooms & gym						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	78,600	SF	4	$527,344	10010
	Sub Total for System	**7**	**items**		**$2,009,293**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	3	Ea.	1	$4,208	Rollup
Generator Requires Replacement	Capital Renewal	1	Ea.	2	$103,872	10006
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$68,594	11684
The Panelboard Requires Replacement	Capital Renewal	14	Ea.	2	$67,423	9999
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,760	10000
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$12,465	10001
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$3,872	10002
Room Has Insufficient Electrical Outlets	Educational Adequacy	56	Ea.	5	$27,604	Rollup
	Sub Total for System	**8**	**items**		**$293,797**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backflow Preventer Requires Replacement	Capital Renewal	2	Ea.	2	$7,789	10004
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$115,978	10011
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	38	Ea.	3	$287,066	9988
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	18	Ea.	3	$23,762	9993
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	15	Ea.	4	$152,268	9989
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	13	Ea.	4	$35,109	9982
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	19	Ea.	4	$51,313	9983
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	6	Ea.	4	$15,354	9991
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	1	Ea.	4	$7,328	9994
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	38	Ea.	4	$120,065	9986
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	$6,572	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	24	Ea.	5	$36,034	Rollup
	Sub Total for System	**12**	**items**		**$858,638**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks shut-off valves for utilities. (International Fuel Gas Code, Section 409.6)	Educational Adequacy	4	Ea.	1	$45,326	Rollup
	Sub Total for System	**1**	**items**		**$45,326**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	11	Ea.	3	$62,323	Rollup
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	1	Ea.	3	$9,443	10771

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	37	Ea.	3	$733,717	10766
Technology: Instructional spaces do not have local sound reinforcement.	Technology	37	Ea.	3	$174,695	10767
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,288	10756
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,288	10760
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,620	10755
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,620	10759
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10758
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,721	10762
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	10754
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$21,530	10753
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$37,772	10768
Technology: Network system inadequate and/or near end of useful life	Technology	20	Ea.	3	$94,430	10769
Technology: Network system inadequate and/or near end of useful life	Technology	63,300	SF	3	$17,932	10770
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	63,300	SF	3	$107,593	10772
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	4	Room	3	$75,544	10765
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	10757
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	10761
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	37	Ea.	3	$55,902	10764
Technology: Telephone system is inadequate and/or non-existent.	Technology	37	Ea.	3	$265,536	10763
	Sub Total for System	**21**	**items**		**$1,725,727**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,065	Rollup
The Metal Student Lockers Require Replacement	Capital Renewal	725	Ea.	4	$354,288	10013
Room lacks an appropriate refrigerator.	Educational Adequacy	4	Ea.	5	$33,995	Rollup
	Sub Total for System	**3**	**items**		**$397,348**	
	Sub Total for Building 01 - Main Building	**71**	**items**		**$8,979,427**	
	Total for Campus	**78**	**items**		**$9,720,434**	

North Cumberland Middle School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Pedestrian Pavement	Sidewalks - Concrete	3,500	SF	$71,539	5
Fences and Gates	Fencing - Chain Link (4 Ft)	200	LF	$12,929	5
	Sub Total for System	**2**	**items**	**$84,468**	
	Sub Total for Building -	**2**	**items**	**$84,468**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Built-Up Roofing (BUR) w/ballast	47,833	SF	$1,818,988	5
Note:	Updated per LEA review feedback				
Low-Slope Roofing	Modified Bitumen	9,792	SF	$372,369	5
Note:	Updated per LEA review feedback				
	Sub Total for System	**2**	**items**	**$2,191,357**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet	3,930	SF	$85,502	3
Wall Painting and Coating	Painting/Staining (Bldg SF)	55,019	SF	$363,529	5
	Sub Total for System	**2**	**items**	**$449,031**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units	13	Ea.	$43,405	3
HVAC Air Distribution	Ductwork (Bldg.SF)	78,600	SF	$1,155,511	5
Exhaust Air	Roof Exhaust Fan	16	Ea.	$83,266	5
Decentralized Cooling	Condenser - Outside Air Cooled (5 Tons)	2	Ea.	$27,741	5
	Sub Total for System	**4**	**items**	**$1,309,923**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wiring Devices	Electrical Disconnect	4	Ea.	$7,332	5
	Sub Total for System	**1**	**items**	**$7,332**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Building Support Plumbing System Supplementary Components	Sump Pump	2	Ea.	$2,898	3
Domestic Water Equipment	Water Heater - Electric - 52 gallon	1	Ea.	$3,255	4
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)	78,600	SF	$632,407	5
	Sub Total for System	**3**	**items**	**$638,559**	
	Sub Total for Building 01 - Main Building	**12**	**items**	**$4,596,203**	
	Total for: North Cumberland Middle School	**14**	**items**	**$4,680,671**	

Supporting Photos


Stained Ceiling Tile


Deteriorated Asphalt


Weathered Asphalt Paving


Chipped Concrete Stair



Site Aerial



Chain Link Fence



Hallway Finishes



Stage



Front Entrance



Exterior Finishes


Typical Classroom


Gymnasium

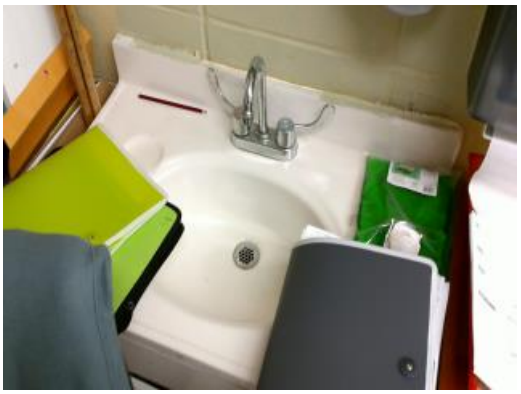

Music Room


Parking


Restroom Finishes

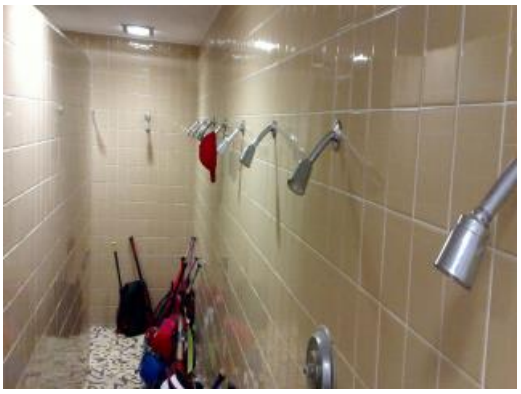

Cafeteria


Library


Classroom Lavatory


Corroded Lab Sink


Restroom Lavatories


Group Showers


Drinking Fountain


Painted Ceiling Peeling


Corroded Mop Sink


Electric Water Cooler


Aged Air Compressor


Panelboard


Aged Panelboard


Aged Unit Heater


Aged Backflow Preventer


Aged Radiant Heater


Emergency Generator


Aged Gym Lockers


Pumps



Fire Alarm Control Panel



Water Heater



Boilers



Weathered Roof



Main Entrance