Chariho

LEA Summary

Chariho totals 538,632 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 in March 2016. This report provides LEA summary findings for the statewide assessment program.

School Type by Count

School Type	SqFt
Elementary School	174,020
Middle School	154,936
High School	197,676
K-12	12,000
Total:	**538,632**

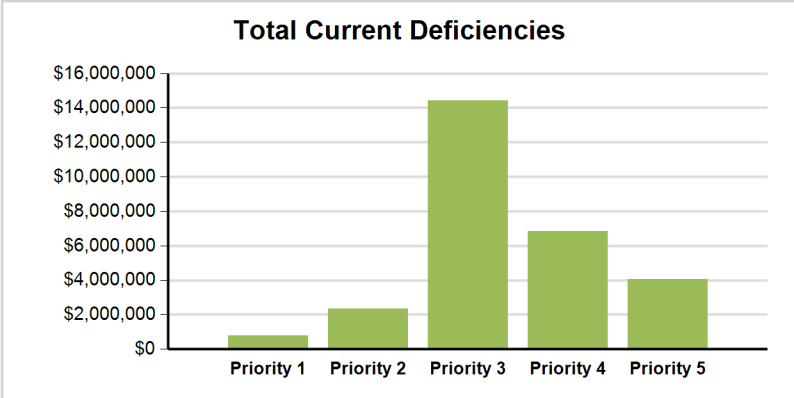
Demographics

Enrollment is projected to decrease by 17.2% over the next 10 years in Chariho. The total LEA enrollment at 8 school(s) is 3,233 students with a total capacity of 4,060 as reported by the LEA. Utilization is calculated by dividing enrollment by capacity, resulting in 79.6% utilization at Chariho.

79.6 % Utilization

Educational Program Space Analysis

In Chariho there are 266 instructional spaces; of these spaces 18.0% meet or exceed the space size standards. Of the total current deficiencies identified, $3,687,516 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 $28,474,573, with 50.7% categorized as Priority 3 and another 24.1% as Priority 4. The building systems with the highest current deficiency costs are Interior and Technology.

The projected life cycle need in Years 1 through 5 is $22,217,003. It is anticipated that the majority of the need will occur in Year 3. School(s) with the greatest need are represented in the adjacent table and make up 58.4% of the combined 5-Year need at Chariho.

School(s) with Greatest Need	Combined 5-Year Need
Chariho Regional Middle School	$11,699,314
Chariho Regional High School	$10,751,294
Richmond Elementary School	$7,169,819

Five Year Facility Condition Index (FCI)

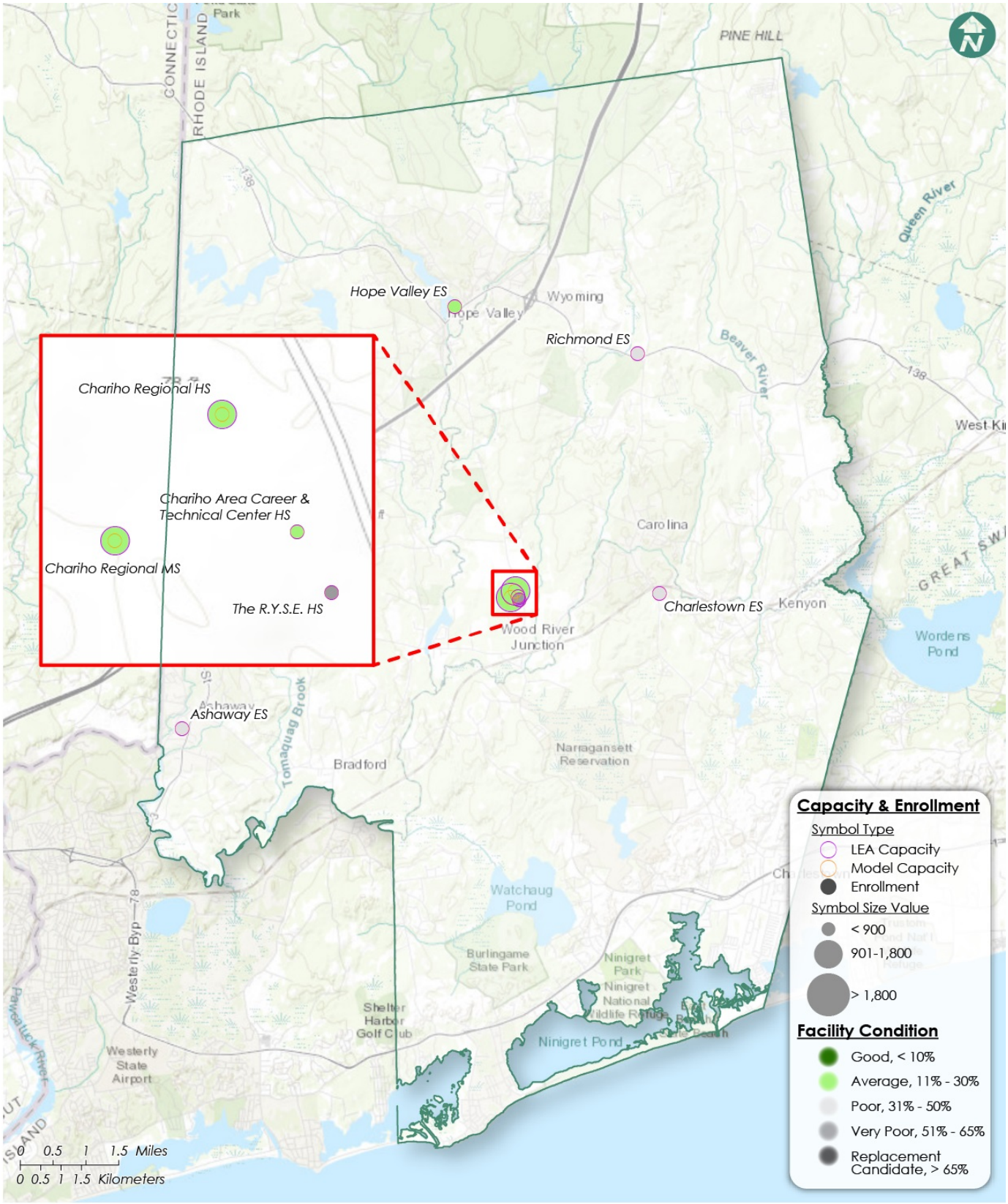
For master planning purposes, the total current deficiencies, less new construction, and the first 5 years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-Year FCI was calculated by dividing the 5-Year need by the total replacement cost. The 5-Year need is $50,691,576 with a district replacement value of $188,565,740. The resulting 5-Year FCI is 26.9%.

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
538,632	1963	$28,474,573	$22,217,003	$50,691,576	26.9%

Chariho



Facility Condition Assessment

Chariho - Ashaway Elementary School | *June 2017*

12A Hillside Avenue, Ashaway, RI 02804

Introduction

Ashaway Elementary School, located at 12A Hillside Avenue in Ashaway, Rhode Island, was built in 1968. It comprises 35,750 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.

Ashaway Elementary School serves grades KG - 4, has 18 instructional spaces, and has an enrollment of 197. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Ashaway Elementary School is 258 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 Ashaway Elementary School the 5-year need is $5,331,103. 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.

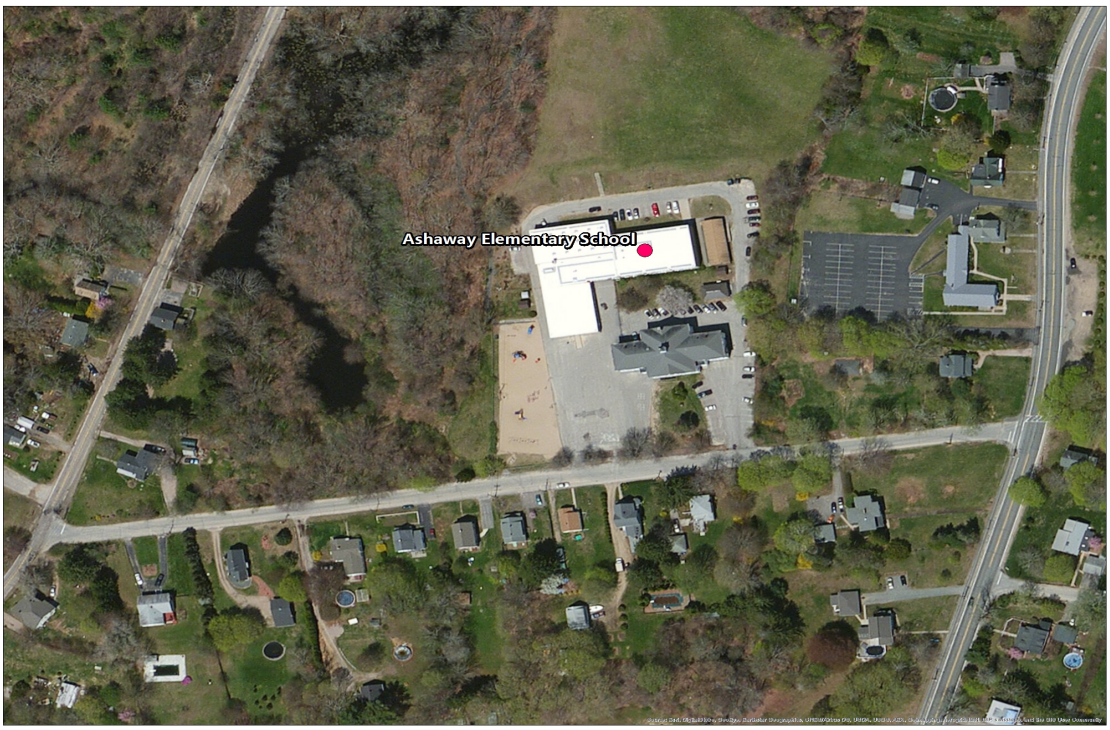


Figure 1: Aerial view of Ashaway Elementary School

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 Ashaway Elementary School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	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
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
02 - Building 02:	CMU Exterior Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
03 - Portable:	Wood Siding Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing
02 - Building 02:	Metal Steep Slope Roofing
03 - Portable:	Composition Shingle 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
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring

01 - Main Building:	Terrazzo Flooring
	Carpet
02 - Building 02:	Vinyl/Fabric Wall Covering
	Concrete Flooring
03 - Portable:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Vinyl/Fabric Wall Covering
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	1,275 MBH Cast Iron Steam Boiler
	3,060 MBH Cast Iron Steam Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	20 MBH Steam Unit Heater
	Electronic Heating System Controls
	1 Ton Ductless Split System
	Window Units
	Make-up Air Unit
	1 HP or Smaller Pump
	2-Pipe Steam Hydronic Distribution System
	Ductwork
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Wall Exhaust Fan
	Kitchen Exhaust Hoods
02 - Building 02:	Gas Heating Unit Vent
	2 Ton Thru-Wall A/C
	Wall Exhaust Fan
03 - Portable:	7 kW Electric Unit Heater

Plumbing

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

01 - Main Building:	4" Backflow Preventers
	Gas Piping System
	80 Gallon Electric Water Heater
	100 Gallon Gas Water Heater
02 - Building 02:	3/4" Backflow Preventers

02 - Building 02:	Gas Piping System
	30 Gallon Gas Water Heater
03 - Portable:	10 Gallon Electric Water Heater
01 - Main Building:	Domestic Water Piping System
02 - Building 02:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
02 - Building 02:	Restroom Lavatories
	Toilets
03 - Portable:	Lavatories
	Toilets
01 - Main Building:	Sump Pump
	Air Compressor (1 hp)

Electrical

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

01 - Main Building:	50 kW Emergency Generator
	208/120v Switch
	800 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
02 - Building 02:	50 kW Emergency Generator
	208/120v Switch
	Panelboard - 120/208 225A
	Light Fixtures
	Building Mounted Lighting Fixtures
03 - Portable:	Panelboard - 120/240 100A
	Building 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	-	-	$111,195	$56,322	$5,807	$173,325	9.12 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$128,362	$86,467	$11,332	$226,160	11.90 %
Mechanical	-	$311,634	$92,531	-	$11,155	$415,319	21.86 %
Electrical	-	$29,511	$5,942	-	$7,403	$42,856	2.26 %
Plumbing	-	-	$9,691	$36,820	$10,644	$57,155	3.01 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$980,852	-	-	$980,852	51.62 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,533	-	-	$4,533	0.24 %
Total	$0	$341,145	$1,333,105	$179,609	$46,341	$1,900,200	

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

The building systems with the most need include:

Technology	-	$980,852
Mechanical	-	$415,319
Interior	-	$226,160

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

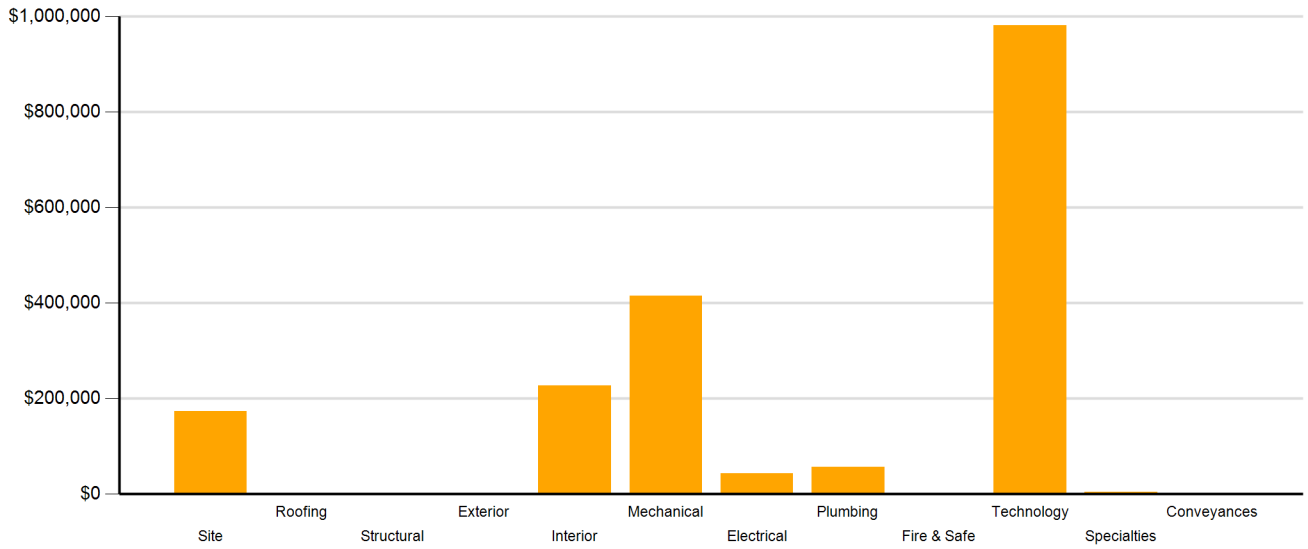


Figure 2: System Deficiencies

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	-	-	$213,913	$27,184	-	$241,097
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$341,145	$52,322	$64,813	$14,615	$472,895
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$4,533	$42,711	$31,726	$78,970
Functional Deficiency	-	-	$5,942	-	-	$5,942
Hazardous Material	-	-	-	$44,901	-	$44,901
Technology	-	-	$980,852	-	-	$980,852
Traffic	-	-	$75,544	-	-	$75,544
Total	$0	$341,145	$1,333,105	$179,609	$46,341	$1,900,200

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

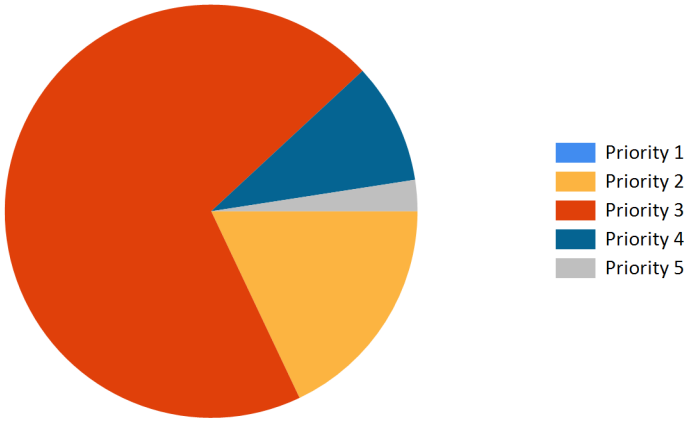


Figure 3: Current deficiencies by priority

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	$173,325	$0	$0	$151,590	$0	$0	$151,590	$324,915
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$466,720	$0	$51,338	$518,058	$518,058
Interior	$226,160	$0	$0	$220,428	$41,328	$1,266,230	$1,527,986	$1,754,147
Mechanical	$415,319	$0	$0	$132,406	$5,632	$335,671	$473,709	$889,028
Electrical	$42,856	$0	$0	$11,599	$0	$0	$11,599	$54,455
Plumbing	$57,155	$0	$0	$412,361	$0	$15,225	$427,586	$484,741
Fire and Life Safety	$0	$0	$0	$0	$6,155	$0	$6,155	$6,155
Technology	$980,852	$0	$0	$0	$0	$0	$0	$980,852
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$4,533	$0	$0	$0	$0	$313,258	$313,258	$317,791
Total	**$1,900,200**	**$0**	**$0**	**$1,395,104**	**$53,115**	**$1,981,722**	**$3,429,941**	**$5,330,141**

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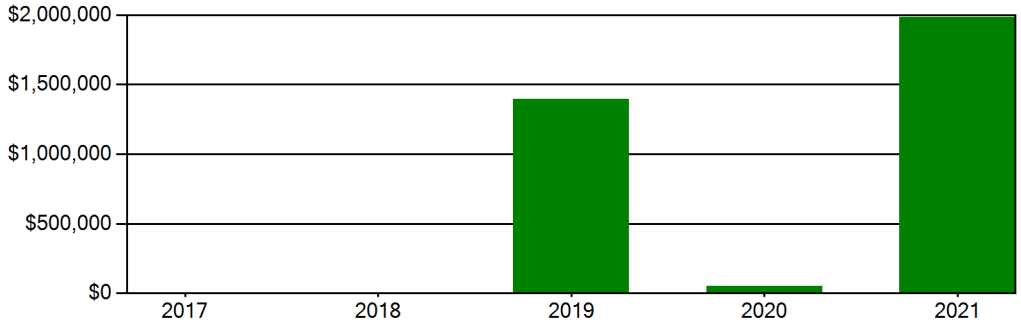
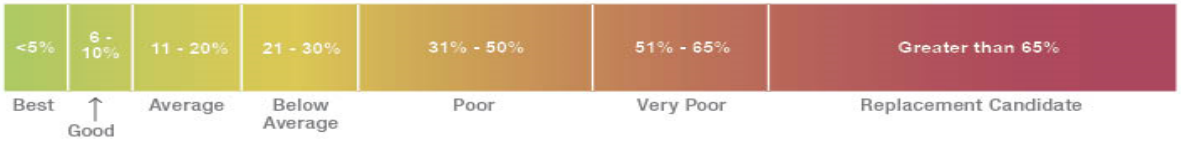


Figure 4: Life Cycle Capital Renewal Forecast

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 $13,247,500. For planning purposes, the total 5-year need at the Ashaway Elementary School is $5,331,103 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Ashaway Elementary School facility has a 5-year FCI of 40.24%.

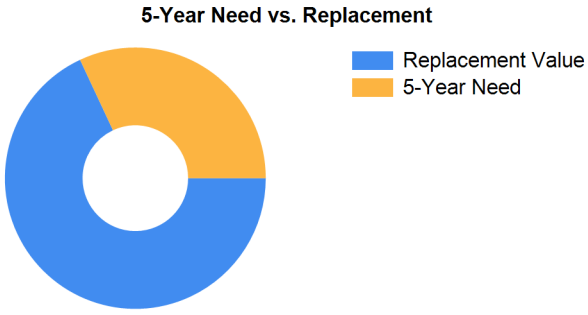


Figure 5: 5-Year FCI

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 210 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 Ashaway Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $455,112.

Summary of Findings

The Ashaway Elementary School comprises 35,750 square feet and was constructed in 1968. Current deficiencies at this school total $1,901,162. Five year capital renewal costs total $3,429,941. The total identified need for the Ashaway Elementary School (current deficiencies and 5-year capital renewal costs) is $5,331,103. The 5-year FCI is 40.24%.

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
Ashaway Elementary School Totals	35,750	1968	$1,901,162	$3,429,941	$5,331,103	40.24%

**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
Traffic Signage Is Required	Traffic	2	Ea.	3	$75,544	4440
Note: Add school zone warning signs along Hillside Avenue						
Asphalt Paving Requires Resurfacing	Capital Renewal	26,950	SF	4	$27,994	846
Note: The parking and roadway pavement area need to be resurfaced in the near future. It appears to be beyond its life cycle with patching and cracking.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28423
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28702
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**4**	**items**		**$137,673**	
	Sub Total for School and Site Level	**4**	**items**		**$137,673**	

Building: 01 - Main Building

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	14	Ea.	3	$121,382	4629
Note: All classroom						
The Carpet Flooring Requires Replacement	Capital Renewal	308	SF	3	$6,980	1397
Note: The only carpet is in the library and there is VCT below it. The carpet has wear and tear and is scheduled to be replaced by VCT within the year.						
Glazing Putty is Broken or Deteriorating	Hazardous Material	2,070	LF	4	$40,999	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	1	Ea.	4	$297	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	80	LF	4	$1,901	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	100	SF	4	$990	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 - linear feet)	Hazardous Material	30	LF	4	$713	Rollup
Room Is Excessively Reverberant	Acoustics	3,000	SF	4	$27,184	4631
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	380	SF	4	$14,382	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	4	Ea.	5	$9,065	Rollup
	Sub Total for System	**10**	**items**		**$223,894**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	18	Ea.	2	$31,409	759
Note: Convector did not appear to be active or functional.						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	34,900	SF	2	$280,225	754
Note: Steam piping is extremely old with significant rust and corrosion observed in the mechanical building.						
Unit Ventilators Are Excessively Noisy	Acoustics	14	Ea.	3	$92,531	4628
Note: All classrooms						
Duct Grill Requires Replacement	Capital Renewal	15	Ea.	5	$4,635	767
Note: Gym diffusers showing signs of surface corrosion.						
Remove Abandoned Equipment	Capital Renewal	2	Ea.	5	$6,520	762
Note: Powered exhaust fans still remain after the flue breeching has been reconfigured for the boiler; remove two fans and excessive ductwork.						
	Sub Total for System	**5**	**items**		**$415,319**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$24,461	755
Note: Main service appears to be original equipment, the performance of the circuit breakers is questioned due to the significant age of the system.						

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,051	761
Note: The circuit breakers performance is questioned due to the significant age of the system.						
The Electrical Receptacles Are Inadequate And More are Needed	Functional Deficiency	10	Ea.	3	$5,942	764
Note: Classrooms, library and offices need additional power capacity.						
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,460	763
Note: Remove abandoned antenna.						
Location: Rooftop						
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,943	Rollup
	Sub Total for System	**5**	**items**		**$42,856**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	7	Ea.	3	$9,691	753
Note: Excessive stains and hard water deposit on the urinal and surrounding flush valves.						
Location: Boys upper/lower						
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	13	Ea.	4	$36,820	758
Note: Classroom sinks are discolored, corroded on the faucets and no bubblers.						
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	4	Ea.	5	$4,072	Rollup
	Sub Total for System	**4**	**items**		**$57,155**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	24	Ea.	3	$499,116	3193
Technology: Instructional spaces do not have local sound reinforcement.	Technology	29	Ea.	3	$143,595	3200
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,932	3190
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,366	3188
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	114	Ea.	3	$50,803	3191
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$31,690	3198
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$24,758	3199
Technology: Network system inadequate and/or near end of useful life	Technology	37,850	SF	3	$11,245	3201
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	30,775	SF	3	$54,858	3194
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$56,448	3195
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3189
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,536	3192
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	24	Ea.	3	$38,028	3196
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,526	3197
	Sub Total for System	**14**	**items**		**$980,852**	

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	**39**	**items**		**$1,724,609**	

Building: 03 - Portable

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Wood Ramp Requires Replacement	Capital Renewal	600	SF	3	$35,651	848
Note: The existing ramp in front of the portable building is wood and appears beyond its life cycle. 150 LF						
	Sub Total for System	**1**	**items**		**$35,651**	

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**	
	Sub Total for Building 03 - Portable	**2**	**items**		**$37,917**	
	Total for Campus	**45**	**items**		**$1,900,200**	

Buildings with no reported deficiencies

02 - Building 02

Ashaway Elementary 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	3
Pedestrian Pavement	Sidewalks - Asphalt	4,200	SF	$35,890	3
Note:	Paved pedistrian playground and bus drop off space				
Fences and Gates	Fencing - Chain Link (4 Ft)	1,100	LF	$71,112	3
	Sub Total for System	**3**	**items**	**$151,590**	
	Sub Total for Building -	**3**	**items**	**$151,590**	

Building: 01 - Main Building

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Operating Windows	Aluminum - Windows per SF	2,583	SF	$437,106	3
Note:	123 3'x7' windows				
Exterior Operating Windows	Aluminum - Windows per SF	60	SF	$10,153	3
Note:	5 3'x4' windows				
Exterior Operating Windows	Aluminum - Windows per SF	90	SF	$15,230	3
Note:	6 3'x 5' windows				
Exterior Operating Windows	Aluminum - Windows per SF	25	SF	$4,231	3
Note:	1 5' x 5' windows				
Exterior Entrance Doors	Steel - Insulated and Painted	8	Door	$51,338	5
	Sub Total for System	**5**	**items**	**$518,058**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	33,361	SF	$220,428	3
Tile Flooring	Ceramic Tile	1,539	SF	$41,328	4
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System	34,900	SF	$413,931	5
Wood Flooring	Wood Flooring - All Types	308	SF	$10,219	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	34,900	SF	$315,204	5
Interior Swinging Doors	Wood	68	Door	$313,540	5
Interior Door Supplementary Components	Door Hardware	68	Door	$213,336	5
	Sub Total for System	**7**	**items**	**$1,527,986**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	2	Ea.	$33,830	3
Decentralized Cooling	Window Units	20	Ea.	$66,777	3
Air Distribution	Make-up Air Unit	2	Ea.	$31,799	3
Decentralized Heating Equipment	Unit Heater Steam/HW (20 MBH)	2	Ea.	$5,632	4
Exhaust Air	Roof Exhaust Fan - Large	7	Ea.	$97,254	5
Exhaust Air	Wall Exhaust Fan	1	Ea.	$2,678	5
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)	34,900	SF	$235,739	5
	Sub Total for System	**7**	**items**	**$473,709**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Panelboard - 120/208 225A	2	Ea.	$11,599	3
	Sub Total for System	**1**	**items**	**$11,599**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Toilets	20	Ea.	$57,042	3
Plumbing Fixtures	Restroom Lavatories	17	Ea.	$54,078	3
Plumbing Fixtures	Non-Refrigerated Drinking Fountain	2	Ea.	$20,440	3
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)	34,900	SF	$280,801	3
Domestic Water Equipment	Water Heater - Electric - 80 gallon	1	Ea.	$5,655	5
Building Support Plumbing System Supplementary Components	Sump Pump	1	Ea.	$1,449	5

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 100 Gallon		1	Ea.	$5,322	5
		Sub Total for System	**7**	**items**	**$424,786**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		28	Room	$313,258	5
		Sub Total for System	**1**	**items**	**$313,258**	
		Sub Total for Building 01 - Main Building	**28**	**items**	**$3,269,396**	

Building: 02 - Building 02

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 30 gallon		1	Ea.	$2,799	5
	Note: 5 gallon water heater					
		Sub Total for System	**1**	**items**	**$2,799**	
		Sub Total for Building 02 - Building 02	**1**	**items**	**$2,799**	

Building: 03 - Portable

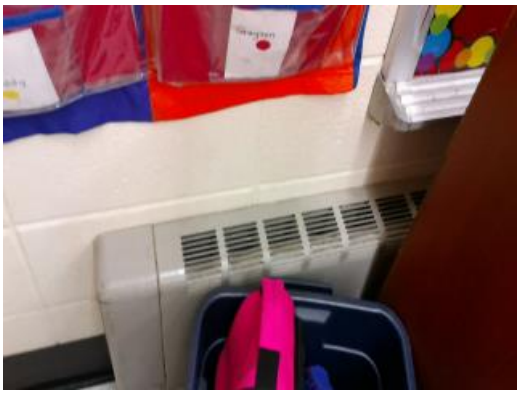
Fire and Life Safety

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm		2,100	SF	$6,155	4
		Sub Total for System	**1**	**items**	**$6,155**	
		Sub Total for Building 03 - Portable	**1**	**items**	**$6,155**	
		Total for: Ashaway Elementary School	**33**	**items**	**$3,429,940**	

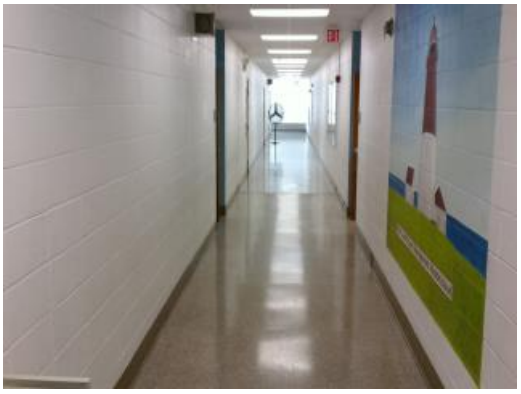
Supporting Photos

Site Aerial

Security Area Main Entrance



Radiant Heater



Hallway Finishes


Concrete Stairs To Field


Exposed Gym Ceiling


Restroom Fixtures And Finishes


Stage


Skylight


Playground Equipment


Water Damage At Skylights


Boilers


Main Electrical Service


Roof Condition


Corroded HVAC Piping


Exterior Brick Wall

Patched Asphalt Paving

Southeast Elevation

Entrance

Portable School Bathroom

Gymnasium And Cafeteria

Roof Drain


Circuit Breaker


Library


Front Entry Gates

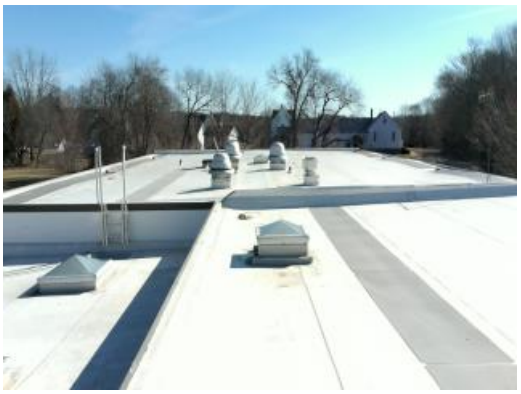

West Side Elevation


Water Tank Room


Playground

Plaque


Typical Classroom


Roof Condition


Stained Janitor Sink


Cracked Asphalt Paving


Stained Classroom Sink

Site Signage


Kitchen


Water Tank Room


North Elevation


Building 3 Exterior


Aged Panel

Elevation

Facility Condition Assessment

Chariho - Chariho Area Career & Technical Center | *June 2017*

459 Switch Rd, Wood River Junction, RI 02894

Introduction

Chariho Area Career & Technical Center, located at 459 Switch Rd in Wood River Junction, Rhode Island, was built in 1959. It comprises 41,000 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.

Chariho Area Career & Technical Center serves grades 9 - 12, has 14 instructional spaces, and enrollment was not provided. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Chariho Area Career & Technical Center was not provided consequently no utilization could be calculated.

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 Chariho Area Career & Technical Center the 5-year need is $3,937,134. 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 Chariho Area Career & Technical 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 Chariho Area Career & Technical 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
	Storefront Entrance Doors
	Overhead Exterior Utility Doors
03 - Marine Technology:	Metal Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
04 - Storage:	Vinyl Siding Exterior Wall
	Steel Exterior 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
03 - Marine Technology:	Metal Steep Slope Roofing
04 - Storage:	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
	Painted Ceilings
	Ceramic Tile Wall
	Vinyl/Fabric Wall Covering

01 - Main Building:	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
03 - Marine Technology:	Wood Interior Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Non-Painted Plaster/Gypsum Board Ceiling
	Interior Wall Painting
	Concrete Flooring
	Vinyl Composition Tile Flooring
04 - Storage:	Door Hardware
	CMU Wall
	Concrete Flooring

Mechanical

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

01 - Main Building:	3,264 MBH Cast Iron Water Boiler
	Electric Furnace
	Steam/Hot Water Heating Unit Vent
	DDC Heating System Controls
	2 Ton Ductless Split System
	2-Pipe Hot Water Hydronic Distribution System
	5 HP Pump
	10 HP Pump
	2,000 CFM Interior AHU
	5,000 CFM Interior AHU
	Kitchen Exhaust Hoods
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Wall Exhaust Fan
	Fire Sprinkler System
03 - Marine Technology:	400 MBH Cast Iron Water Boiler
	5 kW Electric Unit Heater
	Electronic Heating System Controls
	2-Pipe Hot Water Hydronic Distribution System

Plumbing

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

01 - Main Building:	3/4" Backflow Preventers
	4" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
03 - Marine Technology:	Gas Piping System
01 - Main Building:	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
	Air Compressor (5 hp)
	275 Gallon Above Ground Fuel Oil Storage Tank
	2,000 Gallon Above Ground Fuel Oil Storage Tank

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
	45 KVA Transformer
	75 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Panelboard - 277/480 400A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
03 - Marine Technology:	Panelboard - 120/208 100A
	Building 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	-	-	-	-	$64,020	$64,020	2.00 %
Roofing	-	$1,388,018	$960	-	-	$1,388,978	43.42 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	$18,634	-	$18,634	0.58 %
Interior	-	-	$322,163	$776,448	$145,290	$1,243,900	38.89 %
Mechanical	-	-	$15,112	$21,986	-	$37,098	1.16 %
Electrical	-	$1,833	-	-	$25,806	$27,639	0.86 %
Plumbing	-	-	-	$846	$39,302	$40,148	1.26 %
Fire and Life Safety	$57,042	-	-	-	-	$57,042	1.78 %
Technology	-	-	$17,113	-	-	$17,113	0.53 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$59,324	$200,336	$44,493	$304,152	9.51 %
Total	$57,042	$1,389,851	$414,671	$1,018,249	$318,910	$3,198,723	

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

The building systems with the most need include:

Roofing	-	$1,388,978
Interior	-	$1,243,900
Specialties	-	$304,152

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

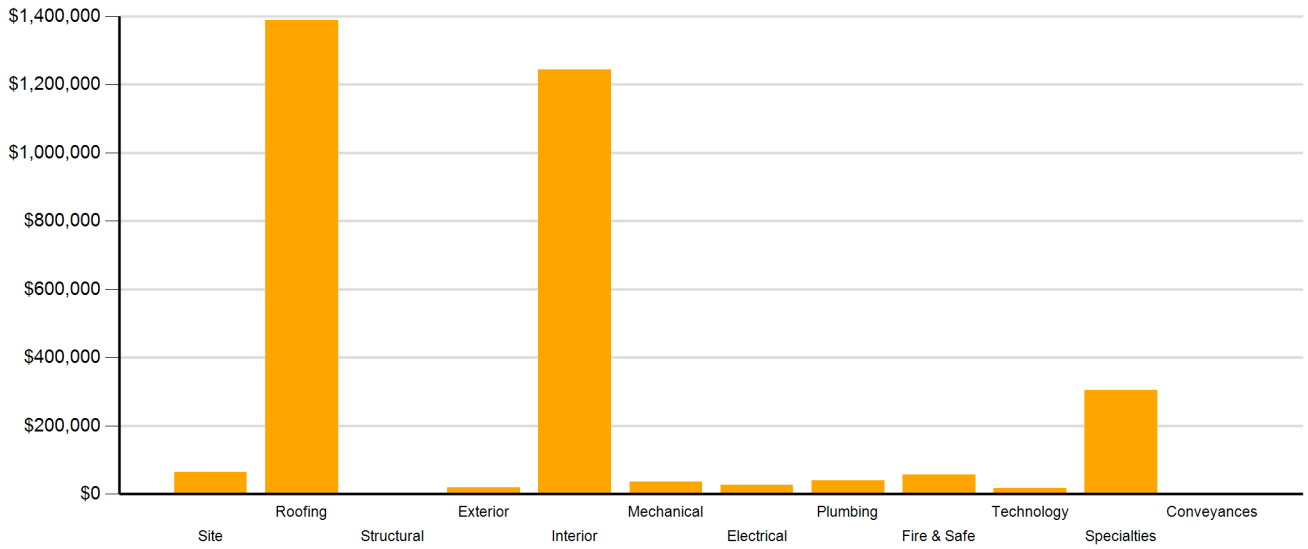


Figure 2: System Deficiencies

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	-	-	$116,527	$34,567	-	$151,094
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$1,389,851	$221,708	$26,622	$115,629	$1,753,809
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$57,042	-	$76,436	$942,800	$203,282	$1,279,559
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$14,260	-	$14,260
Technology	-	-	-	-	-	$0
Traffic	-	-	-	-	-	$0
Total	$57,042	$1,389,851	$414,671	$1,018,249	$318,910	$3,198,723

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

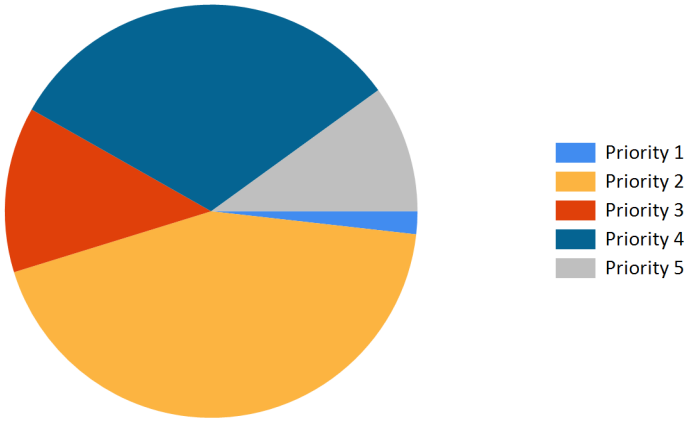


Figure 3: Current deficiencies by priority

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	$64,020	$0	$0	$0	$0	$0	$0	$64,020
Roofing	$1,388,978	$0	$0	$0	$0	$0	$0	$1,388,978
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$18,634	$0	$0	$0	$0	$0	$0	$18,634
Interior	$1,243,900	$0	$0	$323,724	$161,419	$0	$485,143	$1,729,044
Mechanical	$37,098	$0	$0	$202,516	$0	$31,928	$234,444	$271,542
Electrical	$27,639	$0	$0	$17,826	$0	$0	$17,826	$45,465
Plumbing	$40,148	$0	$0	$0	$0	$0	$0	$40,148
Fire and Life Safety	$57,042	$0	$0	$0	$0	$0	$0	$57,042
Technology	$17,113	$0	$0	$0	$0	$0	$0	$17,113
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$304,152	$0	$0	$0	$0	$0	$0	$304,152
Total	**$3,198,723**	**$0**	**$0**	**$544,066**	**$161,419**	**$31,928**	**$737,413**	**$3,936,136**

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

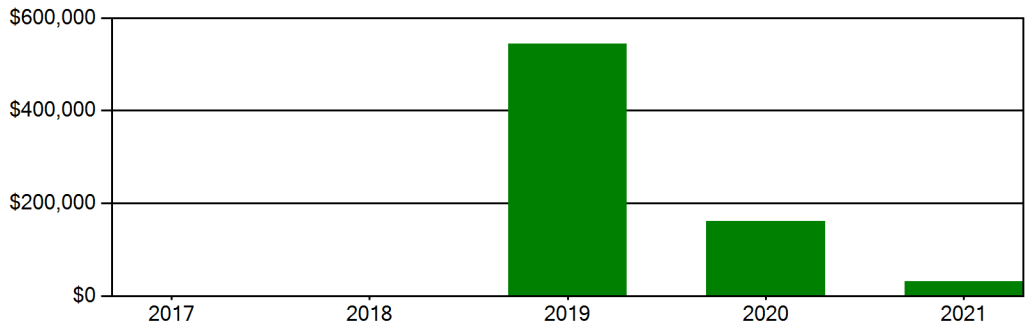
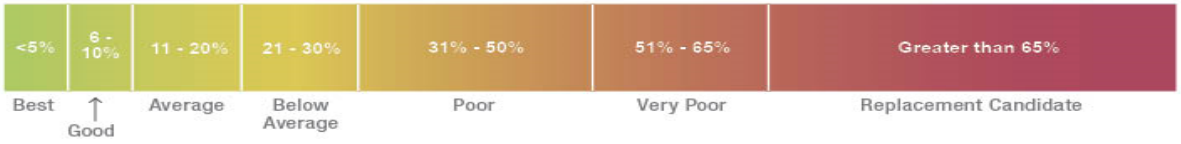


Figure 4: Life Cycle Capital Renewal Forecast

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 $14,760,000. For planning purposes, the total 5-year need at the Chariho Area Career & Technical Center is $3,937,134 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Chariho Area Career & Technical Center facility has a 5-year FCI of 26.67%.

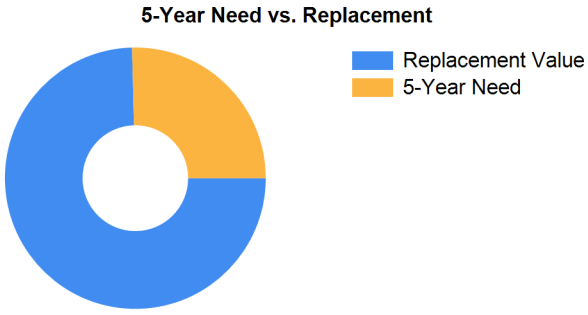


Figure 5: 5-Year FCI

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 200 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 Chariho Area Career & Technical Center cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Chariho Area Career & Technical Center comprises 41,000 square feet and was constructed in 1959. Current deficiencies at this school total $3,199,721. Five year capital renewal costs total $737,413. The total identified need for the Chariho Area Career & Technical Center (current deficiencies and 5-year capital renewal costs) is $3,937,134. The 5-year FCI is 26.67%.

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
Chariho Area Career & Technical Center Totals	41,000	1959	$3,199,721	$737,413	$3,937,134	26.67%

**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
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,020	54970
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**1**	**items**		**$64,020**	
	Sub Total for School and Site Level	**1**	**items**		**$64,020**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Built-up Roofing With Aggregate Ballast Requires Replacement	Capital Renewal	36,500	SF	2	$1,388,018	1860
Membrane Flashings At Penetration Require Repair	Capital Renewal	10	Ea.	3	$960	1403
Note: The flashing around the vents and expansion joints are cracking and need to be re-flashed/sealed.						
	Sub Total for System	**2**	**items**		**$1,388,978**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Garage Doors To Exterior Are Required	Educational Adequacy	1	Ea.	4	$18,634	Rollup
	Sub Total for System	**1**	**items**		**$18,634**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	14	Ea.	3	$116,527	4651
Note: All classrooms						
Interior Doors Require Replacement	Capital Renewal	43	Door	3	$198,268	1906
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	100	SF	3	$903	1405
The Suspended Ceiling Grid And Tiles Require Replacement	Capital Renewal	400	SF	3	$6,465	1406
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	1,500	SF	4	$14,260	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	576	SF	4	$16,428	4652
Note: Shared walls with classrooms						
Partitions Provide Insufficient Sound Isolation	Acoustics	636	SF	4	$18,139	4653
Note: Shared walls with classrooms						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	18,397	SF	4	$700,998	Rollup
The Terrazzo Flooring Requires Repair	Capital Renewal	500	SF	4	$26,622	1404
Note: The terrazzo has hairline cracks in several areas and needs to be repaired.						
Classroom Door Requires Vision Panel	Educational Adequacy	13	Ea.	5	$29,662	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	17,500	SF	5	$115,629	Rollup
	Sub Total for System	**11**	**items**		**$1,243,900**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Large HVAC Circulating Pump Requires Replacement	Capital Renewal	1	Ea.	3	$15,112	1435
Note: Domestic water pump has indications and worn seals and/or broken gaskets and appears to be no longer functional.						
Location: Well pump closet						
Lab lacks an appropriate fume hood.	Educational Adequacy	1	Ea.	4	$21,986	Rollup
	Sub Total for System	**2**	**items**		**$37,098**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$1,833	1434
Note: Federal Pacific - 20 amp disconnect in the wood shop needs to be replaced.						
Location: Wood shop						

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	52	Ea.	5	$25,806	Rollup
	Sub Total for System	**2**	**items**		**$27,639**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Floor Drains Are Required	Educational Adequacy	1	Ea.	4	$846	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	26	Ea.	5	$39,302	Rollup
	Sub Total for System	**2**	**items**		**$40,148**	

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	5	Ea.	1	$57,042	Rollup
	Sub Total for System	**1**	**items**		**$57,042**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$17,113	Rollup
	Sub Total for System	**1**	**items**		**$17,113**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	13	Ea.	3	$59,324	Rollup
Automobile Lift is Missing	Educational Adequacy	1	Ea.	4	$45,633	Rollup
Barbering Chairs with Adjacent Sinks Are Required	Educational Adequacy	1	Ea.	4	$13,833	Rollup
Pedicure Spa Chairs and Manicure Tables Are Required	Educational Adequacy	1	Ea.	4	$7,225	Rollup
Separate Student Kitchen Stations Are Required	Educational Adequacy	1	Ea.	4	$3,727	Rollup
Walk In Cooler/Freezer Is Required	Educational Adequacy	1	Ea.	4	$90,316	Rollup
Welding Bays Are Required	Educational Adequacy	4	Ea.	4	$21,676	Rollup
Work Tables Are Required	Educational Adequacy	5	Ea.	4	$17,926	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	2	Ea.	5	$17,113	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	2	Ea.	5	$27,380	Rollup
	Sub Total for System	**10**	**items**		**$304,152**	
	Sub Total for Building 01 - Main Building	**32**	**items**		**$3,134,703**	
	Total for Campus	**33**	**items**		**$3,198,723**	

Buildings with no reported deficiencies

04 - Storage

Chariho Area Career & Technical Center - Life Cycle Summary Yrs 1-5

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings	1,095	SF	$4,580	3
Flooring Treatment	Concrete Floor - Finished	11,775	SF	$153,312	3
Carpeting	Carpet	1,825	SF	$39,705	3
Note:	Main office area				
Interior Swinging Doors	Steel	17	Door	$72,793	3
Interior Door Supplementary Components	Door Hardware	17	Door	$53,334	3
Resilient Flooring	Vinyl Composition Tile Flooring	12,775	SF	$146,552	4
	Sub Total for System	**6**	**items**	**$470,277**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
HVAC Air Distribution	AHU 5,000 CFM Interior	2	Ea.	$202,516	3
Exhaust Air	Kitchen Exhaust Hoods	2	Ea.	$31,928	5
Note:	Educational kitchen area				
	Sub Total for System	**2**	**items**	**$234,444**	
	Sub Total for Building 01 - Main Building	**8**	**items**	**$704,720**	

Building: 03 - Marine Technology

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	2,250	SF	$14,867	4
	Sub Total for System	**1**	**items**	**$14,867**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)	3,000	SF	$17,826	3
	Sub Total for System	**1**	**items**	**$17,826**	
	Sub Total for Building 03 - Marine Technology	**2**	**items**	**$32,692**	
	Total for: Chariho Area Career & Technical Center	**10**	**items**	**$737,412**	

Supporting Photos

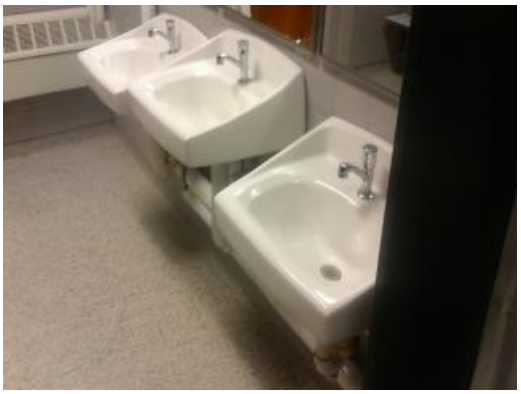
Site Aerial

Cracked Ceiling Tile

Storage Building Exterior

Kitchen


Coiled Doors


Typical Lavatories


Non-Functional Pump


Entrance Way Signage

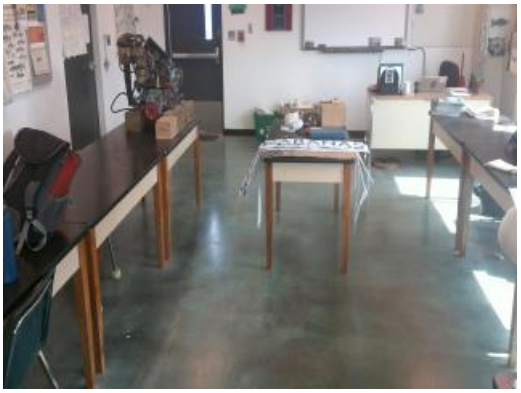

Stained Ceiling Tiles


Marine Building Exterior


Roof Condition


Carpentry Classroom


Typical Classroom


Marine Technology Classroom


Cracked Terrazzo Floor


Electrical Service

Building Signage


Classroom

Federal Pacific Electrical Disconnect


Drafting Room


Generator


Cracked Flashing At Exhaust


Dining Room Area


Hallway Finishes

Facility Condition Assessment

Chariho - Chariho Regional High School | *June 2017*

453 Switch Road, Wood River Junction, RI 02894

Introduction

Chariho Regional High School, located at 453 Switch Road in Wood River Junction, Rhode Island, was built in 1959. It comprises 156,676 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.

Chariho Regional High School serves grades 9 - 12, has 63 instructional spaces, and has an enrollment of 1,105. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Chariho Regional High School is 1,252 with a resulting utilization of 88%.

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 Chariho Regional High School the 5-year need is $10,751,294. 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 Chariho Regional 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 Chariho Regional 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
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
03 - Administration Offices:	Vinyl Siding Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
05 - Building-05:	Wood Siding Exterior Wall
	Overhead Exterior Utility Doors
06 - Building-06:	Wood Siding Exterior Wall
	Steel Exterior Entrance Doors
07 - Generator Shed:	CMU Exterior Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing
03 - Administration Offices:	Composition Shingle Roofing
05 - Building-05:	Composition Shingle Roofing
06 - Building-06:	Composition Shingle Roofing
07 - Generator Shed:	Composition Shingle Roofing

Interior

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

01 - Main Building:	Moveable Interior Partition
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling

01 - Main Building:	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
	Athletic/Sport Flooring
03 - Administration Offices:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Interior Wall Painting
	Concrete Flooring
	Vinyl Composition Tile Flooring
	Carpet
05 - Building-05:	Door Hardware
	Interior Wall Painting
	Wood Flooring
06 - Building-06:	Door Hardware
	Interior Wall Painting
	Concrete Flooring
	Wood Flooring
07 - Generator Shed:	Door Hardware
	CMU Wall
	Concrete Flooring

Mechanical

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

01 - Main Building:	400 MBH Cast Iron Water Boiler
	4,488 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	DDC Heating System Controls
	2 Ton Ductless Split System
	5 Ton Package DX Unit
	Window Units
	5 HP Pump

01 - Main Building:	25 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	10,000 CFM Interior AHU
	Kitchen Exhaust Hoods
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Wall Exhaust Fan
03 - Administration Offices:	Electronic Heating System Controls
	3 Ton Fan Coil - Water Cool/Water Heat
	3 Ton Outside Air Cooled Condenser
	4-Pipe Hydronic Distribution System
	Ductwork
	Roof Exhaust Fan

Plumbing

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

01 - Main Building:	Gas Piping System
03 - Administration Offices:	40 Gallon Electric Water Heater
01 - Main Building:	Domestic Water Piping System
03 - Administration Offices:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
03 - Administration Offices:	Lavatories
	Mop/Service Sinks
	Restroom Lavatories
	Toilets
	Urinals
01 - Main Building:	10,000 Gallon Above Ground Fuel Oil Storage Tank

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
	3,000 Amp Switchgear

01 - Main Building:	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
03 - Administration Offices:	Solar Panels
	Automatic Transfer Switch
	600 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Light Fixtures
06 - Building-06:	Light Fixtures
07 - Generator Shed:	1200 kW Emergency Generator
	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	-	-	-	$28,329	-	$28,329	0.51 %
Roofing	-	-	$4,278	-	-	$4,278	0.08 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$6,417	-	-	$27,095	$33,512	0.60 %
Interior	-	-	$1,685,159	$1,483,741	-	$3,168,900	56.90 %
Mechanical	-	-	$9,669	$153,901	-	$163,569	2.94 %
Electrical	$2,825	-	$17,405	-	$123,074	$143,304	2.57 %
Plumbing	-	-	-	$29,510	$98,479	$127,989	2.30 %
Fire and Life Safety	$22,817	-	-	-	-	$22,817	0.41 %
Technology	-	-	$1,754,654	-	-	$1,754,654	31.51 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	-	$121,499	$121,499	2.18 %
Total	$25,641	$6,417	$3,471,165	$1,695,480	$370,147	$5,568,850	

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

The building systems with the most need include:

Interior	-	$3,168,900
Technology	-	$1,754,654
Mechanical	-	$163,569

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

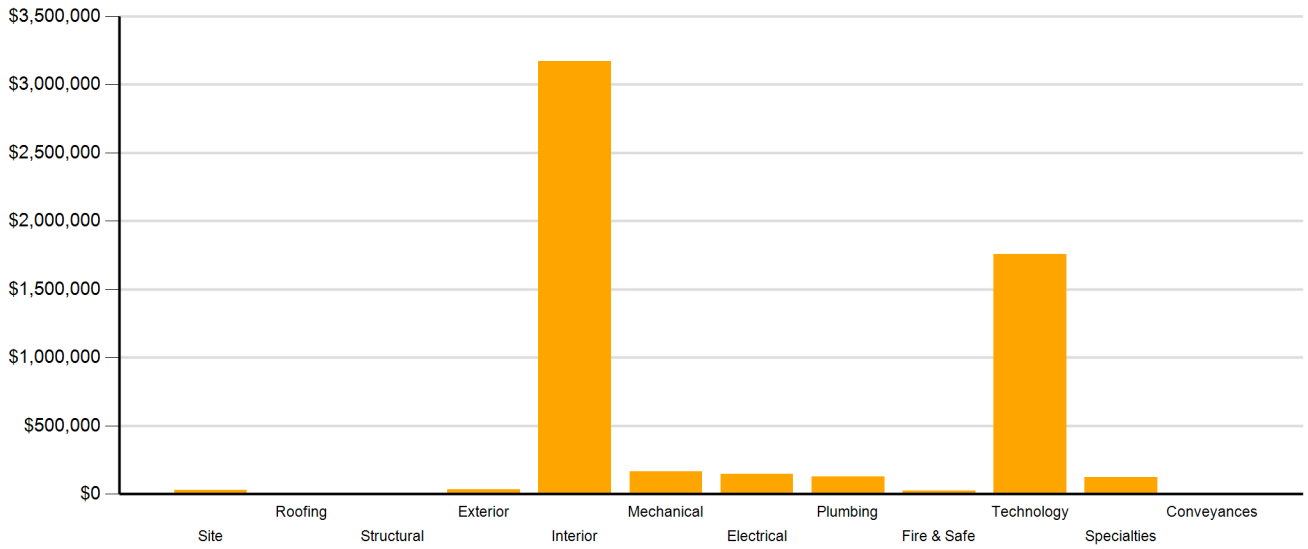


Figure 2: System Deficiencies

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	-	-	$524,371	-	-	$524,371
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$6,417	$1,165,359	$1,459,342	$27,095	$2,658,213
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$25,641	-	$79,859	$182,230	$343,052	$630,781
Functional Deficiency	-	-	$26,781	-	-	$26,781
Hazardous Material	-	-	-	$53,908	-	$53,908
Technology	-	-	$1,674,795	-	-	$1,674,795
Traffic	-	-	-	-	-	$0
Total	$25,641	$6,417	$3,471,165	$1,695,480	$370,147	$5,568,850

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

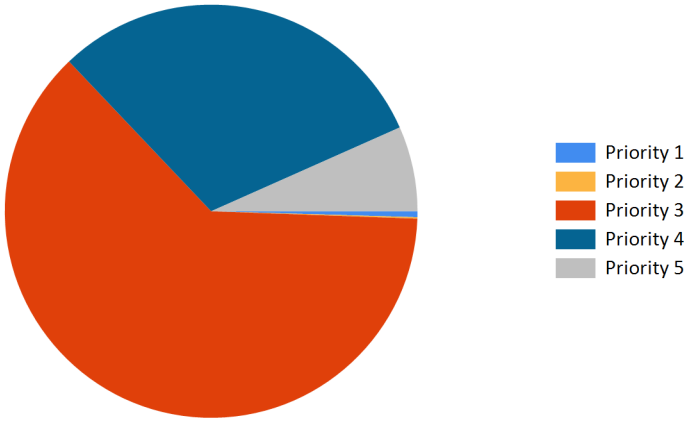


Figure 3: Current deficiencies by priority

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	$28,329	$0	$0	$397,022	$0	$0	$397,022	$425,351
Roofing	$4,278	$0	$0	$0	$0	$0	$0	$4,278
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$33,512	$0	$0	$0	$0	$23,981	$23,981	$57,493
Interior	$3,168,900	$0	$0	$1,204,959	$318,861	$1,290,279	$2,814,099	$5,982,999
Mechanical	$163,569	$0	$0	$272,355	$700,409	$0	$972,764	$1,136,333
Electrical	$143,304	$0	$0	$40,595	$0	$0	$40,595	$183,899
Plumbing	$127,989	$0	$0	$0	$12,066	$18,035	$30,101	$158,090
Fire and Life Safety	$22,817	$0	$0	$0	$0	$0	$0	$22,817
Technology	$1,754,654	$0	$0	$0	$0	$0	$0	$1,754,654
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$121,499	$0	$0	$0	$0	$895,024	$895,024	$1,016,523
Total	**$5,568,850**	**$0**	**$0**	**$1,914,931**	**$1,031,336**	**$2,227,319**	**$5,173,586**	**$10,742,436**

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

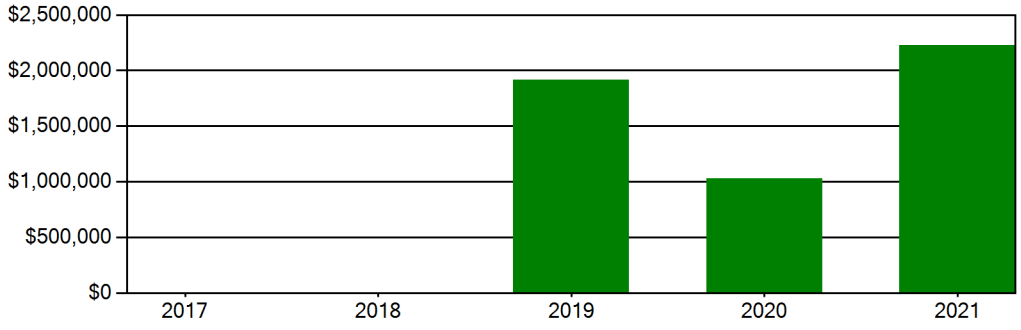
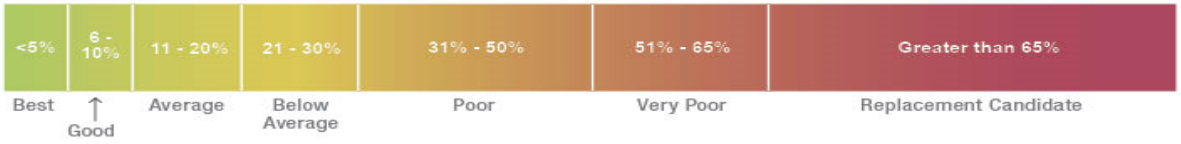


Figure 4: Life Cycle Capital Renewal Forecast

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 $56,403,360. For planning purposes, the total 5-year need at the Chariho Regional High School is $10,751,294 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Chariho Regional High School facility has a 5-year FCI of 19.05%.

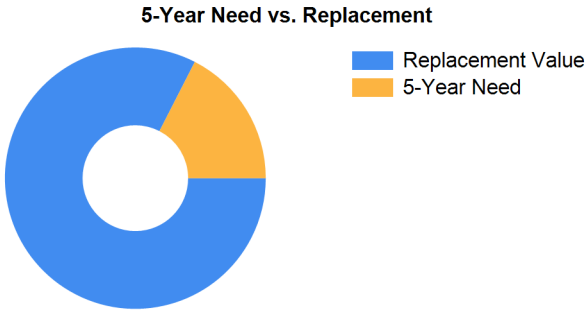


Figure 5: 5-Year FCI

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 803 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 Chariho Regional High School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Chariho Regional High School comprises 156,676 square feet and was constructed in 1959. Current deficiencies at this school total $5,577,708. Five year capital renewal costs total $5,173,586. The total identified need for the Chariho Regional High School (current deficiencies and 5-year capital renewal costs) is $10,751,294. The 5-year FCI is 19.05%.

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
Chariho Regional High School Totals	156,676	1959	$5,577,708	$5,173,586	$10,751,294	19.05%

**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
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28422
Note: Backstops Require Replacement						
	Sub Total for System	**1**	**items**		**$28,329**	
	Sub Total for School and Site Level	**1**	**items**		**$28,329**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Snap-On-Seams Require Repair	Capital Renewal	200	LF	3	$4,278	1736
Note: Ripples or blisters in the roof flashing should be addressed.						
	Sub Total for System	**1**	**items**		**$4,278**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	63	Ea.	3	$524,371	4654
Note: All classrooms						
Interior CMU Walls Require Repair	Capital Renewal	500	SF	3	$18,158	1732
Note: Cracks in the CMU Block in Classroom B-15 and Cafeteria walls.						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	116,521	SF	3	$1,052,374	4497
The Vinyl Composition Tile Requires Replacement	Capital Renewal	7,000	SF	3	$80,302	1735
Note: The VCT is separating and should be replaced along the B-Wing.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	2,250	SF	4	$24,399	1733
Note: The ceilings in the F-Wing classrooms should be replaced. These are the Home Economics, Health and Art classrooms.						
Ceiling Grid Requires Replacement	Capital Renewal	116,521	SF	4	$1,381,997	1734
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	16	LF	4	$365	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	900	SF	4	$8,556	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. AND NOT in children-accessible area (measurement unit - linear feet)	Hazardous Material	30	LF	4	$685	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	4,150	SF	4	$39,454	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	$1,996	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	100	LF	4	$2,282	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	1	Ea.	4	$285	Rollup
	Sub Total for System	**14**	**items**		**$3,135,510**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Component Insulation Deteriorated And Requires Replacement	Functional Deficiency	300	LF	3	$9,669	1740
Note: Pipe insulation in the main mechanical room needs the insulation replaced.						
Lab lacks an appropriate fume hood.	Educational Adequacy	7	Ea.	4	$153,901	Rollup
	Sub Total for System	**2**	**items**		**$163,569**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	2	Ea.	1	$2,825	Rollup
Panel Spacing Cover Plate Is Missing	Capital Renewal	7	Ea.	3	$293	1741
Note: Damaged covers in the old wings of the buildings need to be replaced.						
The Electrical Receptacles Are Inadequate And More are Needed	Functional Deficiency	30	Ea.	3	$17,113	1739
Note: Add additional electrical capacity in the classrooms.						

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	248	Ea.	5	$123,074	Rollup
	Sub Total for System	**4**	**items**		**$143,304**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	4	Ea.	4	$29,510	2421
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	$6,617	Rollup
Room lacks a private shower area.	Educational Adequacy	1	Ea.	5	$10,235	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	54	Ea.	5	$81,627	Rollup
	Sub Total for System	**4**	**items**		**$127,989**	

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	2	Ea.	1	$22,817	Rollup
	Sub Total for System	**1**	**items**		**$22,817**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	14	Ea.	3	$79,859	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	48	Ea.	3	$23,767	3275
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	62	Ea.	3	$589,432	3278
Technology: Instructional spaces do not have local sound reinforcement.	Technology	62	Ea.	3	$294,716	3277
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$45,253	3260
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	3251
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,216	3271
Technology: Intermediate Telecommunications Room needs M/E improvements.	Technology	1	Ea.	3	$24,338	3255
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,732	3265
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$16,732	3269
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	3258
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	3263
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	3268
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	3270
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,932	3272
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$21,676	3249
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	90	Ea.	3	$38,503	3253
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	46	Ea.	3	$19,679	3257

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	50	Ea.	3	$21,391	3262
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	50	Ea.	3	$21,391	3267
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	48	Ea.	3	$21,391	3274
Technology: Network system inadequate and/or near end of useful life	Technology	10	Ea.	3	$76,056	3281
Technology: Network system inadequate and/or near end of useful life	Technology	24	Ea.	3	$114,084	3282
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3252
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3254
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3256
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3259
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3261
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3264
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3266
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3273
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	62	Ea.	3	$94,309	3283
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	62	Ea.	3	$94,309	3284
	Sub Total for System	**33**	**items**		**$1,754,654**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks an appropriate refrigerator.	Educational Adequacy	11	Ea.	5	$94,119	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	2	Ea.	5	$27,380	Rollup
	Sub Total for System	**2**	**items**		**$121,499**	
	Sub Total for Building 01 - Main Building	**61**	**items**		**$5,473,619**	

Building: 03 - Administration Offices

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Requires Cleaning	Capital Renewal	10,000	SF Wall	5	$27,095	1725
Note: The exterior has pollen and mildew on the vinyl siding and should be power washed.						
	Sub Total for System	**1**	**items**		**$27,095**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Concrete Flooring Requires Replacement	Capital Renewal	1,800	SF	4	$23,436	1724
Note: There are cracks in the concrete floor basement storage area.						
	Sub Total for System	**1**	**items**		**$23,436**	
	Sub Total for Building 03 - Administration Offices	**2**	**items**		**$50,531**	

Building: 05 - Building-05

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Wood Flooring Requires Replacement	Capital Renewal	300	SF	3	$9,954	2456
Note: Wood flooring shows wear and tear and should be replaced.						
	Sub Total for System	**1**	**items**		**$9,954**	
	Sub Total for Building 05 - Building-05	**1**	**items**		**$9,954**	

Building: 07 - Generator Shed

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	1	Door	2	$6,417	2816
	Sub Total for System	**1**	**items**		**$6,417**	
	Sub Total for Building 07 - Generator Shed	**1**	**items**		**$6,417**	
	Total for Campus	**66**	**items**		**$5,568,850**	

Buildings with no reported deficiencies

06 - Building-06

Chariho Regional 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	120	CAR	$397,022	3
Note:	Senior Lot				
	Sub Total for System	**1**	**items**	**$397,022**	
	Sub Total for Building -	**1**	**items**	**$397,022**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceiling Exposed Metal Structure	26,880	SF	$306,657	3
Wall Painting and Coating	Painting/Staining (Bldg SF)	135,455	SF	$894,998	3
Note:	The majority of the interior is painted on a regular cycle of every 2 to 3 years.				
Carpeting	Carpet	14,565	SF	$316,879	4
Resilient Flooring	Vinyl Composition Tile Flooring	111,016	SF	$1,273,547	5
	Sub Total for System	**4**	**items**	**$2,792,081**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units	10	Ea.	$33,388	3
HVAC Air Distribution	AHU 10,000 CFM Interior	2	Ea.	$238,967	3
Heat Generation	Boiler - Cast Iron - Water (4488 MBH)	2	Ea.	$531,261	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	10	Ea.	$169,148	4
	Sub Total for System	**4**	**items**	**$972,765**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Panelboard - 120/208 225A	7	Ea.	$40,595	3
	Sub Total for System	**1**	**items**	**$40,595**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Mop/Service Sinks	7	Ea.	$18,035	5
	Sub Total for System	**1**	**items**	**$18,035**	

Specialties

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry	80	Room	$895,024	5
	Sub Total for System	**1**	**items**	**$895,024**	
	Sub Total for Building 01 - Main Building	**11**	**items**	**$4,718,499**	

Building: 03 - Administration Offices

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings	4,000	SF	$16,732	5
	Sub Total for System	**1**	**items**	**$16,732**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Toilets	2	Ea.	$5,704	4
Plumbing Fixtures	Restroom Lavatories	2	Ea.	$6,362	4
	Sub Total for System	**2**	**items**	**$12,066**	
	Sub Total for Building 03 - Administration Offices	**3**	**items**	**$28,799**	

Building: 05 - Building-05

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Wood Siding - Bldg SF basis	300	SF	$8,993	5
	Sub Total for System	**1**	**items**	**$8,993**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		300	SF	$1,982	4
		Sub Total for System	**1**	**items**	**$1,982**	
		Sub Total for Building 05 - Building-05	**2**	**items**	**$10,975**	

Building: 06 - Building-06

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Wood Siding - Bldg SF basis		500	SF	$14,988	5
		Sub Total for System	**1**	**items**	**$14,988**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		500	SF	$3,304	3
		Sub Total for System	**1**	**items**	**$3,304**	
		Sub Total for Building 06 - Building-06	**2**	**items**	**$18,291**	
		Total for: Chariho Regional High School	**19**	**items**	**$5,173,586**	

Supporting Photos

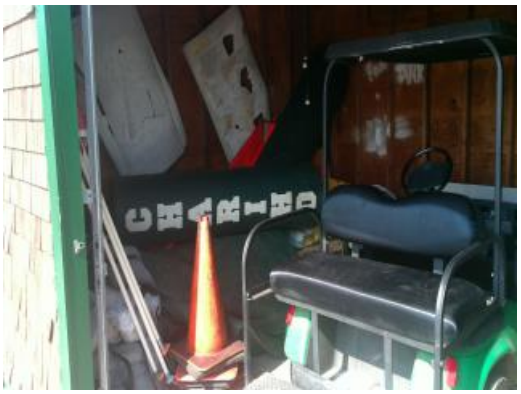
Site Aerial

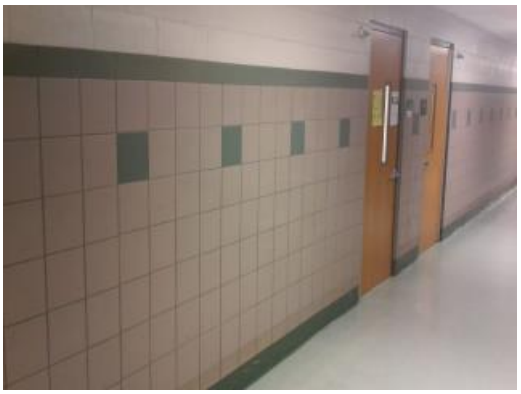
Stained Ceiling Tiles

Stained Ceiling Tiles

Building 5 Interior


Typical Door Hardware


Building 5 Interior Storage

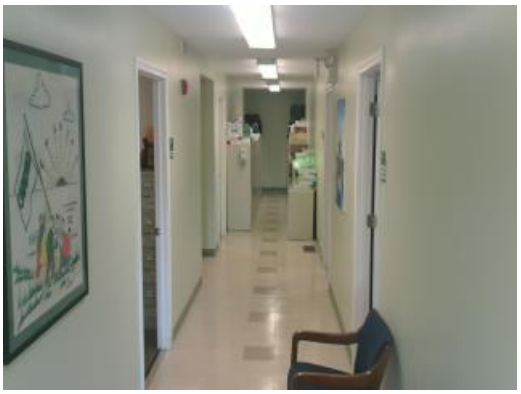

Hallway Finishes


Roof Exhaust Fans


Greenhouse


Admin Building Mildew And Pollen Stained Exterior

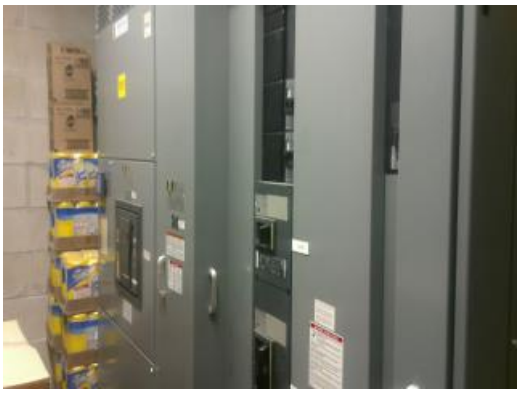
Corridor Panelboard



Admin Building North Hallway

Plaque

Library



Main Distribution Panel

Typical Lavatories

Building 6 Exterior


Building 6 Exposed Wood Ceiling


Hot Water Heater


Generator Shed


Building 5 Plywood Floor


Play Field


Ripples In The Membrane Flashing


Admin Building Basement Exterior Doors


Building 5 Overhead Door


Admin Building Cracked Concrete Floor


Admin Building Main Entrance


Admin Building Typical Office


Concrete Walkways


Elevation


Separating VCT


Football Field


Science Cabinetry


Fuel Oil Storage Tank


Building 5 Exterior


Building 6 Wood Floor


Rooftop Unit


Cracked CMU

Facility Condition Assessment

Chariho - Chariho Regional Middle School | *June 2017*

455B Switch Road, Wood River Junction, RI 02894

Introduction

Chariho Regional Middle School, located at 455B Switch Road in Wood River Junction, Rhode Island, was built in 1990. It comprises 154,936 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.

Chariho Regional Middle School serves grades 5 - 8, has 74 instructional spaces, and has an enrollment of 944. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Chariho Regional Middle School is 1,200 with a resulting utilization of 79%.

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 Chariho Regional Middle School the 5-year need is $11,699,314. 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 Chariho Regional 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 Chariho Regional 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
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
02 - Maintenance and Tech:	Metal Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
03 - Field Storage:	Wood Siding Exterior Wall
04 - Oil and Recycling:	Wood Siding Exterior Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing
02 - Maintenance and Tech:	Metal Steep Slope Roofing
03 - Field Storage:	Composition Shingle Roofing

Interior

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

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

01 - Main Building:	Wood Flooring
	Vinyl Composition Tile Flooring
	Carpet
02 - Maintenance and Tech:	Steel 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
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
03 - Field Storage:	Overhead Interior Coiling Doors
	Concrete Flooring
	Wood Flooring
04 - Oil and Recycling:	Wood Wall Paneling
	Concrete Flooring

Mechanical

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

01 - Main Building:	4,488 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	DDC Heating System Controls
	1 Ton Ductless Split System
	3 Ton Ductless Split System
	10 Ton Package DX Unit
	20 Ton Package DX Unit
	Window Units
	10 HP Pump
	25 HP Pump
	2-Pipe Steam Hydronic Distribution System
	2,000 CFM Interior AHU
	5,000 CFM Interior AHU
	10,000 CFM Interior AHU
	Ductwork
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Fire Sprinkler System

02 - Maintenance and Tech:	1,275 MBH Cast Iron Water Boiler
	20 MBH Steam Unit Heater
	DDC Heating System Controls
	3 Ton Ductless Split System
	3 Ton Fan Coil - Water Cool/Water Heat
	3 Ton Heat Pump
	3 Ton Condensing Unit
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	Roof Exhaust Fan

Plumbing

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

01 - Main Building:	15,000 Gallon Water Storage Tank
	Gas Piping System
	75 Gallon Gas Water Heater
02 - Maintenance and Tech:	2" Backflow Preventers
	Gas Piping System
	100 Gallon Gas Water Heater
01 - Main Building:	Domestic Water Piping System
02 - Maintenance and Tech:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
02 - Maintenance and Tech:	Lavatories
	Mop/Service Sinks
	Restroom Lavatories
	Toilets
01 - Main Building:	10,000 Gallon Above Ground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	1200 kW Emergency Generator
	480v Switch
	1,200 Amp Switchgear
	15 KVA Transformer

01 - Main Building:	3 KVA Transformer
	30 KVA Transformer
	45 KVA Transformer
	75 KVA Transformer
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 120/240 100A
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Panelboard - 277/480 600A
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
02 - Maintenance and Tech:	1200 kW Emergency Generator
	480v Switch
	600 Amp Switchgear
	45 KVA Transformer
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 277/480 225A
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
03 - Field Storage:	Light Fixtures
04 - Oil and Recycling:	Building 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	-	-	-	-	$330,645	$330,645	5.11 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$2,125	-	-	-	$2,125	0.03 %
Interior	-	-	$1,801,939	$33,564	$537,705	$2,373,208	36.67 %
Mechanical	-	-	$384,580	-	$1,189,812	$1,574,392	24.33 %
Electrical	$2,806	-	-	-	-	$2,806	0.04 %
Plumbing	-	-	-	-	$48,612	$48,612	0.75 %
Fire and Life Safety	$56,658	-	-	-	-	$56,658	0.88 %
Technology	-	-	$2,031,767	-	-	$2,031,767	31.39 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,065	-	$42,493	$51,559	0.80 %
Total	$59,463	$2,125	$4,227,351	$33,564	$2,149,267	$6,471,770	

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

The building systems with the most need include:

Interior	-	$2,373,208
Technology	-	$2,031,767
Mechanical	-	$1,574,392

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

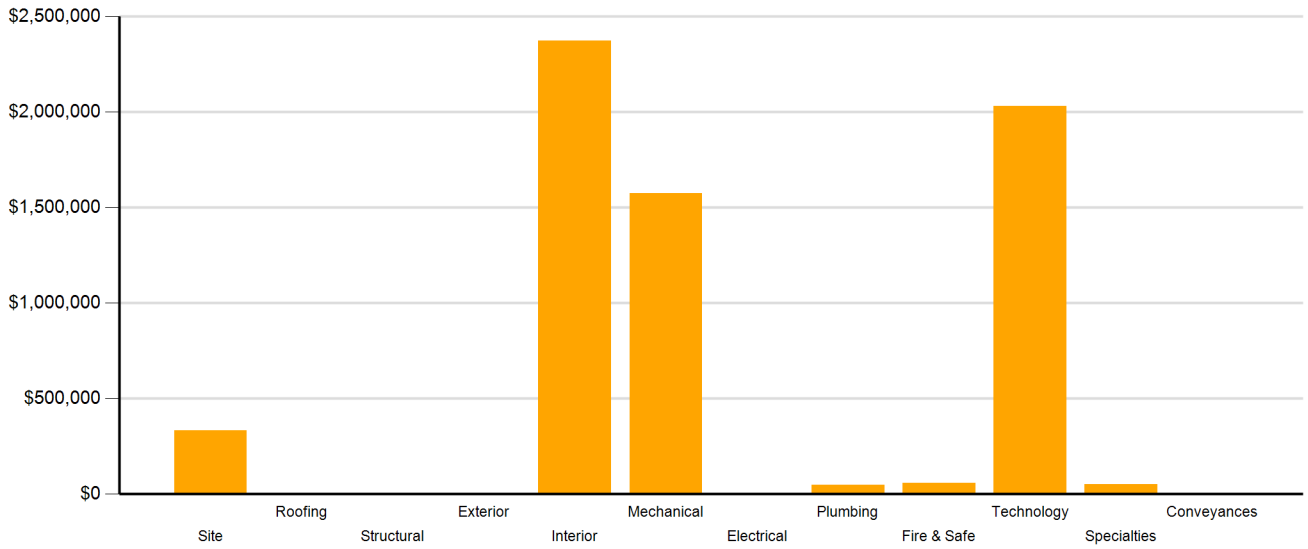


Figure 2: System Deficiencies

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	-	-	$696,081	-	-	$696,081
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$2,125	$1,490,437	-	$1,707,007	$3,199,569
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$59,463	-	$20,397	$20,892	$442,261	$543,012
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$12,672	-	$12,672
Technology	-	-	$2,020,435	-	-	$2,020,435
Traffic	-	-	-	-	-	$0
Total	$59,463	$2,125	$4,227,351	$33,564	$2,149,267	$6,471,770

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

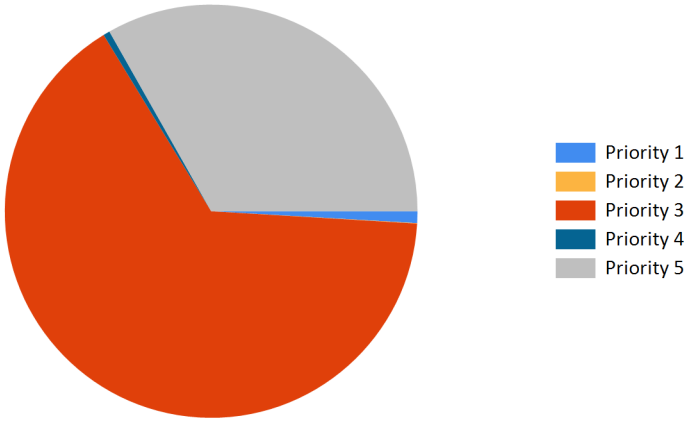


Figure 3: Current deficiencies by priority

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	$330,645	$0	$0	$339,701	$0	$0	$339,701	$670,346
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$2,125	$0	$0	$0	$5,875	$29,975	$35,850	$37,975
Interior	$2,373,208	$0	$0	$1,284,549	$0	$1,789	$1,286,338	$3,659,546
Mechanical	$1,574,392	$0	$0	$3,451,775	$0	$0	$3,451,775	$5,026,167
Electrical	$2,806	$0	$0	$0	$0	$5,942	$5,942	$8,748
Plumbing	$48,612	$0	$0	$0	$84,289	$5,845	$90,134	$138,746
Fire and Life Safety	$56,658	$0	$0	$0	$0	$0	$0	$56,658
Technology	$2,031,767	$0	$0	$0	$0	$0	$0	$2,031,767
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$51,559	$0	$0	$0	$0	$11,188	$11,188	$62,747
Total	**$6,471,770**	**$0**	**$0**	**$5,076,025**	**$90,164**	**$54,739**	**$5,220,928**	**$11,692,698**

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

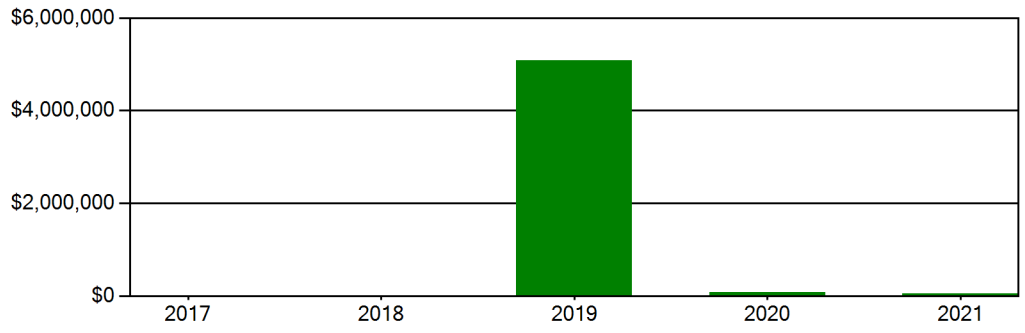
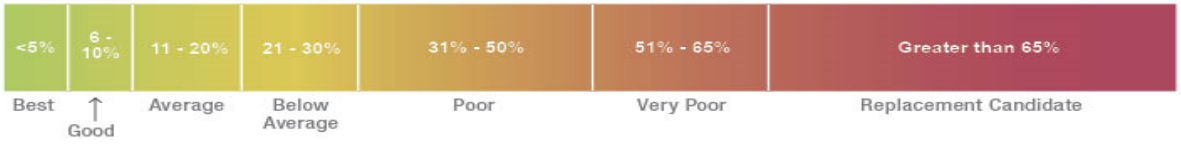


Figure 4: Life Cycle Capital Renewal Forecast

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 $51,128,880. For planning purposes, the total 5-year need at the Chariho Regional Middle School is $11,699,314 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Chariho Regional Middle School facility has a 5-year FCI of 22.87%.

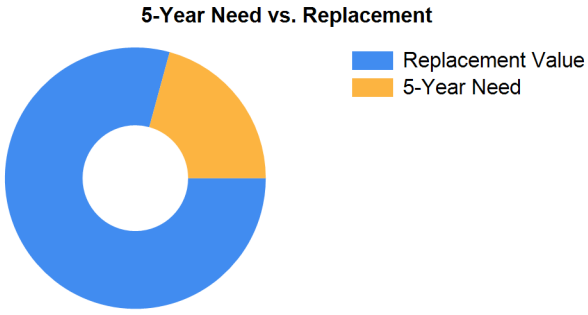


Figure 5: 5-Year FCI

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 851 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 Chariho Regional Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $1,282,684.

Summary of Findings

The Chariho Regional Middle School comprises 154,936 square feet and was constructed in 1990. Current deficiencies at this school total $6,478,386. Five year capital renewal costs total $5,220,928. The total identified need for the Chariho Regional Middle School (current deficiencies and 5-year capital renewal costs) is $11,699,314. The 5-year FCI is 22.87%.

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
Chariho Regional Middle School Totals	154,936	1990	$6,478,386	$5,220,928	$11,699,314	22.87%

**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
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28704
Note: Exterior Basketball Goals are Required						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$324,837	28230
Note: School lacks a competition track.						
	Sub Total for System	**2**	**items**		**$330,645**	
	Sub Total for School and Site Level	**2**	**items**		**$330,645**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Steel Window Requires Replacement	Capital Renewal	10	SF	2	$2,125	1729
Note: Some of the exterior windows have broken seals.						
	Sub Total for System	**1**	**items**		**$2,125**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	72	Ea.	3	$595,246	4655
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	127,566	SF	3	$1,144,369	1727
Note: The acoustic ceiling tiles are old with many warped and stained.						
The Interior Door Hardware Requires Replacement	Capital Renewal	20	Door	3	$62,323	1730
Note: Hardware broken in classroom B2 and other classrooms.						
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	641	LF	4	$12,106	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	552	SF	4	$20,892	Rollup
Wall/ceiling materials - large areas (> 10 sq. ft.) of damage & area in active use - children	Hazardous Material	40	SF	4	$378	Rollup
Wall/ceiling materials -large areas (> 10 sq. ft.) of damage & area in active use-adults only	Hazardous Material	20	SF	4	$189	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	6	Ea.	5	$13,598	Rollup
Interior Walls Require Repainting	Capital Renewal	75,000	SF Wall	5	$439,097	1731
Note: Paint gym and classrooms						
Room lacks appropriate sound control.	Educational Adequacy	200	SF	5	$6,912	Rollup
	Sub Total for System	**10**	**items**		**$2,295,110**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Exhaust Fan Ventilation Requires Repair	Capital Renewal	2	Ea.	3	$43,060	1625
Note: Exhaust fan 2 (SE corner) of auditorium is making noise						
Testing And Balancing Required	Capital Renewal	130,000	SF	3	$240,684	1623
Note: Inconsistent room temperatures observed in the classrooms.						
Unit Ventilators Are Excessively Noisy	Acoustics	16	Ea.	3	$100,836	4657
Note: All classrooms						
Duct Cleaning Required	Capital Renewal	75,000	SF	5	$1,189,812	1624
Note: Common area ductwork is discharging lint and debris from the ceiling air devices.						
	Sub Total for System	**4**	**items**		**$1,574,392**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	2	Ea.	1	$2,806	Rollup
	Sub Total for System	**1**	**items**		**$2,806**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
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	28	Ea.	5	$42,040	Rollup
	Sub Total for System	**2**	**items**		**$48,612**	

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	5	Ea.	1	$56,658	Rollup
	Sub Total for System	**1**	**items**		**$56,658**	

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 inadequate.	Technology	1	Room	3	$332,744	3280
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	66	Ea.	3	$623,235	3301
Technology: Instructional spaces do not have local sound reinforcement.	Technology	66	Ea.	3	$311,617	3300
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,394	3287
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,394	3291
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,394	3295
Technology: Intermediate Telecommunications Room needs M/E improvements.	Technology	1	Ea.	3	$24,174	3286
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	3288
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	3292
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	3296
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,859	3285
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	24	Ea.	3	$10,198	3290
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	106	Ea.	3	$45,043	3294
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	39	Ea.	3	$16,572	3298
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$60,435	3303
Technology: Network system inadequate and/or near end of useful life	Technology	30	Ea.	3	$141,644	3304
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	$107,650	3299
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	3289
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	3293
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	3297
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	100	Ea.	3	$151,087	3302
	Sub Total for System	**22**	**items**		**$2,031,767**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,065	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	5	Ea.	5	$42,493	Rollup
	Sub Total for System	**2**	**items**		**$51,559**	
	Sub Total for Building 01 - Main Building	**43**	**items**		**$6,063,027**	

Building: 02 - Maintenance and Tech

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	11,900	SF	5	$78,098	Rollup
	Sub Total for System	**1**	**items**		**$78,098**	
	Sub Total for Building 02 - Maintenance and Tech	**1**	**items**		**$78,098**	
	Total for Campus	**46**	**items**		**$6,471,770**	

Buildings with no reported deficiencies

03 - Field Storage

Chariho Regional 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
Playfield Areas	MS Athletic Components		1	Ea.	$339,701	3
		Sub Total for System	**1**	**items**	**$339,701**	
		Sub Total for Building -	**1**	**items**	**$339,701**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Resilient Flooring	Vinyl Composition Tile Flooring		111,975	SF	$1,284,549	3
		Sub Total for System	**1**	**items**	**$1,284,549**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Ductless Split System (1 Ton)		1	Ea.	$14,116	3
Heat Generation	Boiler - Cast Iron - Water (4488 MBH)		2	Ea.	$531,261	3
Decentralized Cooling	Window Units		9	Ea.	$30,050	3
Note:	Auditorium					
Heating System Supplementary Components	Controls - DDC (Bldg.SF)		131,635	SF	$792,606	3
HVAC Air Distribution	Ductwork (Bldg.SF)		141,740	SF	$2,083,742	3
		Sub Total for System	**5**	**items**	**$3,451,775**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories		31	Ea.	$84,289	4
Domestic Water Equipment	Water Heater - Gas - 75 Gallons		1	Ea.	$5,845	5
		Sub Total for System	**2**	**items**	**$90,134**	
		Sub Total for Building 01 - Main Building	**8**	**items**	**$4,826,457**	

Building: 03 - Field Storage

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Wood Siding - Bldg SF basis		1,000	SF	$29,975	5
		Sub Total for System	**1**	**items**	**$29,975**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)		1,000	SF	$5,942	5
		Sub Total for System	**1**	**items**	**$5,942**	
		Sub Total for Building 03 - Field Storage	**2**	**items**	**$35,917**	

Building: 04 - Oil and Recycling Building

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Wood Siding - Bldg SF basis		196	SF	$5,875	4
		Sub Total for System	**1**	**items**	**$5,875**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Paneling	Wood Panel wall		196	SF	$1,789	5
		Sub Total for System	**1**	**items**	**$1,789**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		1	Room	$11,188	5
		Sub Total for System	**1**	**items**	**$11,188**	
		Sub Total for Building 04 - Oil and Recycling Building	**3**	**items**	**$18,852**	
		Total for: Chariho Regional Middle School	**14**	**items**	**$5,220,927**	

Supporting Photos

Site Aerial

Kitchen

Building 2 Loading Dock

Girls Showers And Dressing


Boiler Room


Storage Building Faded Paint

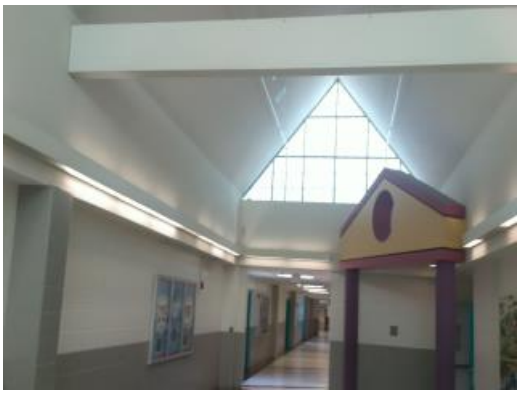

West Cafeteria


Gymnasium


Building 2 Data Server Room


Building 2 Boiler


Auditorium Seating


Hallway Finishes


Drinking Fountain

Plaque

Main Entrance


Home Economics


Building 2 Transformer and EPS


Music Room


Typical Classroom


Addition Classrooms Exterior

Damaged Door Hardware

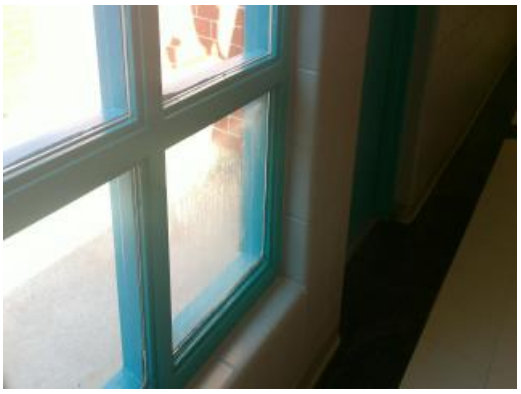

Main Hallway

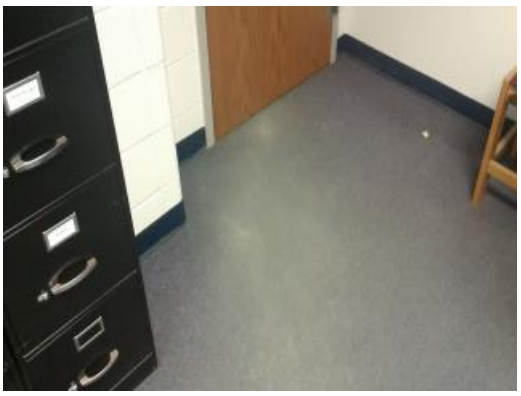

Cafeteria East


Field Storage Building


Building 2 Office


Auditorium Stage


Seal Broken In Window


Worn Carpet


Storage Building Exterior


Building 2 Exterior


Building 2 Garage Bays


Art Room

Facility Condition Assessment

Chariho - Charlestown Elementary School | *June 2017*

363 Carolina Back Road, Charlestown, RI 02813

Introduction

Charlestown Elementary School, located at 363 Carolina Back Road in Charlestown, Rhode Island, was built in 1954. It comprises 54,235 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.

Charlestown Elementary School serves grades KG - 4, has 28 instructional spaces, and has an enrollment of 277. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Charlestown Elementary School is 443 with a resulting utilization of 63%.

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 Charlestown Elementary School the 5-year need is $6,181,958. 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.

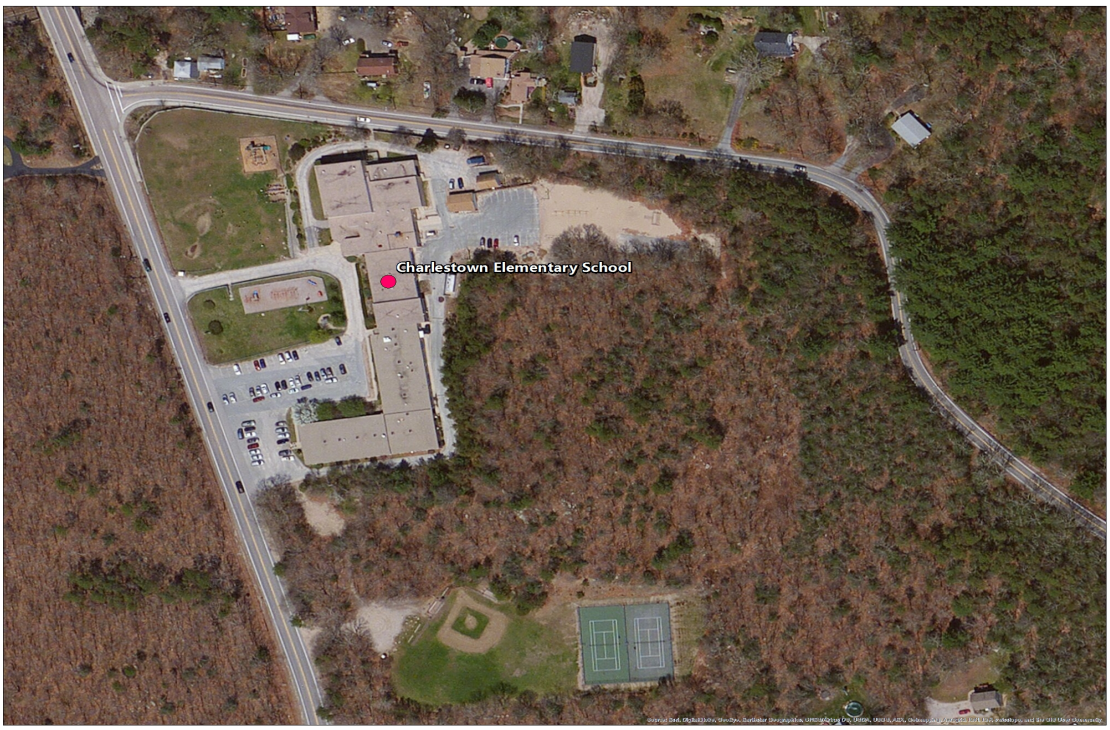


Figure 1: Aerial view of Charlestown Elementary School

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 Charlestown 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
	Storefront Entrance Doors

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

01 - Main Building:	Built-Up Roofing With Ballast

Interior

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

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Aluminum/Glass Storefront Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Non-Painted Plaster/Gypsum Board Ceiling
	Ceramic Tile Wall
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Carpet
	Athletic/Sport Flooring

Mechanical

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

01 - Main Building:	3,264 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	Fin Tube Water Radiant Heater
	20 MBH Steam Unit Heater
	Electronic Heating System Controls
	5 Ton Package DX Unit
	Window Units
	1 HP or Smaller Pump
	10 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	5,000 CFM Interior AHU
	Kitchen Exhaust Hoods
	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
	80 Gallon Electric Water Heater
	50 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	10,000 Gallon Above Ground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	1200 kW Emergency Generator
	Automatic Transfer Switch
	800 Amp Switchgear
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Building Mounted Lighting Fixtures

01 - Main Building:	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	-	-	$37,772	$657,248	$5,807	$700,827	18.93 %
Roofing	-	-	$5,367	-	-	$5,367	0.14 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$73,584	-	-	-	$73,584	1.99 %
Interior	-	-	$432,231	$506,975	$5,761	$944,968	25.53 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	$27,380	$13,690	-	-	$41,070	1.11 %
Plumbing	-	-	-	$40,880	$23,467	$64,347	1.74 %
Fire and Life Safety	$654,925	-	-	-	-	$654,925	17.69 %
Technology	-	-	$925,884	-	-	$925,884	25.01 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	$290,883	-	$290,883	7.86 %
Total	$654,925	$100,964	$1,414,944	$1,495,986	$35,036	$3,701,854	

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

The building systems with the most need include:

Interior	-	$944,968
Technology	-	$925,884
Site	-	$700,827

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

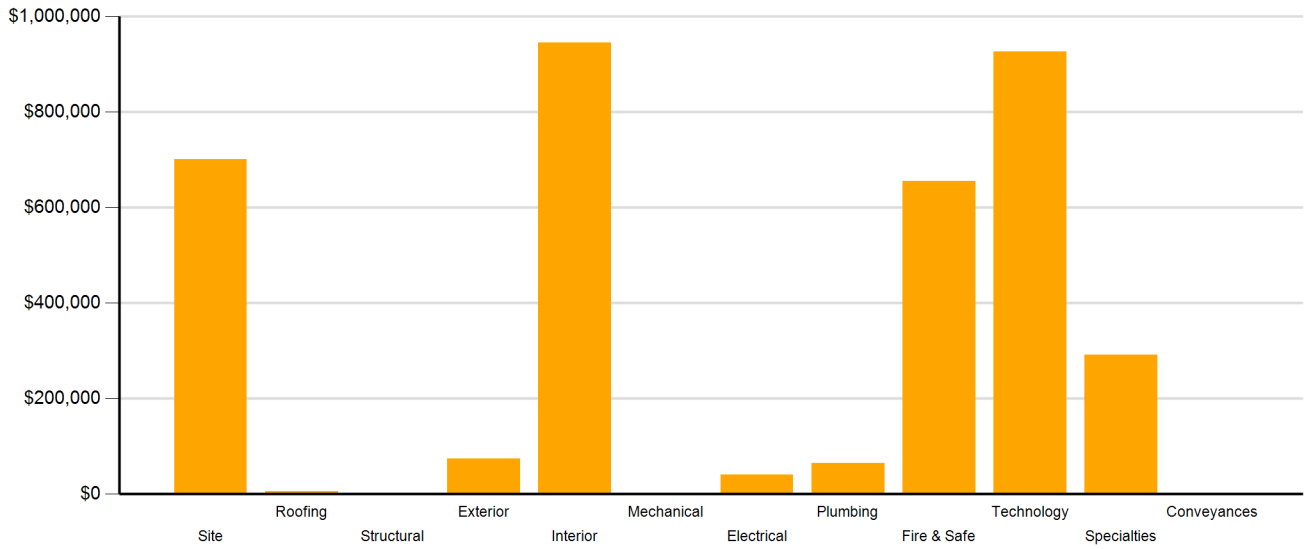


Figure 2: System Deficiencies

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	-	-	$191,437	$140,180	-	$331,617
Barrier to Accessibility	-	-	-	$1,293	-	$1,293
Capital Renewal	-	$100,964	$246,161	$1,326,373	-	$1,673,497
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$17,113	-	$35,036	$52,148
Functional Deficiency	$654,925	-	$13,690	-	-	$668,615
Hazardous Material	-	-	-	$28,141	-	$28,141
Technology	-	-	$908,771	-	-	$908,771
Traffic	-	-	$37,772	-	-	$37,772
Total	$654,925	$100,964	$1,414,944	$1,495,986	$35,036	$3,701,854

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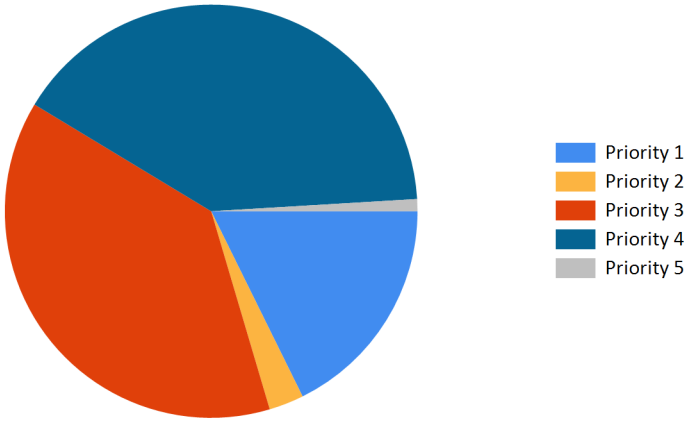

Figure 3: Current deficiencies by priority

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	$700,827	$0	$0	$0	$0	$8,176	$8,176	$709,003
Roofing	$5,367	$0	$0	$0	$0	$0	$0	$5,367
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$73,584	$0	$0	$0	$0	$0	$0	$73,584
Interior	$944,968	$0	$0	$1,366,233	$0	$0	$1,366,233	$2,311,201
Mechanical	$0	$0	$0	$366,341	$421,212	$171,289	$958,842	$958,842
Electrical	$41,070	$0	$0	$23,197	$0	$0	$23,197	$64,267
Plumbing	$64,347	$0	$0	$5,655	$63,621	$54,380	$123,656	$188,003
Fire and Life Safety	$654,925	$0	$0	$0	$0	$0	$0	$654,925
Technology	$925,884	$0	$0	$0	$0	$0	$0	$925,884
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$290,883	$0	$0	$0	$0	$0	$0	$290,883
Total	**$3,701,854**	**$0**	**$0**	**$1,761,426**	**$484,833**	**$233,845**	**$2,480,104**	**$6,181,958**

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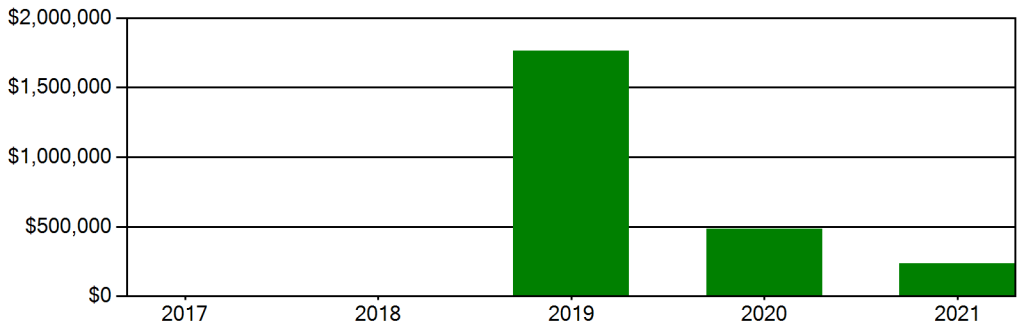
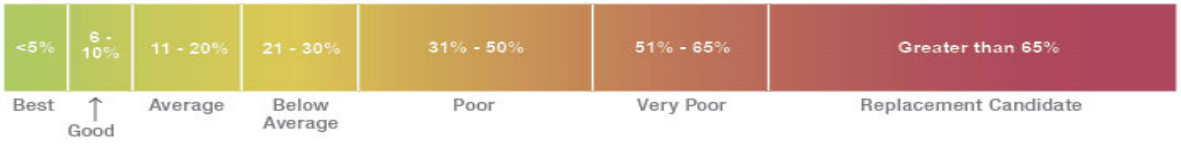


Figure 4: Life Cycle Capital Renewal Forecast

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 $18,982,250. For planning purposes, the total 5-year need at the Charlestown Elementary School is $6,181,958 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Charlestown Elementary School facility has a 5-year FCI of 32.57%.

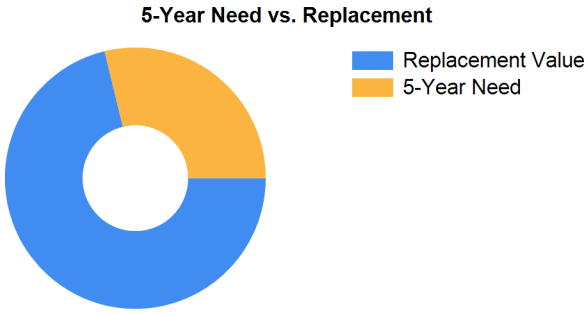


Figure 5: 5-Year FCI

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 301 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 Charlestown Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Charlestown Elementary School comprises 54,235 square feet and was constructed in 1954. Current deficiencies at this school total $3,701,854. Five year capital renewal costs total $2,480,104. The total identified need for the Charlestown Elementary School (current deficiencies and 5-year capital renewal costs) is $6,181,958. The 5-year FCI is 32.57%.

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
Charlestown Elementary School Totals	54,235	1954	$3,701,854	$2,480,104	$6,181,958	32.57%

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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
Traffic Signage Is Required	Traffic	1	Ea.	3	$37,772	4449
Note: Add flashing school zone sign on Old Shannock Road (west bound direction)						
Asphalt Paving Requires Replacement	Capital Renewal	100	CAR	4	$328,624	971
Asphalt Paving Requires Replacement	Capital Renewal	100	CAR	4	$328,624	1037
Note: Front parking lot has major cracks and corrosion.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28703
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**4**	**items**		**$700,827**	
	Sub Total for School and Site Level	**4**	**items**		**$700,827**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Gasketed Closure At Metal Edge Requires Replacement	Capital Renewal	10	LF	3	$328	1035
Note: Gasket has split and requires repair.						
Membrane Flashing At Curb (<2') Requires Repair	Capital Renewal	200	LF	3	$5,039	1034
Note: Flashing at expansion joints have significant cracks; recommend repair.						
	Sub Total for System	**2**	**items**		**$5,367**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Overhead Door Requires Replacement	Capital Renewal	2	Door	2	$73,584	1802
	Sub Total for System	**1**	**items**		**$73,584**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	23	Ea.	3	$191,437	4660
Note: All classroom						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	24,000	SF	3	$216,759	4498
Note: Acoustical grid system and tiles are old and should be replaced.						
The Carpet Flooring Requires Replacement	Capital Renewal	1,085	SF	3	$23,605	1801
Note: The carpet in the Library /Resource room and Music Room needs to be replaced. It is beyond its useful life and shows signs of wear and tear.						
The Ceramic Tile Flooring Requires Replacement	Capital Renewal	16	SF	3	$430	1019
Note: Ceramic tiles in girls locker room and handicap bathroom need to be replaced.						
Ceiling Grid Requires Replacement	Capital Renewal	24,000	SF	4	$284,652	1020
Note: Acoustical grid system and tiles are old and should be replaced.						
Moveable Partitions Require Replacement	Capital Renewal	450	SF Wall	4	$51,979	1902
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	27	Ea.	4	$7,701	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	150	SF	4	$1,426	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	1,940	SF	4	$18,444	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	2	Ea.	4	$570	Rollup
Room Is Excessively Reverberant	Acoustics	3,000	SF	4	$26,097	4663
Note: Gym						
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	2,000	SF	4	$114,084	4664
Note: Cafeteria						
The Gypsum Board Ceilings Require Replacement	Capital Renewal	64	SF	4	$730	1024
Note: The gypsum ceiling in the kitchen is stained, peeling and flaking paint.						
The Handrails In The Stair Area Are Not ADA Compliant	Barrier to Accessibility	10	LF	4	$1,293	1036
Note: ADA ramp to the playground has several missing bars.						

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,282	Rollup
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	$3,480	Rollup
	Sub Total for System	**16**	**items**		**$944,968**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$23,482	1028
Note: Electric panel is showing arc flash burns and other visual aging signs. Recommend replace.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$3,898	1030
Note: Electric Panel is showing signs of wear						
The Electrical Receptacles Are Inadequate And More are Needed	Functional Deficiency	24	Ea.	3	$13,690	1031
Note: Additional power is needed in the classrooms						
	Sub Total for System	**3**	**items**		**$41,070**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	4	Ea.	4	$40,880	1029
Note: No supply water and/or no handles.						
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	8	Ea.	5	$9,131	Rollup
	Sub Total for System	**3**	**items**		**$64,347**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Install Fire Sprinklers (NFPA 13)	Functional Deficiency	50,000	SF	1	$654,925	1033
Note: Building is not sprinkled. Recommend providing full coverage system						
	Sub Total for System	**1**	**items**		**$654,925**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$17,113	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	48	Ea.	3	$22,817	3206
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	24	Ea.	3	$11,408	3216
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	25	Ea.	3	$237,674	3220
Technology: Instructional spaces do not have local sound reinforcement.	Technology	25	Ea.	3	$118,837	3219
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	3208
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$37,648	3212
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$4,753	3217
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	3203
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	3209
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,655	3213
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$42,591	3202
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$42,591	3224

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,032	3207
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	32	Ea.	3	$13,690	3204
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	24	Ea.	3	$10,268	3211
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	32	Ea.	3	$13,690	3215
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$30,422	3222
Technology: Network system inadequate and/or near end of useful life	Technology	20	Ea.	3	$95,070	3223
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	$108,379	3221
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3205
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3210
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,753	3214
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	25	Ea.	3	$38,028	3218
	Sub Total for System	**24**	**items**		**$925,884**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Cabinetry In Classes/Labs	Capital Renewal	26	Room	4	$290,883	1904
	Sub Total for System	**1**	**items**		**$290,883**	
	Sub Total for Building 01 - Main Building	**51**	**items**		**$3,001,027**	
	Total for Campus	**55**	**items**		**$3,701,854**	

Charlestown Elementary 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		400	SF	$8,176	5
		Sub Total for System	**1**	**items**	**$8,176**	
		Sub Total for Building -	**1**	**items**	**$8,176**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Interior Swinging Doors	Wood		106	Door	$488,753	3
Wall Paneling	Wood Panel wall		1,750	SF	$15,972	3
Wall Painting and Coating	Painting/Staining (Bldg SF)		52,085	SF	$344,144	3
Resilient Flooring	Vinyl Composition Tile Flooring		45,099	SF	$517,364	3
		Sub Total for System	**4**	**items**	**$1,366,233**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)		54,235	SF	$366,341	3
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)		2	Ea.	$15,257	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		24	Ea.	$405,955	4
Exhaust Air	Roof Exhaust Fan - Large		11	Ea.	$152,828	5
Exhaust Air	Roof Exhaust Fan - Small		7	Ea.	$18,461	5
		Sub Total for System	**5**	**items**	**$958,842**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Panelboard - 120/208 225A		4	Ea.	$23,197	3
		Sub Total for System	**1**	**items**	**$23,197**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Electric - 80 gallon		1	Ea.	$5,655	3
Plumbing Fixtures	Restroom Lavatories		20	Ea.	$63,621	4
Plumbing Fixtures	Classroom Lavatories		20	Ea.	$54,380	5
		Sub Total for System	**3**	**items**	**$123,655**	
		Sub Total for Building 01 - Main Building	**13**	**items**	**$2,471,927**	
		Total for: Charlestown Elementary School	**14**	**items**	**$2,480,103**	

Supporting Photos

Site Aerial

Cracked Road

Gym Elevation

Alligatored Asphalt Pavement


Elevation


Main Distribution Panel


Fuel Storage Tank


Stained And Warped Ceiling Grid


Missing Ceramic Tile


Generator


Radiant Heater


Drinking Fountain


Aged Panelboard


Broken Spindles At Ramp


Cracked Asphalt Pavement


Playground


Urinal Fixtures


Split Gasket


Stained And Peeling Gypsum Ceiling


Janitor Sink


Boiler

Roof Equipment

Facility Condition Assessment

Chariho - Hope Valley Elementary School | *June 2017*

15 Thelma Drive, Hope Valley, RI 02832

Introduction

Hope Valley Elementary School, located at 15 Thelma Drive in Hope Valley, Rhode Island, was built in 1935. It comprises 28,735 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.

Hope Valley Elementary School serves grades PK - 4, has 21 instructional spaces, and has an enrollment of 238. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Hope Valley Elementary School is 303 with a resulting utilization of 79%.

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 Hope Valley Elementary School the 5-year need is $3,069,256. 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.

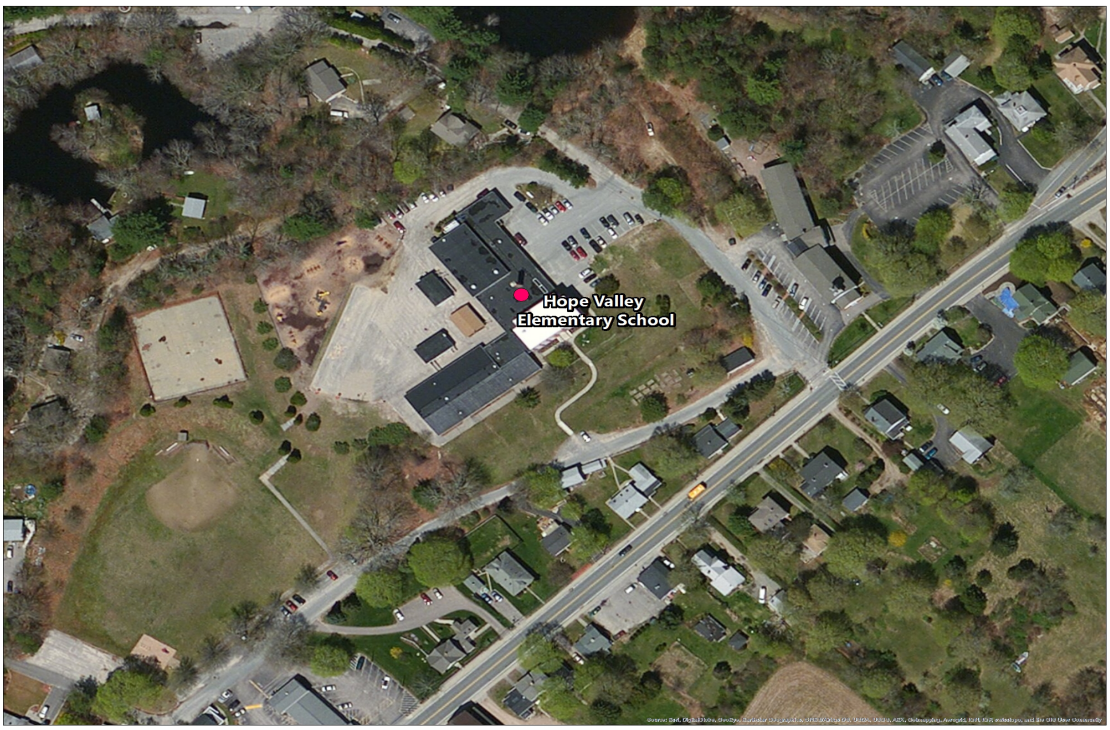


Figure 1: Aerial view of Hope Valley Elementary School

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 Hope Valley 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
	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
	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:	EPDM 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
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Wood Ceilings
	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:	1,275 MBH Cast Iron Water Boiler
	400 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	Fin Tube Water Radiant Heater
	12 MBH Steam Unit Heater
	250 MBH Steam Unit Heater
	DDC Heating System Controls
	Window Units
	15 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	10 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	5,000 CFM Interior AHU
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	Wall Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	250 Gallon Water Storage Tank
	Gas Piping System
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Sump Pump
	5,000 Gallon Underground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	600 Amp Switchgear
	Panelboard - 120/208 225A

01 - Main Building:	Building 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	-	-	-	$585,463	$5,807	$591,270	27.78 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$6,685	-	-	-	$6,685	0.31 %
Interior	-	-	$185,668	$65,006	$194,893	$445,566	20.93 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	$74,451	-	-	$1,985	$76,437	3.59 %
Plumbing	-	-	$131,321	$86,454	$13,997	$231,772	10.89 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$767,553	-	-	$767,553	36.06 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,127	-	-	$9,127	0.43 %
Total	$0	$81,136	$1,093,668	$736,923	$216,682	$2,128,409	

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

The building systems with the most need include:

Technology	-	$767,553
Site	-	$591,270
Interior	-	$445,566

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

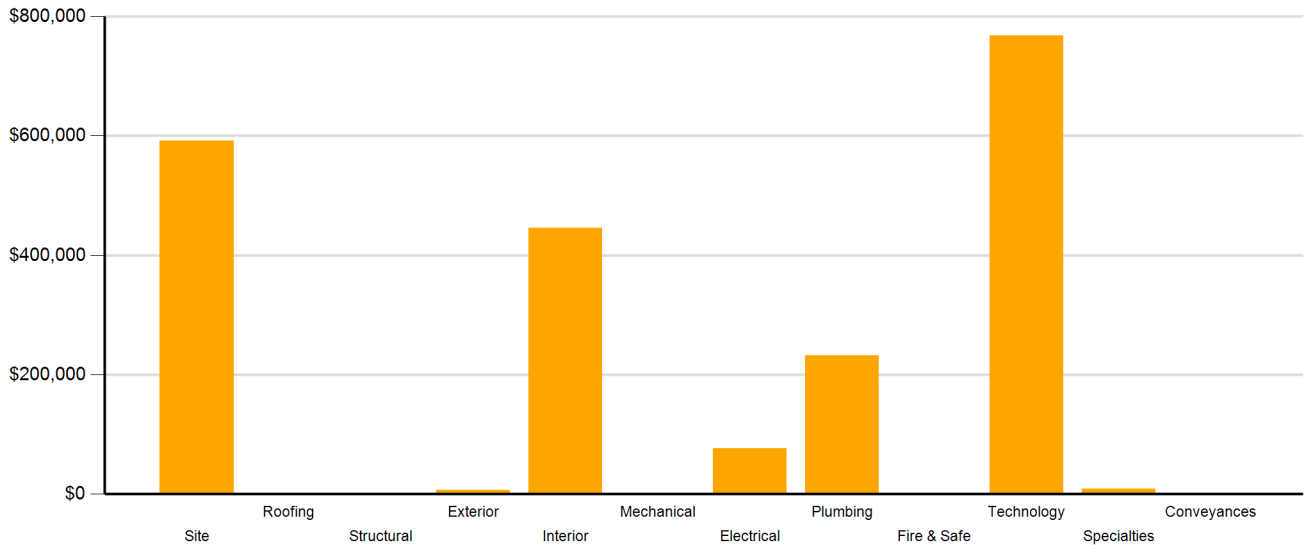


Figure 2: System Deficiencies

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	-	-	-	-	-	$0
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$81,136	$316,989	$691,684	$192,611	$1,282,420
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$20,535	$34,175	$24,071	$78,781
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$11,064	-	$11,064
Technology	-	-	$756,144	-	-	$756,144
Traffic	-	-	-	-	-	$0
Total	$0	$81,136	$1,093,668	$736,923	$216,682	$2,128,409

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

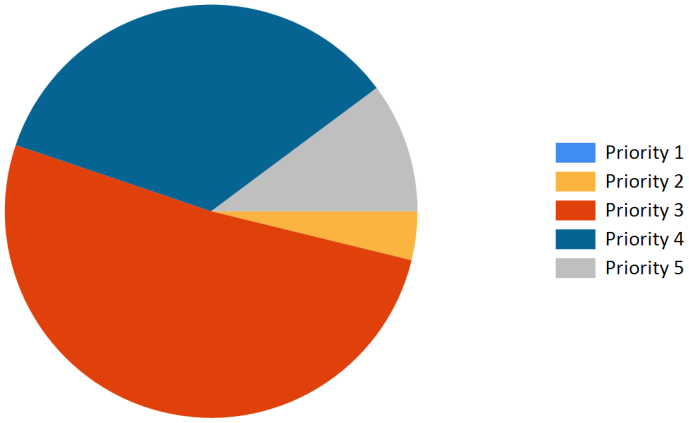


Figure 3: Current deficiencies by priority

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	$591,270	$0	$0	$23,273	$0	$155,500	$178,773	$770,043
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$6,685	$0	$0	$0	$0	$0	$0	$6,685
Interior	$445,566	$0	$0	$686,043	$0	$36,735	$722,778	$1,168,345
Mechanical	$0	$0	$0	$0	$0	$0	$0	$0
Electrical	$76,437	$0	$0	$0	$0	$0	$0	$76,437
Plumbing	$231,772	$0	$0	$36,887	$0	$1,449	$38,336	$270,108
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$767,553	$0	$0	$0	$0	$0	$0	$767,553
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$9,127	$0	$0	$0	$0	$0	$0	$9,127
Total	**$2,128,409**	**$0**	**$0**	**$746,203**	**$0**	**$193,684**	**$939,887**	**$3,068,296**

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

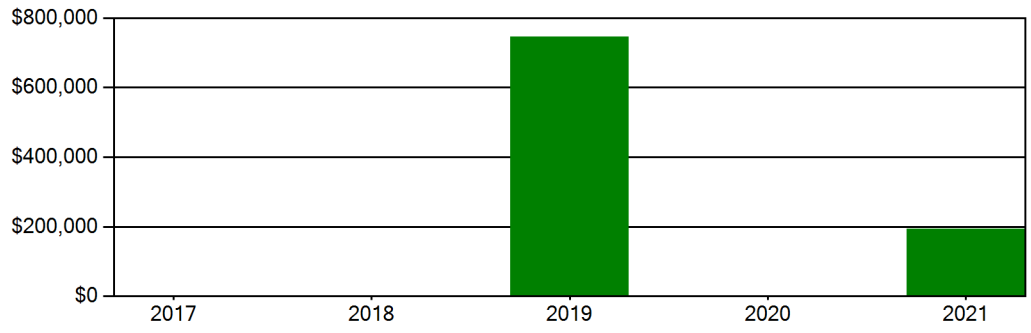
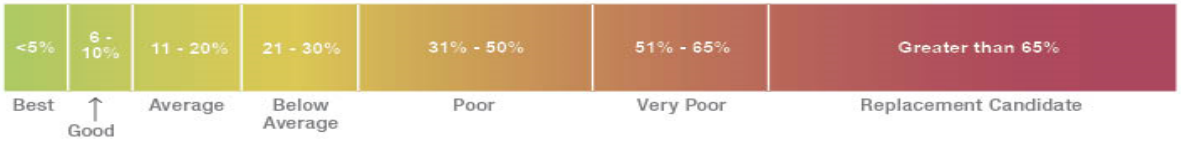


Figure 4: Life Cycle Capital Renewal Forecast

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 $10,368,750. For planning purposes, the total 5-year need at the Hope Valley Elementary School is $3,069,256 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Hope Valley Elementary School facility has a 5-year FCI of 29.59%.

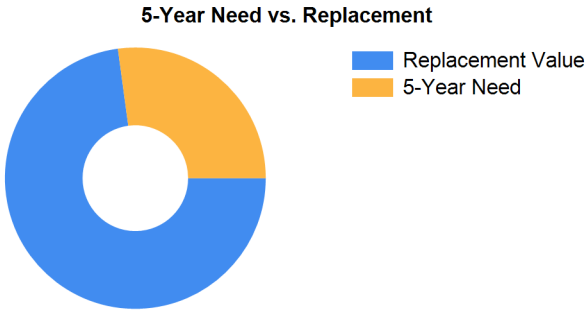


Figure 5: 5-Year FCI

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 165 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 Hope Valley Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $446,040.

Summary of Findings

The Hope Valley Elementary School comprises 28,735 square feet and was constructed in 1935. Current deficiencies at this school total $2,129,369. Five year capital renewal costs total $939,887. The total identified need for the Hope Valley Elementary School (current deficiencies and 5-year capital renewal costs) is $3,069,256. The 5-year FCI is 29.59%.

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
Hope Valley Elementary School Totals	28,735	1935	$2,129,369	$939,887	$3,069,256	29.59%

**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
Asphalt Paving Requires Replacement	Capital Renewal	200	CAR	4	$585,463	1798
Note: The roadway area is old and cracking.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28700
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**2**	**items**		**$591,270**	
	Sub Total for School and Site Level	**2**	**items**		**$591,270**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	1	Door	2	$6,685	1797
Location: Storage						
	Sub Total for System	**1**	**items**		**$6,685**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior CMU Walls Require Repair	Capital Renewal	500	SF	3	$18,915	1795
Note: Cracked CMU needs to be repointed.						
Interior Doors Require Replacement	Capital Renewal	30	Door	3	$144,090	1784
Note: Interior doors are outdated and in disrepair.						
The Carpet Flooring Requires Replacement	Capital Renewal	1,000	SF	3	$22,663	1793
Note: The carpet in the library is older and tearing at the seams.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	1,750	SF	4	$19,768	1794
Note: The adhered acoustic tiles should be replaced in the 1935 building area.						
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	9	Ea.	4	$2,674	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	48	LF	4	$1,141	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	$1,981	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - linear feet)	Hazardous Material	30	LF	4	$713	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	200	SF	4	$1,981	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	2	Ea.	4	$594	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	200	SF	4	$1,981	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	143	SF	4	$5,449	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,282	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	27,985	SF	5	$192,611	Rollup
	Sub Total for System	**14**	**items**		**$416,840**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$20,083	1773
Note: Electrical service outdated and obsolete. Main distribution original to building and should be updated.						
The Panelboard Requires Replacement	Capital Renewal	9	Ea.	2	$54,368	1774
Note: Distribution panels are original to the building and outdated.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	4	Ea.	5	$1,985	Rollup
	Sub Total for System	**3**	**items**		**$76,437**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$121,630	1780
Note: Sanitary piping original to building.						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	7	Ea.	3	$9,691	1779
Note: Urinals are obsolete and original to building.						
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	4	Ea.	4	$42,583	1782
Note: Non-functional						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	4	Ea.	4	$10,735	1781
Note: Mop sinks are original to the building and are obsolete.						
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	10	Ea.	4	$33,136	1777
Note: Lavatories are beginning to fail - upgrade to low flow with auto valves.						
Room lacks a drinking fountain.	Educational Adequacy	9	Ea.	5	$9,925	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,072	Rollup
	Sub Total for System	**7**	**items**		**$231,772**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,408	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	24	Ea.	3	$11,884	3228
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	15	Ea.	3	$148,546	3234
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	15	Ea.	3	$148,546	3235
Technology: Instructional spaces do not have local sound reinforcement.	Technology	20	Ea.	3	$99,031	3233
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,932	3225
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,408	3229
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	118	Ea.	3	$52,585	3226
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$31,690	3237
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$39,612	3238
Technology: Network system inadequate and/or near end of useful life	Technology	28,735	SF	3	$8,537	3239
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	28,735	SF	3	$51,222	3231
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	$112,895	3236
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3227
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,536	3230
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	15	Ea.	3	$23,767	3232
	Sub Total for System	**16**	**items**		**$767,553**	

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 01 - Main Building	**42**	**items**		**$1,508,413**	

Building: 02 - Portable A

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	759	SF	4	$28,726	Rollup
	Sub Total for System	**1**	**items**		**$28,726**	
	Sub Total for Building 02 - Portable A	**1**	**items**		**$28,726**	
	Total for Campus	**45**	**items**		**$2,128,409**	

Hope Valley Elementary School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (4 Ft)		360	LF	$23,273	3
Parking Lot Pavement	Asphalt		47	CAR	$155,500	5
		Sub Total for System	**2**	**items**	**$178,774**	
		Sub Total for Building -	**2**	**items**	**$178,774**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		14,275	SF	$128,926	3
Specialty Suspended Ceilings	Ceiling - Wood		7,138	SF	$47,503	3
Interior Coiling Doors	Overhead		1	Door	$36,792	3
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System		14,275	SF	$169,309	3
Flooring Treatment	Concrete Floor - Finished		3,500	SF	$45,571	3
Resilient Flooring	Vinyl Composition Tile Flooring		22,485	SF	$257,942	3
Suspended Plaster and	Painted ceilings		5,572	SF	$23,308	5
Tile Flooring	Ceramic Tile		500	SF	$13,427	5
		Sub Total for System	**8**	**items**	**$722,777**	

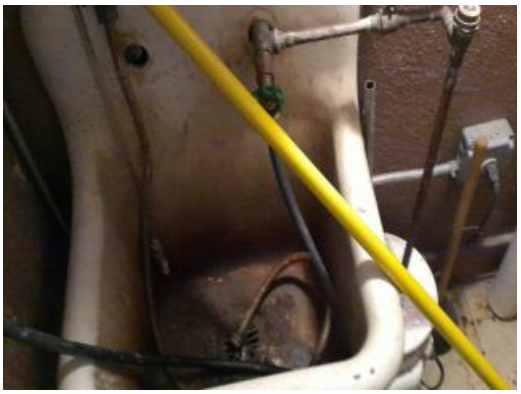
Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain		5	Ea.	$36,887	3
Building Support Plumbing System Supplementary Components	Sump Pump		1	Ea.	$1,449	5
		Sub Total for System	**2**	**items**	**$38,336**	
		Sub Total for Building 01 - Main Building	**10**	**items**	**$761,113**	
		Total for: Hope Valley Elementary School	**12**	**items**	**$939,887**	

Supporting Photos

Site Aerial

Cracked CMU



Original Custodial Sink

Original Panelboard


Adhered Acoustic Tiles


General Roof Condition


Weathered Asphalt Paving


Damaged Door For Exterior Storage


Non-Functional Drinking Fountain


Carpet Fraying At Seam


Electrical Service


Typical Lavatory Fixture


Original Urinals


Elevation

Facility Condition Assessment

Chariho - R.Y.S.E. School | *June 2017*

459 Switch Road, Wood River Junction, RI 02894

Introduction

R.Y.S.E. School, located at 459 Switch Road in Wood River Junction, Rhode Island, was built in 2002. It comprises 12,000 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.

R.Y.S.E. School serves grades 2 - 12, has 12 instructional spaces, and has an enrollment of 55. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for R.Y.S.E. School is 72 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 R.Y.S.E. School the 5-year need is $2,551,697. 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 R.Y.S.E. 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 R.Y.S.E. 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:	Wood Siding Exterior Wall
	Aluminum Exterior Windows
	Storefront Entrance Doors

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

01 - Main Building:	EPDM Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Vinyl/Fabric Wall Covering
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	Electronic Heating System Controls
	5 Ton Package DX Unit
	Ductwork
	Small Roof Exhaust Fan

Plumbing

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

01 - Main Building:	6.4 GPM Instant Water Heater
	Domestic Water Piping System
	Mop/Service Sinks

01 - Main Building:	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

Electrical

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

01 - Main Building:	Panelboard - 120/240 100A
	Building 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	-	-	-	$28,329	$842,119	$870,448	43.59 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$683,443	$141,368	-	$824,811	41.30 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	-	-	-	$23,660	$23,660	1.18 %
Plumbing	-	-	-	-	$2,191	$2,191	0.11 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$225,970	-	-	$225,970	11.32 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$49,859	-	-	$49,859	2.50 %
Total	$0	$0	$959,272	$169,696	$867,970	$1,996,938	

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

The building systems with the most need include:

Site	-	$870,448
Interior	-	$824,811
Technology	-	$225,970

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

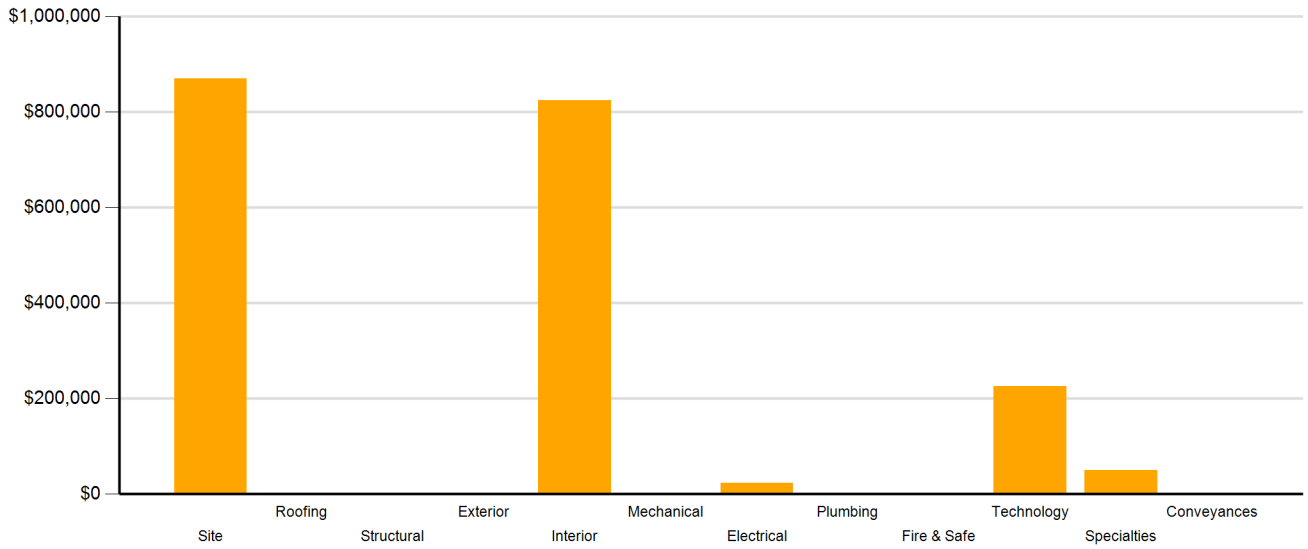


Figure 2: System Deficiencies

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	-	-	$264,554	-	-	$264,554
Barrier to Accessibility	-	-	$174,506	-	-	$174,506
Capital Renewal	-	-	$244,384	$141,368	-	$385,751
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$49,859	$28,329	$867,970	$946,158
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	-	-	$0
Technology	-	-	$225,970	-	-	$225,970
Traffic	-	-	-	-	-	$0
Total	$0	$0	$959,272	$169,696	$867,970	$1,996,938

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

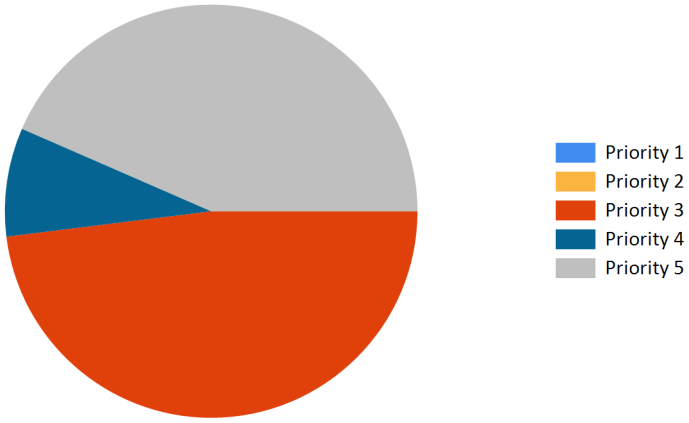


Figure 3: Current deficiencies by priority

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	$870,448	$0	$0	$0	$0	$0	$0	$870,448
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	$824,811	$0	$0	$85,563	$0	$0	$85,563	$910,374
Mechanical	$0	$0	$0	$329,552	$0	$13,186	$342,738	$342,738
Electrical	$23,660	$0	$0	$71,302	$0	$0	$71,302	$94,962
Plumbing	$2,191	$0	$0	$19,984	$0	$0	$19,984	$22,175
Fire and Life Safety	$0	$0	$0	$35,172	$0	$0	$35,172	$35,172
Technology	$225,970	$0	$0	$0	$0	$0	$0	$225,970
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$49,859	$0	$0	$0	$0	$0	$0	$49,859
Total	**$1,996,938**	**$0**	**$0**	**$541,573**	**$0**	**$13,186**	**$554,759**	**$2,551,697**

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

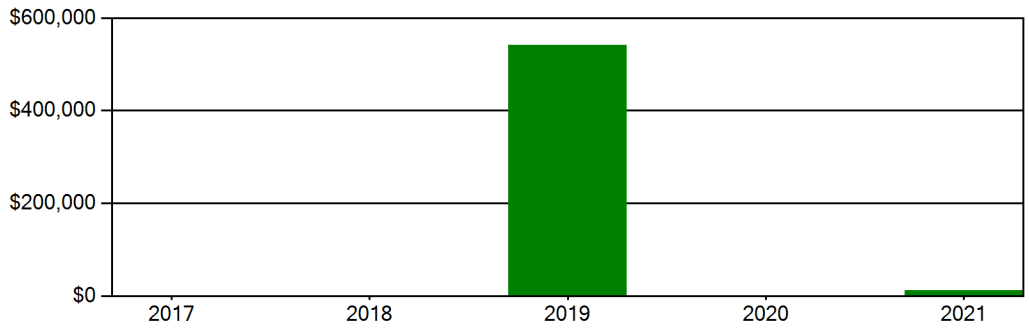
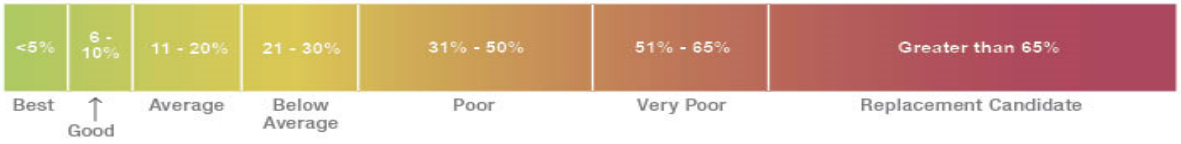


Figure 4: Life Cycle Capital Renewal Forecast

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 $4,320,000. For planning purposes, the total 5-year need at the R.Y.S.E. School is $2,551,697 (Life Cycle Years 1-5 plus the FCI deficiency cost). The R.Y.S.E. School facility has a 5-year FCI of 59.07%.

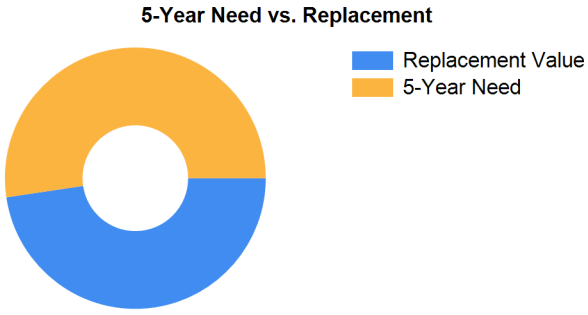


Figure 5: 5-Year FCI

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 59 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 R.Y.S.E. School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The R.Y.S.E. School comprises 12,000 square feet and was constructed in 2002. Current deficiencies at this school total $1,996,938. Five year capital renewal costs total $554,759. The total identified need for the R.Y.S.E. School (current deficiencies and 5-year capital renewal costs) is $2,551,697. The 5-year FCI is 59.07%.

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
R.Y.S.E. School Totals	12,000	2002	$1,996,938	$554,759	$2,551,697	59.07%

**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.

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Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$28,329	28424
Note: Backstops Require Replacement						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,020	54868
Note: PE / Recess Playfield is Missing and is Needed						
School has insufficient baseball fields.	Educational Adequacy	1	Ea.	5	$207,745	28316
Note: School has insufficient baseball fields.						
School has insufficient football/soccer fields.	Educational Adequacy	1	Ea.	5	$94,430	28186
Note: School has insufficient football/soccer fields.						
School has insufficient softball fields.	Educational Adequacy	1	Ea.	5	$151,087	28358
Note: School has insufficient softball fields.						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$324,837	28231
Note: School lacks a competition track.						
	Sub Total for System	**6**	**items**		**$870,448**	
	Sub Total for School and Site Level	**6**	**items**		**$870,448**	

Building: 01 - Main Building

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	32	Ea.	3	$264,554	4737
Note: All classrooms						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	12,000	SF	3	$107,650	1714
Note: The ceiling grid and tile system is original and old. It is recommended that it be replaced throughout the school.						
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	56	Door	3	$174,506	1715
Note: The interior hardware is original and is breaking because of wear and tear. It is recommended that the hardware be replaced.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	12,000	SF	3	$136,734	1713
Note: The vinyl tile is original and separating. It is recommended that the entire building floor tiles be replaced.						
Ceiling Grid Requires Replacement	Capital Renewal	12,000	SF	4	$141,368	4502
Note: The ceiling grid and tile system is original and old. It is recommended that it be replaced throughout the school.						
	Sub Total for System	**5**	**items**		**$824,811**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	48	Ea.	5	$23,660	Rollup
	Sub Total for System	**1**	**items**		**$23,660**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	2	Ea.	5	$2,191	Rollup
	Sub Total for System	**1**	**items**		**$2,191**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	10	Ea.	3	$94,430	3245
Technology: Instructional spaces do not have local sound reinforcement.	Technology	10	Ea.	3	$47,215	3246
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,610	3241
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$21,530	3240

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$8,971	3244
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	20	Ea.	3	$8,499	3242
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$18,886	3247
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	$15,109	3248
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,721	3243
	Sub Total for System	**9**	**items**		**$225,970**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	11	Ea.	3	$49,859	Rollup
	Sub Total for System	**1**	**items**		**$49,859**	
	Sub Total for Building 01 - Main Building	**17**	**items**		**$1,126,490**	
	Total for Campus	**23**	**items**		**$1,996,938**	

R.Y.S.E. School - Life Cycle Summary Yrs 1-5

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Coverings	Vinyl/Fabric Wall Covering		12,000	SF	$85,563	3
		Sub Total for System	**1**	**items**	**$85,563**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Package DX Unit (5 Ton)		5	Ea.	$72,082	3
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)		12,000	SF	$81,056	3
HVAC Air Distribution	Ductwork (Bldg.SF)		12,000	SF	$176,414	3
Exhaust Air	Roof Exhaust Fan - Small		5	Ea.	$13,186	5
		Sub Total for System	**4**	**items**	**$342,738**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)		12,000	SF	$71,302	3
		Sub Total for System	**1**	**items**	**$71,302**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Instant 6.4 GPM		1	Ea.	$5,229	3
Note:	Single unit feeding three sinks					
Plumbing Fixtures	Refrigerated Drinking Fountain		2	Ea.	$14,755	3
		Sub Total for System	**2**	**items**	**$19,984**	

Fire and Life Safety

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm		12,000	SF	$35,172	3
		Sub Total for System	**1**	**items**	**$35,172**	
		Sub Total for Building 01 - Main Building	**9**	**items**	**$554,759**	
		Total for: R.Y.S.E. School	**9**	**items**	**$554,759**	

Supporting Photos

Site Aerial

Electrical Panel

Electric Water Cooler

VCT Flooring Separating


Stained Ceiling Tiles


Typical Classroom


Hallway Finishes


Interior Door Hardware


Restroom Fixtures And Finishes


Broken Ceiling Tiles

Fire Alarm Panel

Front Entrance Doors

Library

Building Exterior

Exterior Finishes

Facility Condition Assessment

Chariho - Richmond Elementary School | *June 2017*

190 Kingstown Road, Wyoming, RI 02898

Introduction

Richmond Elementary School, located at 190 Kingstown Road in Wyoming, Rhode Island, was built in 1935. It comprises 55,300 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.

Richmond Elementary School serves grades PK - 4, has 36 instructional spaces, and has an enrollment of 417. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Richmond Elementary School is 532 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 Richmond Elementary School the 5-year need is $7,169,819. 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 Richmond 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 Richmond 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
	Storefront Entrance Doors
02 - Greenhouse:	Clear Polycarbonate Exterior Wall
	Steel Exterior Entrance Doors
03 - Building 03:	Wood Siding Exterior Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

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

01 - Main Building:	Composition Shingle Roofing
	Slate Roofing
02 - Greenhouse:	Clear Polycarbonate Roofing
03 - Building 03:	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
	Wood Ceilings
	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring

01 - Main Building:	Wood Flooring
	Vinyl Composition Tile Flooring
	Carpet
	Athletic/Sport Flooring
03 - Building 03:	Door Hardware
	Interior Wall Painting
	Concrete Flooring

Mechanical

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

01 - Main Building:	4,488 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	Fin Tube Water Radiant Heater
	DDC Heating System Controls
	Electronic Heating System Controls
	5 Ton Fan Coil - DX Cool w/Electric Heat
	5 Ton Outside Air Cooled Condenser
	Window Units
	Make-up Air Unit
	25 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Fire Sprinkler System
02 - Greenhouse:	200 MBH Gas Furnace
	Wall Exhaust Fan

Plumbing

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

01 - Main Building:	80 Gallon Electric Water Heater
	75 Gallon Gas Water Heater
	Domestic Water Piping System
02 - Greenhouse:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

01 - Main Building:	10,000 Gallon Above Ground Fuel Oil Storage Tank
02 - Greenhouse:	275 Gallon Above Ground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	100 kW Emergency Generator
	Automatic Transfer Switch
	800 Amp Switchgear
	400 Amp Distribution Panel
	600 Amp Distribution Panel
	Motor Controller
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Light Fixtures
02 - Greenhouse:	Panelboard - 120/208 225A

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	-	-	-	$722,973	$5,807	$728,780	20.89 %
Roofing	-	$297,093	-	-	-	$297,093	8.52 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$267,933	$347,904	$2,282	$618,119	17.72 %
Mechanical	-	-	$33,124	-	-	$33,124	0.95 %
Electrical	-	$119,669	$7,774	-	-	$127,443	3.65 %
Plumbing	-	-	$342,892	$8,497	$28,318	$379,706	10.88 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$855,598	-	-	$855,598	24.52 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,563	$444,275	-	$448,838	12.87 %
Total	$0	$416,762	$1,511,883	$1,523,649	$36,407	$3,488,702	

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

The building systems with the most need include:

Technology	-	$855,598
Site	-	$728,780
Interior	-	$618,119

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

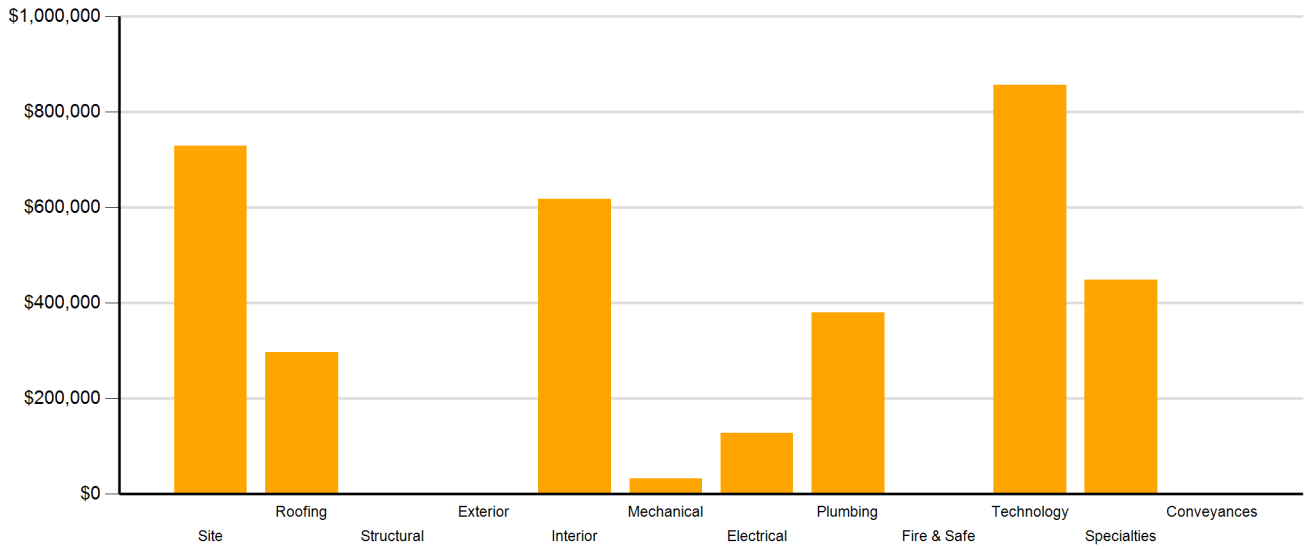


Figure 2: System Deficiencies

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	-	-	-	-	-	$0
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$416,762	$651,722	$1,484,612	-	$2,553,096
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$15,972	$7,773	$36,407	$60,152
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$31,264	-	$31,264
Technology	-	-	$844,189	-	-	$844,189
Traffic	-	-	-	-	-	$0
Total	$0	$416,762	$1,511,883	$1,523,649	$36,407	$3,488,702

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

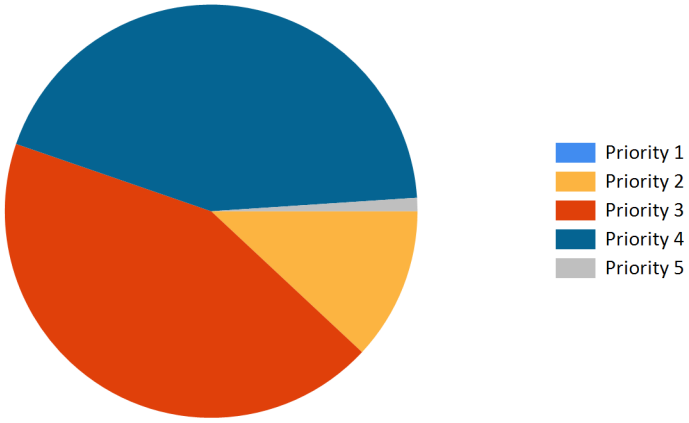


Figure 3: Current deficiencies by priority

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	$728,780	$0	$0	$53,782	$0	$7,735	$61,517	$790,297
Roofing	$297,093	$0	$0	$0	$0	$0	$0	$297,093
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$618,119	$0	$0	$561,501	$883,364	$3,304	$1,448,169	$2,066,288
Mechanical	$33,124	$0	$0	$318,707	$1,622,076	$120,503	$2,061,286	$2,094,410
Electrical	$127,443	$0	$0	$35,822	$0	$23,482	$59,304	$186,747
Plumbing	$379,706	$0	$0	$44,264	$0	$5,845	$50,109	$429,815
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$855,598	$0	$0	$0	$0	$0	$0	$855,598
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$448,838	$0	$0	$0	$0	$0	$0	$448,838
Total	**$3,488,702**	**$0**	**$0**	**$1,014,076**	**$2,505,440**	**$160,869**	**$3,680,385**	**$7,169,087**

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

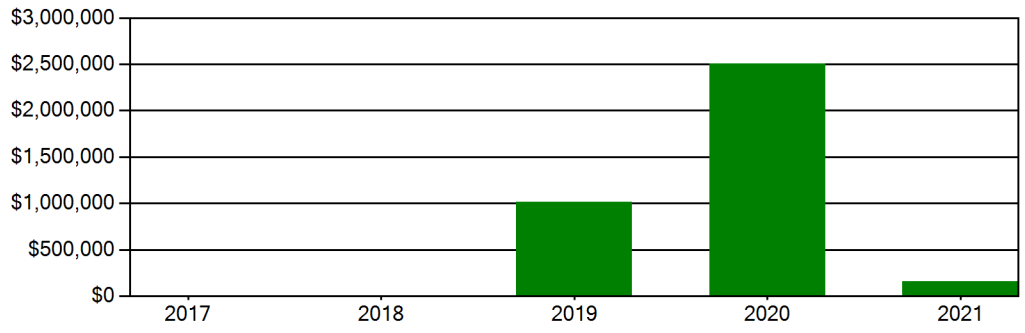
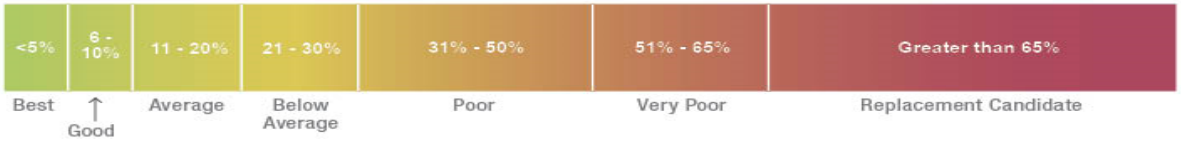


Figure 4: Life Cycle Capital Renewal Forecast

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 $19,355,000. For planning purposes, the total 5-year need at the Richmond Elementary School is $7,169,819 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Richmond Elementary School facility has a 5-year FCI of 37.04%.

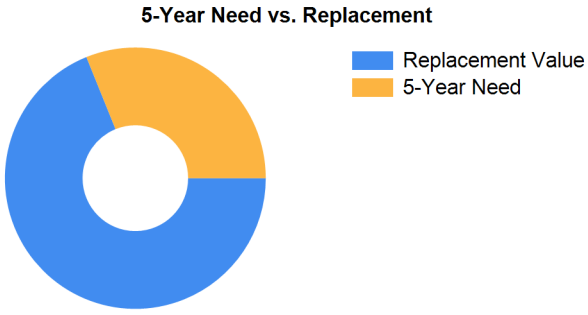


Figure 5: 5-Year FCI

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 307 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 Richmond Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $230,580.

Summary of Findings

The Richmond Elementary School comprises 55,300 square feet and was constructed in 1935. Current deficiencies at this school total $3,489,434. Five year capital renewal costs total $3,680,385. The total identified need for the Richmond Elementary School (current deficiencies and 5-year capital renewal costs) is $7,169,819. The 5-year FCI is 37.04%.

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
Richmond Elementary School Totals	55,300	1935	$3,489,434	$3,680,385	$7,169,819	37.04%

**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
Asphalt Paving Requires Replacement	Capital Renewal	163	CAR	4	$535,657	2472
Note: Parking lot is cracked and alligatoring.						
Asphalt Paving Requires Replacement	Capital Renewal	27	CAR	4	$88,729	2473
Note: Play area asphalt cracked and split.						
Asphalt Paving Requires Replacement	Capital Renewal	30	CAR	4	$98,587	2871
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$5,807	28701
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**4**	**items**		**$728,780**	
	Sub Total for School and Site Level	**4**	**items**		**$728,780**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Shingle Roof Requires Replacement	Capital Renewal	10,000	SF	2	$297,093	2619
	Sub Total for System	**1**	**items**		**$297,093**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	24,997	SF	3	$235,170	2616
The Athletic Sport Flooring Requires Replacement	Capital Renewal	500	SF	3	$17,826	2617
Note: Gym floor is cracking.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	1,250	SF	3	$14,937	2614
Location: Upper hallway, adjacent to the lift on both floors, and Room 1 hall						
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	60	LF	4	$1,188	Rollup
Ceiling Grid Requires Replacement	Capital Renewal	25,000	SF	4	$308,867	2869
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	120	SF	4	$3,565	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	1	Ea.	4	$297	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	1,025	SF	4	$10,151	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
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	512	SF	4	$5,070	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	6	Ea.	4	$1,783	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 - linear feet)	Hazardous Material	300	LF	4	$7,130	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	204	SF	4	$7,773	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,282	Rollup
	Sub Total for System	**14**	**items**		**$618,119**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Make Up Air Equipment Requires Replacement	Capital Renewal	2	Ea.	3	$33,124	2533
Note: Coils and blower wheel are clogged and bearings are grinding.						
	Sub Total for System	**1**	**items**		**$33,124**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$30,343	2550
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$26,738	2552
Note: Breaker is cracked.						
The Panelboard Requires Replacement	Capital Renewal	10	Ea.	2	$50,506	2547
Note: Breaker cases are cracked.						

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$12,082	2549
The Mounted Building Lighting Requires Replacement	Capital Renewal	5	Ea.	3	$7,774	2474
	Sub Total for System	**5**	**items**		**$127,443**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	26,400	SF	3	$221,262	2555
Note: Copper piping is corroded and pitted.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$121,630	2560
Note: Cast iron pipe is cracking.						
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	$8,497	2544
Note: Sinks are stained and corroded.						
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	10	Ea.	5	$10,673	Rollup
	Sub Total for System	**5**	**items**		**$379,706**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,408	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	48	Ea.	3	$23,767	3310
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	23	Ea.	3	$227,771	3320
Technology: Instructional spaces do not have local sound reinforcement.	Technology	23	Ea.	3	$113,886	3319
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,546	3316
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,216	3306
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,932	3307
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$6,932	3312
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,288	3311
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,288	3315
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,408	3309
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	39	Ea.	3	$17,380	3314
Technology: Network system inadequate and/or near end of useful life	Technology	3	Ea.	3	$23,767	3324
Technology: Network system inadequate and/or near end of useful life	Technology	15	Ea.	3	$74,273	3325
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	$112,895	3318
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3308
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3313
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$4,952	3317
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	35	Ea.	3	$55,457	3322

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,526	3323
	Sub Total for System	**20**	**items**		**$855,598**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,563	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	35	Room	4	$407,889	2889
The Metal Student Lockers Require Replacement	Capital Renewal	71	Ea.	4	$36,386	2890
	Sub Total for System	**3**	**items**		**$448,838**	
	Sub Total for Building 01 - Main Building	**49**	**items**		**$2,759,921**	
	Total for Campus	**53**	**items**		**$3,488,702**	

Buildings with no reported deficiencies

02 - Greenhouse

03 - Building 03

Richmond Elementary School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (8 Ft)		800	LF	$53,782	3
Parking Lot Lighting	Pole Mounted Fixtures (Ea.)		1	Ea.	$7,735	5
		Sub Total for System	**2**	**items**	**$61,517**	
		Sub Total for Building -	**2**	**items**	**$61,517**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Interior Door Supplementary Components	Door Hardware		70	Door	$219,611	3
Wall Painting and Coating	Painting/Staining (Bldg SF)		51,744	SF	$341,890	3
Resilient Flooring	Vinyl Composition Tile Flooring		42,004	SF	$481,859	4
Carpeting	Carpet		1,500	SF	$32,634	4
Interior Swinging Doors	Wood		70	Door	$322,762	4
Interior Swinging Doors	Wood		10	Door	$46,109	4
		Sub Total for System	**6**	**items**	**$1,444,865**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units		10	Ea.	$33,388	3
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)		42,240	SF	$285,319	3
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		32	Ea.	$541,274	4
Decentralized Heating Equipment	Radiant Heater - Fin Tube Water		142	Ea.	$1,080,802	4
Exhaust Air	Roof Exhaust Fan - Small		6	Ea.	$15,823	5
Exhaust Air	Roof Exhaust Fan - Large		6	Ea.	$83,361	5
Exhaust Air	Kitchen Exhaust Hoods		1	Ea.	$15,964	5
		Sub Total for System	**7**	**items**	**$2,055,931**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)		24	Ea.	$35,822	3
Electrical Service	Switchgear - Main Dist Panel (800 Amps)		1	Ea.	$23,482	5
		Sub Total for System	**2**	**items**	**$59,304**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain		6	Ea.	$44,264	3
Domestic Water Equipment	Water Heater - Gas - 75 Gallons		1	Ea.	$5,845	5
		Sub Total for System	**2**	**items**	**$50,109**	
		Sub Total for Building 01 - Main Building	**17**	**items**	**$3,610,210**	

Building: 02 - Greenhouse

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Wall Exhaust Fan		2	Ea.	$5,355	5
Note:	Schaefer wall exhaust					
		Sub Total for System	**1**	**items**	**$5,355**	
		Sub Total for Building 02 - Greenhouse	**1**	**items**	**$5,355**	

Building: 03 - Building 03

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		500	SF	$3,304	5
		Sub Total for System	**1**	**items**	**$3,304**	
		Sub Total for Building 03 - Building 03	**1**	**items**	**$3,304**	
		Total for: Richmond Elementary School	**21**	**items**	**$3,680,386**	

Supporting Photos

Site Aerial

Weathered Asphalt

Worn Play Area Paving

School Entrance

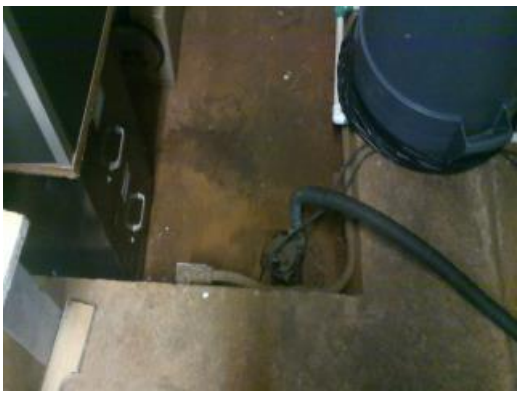

Oil Fired Boiler


Water Pumps


Hallway Finishes


Broken Building Mounted Light

Gym Plaque


Sump Pump


Typical Classroom


Aged Distribution Panel

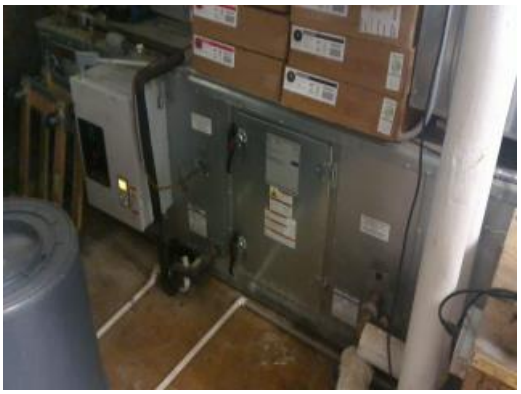

Separating VCT Flooring


Computer Room


Shingle Roof


Aged Panelboard


Gymnasium


Air Handling Unit


Cafeteria


Library


Stained Classroom Lavatory


Cracked Athletic Flooring


Make Up Air Unit


Typical Classroom


Greenhouse


Greenhouse Wall Exhaust


Building 3 Exterior