



Barrington totals 472,150 square feet and consists of the school type(s) detailed below. School(s) were visited three times during the Statewide Facilities Assessment by teams of specialists from February-March 2016. This report provides LEA summary findings for the statewide assessment program.

### School Type by Count



School Type	SqFt
Elementary School	152,050
Middle School	142,500
High School	177,600
<b>Total:</b>	<b>472,150</b>

### Demographics

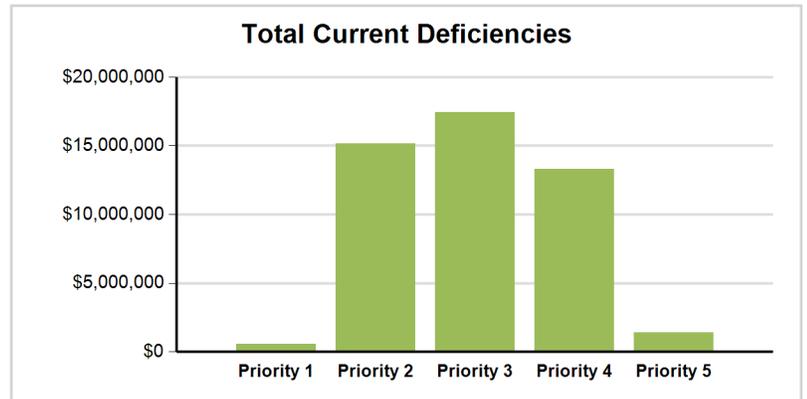
Enrollment is projected to increase by 4.5% over the next 10 years in Barrington. The total LEA enrollment at 6 school(s) is 3,301 students with a total capacity of 4,010 as reported by the LEA. Utilization is calculated by dividing enrollment by capacity, resulting in 82.3% utilization at Barrington.

### 82.3 % Utilization



### Educational Program Space Analysis

In Barrington there are 242 instructional spaces; of these spaces 15.7% meet or exceed the space size standards. Of the total current deficiencies identified, \$4,758,717 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 \$47,855,594, with 36.5% categorized as Priority 3 and another 31.7% as Priority 2. The building systems with the highest current deficiency costs are Interior and Technology.

School(s) with Greatest Need	Combined 5-Year Need
Barrington Middle School	\$23,439,460
Barrington High School	\$12,312,369
Nayatt School	\$8,675,317

The projected life cycle need in Years 1 through 5 is \$11,114,667. 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 75.3% of the combined 5-Year need at Barrington.

### 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 \$58,970,261 with a district replacement value of \$164,178,500. The resulting 5-Year FCI is 35.9%.

### 5-Year FCI Ranges

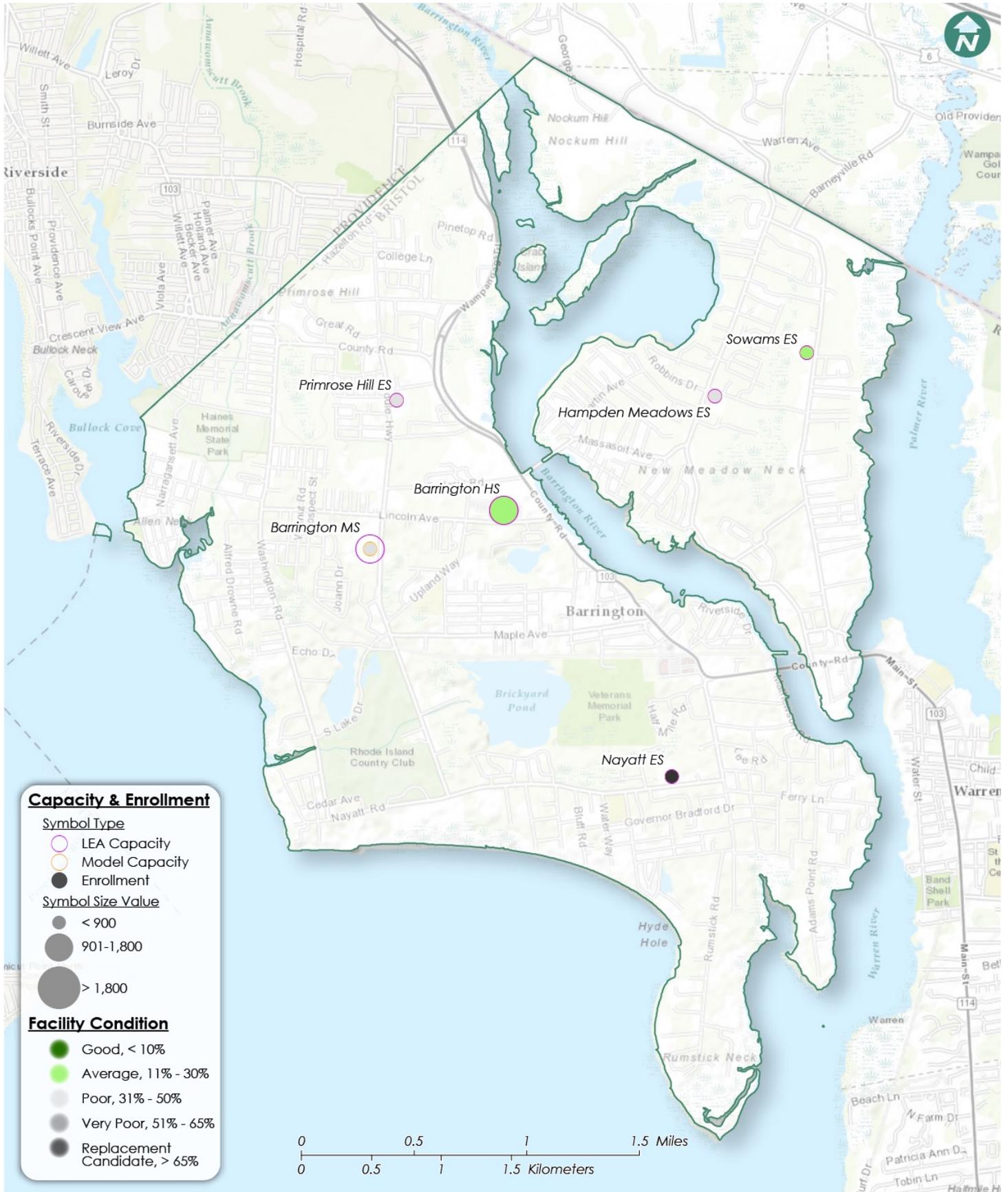


### LEA Summary Data

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
472,150	1955	\$47,855,594	\$11,114,667	\$58,970,261	35.9%



# Barrington





# Facility Condition Assessment

Barrington - Barrington High School

June 2017

220 Lincoln Avenue, Barrington, RI 02806





## Introduction

Barrington High School, located at 220 Lincoln Avenue in Barrington, Rhode Island, was built in 1950. It comprises 177,600 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Barrington High School serves grades 9 - 12, has 83 instructional spaces, and has an enrollment of 1,028. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Barrington High School is 1,200 with a resulting utilization of 86%.

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 Barrington High School the 5-year need is \$12,312,369. 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 Barrington 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 Barrington High School campus, identified by discipline and building.

### Site

The site level systems for this campus include:

<b>Site</b>	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:

<b>01 - Main Building:</b>	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
<b>02 - Press Box:</b>	Painted Exterior Wall
	Metal Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
<b>03 - Field Storage:</b>	CMU Exterior Wall
	Painted Exterior Wall
	Overhead Exterior Utility Doors
<b>04 - Field Storage:</b>	CMU Exterior Wall
	Painted Exterior Wall
	Overhead Exterior Utility Doors
<b>05 - Storage:</b>	CMU Exterior Wall
	Painted Exterior Wall
	Overhead Exterior Utility Doors

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

<b>01 - Main Building:</b>	Composition Shingle Roofing
	Modified Bitumen Roofing
<b>02 - Press Box:</b>	Modified Bitumen Roofing
<b>03 - Field Storage:</b>	Composition Shingle Roofing
<b>04 - Field Storage:</b>	Composition Shingle Roofing
<b>05 - Storage:</b>	Modified Bitumen Roofing



## Interior

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

<b>01 - Main Building:</b>	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Wood Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
<b>02 - Press Box:</b>	Wood Interior Doors
	Interior Door Hardware
	Door Hardware
	Painted Ceilings
	Interior Wall Painting
	Vinyl Composition Tile Flooring
<b>03 - Field Storage:</b>	Exposed Metal Structure Ceiling
	Interior Wall Painting
	Concrete Flooring
<b>04 - Field Storage:</b>	Exposed Metal Structure Ceiling
	Interior Wall Painting
	Concrete Flooring
<b>05 - Storage:</b>	Exposed Metal Structure Ceiling
	Interior Wall Painting
	Concrete Flooring

## Mechanical

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

<b>01 - Main Building:</b>	3,264 MBH Cast Iron Water Boiler
	400 MBH Cast Iron Water Boiler
	4,488 MBH Cast Iron Water Boiler



<b>01 - Main Building:</b>	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	DDC Heating System Controls
	2 Ton Ductless Split System
	5 Ton Package DX Unit
	10 Ton Package DX Unit
	20 Ton Package DX Unit
	Make-up Air Unit
	1 HP or Smaller Pump
	10 HP Pump
	25 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	5,000 CFM Interior AHU
	Ductwork
	Dehumidifier
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Supply Fan
	Fire Sprinkler System

## Plumbing

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

<b>01 - Main Building:</b>	100 Gallon Water Storage Tank
	2" Backflow Preventers
	3/4" Backflow Preventers
	4" Backflow Preventers
<b>02 - Press Box:</b>	40 Gallon Electric Water Heater
<b>01 - Main Building:</b>	Domestic Water Piping System
<b>02 - Press Box:</b>	Domestic Water Piping System
<b>01 - Main Building:</b>	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
<b>02 - Press Box:</b>	Lavatories
<b>01 - Main Building:</b>	Sump Pump



## Electrical

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

<b>01 - Main Building:</b>	150 kW Emergency Generator
	Automatic Transfer Switch
	225 KVA Transformer
	500 KVA Transformer
	Electrical Service
	1600 Amp Distribution Panel
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures
<b>02 - Press Box:</b>	50 kW Emergency Generator
	Automatic Transfer Switch
	30 KVA Transformer
	Panelboard - 277/480 225A
	Light Fixtures
	Canopy Mounted Lighting Fixtures
<b>04 - Field Storage:</b>	Light Fixtures
<b>05 - Storage:</b>	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.



# Facility Condition Assessment

Barrington - Barrington High School

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

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	\$45,326	\$28,329	\$15,298	\$88,953	1.56 %
Roofing	-	-	\$238	-	\$7,358	\$7,596	0.13 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	-	-	\$6,180	-	\$6,180	0.11 %
Interior	-	-	\$584,126	\$214,865	\$8,543	\$807,534	14.18 %
Mechanical	-	-	\$329,340	\$90,621	\$159,717	\$579,678	10.18 %
Electrical	-	\$566,759	\$30,022	-	\$138,306	\$735,087	12.90 %
Plumbing	-	-	\$3,166	\$7,330	\$33,826	\$44,322	0.78 %
Fire and Life Safety	\$26,592	-	-	-	-	\$26,592	0.47 %
Technology	-	-	\$3,252,201	-	-	\$3,252,201	57.09 %
Conveyances	-	-	-	-	-	\$0	0.00 %
Specialties	-	-	\$4,563	\$100,746	\$42,781	\$148,091	2.60 %
<b>Total</b>	\$26,592	\$566,759	\$4,248,982	\$448,071	\$405,829	\$5,696,233	

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

The building systems with the most need include:

Technology	-	\$3,252,201
Interior	-	\$807,534
Electrical	-	\$735,087

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

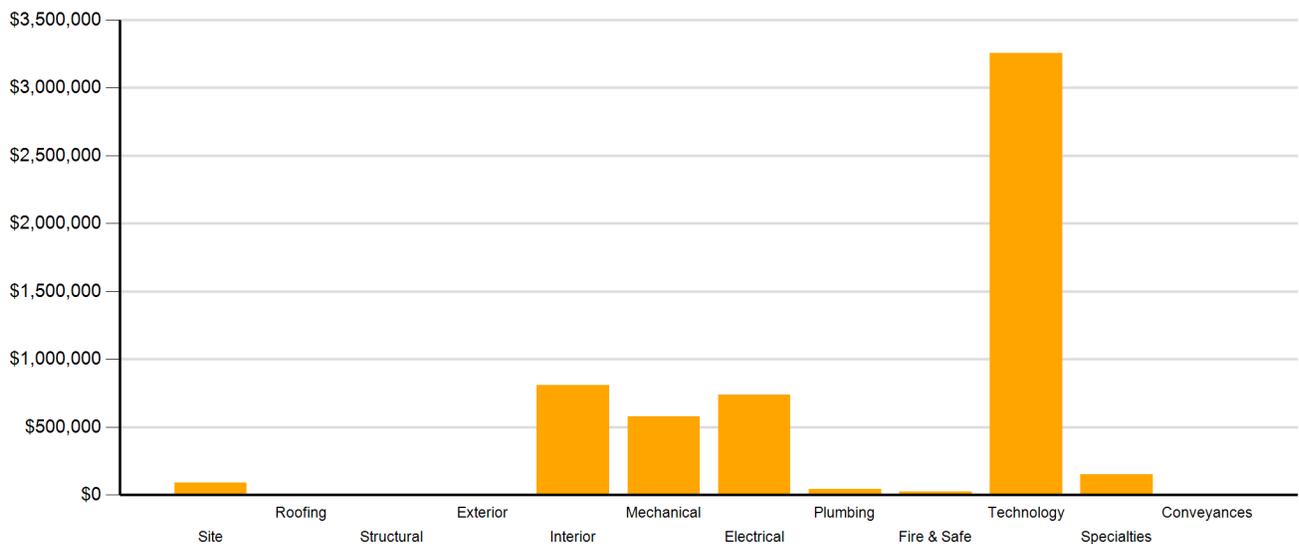


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	\$582,635	-	-	\$582,635
Barrier to Accessibility	-	-	-	-	-	\$0
Capital Renewal	\$3,775	\$566,759	\$354,588	\$18,184	\$185,695	\$1,129,000
Code Compliance	-	-	-	-	-	\$0
Educational Adequacy	\$22,817	-	\$284,068	\$217,018	\$220,087	\$743,990
Functional Deficiency	-	-	\$9,669	-	-	\$9,669
Hazardous Material	-	-	-	\$212,869	\$48	\$212,916
Technology	-	-	\$2,972,696	-	-	\$2,972,696
Traffic	-	-	\$45,326	-	-	\$45,326
<b>Total</b>	\$26,592	\$566,759	\$4,248,982	\$448,071	\$405,829	\$5,696,233

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

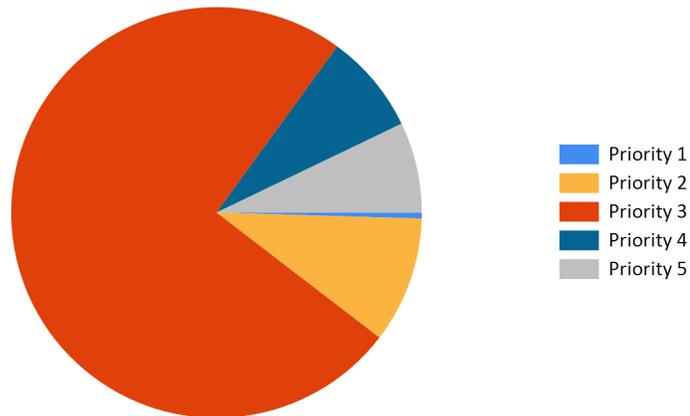


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$88,953	\$0	\$0	\$0	\$0	\$0	\$0	\$88,953
Roofing	\$7,596	\$0	\$0	\$2,826,422	\$0	\$729,185	\$3,555,607	\$3,563,203
Structural	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$6,180	\$0	\$0	\$0	\$0	\$58,088	\$58,088	\$64,268
Interior	\$807,534	\$0	\$29,733	\$0	\$1,052,028	\$10,571	\$1,092,332	\$1,899,866
Mechanical	\$579,678	\$0	\$0	\$1,745,857	\$0	\$111,148	\$1,857,005	\$2,436,683
Electrical	\$735,087	\$0	\$0	\$0	\$0	\$1,783	\$1,783	\$736,870
Plumbing	\$44,322	\$0	\$0	\$3,921	\$36,887	\$1,449	\$42,257	\$86,579
Fire and Life Safety	\$26,592	\$0	\$0	\$0	\$0	\$0	\$0	\$26,592
Technology	\$3,252,201	\$0	\$0	\$0	\$0	\$0	\$0	\$3,252,201
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$148,091	\$0	\$0	\$0	\$0	\$0	\$0	\$148,091
<b>Total</b>	<b>\$5,696,233</b>	<b>\$0</b>	<b>\$29,733</b>	<b>\$4,576,200</b>	<b>\$1,088,915</b>	<b>\$912,224</b>	<b>\$6,607,072</b>	<b>\$12,303,305</b>

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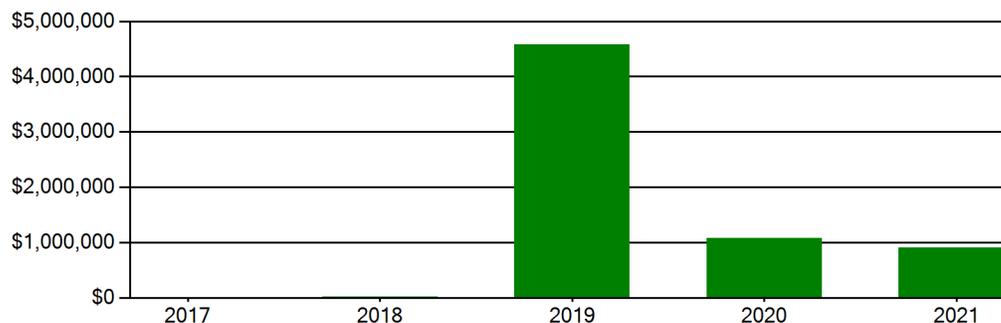


Figure 4: Life Cycle Capital Renewal Forecast



## 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 \$63,936,000. For planning purposes, the total 5-year need at the Barrington High School is \$12,312,369 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Barrington High School facility has a 5-year FCI of 19.24%.

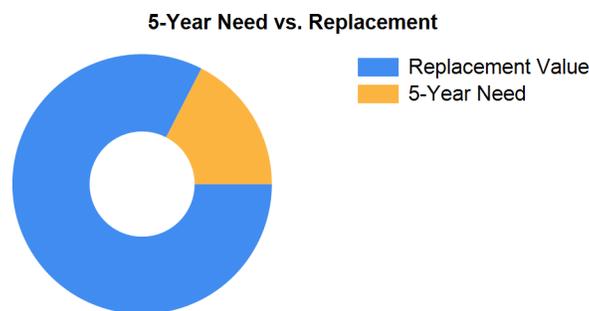


Figure 5: 5-Year FCI

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 945 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 Barrington High School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$0.



### Summary of Findings

The Barrington High School comprises 177,600 square feet and was constructed in 1950. Current deficiencies at this school total \$5,705,297. Five year capital renewal costs total \$6,607,072. The total identified need for the Barrington High School (current deficiencies and 5-year capital renewal costs) is \$12,312,369. The 5-year FCI is 19.24%.

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
<b>Barrington High School Totals</b>	<b>177,600</b>	<b>1950</b>	<b>\$5,705,297</b>	<b>\$6,607,072</b>	<b>\$12,312,369</b>	<b>19.24%</b>

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

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

### Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Sidewalk Requires Replacement <b>Note:</b> Replace sidewalk along Lincoln Avenue from Upland Avenue to County Road	Traffic	2,000	SF	3	\$45,326	4472
Backstops Require Replacement <b>Note:</b> Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28399
Tennis Courts, Nets, And Equipment Require Repair <b>Note:</b> The expansion joints for the tennis courts need to be caulked.	Capital Renewal	6	Ea.	5	\$15,298	2079
<b>Sub Total for System</b>		<b>3 items</b>			<b>\$88,953</b>	
<b>Sub Total for School and Site Level</b>		<b>3 items</b>			<b>\$88,953</b>	

## Building: 01 - Main Building

### Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Roof Drains Require Cleaning <b>Location:</b> Over the administration area, band room, and cafeteria	Capital Renewal	6	Ea.	3	\$238	2076
Splash Blocks Are Required <b>Note:</b> Downspouts on the roof are missing splash blocks.	Capital Renewal	18	Ea.	5	\$7,358	2077
<b>Sub Total for System</b>		<b>2 items</b>			<b>\$7,596</b>	

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation <b>Note:</b> All classrooms	Acoustics	70	Ea.	3	\$582,635	4632
The Vinyl Composition Tile Requires Replacement <b>Location:</b> Room 116B	Capital Renewal	130	SF	3	\$1,491	1992
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	292	LF	4	\$5,552	Rollup
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	200	SF	4	\$5,704	Rollup
Paint (probable pre-1978 in base layer(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	219	Ea.	4	\$62,461	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	7	LF	4	\$160	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	12,990	SF	4	\$123,496	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	1	Ea.	4	\$285	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	361	SF	4	\$3,432	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	265	SF	4	\$2,519	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	10	Ea.	4	\$2,852	Rollup
The Plaster Ceilings Require Replacement <b>Note:</b> Ceiling damage in small areas, possibly due to water infiltration.	Capital Renewal	300	SF	4	\$1,996	1967
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	169	SF	4	\$1,607	Rollup
Wall/ceiling materials - large areas (> 10 sq. ft.) of damage & area in active use - children	Hazardous Material	335	SF	4	\$3,185	Rollup
Wall/ceiling materials -large areas (> 10 sq. ft.) of damage & area in active use-adults only	Hazardous Material	170	SF	4	\$1,616	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	\$1,536	Rollup
Room lacks appropriate sound control.	Educational Adequacy	200	SF	5	\$6,959	Rollup
Wall/ceiling materials - area < 9 sq. ft. AND NOT in children-accessible area	Hazardous Material	5	SF	5	\$48	Rollup
<b>Sub Total for System</b>		<b>18 items</b>			<b>\$807,534</b>	

### Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Component Insulation Deteriorated And Requires Replacement <b>Note:</b> Older mechanical room, pipe insulation is damaged and should be replaced.	Functional Deficiency	300	LF	3	\$9,669	2075



# Facility Condition Assessment

Barrington - Barrington High School

## Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Testing And Balancing Required <b>Note:</b> Several zones (classroom reported) hot spots in the building.	Capital Renewal	171,500	SF	3	\$319,671	2070
Exhaust Fan Ventilation Requires Replacement <b>Note:</b> Damaged exhaust fan on the eastern side of 200 wing.	Capital Renewal	1	Ea.	4	\$2,678	2073
Lab lacks an appropriate fume hood.	Educational Adequacy	4	Ea.	4	\$87,943	Rollup
Duct Cleaning Required <b>Location:</b> Library and media center wing	Capital Renewal	10,000	SF	5	\$159,717	2071
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>		<b>\$579,678</b>	

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement <b>Location:</b> Boiler room	Capital Renewal	1	Ea.	2	\$51,908	1954
The Electrical Service And Distribution Requires Replacement <b>Note:</b> All panelboards are old and should be replaced. New main distribution panel (2000 amp) is fine.	Capital Renewal	171,500	SF	2	\$514,851	1952
The Mounted Building Lighting Requires Replacement <b>Location:</b> By door 3C	Capital Renewal	1	Ea.	3	\$1,493	2024
The Mounted Building Lighting Requires Replacement <b>Location:</b> By door 4D	Capital Renewal	1	Ea.	3	\$1,493	2025
Transfer Switch Requires Replacement <b>Location:</b> Boiler room	Capital Renewal	800	Amps	3	\$26,800	2082
Wall Pack Lighting Requires Repair <b>Note:</b> Wall facing the football stadium seats.	Capital Renewal	1	Ea.	3	\$238	2022
Remove Abandoned Equipment <b>Note:</b> Incinerator in secondary mechanical room is no longer active.	Capital Renewal	1	Ea.	5	\$3,321	2080
Room Has Insufficient Electrical Outlets	Educational Adequacy	272	Ea.	5	\$134,984	Rollup
<b>Sub Total for System</b>		<b>8</b>	<b>items</b>		<b>\$735,087</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Roof Drainage Piping Requires Repair <b>Note:</b> Roof drain boot connection is damaged. <b>Location:</b> Canopy/kitchen	Capital Renewal	15	LF	3	\$3,166	2078
The Custodial Mop Or Service Sink Requires Replacement <b>Note:</b> Mop sink at the janitor closet off of the gym has significant corrosion.	Capital Renewal	1	Ea.	4	\$2,576	2072
The Refrigerated Water Cooler Requires Repair <b>Note:</b> Bi-level fountain outside the small gym does not have any water pressure. Water fill spouts in the large gym do not work. <b>Location:</b> 500 wing	Capital Renewal	5	Ea.	4	\$4,753	2074
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	\$6,617	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	18	Ea.	5	\$27,209	Rollup
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>		<b>\$44,322</b>	

## Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Emergency Lighting Is Inadequate Or Not Present And Should be Installed <b>Location:</b> Boiler room	Capital Renewal	2,500	SF	1	\$3,775	1960
Room lacks shut-off valves for utilities. (International Fuel Gas Code, Section 409.6)	Educational Adequacy	2	Ea.	1	\$22,817	Rollup
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$26,592</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	49	Ea.	3	\$279,505	Rollup
Technology: Auditorium AV/Multimedia system is in need of minor improvements.	Technology	1	Room	3	\$95,070	3182



# Facility Condition Assessment

Barrington - Barrington High School

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	66	Ea.	3	\$1,317,666	3180
Technology: Instructional spaces do not have local sound reinforcement.	Technology	66	Ea.	3	\$313,730	3183
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$37,648	3161
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	\$16,732	3165
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	\$16,732	3169
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	\$16,732	3174
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$4,753	3173
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$4,753	3178
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3159
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3162
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3166
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3170
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3175
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	\$21,676	3158
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	392	Ea.	3	\$167,703	3160
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	48	Ea.	3	\$20,535	3164
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	6	Ea.	3	\$2,567	3168
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	90	Ea.	3	\$38,503	3172
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	90	Ea.	3	\$38,503	3177
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	\$30,422	3184
Technology: Network system inadequate and/or near end of useful life	Technology	66	Ea.	3	\$313,730	3185
Technology: Network system inadequate and/or near end of useful life	Technology	177,600	SF	3	\$50,653	3186
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	177,600	SF	3	\$303,919	3179
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3181
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3163
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3167
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3171
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3176
<b>Sub Total for System</b>		<b>30</b>	<b>items</b>		<b>\$3,252,201</b>	



# Facility Condition Assessment

Barrington - Barrington High School

## Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	\$4,563	Rollup
Backdrop is Required	Educational Adequacy	1	Ea.	4	\$1,426	Rollup
Walk In Cooler/Freezer Is Required	Educational Adequacy	1	Ea.	4	\$90,316	Rollup
Welding Bays Are Required	Educational Adequacy	1	Ea.	4	\$5,419	Rollup
Work Tables Are Required	Educational Adequacy	1	Ea.	4	\$3,585	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	5	Ea.	5	\$42,781	Rollup
	<b>Sub Total for System</b>	<b>6</b>	<b>items</b>		<b>\$148,091</b>	
	<b>Sub Total for Building 01 - Main Building</b>	<b>76</b>	<b>items</b>		<b>\$5,601,101</b>	

## Building: 03 - Field Storage

### Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Soffit Requires Replacement	Capital Renewal	50	SF	4	\$6,180	2066
	<b>Sub Total for System</b>	<b>1</b>	<b>items</b>		<b>\$6,180</b>	
	<b>Sub Total for Building 03 - Field Storage</b>	<b>1</b>	<b>items</b>		<b>\$6,180</b>	
	<b>Total for Campus</b>	<b>80</b>	<b>items</b>		<b>\$5,696,233</b>	

## Buildings with no reported deficiencies

- 02 - Press Box
- 04 - Field Storage
- 05 - Storage



## Barrington High School - Life Cycle Summary Yrs 1-5

### Building: 01 - Main Building

#### Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Modified Bitumen	74,325	SF	\$2,826,422	3
Low-Slope Roofing	Modified Bitumen	17,150	SF	\$652,178	5
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>	<b>\$3,478,600</b>	

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	159,221	SF	\$1,052,028	4
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$1,052,028</b>	

#### Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)	2	Ea.	\$15,257	3
	<b>Note:</b> Hot water recirculating				
Facility Hydronic Distribution	2-Pipe Water System (Hot)	171,500	SF	\$1,321,955	3
Decentralized Cooling	Package DX Unit ( 5 Ton)	15	Ea.	\$216,246	3
Exhaust Air	Roof Exhaust Fan - Small	58	Ea.	\$152,960	3
Decentralized Cooling	Package DX Unit (20 Ton)	1	Ea.	\$39,439	3
Exhaust Air	Roof Exhaust Fan - Large	8	Ea.	\$111,148	5
<b>Sub Total for System</b>		<b>6</b>	<b>items</b>	<b>\$1,857,003</b>	

#### Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Backflow Preventers - 2 in. (Ea.)	1	Ea.	\$3,921	3
Plumbing Fixtures	Refrigerated Drinking Fountain	5	Ea.	\$36,887	4
Building Support Plumbing System Supplementary Components	Sump Pump	1	Ea.	\$1,449	5
<b>Sub Total for System</b>		<b>3</b>	<b>items</b>	<b>\$42,257</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>12</b>	<b>items</b>	<b>\$6,429,888</b>	

### Building: 02 - Press Box

#### Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Modified Bitumen	1,500	SF	\$57,042	5
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$57,042</b>	

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	4,500	SF	\$29,733	2
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$29,733</b>	
<b>Sub Total for Building 02 - Press Box</b>		<b>2</b>	<b>items</b>	<b>\$86,775</b>	

### Building: 03 - Field Storage

#### Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Steep Slope Roofing	Composition Shingle	700	SF	\$19,965	5
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$19,965</b>	

#### Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Exterior Painting - Bldg SF basis	700	SF	\$9,317	5
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$9,317</b>	

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	700	SF	\$4,625	5
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$4,625</b>	
<b>Sub Total for Building 03 - Field Storage</b>		<b>3</b>	<b>items</b>	<b>\$33,907</b>	



## Building: 04 - Field Storage

### Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Exterior Painting - Bldg SF basis	300	SF	\$3,993	5
Exterior Utility Doors	Overhead	1	Door	\$36,792	5
		<b>Sub Total for System</b>		<b>\$40,785</b>	

### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	300	SF	\$1,982	5
		<b>Sub Total for System</b>		<b>\$1,982</b>	

### Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)	300	SF	\$1,783	5
		<b>Sub Total for System</b>		<b>\$1,783</b>	
		<b>Sub Total for Building 04 - Field Storage</b>		<b>\$44,550</b>	

## Building: 05 - Storage

### Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Exterior Painting - Bldg SF basis	600	SF	\$7,986	5
		<b>Sub Total for System</b>		<b>\$7,986</b>	

### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	600	SF	\$3,964	5
		<b>Sub Total for System</b>		<b>\$3,964</b>	
		<b>Sub Total for Building 05 - Storage</b>		<b>\$11,950</b>	
		<b>Total for: Barrington High School</b>		<b>\$6,607,069</b>	



## Supporting Photos



Site Aerial



Site - Tennis Court



Building 03 - Field Storage



Main Building - Corroded Janitor Sink



# Facility Condition Assessment

Barrington - Barrington High School



Building 03 - Soffit Damage



Main Building - Broken Water Cooler



Main Building - Roof Exhausts



Main Building - Damaged Insulation



Main Building - Water Cooler



Main Building - Transfer Switch



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Abandoned Incinerator



Site - Marquee



Main Building - Transfer Switch



Main Building - Curling VCT



Building 04 - Secondary Field Storage



Main Building - Science Classroom



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Music Room



Main Building - Damaged Building Mounted Lighting



Main Building - Damaged Building Mounted Lighting



Main Building - Restroom Sinks



Main Building - Mechanical Room



Main Building - Distribution Panel



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Electric Panel



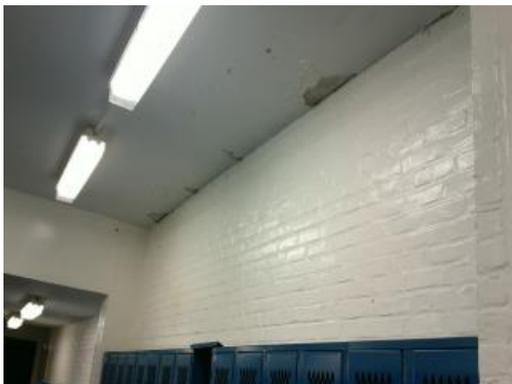
Main Building - Electric Panel



Main Building - Auditorium



Main Building - Sloped Roof



Main Building - Damaged Plaster Ceiling



Building 02 - Bleachers



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Wood Shop



Main Building - Unit Ventilators



Main Building - Front Elevation



Building 05 - Vacant Storage



Main Building - Typical Classroom



Building 02 - Stadium Elevation



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Main Entry



Main Building - Language Lab



Main Building - Flat Roof



Main Building - Library



Main Building - Concrete Walk



Main Building - Cafeteria



# Facility Condition Assessment

Barrington - Barrington High School



Main Building - Backflow Preventer



# Facility Condition Assessment

Barrington - Barrington Middle School

June 2017

261 Middle Highway, Barrington, RI 02806





## Introduction

Barrington Middle School, located at 261 Middle Highway in Barrington, Rhode Island, was built in 1954. It comprises 142,500 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.

Barrington Middle School serves grades 6 - 8, has 66 instructional spaces, and has an enrollment of 841. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Barrington Middle School is 950 with a resulting utilization of 89%.

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 Barrington Middle School the 5-year need is \$23,439,460. 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 Barrington 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 Barrington Middle School campus, identified by discipline and building.

### Site

The site level systems for this campus include:

<b>Site</b>	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

### Building Envelope

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

<b>01 - Main Building:</b>	Brick Exterior Wall
	Pitched Slate Tile Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

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

<b>01 - Main Building:</b>	EPDM Roofing
	Modified Bitumen Roofing
	Aluminum Canopy Roofing

### Interior

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

<b>01 - Main Building:</b>	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Quarry Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring



<b>01 - Main Building:</b>	Carpet
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## Mechanical

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

<b>01 - Main Building:</b>	3,264 MBH Cast Iron Water Boiler
	400 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Electronic Heating System Controls
	2 Ton Ductless Split System
	5 Ton Package DX Unit
	30 Ton Package DX Unit
	Chilled Water Unit Ventilator
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	25 HP Pump
	Ductwork
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Kitchen Exhaust Hoods

## Plumbing

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

<b>01 - Main Building:</b>	250 Gallon Water Storage Tank
	Gas Piping System
	50 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
	Sump Pump

## Electrical

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

<b>01 - Main Building:</b>	50 kW Emergency Generator
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# Facility Condition Assessment

Barrington - Barrington Middle School

<b>01 - Main Building:</b>	208/120v Switch
	112.5 KVA Transformer
	15 KVA Transformer
	75 KVA Transformer
	3,000 Amp Distribution Panel
	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 400A
	Panelboard - 120/240 225A
	Panelboard - 277/480 225A
	Panelboard - 277/480 400A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures



## Facility Deficiency Priority Levels

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

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

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

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

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

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



# Facility Condition Assessment

Barrington - Barrington Middle School

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

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	\$9,065	\$1,439,035	\$324,837	\$1,772,938	8.27 %
Roofing	-	\$3,859,830	-	\$439,222	-	\$4,299,052	20.04 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	\$2,852,707	-	-	-	\$2,852,707	13.30 %
Interior	-	-	\$2,014,777	\$4,367,965	\$12,606	\$6,395,348	29.82 %
Mechanical	-	\$1,371,917	\$265,616	-	-	\$1,637,533	7.63 %
Electrical	-	\$313,055	\$236,263	\$19,299	\$120,171	\$688,788	3.21 %
Plumbing	-	-	\$1,091,035	\$8,157	\$16,095	\$1,115,288	5.20 %
Fire and Life Safety	\$22,817	-	-	-	-	\$22,817	0.11 %
Technology	-	-	\$2,637,186	-	-	\$2,637,186	12.30 %
Conveyances	-	-	-	-	-	\$0	0.00 %
Specialties	-	-	\$13,690	-	\$13,690	\$27,380	0.13 %
<b>Total</b>	<b>\$22,817</b>	<b>\$8,397,509</b>	<b>\$6,267,632</b>	<b>\$6,273,678</b>	<b>\$487,400</b>	<b>\$21,449,036</b>	

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

The building systems with the most need include:

Interior	-	\$6,395,348
Roofing	-	\$4,299,052
Exterior	-	\$2,852,707

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

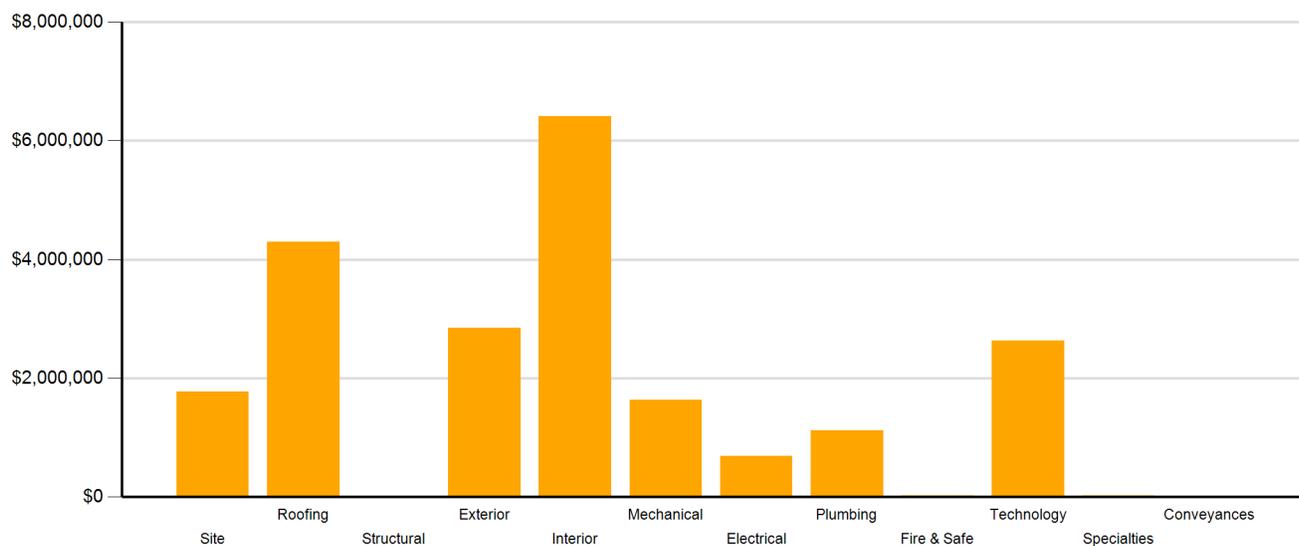


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	\$357,904	-	-	\$357,904
Barrier to Accessibility	-	-	\$807,143	-	-	\$807,143
Capital Renewal	-	\$8,353,396	\$2,206,381	\$2,917,551	\$1,068	\$13,478,396
Code Compliance	-	-	-	-	-	\$0
Educational Adequacy	\$22,817	-	\$70,732	\$1,052,105	\$486,333	\$1,631,987
Functional Deficiency	-	\$44,112	\$236,263	-	-	\$280,375
Hazardous Material	-	-	-	\$2,304,022	-	\$2,304,022
Technology	-	-	\$2,580,144	-	-	\$2,580,144
Traffic	-	-	\$9,065	-	-	\$9,065
<b>Total</b>	\$22,817	\$8,397,509	\$6,267,632	\$6,273,678	\$487,400	\$21,449,036

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

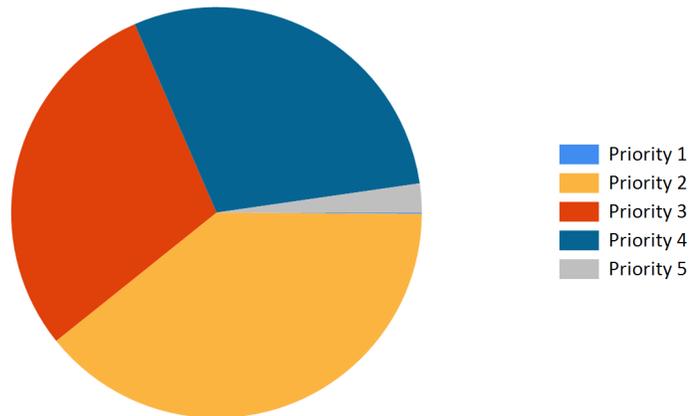


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$1,772,938	\$0	\$0	\$142,187	\$0	\$0	\$142,187	\$1,915,125
Roofing	\$4,299,052	\$0	\$0	\$0	\$0	\$0	\$0	\$4,299,052
Structural	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$2,852,707	\$0	\$0	\$0	\$0	\$0	\$0	\$2,852,707
Interior	\$6,395,348	\$0	\$0	\$0	\$0	\$842,436	\$842,436	\$7,237,784
Mechanical	\$1,637,533	\$0	\$15,964	\$228,012	\$0	\$55,382	\$299,358	\$1,936,891
Electrical	\$688,788	\$0	\$0	\$0	\$3,350	\$76,056	\$79,406	\$768,194
Plumbing	\$1,115,288	\$0	\$14,755	\$10,633	\$0	\$0	\$25,388	\$1,140,676
Fire and Life Safety	\$22,817	\$0	\$0	\$0	\$0	\$0	\$0	\$22,817
Technology	\$2,637,186	\$0	\$0	\$0	\$0	\$0	\$0	\$2,637,186
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$27,380	\$0	\$0	\$581,766	\$0	\$0	\$581,766	\$609,146
<b>Total</b>	<b>\$21,449,036</b>	<b>\$0</b>	<b>\$30,719</b>	<b>\$962,598</b>	<b>\$3,350</b>	<b>\$973,874</b>	<b>\$1,970,541</b>	<b>\$23,419,577</b>

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

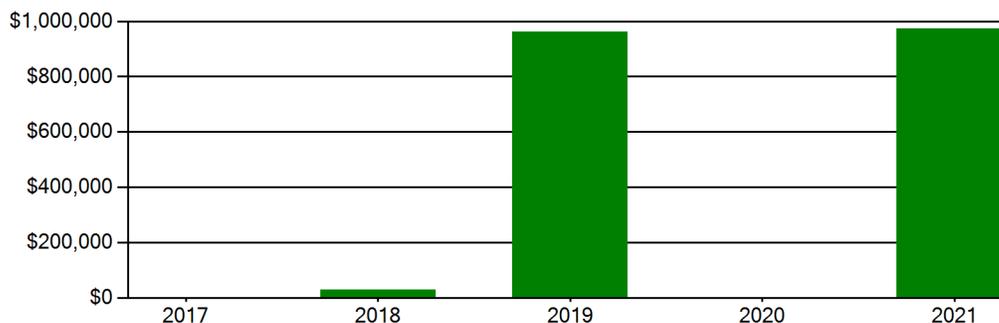


Figure 4: Life Cycle Capital Renewal Forecast



## 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 \$47,025,000. For planning purposes, the total 5-year need at the Barrington Middle School is \$23,439,460 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Barrington Middle School facility has a 5-year FCI of 49.80%.

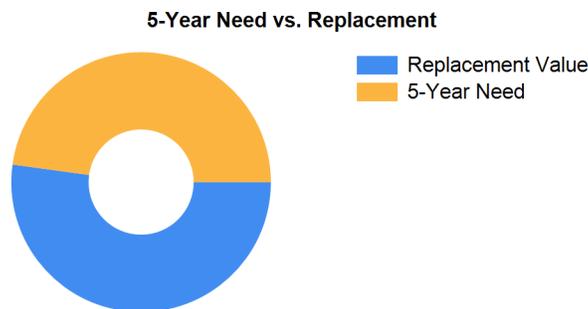


Figure 5: 5-Year FCI

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 783 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 Barrington Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$1,015,027.



## Summary of Findings

The Barrington Middle School comprises 142,500 square feet and was constructed in 1954. Current deficiencies at this school total \$21,468,919. Five year capital renewal costs total \$1,970,541. The total identified need for the Barrington Middle School (current deficiencies and 5-year capital renewal costs) is \$23,439,460. The 5-year FCI is 49.80%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
<b>Barrington Middle School Totals</b>	<b>142,500</b>	<b>1954</b>	<b>\$21,468,919</b>	<b>\$1,970,541</b>	<b>\$23,439,460</b>	<b>49.80%</b>

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

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

## Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Traffic Signage Is Required <b>Note:</b> Change bus route to one-way (add signage)	Traffic	4	Ea.	3	\$9,065	4474
Asphalt Paving Requires Replacement	Capital Renewal	128	CAR	4	\$423,491	2179
Asphalt Paving Requires Replacement <b>Note:</b> Parking and drives are no longer smooth or level. Drives have ripples and pot holes and parking lot is cracking in numerous locations.	Capital Renewal	128	CAR	4	\$420,639	2411
Backstops Require Replacement <b>Note:</b> Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28404
Tennis Courts, Nets, And Equipment Require Replacement	Capital Renewal	3	Ea.	4	\$566,577	2446
School lacks a competition track. <b>Note:</b> School lacks a competition track.	Educational Adequacy	1	Ea.	5	\$324,837	28224
<b>Sub Total for System</b>		<b>6</b>	<b>items</b>		<b>\$1,772,938</b>	

### Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Pole Lighting Is Missing And Needed <b>Note:</b> Site lighting is poor. Provide additional lighting at the front entrance and side entrances.	Functional Deficiency	12	Ea.	3	\$236,263	3016
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$236,263</b>	
<b>Sub Total for School and Site Level</b>		<b>7</b>	<b>items</b>		<b>\$2,009,201</b>	

## Building: 01 - Main Building

### Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Modified Roof Covering Requires Replacement <b>Note:</b> The roof is being patched and repaired continually, the staff reports multiple leaks in Library, Rooms 10/12 and second level.	Capital Renewal	101,500	SF	2	\$3,859,830	2412
Aluminum Panel Canopy Or Awning Requires Replacement <b>Note:</b> Bus drop off canopy has been damaged and it leaks.	Capital Renewal	2,310	SF	4	\$439,222	2413
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$4,299,052</b>	

### Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Slate Tile Wall Requires Replacement <b>Note:</b> Slate tiles have been damaged and replacement materials do not match the existing. Recommend complete replacement. <b>Location:</b> Band Room, Elevated second story addition.	Capital Renewal	14,000	SF	2	\$1,064,781	3015
The Aluminum Window Requires Replacement	Capital Renewal	10,191	SF	2	\$1,724,562	2447
The Metal Exterior Door Requires Replacement <b>Note:</b> Corrosion at frame and doors.	Capital Renewal	3	Door	2	\$19,252	2091
Waterproofing is required <b>Note:</b> Reported water intrusion issues at basement. Currently space is not in use, sump pumps installed in space, apparently undering some sort of remediation.	Functional Deficiency	1	LS	2	\$44,112	53518
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>		<b>\$2,852,707</b>	

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation <b>Note:</b> All classrooms	Acoustics	43	Ea.	3	\$357,904	4633
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	239	Door	3	\$681,650	2088
The Acoustical Ceiling Tiles Require Replacement <b>Note:</b> Tiles are warping, discolored, and stained. <b>Location:</b> Old section of the building	Capital Renewal	87,700	SF	3	\$792,073	3007
The Wood Flooring Requires Replacement <b>Note:</b> Basketball flooring has been subjected to water infiltration. Floor has warped and is damaged. The staff reports that annual maintenance is done to relevel the floor. <b>Location:</b> Gymnasium	Capital Renewal	5,520	SF	3	\$183,150	3014



# Facility Condition Assessment

Barrington - Barrington Middle School

## Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ceiling Grid Requires Replacement	Capital Renewal	87,700	SF	4	\$1,040,166	3005
<b>Note:</b> Ceiling tiles are discolored, damaged by stains, and beginning to curl.						
<b>Location:</b> Old section						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	73,664	SF	4	\$2,100,964	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	3,650	SF	4	\$34,700	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	89	Ea.	4	\$25,384	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	262	LF	4	\$5,978	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	14,410	SF	4	\$136,995	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	26,868	SF	4	\$1,023,777	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	4	Ea.	5	\$9,127	Rollup
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	\$3,480	Rollup
<b>Sub Total for System</b>		<b>13</b>	<b>items</b>		<b>\$6,395,348</b>	

## Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	50	Ea.	2	\$845,740	2263
<b>Note:</b> Staff reports the units no longer provide ventilation. The dampers are stuck in one position and the units have to be manually operated.						
Replace Unit Ventilators	Capital Renewal	7	Ea.	2	\$44,415	3021
<b>Note:</b> Unit ventilators are not functioning properly, there is no ventilation air.						
<b>Location:</b> Classrooms						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	62,500	SF	2	\$481,762	3022
<b>Note:</b> Hot water pipes are corroding. Recommend re-piping the hot water system in the old section of the building.						
Testing And Balancing Required	Capital Renewal	142,500	SF	3	\$265,616	2180
<b>Note:</b> Hot and cold spots in the building.						
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>		<b>\$1,637,533</b>	

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	\$25,669	2092
<b>Location:</b> Second floor main electrical room.						
The Distribution Panel Requires Replacement	Capital Renewal	2	Ea.	2	\$51,338	2093
<b>Location:</b> Second floor						
The Panelboard Requires Replacement	Capital Renewal	9	Ea.	2	\$107,638	2087
The Panelboard Requires Replacement	Capital Renewal	14	Ea.	2	\$67,880	2449
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	\$23,920	2450
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	\$17,788	2452
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	\$18,824	2453
The Canopy Lighting Requires Replacement	Capital Renewal	14	Ea.	4	\$19,299	2448
<b>Note:</b> 1 X 4 single tube fluorescent light fixtures						
Remove Abandoned Rooftop Equipment	Capital Renewal	1	Ea.	5	\$1,068	2169
<b>Note:</b> Condensing unit						
Room Has Insufficient Electrical Outlets	Educational Adequacy	240	Ea.	5	\$119,104	Rollup
<b>Sub Total for System</b>		<b>10</b>	<b>items</b>		<b>\$452,525</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Sump Pump Requires Replacement	Capital Renewal	4	Ea.	3	\$5,795	2266
<b>Note:</b> Sump pumps are not reliable. They are known not to work or function poorly in moderate rain fall.						
<b>Location:</b> Lower basement and around the gym						
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	81,500	SF	3	\$655,740	2454
<b>Location:</b> Older section of building						



# Facility Condition Assessment

Barrington - Barrington Middle School

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Restroom Is Not ADA Compliant	Barrier to Accessibility	450	SF	3	\$125,493	3018
<b>Note:</b> Restrooms are not accessible to children or adult users. Provide three accessible restrooms in the facility.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	\$116,765	2264
<b>Note:</b> Sanitary system in the older section the building is having routine issues with back-ups and odors coming from the drains.						
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	24	Ea.	3	\$182,534	2265
<b>Note:</b> Shower heads missing and rust stains on shower walls with scaling and corrosion.						
The Toilets Plumbing Fixtures Require Repair	Capital Renewal	3	Ea.	3	\$4,709	2178
<b>Location:</b> Girls gym, boys locker, off auditorium						
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	\$8,157	2170
<b>Note:</b> Science room sinks emitting foul odors.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	\$5,514	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	7	Ea.	5	\$10,581	Rollup
<b>Sub Total for System</b>		<b>9</b>	<b>items</b>		<b>\$1,115,288</b>	

## 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
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$22,817</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	10	Ea.	3	\$57,042	Rollup
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	60	Ea.	3	\$1,197,878	3157
Technology: Instructional spaces do not have local sound reinforcement.	Technology	60	Ea.	3	\$285,209	3151
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3135
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3138
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3142
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3146
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3134
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3137
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3141
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3145
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	260	Ea.	3	\$111,232	3136
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	150	Ea.	3	\$64,172	3140
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	48	Ea.	3	\$20,535	3144
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	24	Ea.	3	\$10,268	3148
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	\$45,633	3154
Technology: Network system inadequate and/or near end of useful life	Technology	30	Ea.	3	\$142,605	3155



# Facility Condition Assessment

Barrington - Barrington Middle School

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Network system inadequate and/or near end of useful life	Technology	142,500	SF	3	\$40,642	3156
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	142,500	SF	3	\$243,854	3153
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3152
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3139
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3143
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3147
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	60	Ea.	3	\$91,267	3149
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	\$7,225	3150
<b>Sub Total for System</b>		<b>25</b>	<b>items</b>		<b>\$2,637,186</b>	

## Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	3	Ea.	3	\$13,690	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	1	Ea.	5	\$13,690	Rollup
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$27,380</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>70</b>	<b>items</b>		<b>\$19,439,835</b>	
<b>Total for Campus</b>		<b>77</b>	<b>items</b>		<b>\$21,449,036</b>	



## Barrington 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
Fences and Gates	Fencing - Chain Link (8 Ft)	804	LF	\$54,051	3
	<b>Note:</b> Tennis court - 10ft				
Fences and Gates	Fencing - Chain Link (8 Ft)	1,311	LF	\$88,136	3
	<b>Note:</b> 6 ft perimeter				
	<b>Sub Total for System</b>	<b>2</b>	<b>items</b>	<b>\$142,187</b>	
	<b>Sub Total for Building -</b>	<b>2</b>	<b>items</b>	<b>\$142,187</b>	

### Building: 01 - Main Building

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	127,500	SF	\$842,436	5
	<b>Sub Total for System</b>	<b>1</b>	<b>items</b>	<b>\$842,436</b>	

#### Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	\$15,964	2
	<b>Note:</b> Older kitchen				
Decentralized Heating Equipment	Finned Wall Radiator - (Ea.)	20	Ea.	\$33,503	3
Exhaust Air	Roof Exhaust Fan - Large	14	Ea.	\$194,509	3
Exhaust Air	Roof Exhaust Fan - Small	21	Ea.	\$55,382	5
	<b>Sub Total for System</b>	<b>4</b>	<b>items</b>	<b>\$299,357</b>	

#### Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Transfer Switches	208/120v Switch (Amps)	100	Amps	\$3,350	4
Packaged Generator Assemblies	Emergency Generator (50 KW)	1	Ea.	\$76,056	5
	<b>Sub Total for System</b>	<b>2</b>	<b>items</b>	<b>\$79,406</b>	

#### Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain	2	Ea.	\$14,755	2
	<b>Note:</b> Halsey-Taylor				
Plumbing Fixtures	Urinals	8	Ea.	\$10,633	3
	<b>Note:</b> Recessed				
	<b>Sub Total for System</b>	<b>2</b>	<b>items</b>	<b>\$25,387</b>	

#### Specialties

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry	52	Room	\$581,766	3
	<b>Sub Total for System</b>	<b>1</b>	<b>items</b>	<b>\$581,766</b>	
	<b>Sub Total for Building 01 - Main Building</b>	<b>10</b>	<b>items</b>	<b>\$1,828,353</b>	
	<b>Total for: Barrington Middle School</b>	<b>12</b>	<b>items</b>	<b>\$1,970,540</b>	



## Supporting Photos



Site Aerial



Typical Classroom



Roof Condition



Distribution Panel



# Facility Condition Assessment

Barrington - Barrington Middle School



Sump Pump



Prep Room Sink



Abandoned Condensing Unit



Leaking Shower Fixture



Cracked And Worn Asphalt



Main Entrance



# Facility Condition Assessment

Barrington - Barrington Middle School



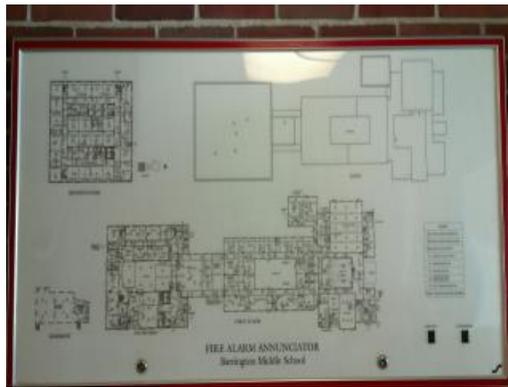
Panelboard



Hot Water Pumps



Front Elevation



Fire Alarm Panel With Floor Plan



Computer Lab



Stained Showers



# Facility Condition Assessment

Barrington - Barrington Middle School



Patched Roofing



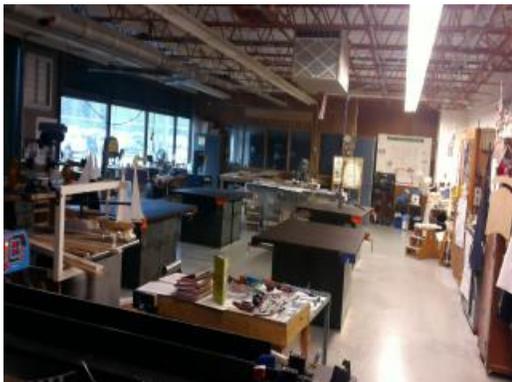
Library



Choir Classroom



Control System



Lab Classroom



Cafeteria



# Facility Condition Assessment

Barrington - Barrington Middle School



Science Classroom



Panelboard



Non-Compliant ADA Hardware



Typical Roof



Main Boilers



Canopy Lighting



# Facility Condition Assessment

Barrington - Barrington Middle School



Damaged Exterior Wall



# Facility Condition Assessment

Barrington - Hampden Meadows School

June 2017

297 New Meadow Road, Barrington, RI 02806





## Introduction

Hampden Meadows School, located at 297 New Meadow Road in Barrington, Rhode Island, was built in 1956. It comprises 49,350 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.

Hampden Meadows School serves grades 4 - 5, has 30 instructional spaces, and has an enrollment of 525. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Hampden Meadows School is 560 with a resulting utilization of 94%.

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 Hampden Meadows School the 5-year need is \$6,306,997. 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.

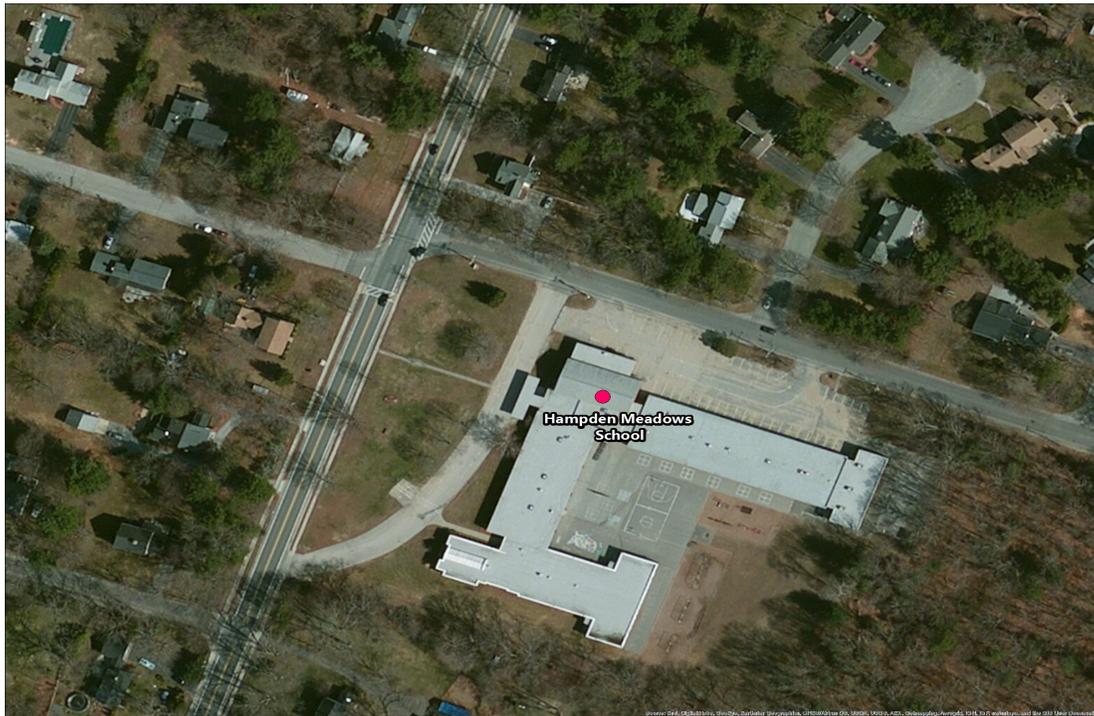


Figure 1: Aerial view of Hampden Meadows School



## 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 Hampden Meadows School campus, identified by discipline and building.

### Site

The site level systems for this campus include:

<b>Site</b>	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

### Building Envelope

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

<b>01 - Main Building:</b>	Brick Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Storefront Entrance Doors

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

<b>01 - Main Building:</b>	Built-Up Roofing With Ballast
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### Interior

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

<b>01 - Main Building:</b>	Interior Demountable Partitions
	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
	Wood Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Rubber Flooring
	Carpet



## Mechanical

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

<b>01 - Main Building:</b>	1,275 MBH Cast Iron Water Boiler
	3,264 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	12 MBH Steam Unit Heater
	DDC Heating System Controls
	1 Ton Ductless Split System
	Make-up Air Unit
	5 HP Pump
	10 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	5 Ton DX Gas Roof Top Unit
	Ductwork
	Roof Exhaust Fan
	Kitchen Exhaust Hoods

## Plumbing

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

<b>01 - Main Building:</b>	Gas Piping System
	6.4 GPM Instant Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Toilets
	Urinals

## Electrical

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

<b>01 - Main Building:</b>	75 KVA Transformer
	400 Amp Distribution Panel
	Panelboard - 120/208 225A
	Panelboard - 120/240 100A
	Panelboard - 120/240 225A
	Panelboard - 120/240 400A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures



# Facility Condition Assessment

Barrington - Hampden Meadows School



## 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.



# Facility Condition Assessment

Barrington - Hampden Meadows School

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

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	-	\$28,329	-	\$28,329	0.57 %
Roofing	-	-	-	-	-	\$0	0.00 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	-	-	-	-	\$0	0.00 %
Interior	-	-	\$14,669	\$951,027	\$5,457	\$971,154	19.57 %
Mechanical	-	\$1,453,670	\$209,383	\$222,374	-	\$1,885,427	37.99 %
Electrical	-	\$25,669	\$1,468	\$5,124	\$55,582	\$87,843	1.77 %
Plumbing	-	-	\$533,765	\$55,045	\$5,838	\$594,648	11.98 %
Fire and Life Safety	\$18,034	-	-	-	-	\$18,034	0.36 %
Technology	-	-	\$1,376,880	-	-	\$1,376,880	27.75 %
Conveyances	-	-	-	-	-	\$0	0.00 %
Specialties	-	-	-	-	-	\$0	0.00 %
<b>Total</b>	\$18,034	\$1,479,339	\$2,136,166	\$1,261,900	\$66,877	\$4,962,315	

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

The building systems with the most need include:

Mechanical	-	\$1,885,427
Technology	-	\$1,376,880
Interior	-	\$971,154

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

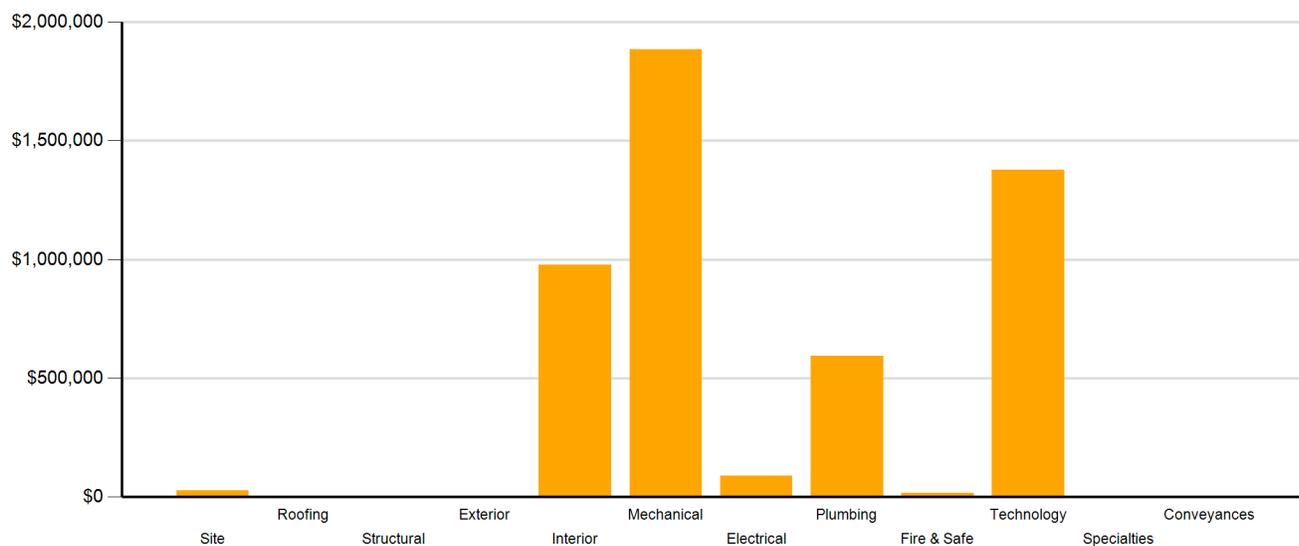


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	\$209,383	-	-	\$209,383
Barrier to Accessibility	-	-	-	-	-	\$0
Capital Renewal	\$17,865	\$1,479,339	\$549,903	\$286,727	\$1,977	\$2,335,811
Code Compliance	-	-	-	-	-	\$0
Educational Adequacy	-	-	\$5,704	\$529,091	\$64,899	\$599,694
Functional Deficiency	\$168	-	-	-	-	\$168
Hazardous Material	-	-	-	\$446,082	-	\$446,082
Technology	-	-	\$1,371,176	-	-	\$1,371,176
Traffic	-	-	-	-	-	\$0
<b>Total</b>	<b>\$18,034</b>	<b>\$1,479,339</b>	<b>\$2,136,166</b>	<b>\$1,261,900</b>	<b>\$66,877</b>	<b>\$4,962,315</b>

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

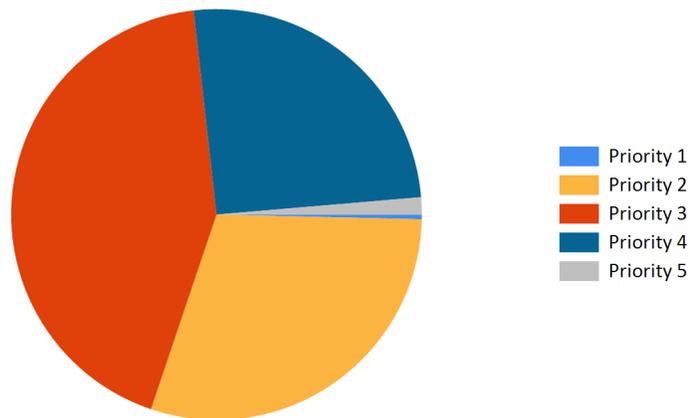


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$28,329	\$0	\$0	\$0	\$0	\$0	\$0	\$28,329
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	\$971,154	\$0	\$0	\$0	\$513,783	\$692,602	\$1,206,385	\$2,177,539
Mechanical	\$1,885,427	\$0	\$0	\$74,093	\$0	\$0	\$74,093	\$1,959,521
Electrical	\$87,843	\$0	\$0	\$15,164	\$5,799	\$32,638	\$53,601	\$141,444
Plumbing	\$594,648	\$0	\$0	\$0	\$0	\$0	\$0	\$594,648
Fire and Life Safety	\$18,034	\$0	\$0	\$3,297	\$0	\$0	\$3,297	\$21,331
Technology	\$1,376,880	\$0	\$0	\$0	\$0	\$0	\$0	\$1,376,880
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$4,962,315</b>	<b>\$0</b>	<b>\$0</b>	<b>\$92,554</b>	<b>\$519,582</b>	<b>\$725,240</b>	<b>\$1,337,376</b>	<b>\$6,299,691</b>

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

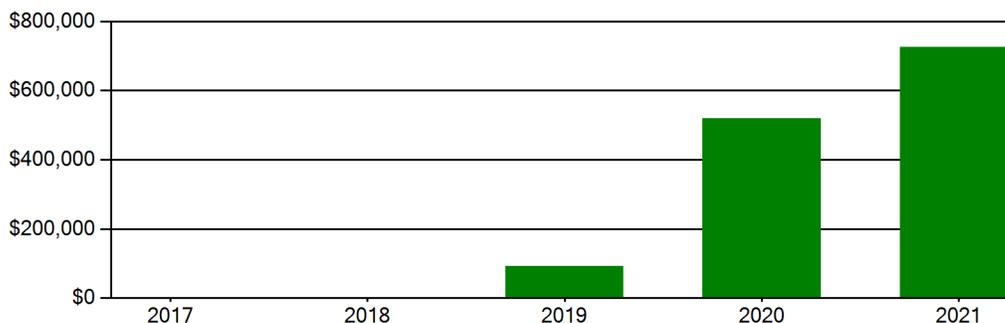


Figure 4: Life Cycle Capital Renewal Forecast



### Facility Condition Index (FCI)

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



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

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

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today’s estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is \$17,272,500. For planning purposes, the total 5-year need at the Hampden Meadows School is \$6,306,997 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Hampden Meadows School facility has a 5-year FCI of 36.47%.

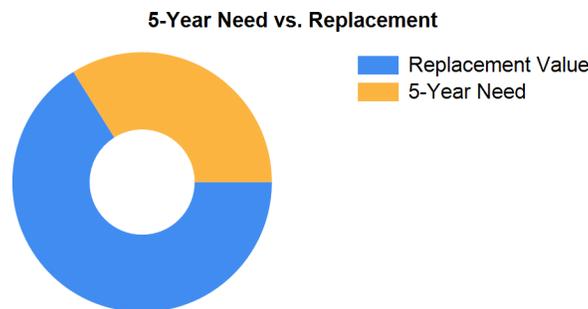


Figure 5: 5-Year FCI

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 274 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 Hampden Meadows School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$0.



### Summary of Findings

The Hampden Meadows School comprises 49,350 square feet and was constructed in 1956. Current deficiencies at this school total \$4,969,621. Five year capital renewal costs total \$1,337,376. The total identified need for the Hampden Meadows School (current deficiencies and 5-year capital renewal costs) is \$6,306,997. The 5-year FCI is 36.47%.

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
Hampden Meadows School Totals	49,350	1956	\$4,969,621	\$1,337,376	\$6,306,997	36.47%

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

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

### Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28402
<b>Note:</b> Backstops Require Replacement						
		<b>Sub Total for System</b>			<b>\$28,329</b>	
		<b>Sub Total for School and Site Level</b>			<b>\$28,329</b>	

## Building: 01 - Main Building

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior CMU Walls Require Repair	Capital Renewal	150	SF	3	\$5,447	924
Interior Doors Require Replacement	Capital Renewal	2	Door	3	\$9,222	923
Interior Toilet Partition Requires Repair	Capital Renewal	8	Ea.	4	\$4,183	921
<b>Note:</b> Missing hardware and poor installation						
<b>Location:</b> Boys and girls restrooms across from administrative area						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	14,406	SF	4	\$410,872	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	20	Ea.	4	\$5,704	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	789	LF	4	\$18,002	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	1,210	SF	4	\$11,503	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	13,142	SF	4	\$500,762	Rollup
Interior Walls Require Repainting	Capital Renewal	200	SF Wall	5	\$1,179	1395
<b>Note:</b> Paint peeling in boys and girls restroom by administrative area, possible water intrusion from windows.						
Moveable Partitions Require Repair	Capital Renewal	120	SF	5	\$799	922
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	\$3,480	Rollup
		<b>Sub Total for System</b>			<b>\$971,154</b>	

### Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Gas Piping Requires Replacement (SF Basis)	Capital Renewal	49,350	SF	2	\$1,068,495	1396
Steam/HW Unit Heater Requires Replacement	Capital Renewal	2	Ea.	2	\$4,776	1363
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	49,350	SF	2	\$380,399	693
<b>Note:</b> Original to 1956.						
Unit Ventilators Are Excessively Noisy	Acoustics	33	Ea.	3	\$209,383	674
<b>Note:</b> Original to 1956.						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	49,350	SF	4	\$203,314	1871
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	\$19,060	661
<b>Note:</b> Regularly occurring issues per facility manager						
		<b>Sub Total for System</b>			<b>\$1,885,427</b>	

### Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	\$25,669	650
<b>Note:</b> Main distribution panel and panels 1 & 2 should be replaced in the near future, breakers may not be available any longer. Also in an event of a fault, the breakers may not clear, thus an electrical fire could occur.						
<b>Location:</b> Boiler room						
The Distribution Panel Requires Repair	Capital Renewal	2	Ea.	3	\$1,468	652
<b>Note:</b> Same conditions as panels in the boiler room. 120/208 225A each.						
<b>Location:</b> Kitchen and Stage						
The Incandescent Lighting Requires Replacement	Capital Renewal	7	Ea.	4	\$5,124	706
<b>Note:</b> Fixtures have water damage and are using inefficient incandescent lamp.						
<b>Location:</b> Main entry and other exit doors						



# Facility Condition Assessment

Barrington - Hampden Meadows School

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	112	Ea.	5	\$55,582	Rollup
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>		<b>\$87,843</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	49,350	SF	3	\$397,064	704
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	\$116,765	705
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	15	Ea.	3	\$19,936	707
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	1	Ea.	4	\$2,576	720
The Refrigerated Water Cooler Requires Repair	Capital Renewal	5	Ea.	4	\$4,753	669
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	15	Ea.	4	\$47,715	718
Room lacks a drinking fountain.	Educational Adequacy	3	Ea.	5	\$3,308	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	2	Ea.	5	\$2,530	Rollup
<b>Sub Total for System</b>		<b>8</b>	<b>items</b>		<b>\$594,648</b>	

## Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Emergency Lighting System Requires Replacement <b>Location:</b> Door 1B	Functional Deficiency	200	SF	1	\$168	656
Fire Alarm Horn/Strobe Is Missing And Is Needed <b>Note:</b> Kitchen heat detectors appear to not be functional. No information available on devices.	Capital Renewal	2	Ea.	1	\$1,901	651
Replace Kitchen Exhaust Hood <b>Note:</b> Physically deteriorating	Capital Renewal	1	Ea.	1	\$15,964	717
<b>Sub Total for System</b>		<b>3</b>	<b>items</b>		<b>\$18,034</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	\$5,704	Rollup
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	27	Ea.	3	\$539,045	3133
Technology: Instructional spaces do not have local sound reinforcement.	Technology	27	Ea.	3	\$128,344	3127
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	\$5,324	3109
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	\$5,324	3115
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	\$5,324	3120
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$37,648	3108
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$37,648	3114
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$37,648	3119
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$4,753	3111
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$4,753	3117
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$4,753	3122
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3106



# Facility Condition Assessment

Barrington - Hampden Meadows School

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3104
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	114	Ea.	3	\$48,771	3107
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	51	Ea.	3	\$21,819	3113
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	\$41,070	3123
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	\$15,211	3129
Technology: Network system inadequate and/or near end of useful life	Technology	20	Ea.	3	\$95,070	3130
Technology: Network system inadequate and/or near end of useful life	Technology	49,350	SF	3	\$14,075	3132
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	24	Ea.	3	\$11,408	3112
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	24	Ea.	3	\$11,408	3118
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	49,350	SF	3	\$84,450	3124
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3128
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3105
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3110
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3116
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3121
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	22	Ea.	3	\$33,465	3125
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	\$7,225	3126
	<b>Sub Total for System</b>	<b>30</b>	<b>items</b>		<b>\$1,376,880</b>	
	<b>Sub Total for Building 01 - Main Building</b>	<b>62</b>	<b>items</b>		<b>\$4,933,986</b>	
	<b>Total for Campus</b>	<b>63</b>	<b>items</b>		<b>\$4,962,315</b>	



## Hampden Meadows School - Life Cycle Summary Yrs 1-5

### Building: 01 - Main Building

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Resilient Flooring	Vinyl Composition Tile Flooring	34,779	SF	\$398,976	4
Carpeting	Carpet	5,277	SF	\$114,807	4
Wall Painting and Coating	Painting/Staining (Bldg SF)	41,512	SF	\$274,284	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	46,317	SF	\$418,318	5
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>	<b>\$1,206,385</b>	

#### Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Air Distribution	Make-up Air Unit	1	Ea.	\$15,899	3
	<b>Note:</b> Rebuilt in 2004				
HVAC Air Distribution	Roof Top Unit - DX Gas (5 Ton)	3	Ea.	\$58,194	3
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>	<b>\$74,094</b>	

#### Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)	11	Ea.	\$15,164	3
Power Distribution	Panelboard - 120/208 225A	1	Ea.	\$5,799	4
	<b>Note:</b> Kitchen				
Power Distribution	Panelboard - 120/208 225A	2	Ea.	\$11,599	5
Power Distribution	Panelboard - 120/240 225A	1	Ea.	\$9,602	5
Power Distribution	Panelboard - 120/240 400A	1	Ea.	\$11,437	5
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>	<b>\$53,600</b>	

#### Fire and Life Safety

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm	1,125	SF	\$3,297	3
	<b>Note:</b> Kitchen				
	Heat detectors				
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$3,297</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>12</b>	<b>items</b>	<b>\$1,337,376</b>	
<b>Total for: Hampden Meadows School</b>		<b>12</b>	<b>items</b>	<b>\$1,337,376</b>	



## Supporting Photos



Site Aerial



Damaged Interior CMU Wall



Deteriorating Kitchen Exhaust Hood



Corridor Doors Missing



# Facility Condition Assessment

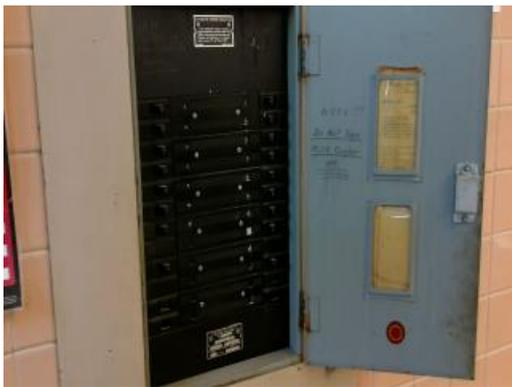
Barrington - Hampden Meadows School



Circulating Pump



Front Elevation



Aged Panelboard



Library



Asphalt Paving



Music Room



# Facility Condition Assessment

Barrington - Hampden Meadows School



West Elevation



Custodial Sink



Fixtures And Finishes



Urinals



Exterior Finishes



Original Radiant Heater



# Facility Condition Assessment

Barrington - Hampden Meadows School



Typical Classroom



Library



Multipurpose Room



Typical Roof Condition



Kitchen



Gymnasium



# Facility Condition Assessment

Barrington - Hampden Meadows School



Typical Roof Condition



# Facility Condition Assessment

Barrington - Nayatt School

June 2017

400 Nayatt Road, Barrington, RI 02806





## Introduction

Nayatt School, located at 400 Nayatt Road in Barrington, Rhode Island, was built in 1954. It comprises 34,000 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.

Nayatt School serves grades KG - 3, has 23 instructional spaces, and has an enrollment of 345. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Nayatt School is 475 with a resulting utilization of 73%.

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 Nayatt School the 5-year need is \$8,675,317. 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.

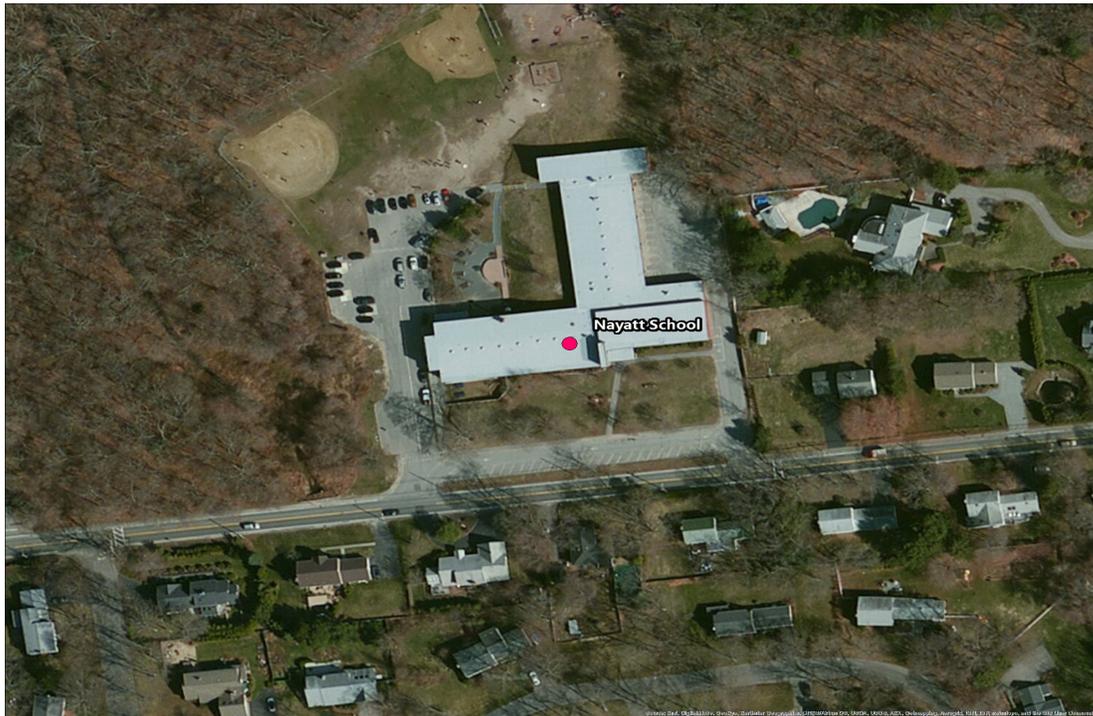


Figure 1: Aerial view of Nayatt School



## 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 Nayatt School campus, identified by discipline and building.

#### Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

#### Building Envelope

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

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

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

01 - Main Building:	EPDM Roofing
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#### Interior

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

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

#### 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
	20 MBH Steam Unit Heater
	Electronic Heating System Controls



<b>01 - Main Building:</b>	1 Ton Ductless Split System
	1 HP or Smaller Pump
	2-Pipe Hot Water Hydronic Distribution System
	Small Roof Exhaust Fan

## Plumbing

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

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

## Electrical

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

<b>01 - Main Building:</b>	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Light Fixtures
	Building Mounted Lighting Fixtures



## Facility Deficiency Priority Levels

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

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

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

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

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

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



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

Table 1: System by Priority

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	\$363,846	\$256,468	\$5,807	\$626,121	7.96 %
Roofing	-	-	-	-	-	\$0	0.00 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	\$2,282	\$11,332	-	-	\$13,613	0.17 %
Interior	-	-	\$466,559	\$2,743,734	\$5,761	\$3,216,054	40.90 %
Mechanical	-	\$1,345,301	-	-	-	\$1,345,301	17.11 %
Electrical	-	\$279,980	\$113,692	-	\$41,686	\$435,359	5.54 %
Plumbing	-	-	\$273,560	\$64,524	\$22,889	\$360,973	4.59 %
Fire and Life Safety	\$445,349	-	-	-	-	\$445,349	5.66 %
Technology	-	-	\$1,033,788	-	-	\$1,033,788	13.15 %
Conveyances	-	-	\$152,112	-	-	\$152,112	1.93 %
Specialties	-	-	-	\$234,944	-	\$234,944	2.99 %
<b>Total</b>	\$445,349	\$1,627,563	\$2,414,888	\$3,299,669	\$76,144	\$7,863,613	

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

The building systems with the most need include:

Interior	-	\$3,216,054
Mechanical	-	\$1,345,301
Technology	-	\$1,033,788

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

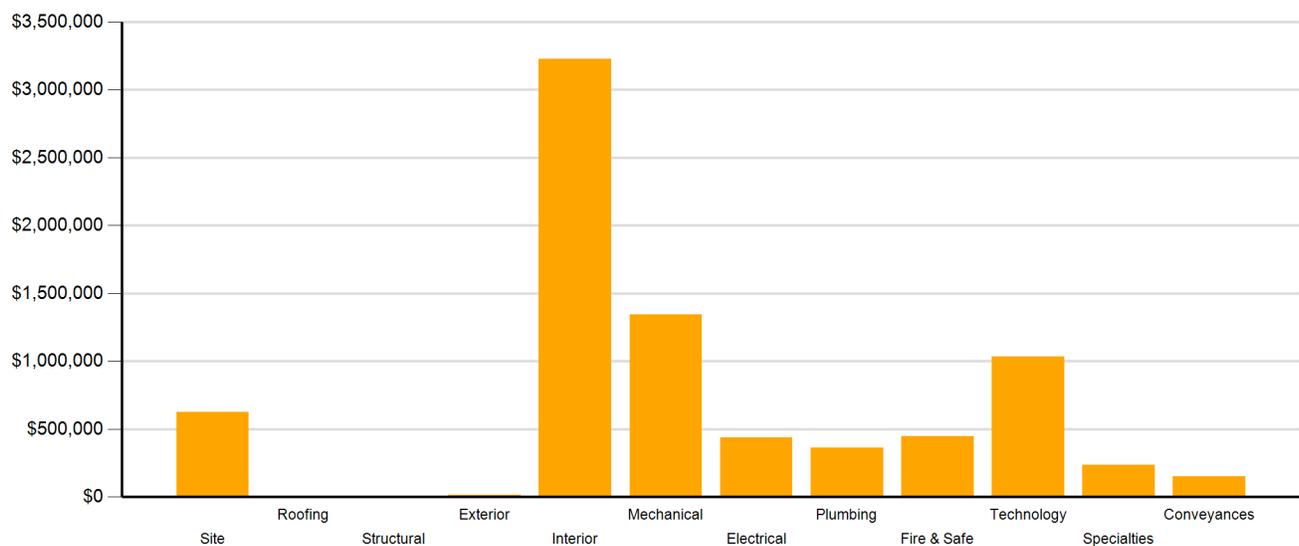


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	\$174,790	-	-	\$174,790
Barrier to Accessibility	-	-	\$443,880	-	-	\$443,880
Capital Renewal	-	\$1,627,563	\$337,733	\$1,778,724	-	\$3,744,020
Code Compliance	\$445,349	-	-	-	-	\$445,349
Educational Adequacy	-	-	-	\$639,592	\$76,144	\$715,736
Functional Deficiency	-	-	\$91,303	-	-	\$91,303
Hazardous Material	-	-	-	\$881,353	-	\$881,353
Technology	-	-	\$1,033,788	-	-	\$1,033,788
Traffic	-	-	\$333,393	-	-	\$333,393
<b>Total</b>	\$445,349	\$1,627,563	\$2,414,888	\$3,299,669	\$76,144	\$7,863,613

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

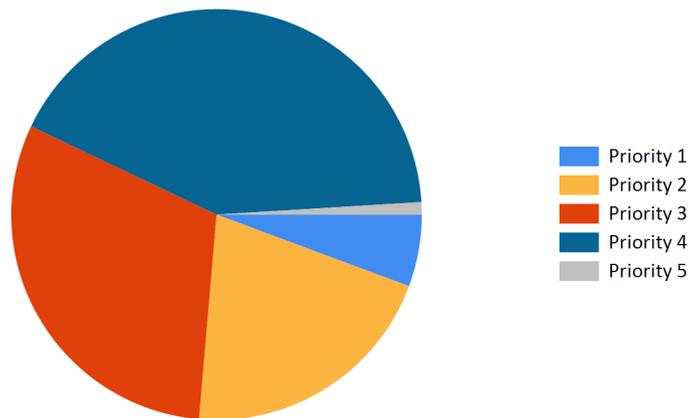


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$626,121	\$0	\$0	\$0	\$0	\$71,539	\$71,539	\$697,660
Roofing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Structural	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$13,613	\$0	\$0	\$0	\$0	\$0	\$0	\$13,613
Interior	\$3,216,054	\$0	\$36,986	\$146,022	\$0	\$0	\$183,008	\$3,399,062
Mechanical	\$1,345,301	\$0	\$0	\$42,348	\$45,770	\$295,591	\$383,709	\$1,729,010
Electrical	\$435,359	\$0	\$0	\$0	\$0	\$0	\$0	\$435,359
Plumbing	\$360,973	\$0	\$0	\$0	\$5,845	\$57,099	\$62,944	\$423,917
Fire and Life Safety	\$445,349	\$0	\$0	\$99,654	\$0	\$0	\$99,654	\$545,003
Technology	\$1,033,788	\$0	\$0	\$0	\$0	\$0	\$0	\$1,033,788
Conveyances	\$152,112	\$0	\$0	\$0	\$0	\$0	\$0	\$152,112
Specialties	\$234,944	\$0	\$0	\$0	\$0	\$0	\$0	\$234,944
<b>Total</b>	<b>\$7,863,613</b>	<b>\$0</b>	<b>\$36,986</b>	<b>\$288,024</b>	<b>\$51,615</b>	<b>\$424,229</b>	<b>\$800,854</b>	<b>\$8,664,467</b>

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

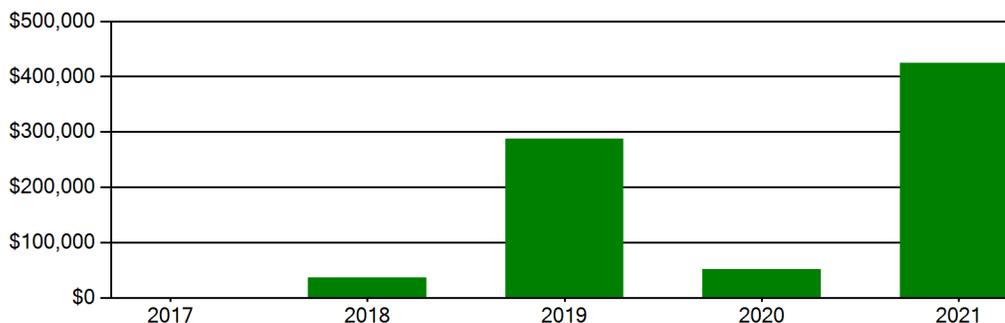


Figure 4: Life Cycle Capital Renewal Forecast



## 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 \$11,900,000. For planning purposes, the total 5-year need at the Nayatt School is \$8,675,317 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Nayatt School facility has a 5-year FCI of 72.81%.

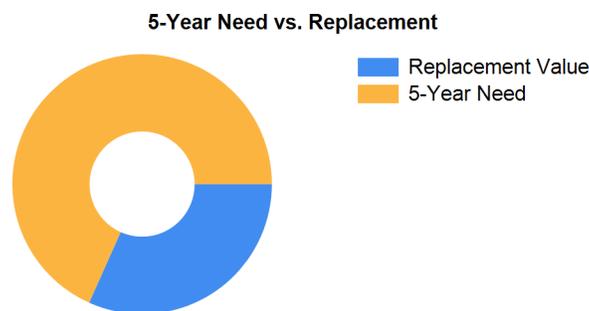


Figure 5: 5-Year FCI

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 189 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 Nayatt School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$442,260.



### Summary of Findings

The Nayatt School comprises 34,000 square feet and was constructed in 1954. Current deficiencies at this school total \$7,874,463. Five year capital renewal costs total \$800,854. The total identified need for the Nayatt School (current deficiencies and 5-year capital renewal costs) is \$8,675,317. The 5-year FCI is 72.81%.

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
Nayatt School Totals	34,000	1954	\$7,874,463	\$800,854	\$8,675,317	72.81%

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

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

### Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Concrete Walks Require Replacement	Capital Renewal	1,500	SF	3	\$30,453	3028
Install New Paving	Traffic	7,830	SF	3	\$162,664	4495
<b>Note:</b> Construct driveway behind school for parent drop off/pick up (square footage provided is a rough estimate)						
Sidewalk Requires Replacement	Traffic	4,200	SF	3	\$95,185	4493
<b>Note:</b> Replace sidewalk adjacent to school along Nayatt Road (6' wide)						
Traffic Signage Is Required	Traffic	2	Ea.	3	\$75,544	4494
<b>Note:</b> Add flashing beacons to school zone signs						
Asphalt Paving Requires Replacement	Capital Renewal	58	CAR	4	\$190,602	2778
<b>Note:</b> Parking lot paving is cracked and pitted.						
Asphalt Paving Requires Replacement	Capital Renewal	10	CAR	4	\$32,862	2779
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28400
<b>Note:</b> Backstops Require Replacement						
Fencing Requires Replacement (8' Chain Link Fence)	Capital Renewal	70	LF	4	\$4,674	2780
<b>Note:</b> Fence is rusted and falling.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	\$5,807	28685
<b>Note:</b> Exterior Basketball Goals are Required						
<b>Sub Total for System</b>		<b>9</b>	<b>items</b>		<b>\$626,121</b>	

### Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Exterior Wood Stairs Require Replacement	Capital Renewal	20	LF	3	\$11,332	2807
<b>Note:</b> Exterior wood stairs are weathered and should be replaced.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$11,332</b>	

### Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Pole Lighting Is Missing And Needed	Functional Deficiency	4	Ea.	3	\$78,754	2785
<b>Note:</b> Building lights are the only light to the parking lot. Pole lighting is needed.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$78,754</b>	
<b>Sub Total for School and Site Level</b>		<b>11</b>	<b>items</b>		<b>\$716,206</b>	

## Building: 01 - Main Building

### Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Brick Exterior Requires Replacement (Bldg SF)	Capital Renewal	50	SF	2	\$2,282	2808
<b>Note:</b> Damaged bricks should be replaced.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$2,282</b>	

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	21	Ea.	3	\$174,790	27956
<b>Location:</b> Classrooms						
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	93	Door	3	\$291,769	3029
<b>Note:</b> Non-compliant hardware should be replaced.						
Interior Wood Walls Require Replacement	Capital Renewal	8,500	SF	4	\$77,577	2784
<b>Note:</b> Wood panels in classrooms are original to the building, damaged, and should be replaced.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	30,600	SF	4	\$872,740	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	13	Ea.	4	\$3,708	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	195	LF	4	\$4,449	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	48	SF	4	\$456	Rollup



## Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	16,042	SF	4	\$611,263	Rollup
Stair Treads Require Replacement <b>Note:</b> Stairs are missing treads.	Capital Renewal	100	LF	4	\$4,183	2805
The Gypsum Board Ceilings Require Replacement <b>Note:</b> Water damaged portion of gypboard ceiling should be replaced.	Capital Renewal	500	SF	4	\$5,704	2814
Vinyl Cove Base Requires Replacement <b>Note:</b> Replace cove base where damaged or missing.	Capital Renewal	102,000	LF	4	\$1,163,653	2815
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
<b>Sub Total for System</b>		<b>13</b>	<b>items</b>		<b>\$3,216,054</b>	

## Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Gas Piping Requires Replacement (SF Basis)	Capital Renewal	34,000	SF	2	\$736,146	3040
Steam/HW Unit Heater Requires Replacement	Capital Renewal	20	Ea.	2	\$56,319	2802
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	1	Ea.	2	\$265,630	2799
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	15	Ea.	2	\$25,127	2801
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	34,000	SF	2	\$262,078	2803
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>		<b>\$1,345,301</b>	

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	\$25,669	2795
The Lighting Fixtures Require Replacement	Capital Renewal	34,000	SF	2	\$202,023	2793
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	\$29,091	2796
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	\$23,197	2797
The Electrical Receptacles Are Inadequate And More are Needed <b>Note:</b> Each classroom needs another receptacle.	Functional Deficiency	22	Ea.	3	\$12,549	2804
The Mounted Building Lighting Requires Replacement	Capital Renewal	15	Ea.	3	\$22,389	2794
Room Has Insufficient Electrical Outlets	Educational Adequacy	84	Ea.	5	\$41,686	Rollup
<b>Sub Total for System</b>		<b>7</b>	<b>items</b>		<b>\$356,605</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	34,000	SF	3	\$273,560	2786
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	5	Ea.	4	\$12,882	2798
The Refrigerated Water Cooler Requires Replacement <b>Note:</b> Push buttons don't work and fixtures are low flow and aged.	Capital Renewal	7	Ea.	4	\$51,642	2887
Room lacks a drinking fountain.	Educational Adequacy	12	Ea.	5	\$13,234	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	9	Ea.	5	\$9,655	Rollup
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>		<b>\$360,973</b>	

## Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Install Fire Sprinklers (NFPA 13) <b>Note:</b> Sprinklers are missing and should be installed.	Code Compliance	34,000	SF	1	\$445,349	2788
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$445,349</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	26	Ea.	3	\$519,081	3080
Technology: Instructional spaces do not have local sound reinforcement.	Technology	31	Ea.	3	\$147,358	3079



## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3073
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3071
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$9,032	3075
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	66	Ea.	3	\$28,236	3074
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	\$15,211	3082
Technology: Network system inadequate and/or near end of useful life	Technology	10	Ea.	3	\$47,535	3083
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	34,000	SF	3	\$58,183	3076
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3081
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3072
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	26	Ea.	3	\$39,549	3077
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	\$7,225	3078
<b>Sub Total for System</b>		<b>13</b>	<b>items</b>		<b>\$1,033,788</b>	

## Conveyances

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Elevator Is Missing And Needed	Barrier to Accessibility	2	FLOOR	3	\$152,112	2813
<b>Note:</b> School has no elevator access for ADA.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$152,112</b>	

## Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Cabinetry In Classes/Labs	Capital Renewal	21	Room	4	\$234,944	2781
<b>Note:</b> Cabinetry is original to the building and should be replaced.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$234,944</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>47</b>	<b>items</b>		<b>\$7,147,407</b>	
<b>Total for Campus</b>		<b>58</b>	<b>items</b>		<b>\$7,863,613</b>	



## Nayatt School - Life Cycle Summary Yrs 1-5

### Site Level Life Cycle Items

#### Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Pedestrian Pavement	Sidewalks - Concrete	3,500	SF	\$71,539	5
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$71,539</b>	
<b>Sub Total for Building -</b>		<b>1</b>	<b>items</b>	<b>\$71,539</b>	

### Building: 01 - Main Building

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet	1,700	SF	\$36,986	2
Wall Painting and Coating	Painting/Staining (Bldg SF)	22,100	SF	\$146,022	3
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>	<b>\$183,008</b>	

#### Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Ductless Split System (1 Ton)	3	Ea.	\$42,348	3
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)	6	Ea.	\$45,770	4
Exhaust Air	Roof Exhaust Fan - Small	25	Ea.	\$65,931	5
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)	34,000	SF	\$229,660	5
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>	<b>\$383,709</b>	

#### Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 75 Gallons	1	Ea.	\$5,845	4
Plumbing Fixtures	Classroom Lavatories	21	Ea.	\$57,099	5
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>	<b>\$62,944</b>	

#### Fire and Life Safety

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm	34,000	SF	\$99,654	3
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>	<b>\$99,654</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>9</b>	<b>items</b>	<b>\$729,314</b>	
<b>Total for: Nayatt School</b>		<b>10</b>	<b>items</b>	<b>\$800,853</b>	



Supporting Photos



Site Aerial



Worn Exterior Stairs



Typical Windows



Typical Classroom



Side Elevation



Library



Cracking Asphalt Roadway Pavement



Exterior Finishes



Typical Restroom Fixtures And Finishes



Gym/Cafeteria



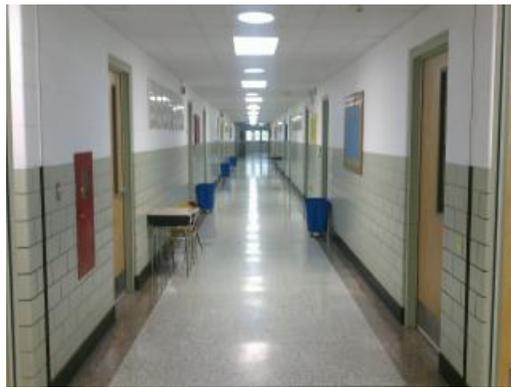
Damaged Parking Lot Paving



Rusted Fence Falling Over



Playground Equipment



Hallway Finishes



Worn Mismatched VCT



Deteriorating Piping



Aged And Stained Service Sink



Water Damaged Gypsum Board Ceiling



Stairs Missing Treads



Deteriorated Piping



Original Cabinetry



Typical Light Fixtures



Damaged Vinyl Cove Base



Worn Wood Panel In Classroom



Damaged Exterior Brick Wall



Worn VCT Flooring



Aged Building Lights



Missing Vinyl Cove Base



Worn Cabinet Unit Heater



Aged Boiler



Aged 100 Amp Panelboard



Aged And Outdated Finned Tube Radiator



Aged 400 Amp Distribution Panel



Exterior



# Facility Condition Assessment

Barrington - Nayatt School



Entrance



# Facility Condition Assessment

Barrington - Primrose Hill School

June 2017

60 Middle Highway, Barrington, RI 02806





## Introduction

Primrose Hill School, located at 60 Middle Highway in Barrington, Rhode Island, was built in 1954. It comprises 36,000 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.

Primrose Hill School serves grades PK - 3, has 21 instructional spaces, and has an enrollment of 316. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Primrose Hill School is 475 with a resulting utilization of 67%.

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 Primrose Hill School the 5-year need is \$5,336,289. 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 Primrose Hill School



## Approach and Methodology

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

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

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

## Discipline Specialists

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

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

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

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

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

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

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



## System Summaries

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

### Site

The site level systems for this campus include:

<b>Site</b>	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

### Building Envelope

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

<b>01 - Main Building:</b>	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors

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

<b>01 - Main Building:</b>	Built-Up Roofing With Ballast
----------------------------	-------------------------------

### Interior

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

<b>01 - Main Building:</b>	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
	CMU Wall
	Interior Wall Painting
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Rubber Flooring
	Carpet

### Mechanical

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

<b>01 - Main Building:</b>	3,264 MBH Cast Iron Water Boiler
	Finned Wall Radiator



<b>01 - Main Building:</b>	Steam/Hot Water Heating Unit Vent
	250 MBH Steam Unit Heater
	Electronic Heating System Controls
	1 Ton Ductless Split System
	Make-up Air Unit
	1 HP or Smaller Pump
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	Ductwork
	Large Roof Exhaust Fan

## Plumbing

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

<b>01 - Main Building:</b>	250 Gallon Water Storage Tank
	2" Backflow Preventers
	Gas Piping System
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

## Electrical

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

<b>01 - Main Building:</b>	100 kW Emergency Generator
	Automatic Transfer Switch
	75 KVA Transformer
	Panelboard - 120/208 100A
	600 Amp Distribution Panel
	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

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	-	\$28,329	\$5,807	\$34,136	0.67 %
Roofing	-	-	-	-	-	\$0	0.00 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	\$12,834	-	-	-	\$12,834	0.25 %
Interior	-	-	\$171,441	\$1,463,930	\$6,712	\$1,642,083	32.00 %
Mechanical	-	\$2,106,955	\$15,899	\$43,846	-	\$2,166,700	42.22 %
Electrical	-	-	-	\$2,928	\$39,701	\$42,629	0.83 %
Plumbing	-	-	\$289,652	\$10,875	\$22,280	\$322,807	6.29 %
Fire and Life Safety	\$30,244	-	-	-	-	\$30,244	0.59 %
Technology	-	-	\$871,694	-	-	\$871,694	16.99 %
Conveyances	-	-	-	-	-	\$0	0.00 %
Specialties	-	-	-	-	\$8,556	\$8,556	0.17 %
<b>Total</b>	\$30,244	\$2,119,789	\$1,348,687	\$1,549,909	\$83,056	\$5,131,684	

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

The building systems with the most need include:

Mechanical	-	\$2,166,700
Interior	-	\$1,642,083
Technology	-	\$871,694

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

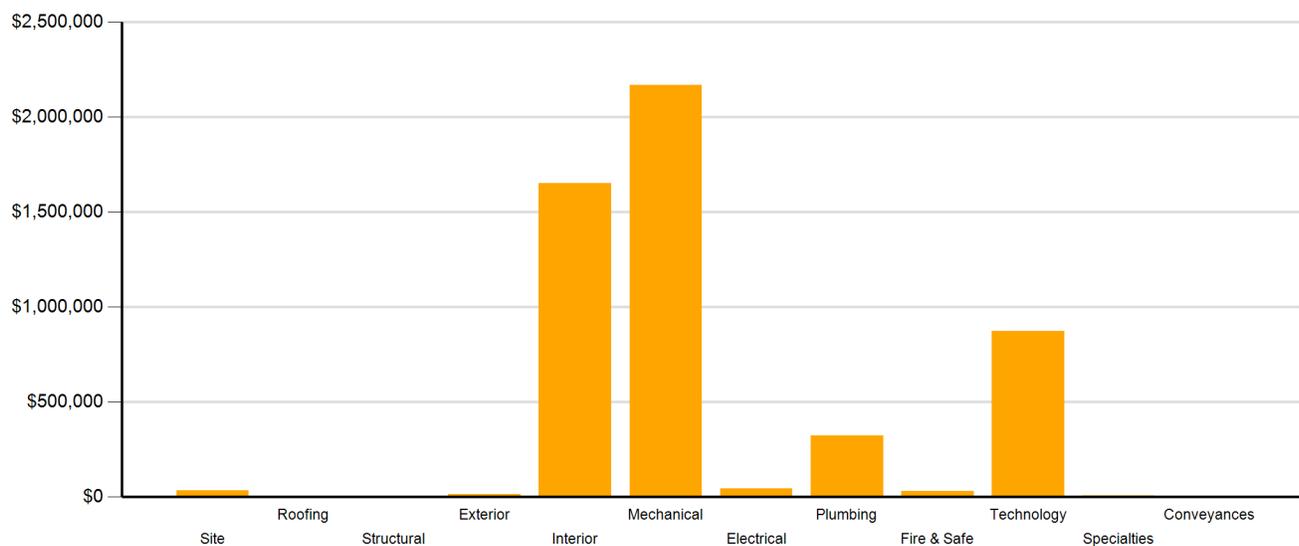


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	\$166,467	-	-	\$166,467
Barrier to Accessibility	-	-	-	-	-	\$0
Capital Renewal	\$30,244	\$2,119,789	\$310,525	\$57,080	\$951	\$2,518,588
Code Compliance	-	-	-	-	-	\$0
Educational Adequacy	-	-	-	\$728,792	\$82,106	\$810,897
Functional Deficiency	-	-	-	-	-	\$0
Hazardous Material	-	-	-	\$764,037	-	\$764,037
Technology	-	-	\$871,694	-	-	\$871,694
Traffic	-	-	-	-	-	\$0
<b>Total</b>	<b>\$30,244</b>	<b>\$2,119,789</b>	<b>\$1,348,687</b>	<b>\$1,549,909</b>	<b>\$83,056</b>	<b>\$5,131,684</b>

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

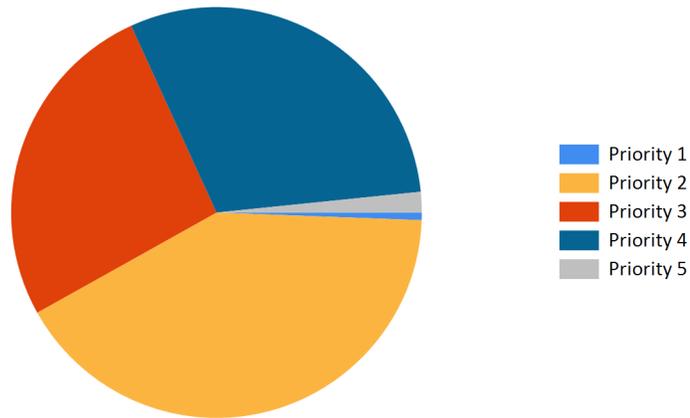


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$34,136	\$0	\$0	\$0	\$0	\$0	\$0	\$34,136
Roofing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Structural	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$12,834	\$0	\$0	\$0	\$0	\$0	\$0	\$12,834
Interior	\$1,642,083	\$0	\$0	\$0	\$0	\$194,725	\$194,725	\$1,836,808
Mechanical	\$2,166,700	\$0	\$0	\$0	\$0	\$0	\$0	\$2,166,700
Electrical	\$42,629	\$0	\$0	\$0	\$0	\$0	\$0	\$42,629
Plumbing	\$322,807	\$0	\$0	\$0	\$0	\$0	\$0	\$322,807
Fire and Life Safety	\$30,244	\$0	\$0	\$0	\$0	\$0	\$0	\$30,244
Technology	\$871,694	\$0	\$0	\$0	\$0	\$0	\$0	\$871,694
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$8,556	\$0	\$0	\$0	\$0	\$0	\$0	\$8,556
<b>Total</b>	<b>\$5,131,684</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$194,725</b>	<b>\$194,725</b>	<b>\$5,326,409</b>

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

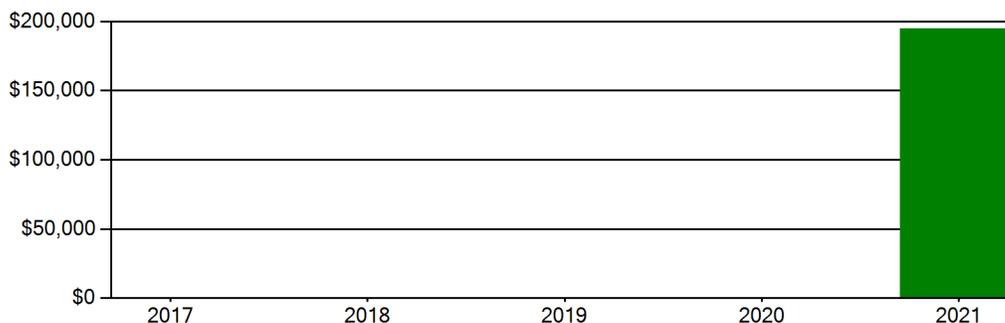


Figure 4: Life Cycle Capital Renewal Forecast



## 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 \$12,600,000. For planning purposes, the total 5-year need at the Primrose Hill School is \$5,336,289 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Primrose Hill School facility has a 5-year FCI of 42.27%.

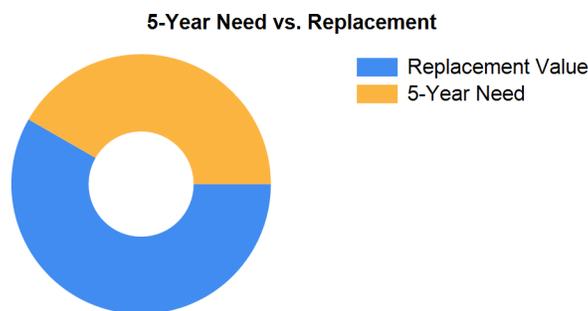


Figure 5: 5-Year FCI

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 Primrose Hill School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$381,024.



## Summary of Findings

The Primrose Hill School comprises 36,000 square feet and was constructed in 1954. Current deficiencies at this school total \$5,141,564. Five year capital renewal costs total \$194,725. The total identified need for the Primrose Hill School (current deficiencies and 5-year capital renewal costs) is \$5,336,289. The 5-year FCI is 42.27%.

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
Primrose Hill School Totals	36,000	1954	\$5,141,564	\$194,725	\$5,336,289	42.27%

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

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

## Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28401
<b>Note:</b> Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	\$5,807	28686
<b>Note:</b> Exterior Basketball Goals are Required						
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$34,136</b>	
<b>Sub Total for School and Site Level</b>		<b>2</b>	<b>items</b>		<b>\$34,136</b>	

## Building: 01 - Main Building

### Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Exterior Door Requires Replacement	Capital Renewal	2	Door	2	\$12,834	951
<b>Note:</b> Entry exterior metal doors are not level with pavement. Replace doors at appropriate height or level pavement to door height.						
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$12,834</b>	

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Entry Doors Provide Insufficient Sound Isolation	Acoustics	20	Ea.	3	\$166,467	4723
<b>Note:</b> All classroom						
Interior CMU Walls Require Repair	Capital Renewal	10	SF	3	\$363	938
<b>Note:</b> Repoint CMU wall.						
Interior Doors Require Replacement	Capital Renewal	1	Door	3	\$4,611	949
<b>Location:</b> Room 20						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	26,304	SF	4	\$750,214	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	8	Ea.	4	\$2,282	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - linear feet)	Hazardous Material	160	LF	4	\$3,651	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	830	SF	4	\$7,891	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	18,368	SF	4	\$699,893	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	\$2,282	Rollup
Interior Doors Require Repair	Capital Renewal	1	Door	5	\$951	942
<b>Location:</b> Stage Right						
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	\$3,480	Rollup
<b>Sub Total for System</b>		<b>11</b>	<b>items</b>		<b>\$1,642,083</b>	

### Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	36,000	SF	2	\$529,242	944
<b>Note:</b> Replace entire system. 1956 installation date.						
Gas Piping Requires Replacement (SF Basis)	Capital Renewal	36,000	SF	2	\$779,449	1890
Replace Unit Vent	Capital Renewal	3	Ea.	2	\$50,744	945
<b>Note:</b> Outdated equipment, visually ready to be replaced. Frequent service calls per facility manager						
Steam/HW Unit Heater Requires Replacement	Capital Renewal	30	Ea.	2	\$101,591	941
<b>Note:</b> Classroom unit heaters.						
The Air Handler HVAC Component Requires Replacement	Capital Renewal	3	Ea.	2	\$129,411	947
The Boiler HVAC Component Requires Replacement	Capital Renewal	1	Ea.	2	\$170,342	930
<b>Note:</b> Boiler original to 1956 and obsolete - should be replaced						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	41	Ea.	2	\$68,680	940
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	36,000	SF	2	\$277,495	932
The Make Up Air Equipment Requires Replacement	Capital Renewal	1	Ea.	3	\$15,899	935
<b>Note:</b> Draft inducer obsolete and should be replaced						



# Facility Condition Assessment

Barrington - Primrose Hill School

## Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	3	Ea.	4	\$28,589	931
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	\$15,257	934
<b>Sub Total for System</b>		<b>11</b>	<b>items</b>		<b>\$2,166,700</b>	

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Incandescent Lighting Requires Replacement <b>Note:</b> Main entry and side door.	Capital Renewal	4	Ea.	4	\$2,928	785
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	\$39,701	Rollup
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$42,629</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life <b>Note:</b> Beginning to oxidize and corrode	Capital Renewal	36,000	SF	3	\$289,652	936
Floor Drains Are Required	Educational Adequacy	1	Ea.	4	\$570	Rollup
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	4	Ea.	4	\$10,306	937
Room lacks a drinking fountain.	Educational Adequacy	11	Ea.	5	\$12,131	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	9	Ea.	5	\$10,149	Rollup
<b>Sub Total for System</b>		<b>5</b>	<b>items</b>		<b>\$322,807</b>	

## Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Emergency Lighting System Requires Replacement <b>Note:</b> Replace system.	Capital Renewal	36,000	SF	1	\$30,244	784
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$30,244</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	48	Ea.	3	\$22,817	3060
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	18	Ea.	3	\$359,363	3067
Technology: Instructional spaces do not have local sound reinforcement.	Technology	20	Ea.	3	\$95,070	3066
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3056
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3061
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3054
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$9,032	3057
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	52	Ea.	3	\$22,246	3058
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	36	Ea.	3	\$15,401	3059
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	\$15,211	3068
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	\$57,042	3069
Technology: Network system inadequate and/or near end of useful life	Technology	36,000	SF	3	\$10,268	3070
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	36,000	SF	3	\$61,605	3062
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3063



# Facility Condition Assessment

Barrington - Primrose Hill School

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3055
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	18	Ea.	3	\$27,380	3064
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	\$7,225	3065
<b>Sub Total for System</b>		<b>17</b>	<b>items</b>		<b>\$871,694</b>	

## Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks an appropriate refrigerator.	Educational Adequacy	1	Ea.	5	\$8,556	Rollup
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$8,556</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>49</b>	<b>items</b>		<b>\$5,097,548</b>	
<b>Total for Campus</b>		<b>51</b>	<b>items</b>		<b>\$5,131,684</b>	



## Primrose Hill School - Life Cycle Summary Yrs 1-5

### Building: 01 - Main Building

#### Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	29,471	SF	\$194,725	5
	<b>Sub Total for System</b>	<b>1</b>	<b>items</b>	<b>\$194,725</b>	
	<b>Sub Total for Building 01 - Main Building</b>	<b>1</b>	<b>items</b>	<b>\$194,725</b>	
	<b>Total for: Primrose Hill School</b>	<b>1</b>	<b>items</b>	<b>\$194,725</b>	



## Supporting Photos



Site Aerial



Damaged Interior Door



Roof Condition



Library



# Facility Condition Assessment

Barrington - Primrose Hill School



Typical Classroom



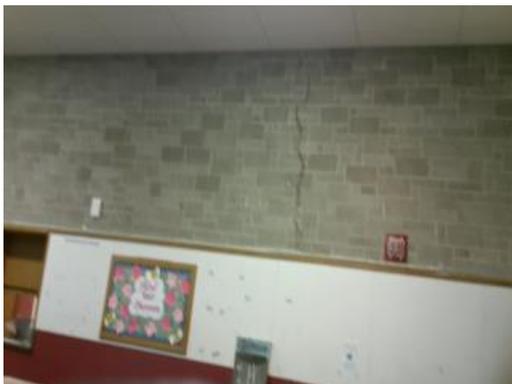
Circulating Pump And Piping



Kitchen



Ductwork



Cracked Wall



Corroded Custodial Sink



# Facility Condition Assessment

Barrington - Primrose Hill School



Radiator Heater



West Elevation



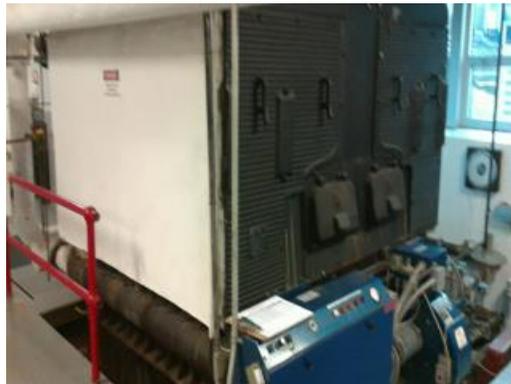
School Sign



Library



Front Elevation



Boiler



# Facility Condition Assessment

Barrington - Primrose Hill School



Multipurpose Room



Main Entry



Kitchen



Door Tripping Hazard



Rear Elevation



# Facility Condition Assessment

Barrington - Sowams Elementary School

June 2017

364 Sowams Road, Barrington, RI 02806





## Introduction

Sowams Elementary School, located at 364 Sowams Road in Barrington, Rhode Island, was built in 1962. It comprises 32,700 gross square feet. Each school across the district was visited three times during the Facility Condition Assessments by three teams of specialists in the spring/summer of 2016.

Sowams Elementary School serves grades KG - 3, has 19 instructional spaces, and has an enrollment of 246. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Sowams Elementary School is 350 with a resulting utilization of 70%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Sowams Elementary School the 5-year need is \$2,899,830. 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.

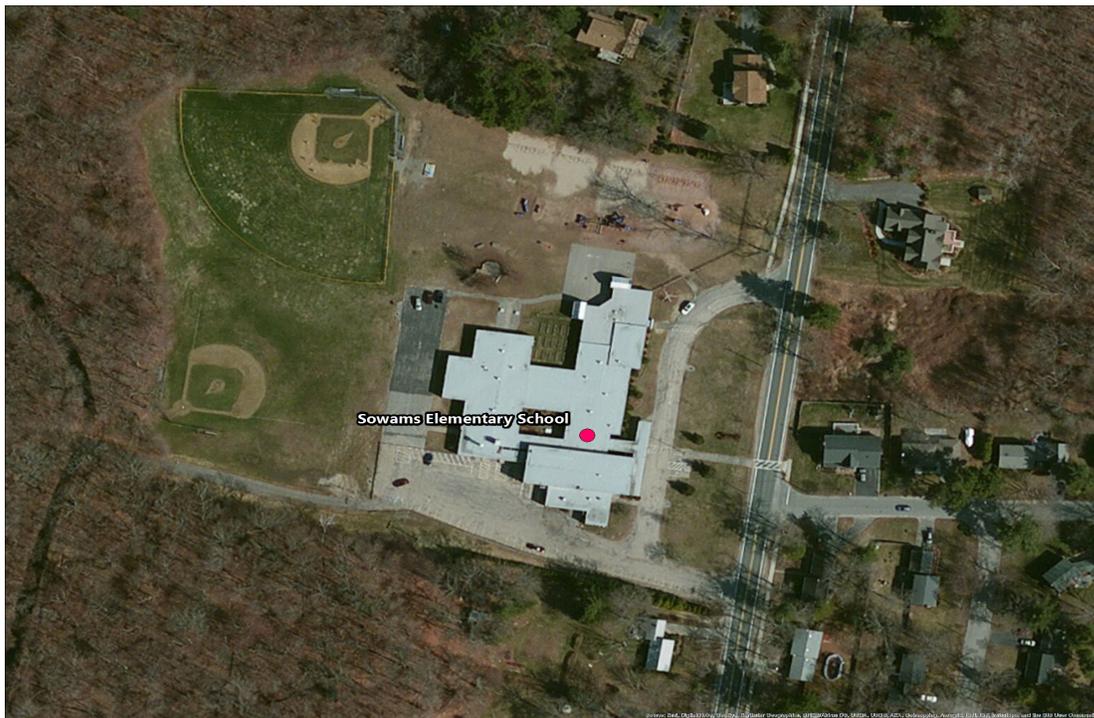


Figure 1: Aerial view of Sowams Elementary School



## 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 Sowams 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
	Storefront / Curtain Wall
	Storefront Entrance Doors
	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
---------------------	-------------------------------

#### Interior

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

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



**Mechanical**

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

<b>01 - Main Building:</b>	2,400 MBH Copper Tube Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	250 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	1 Ton Ductless Split System
	Window Units
	1 HP or Smaller Pump
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	Wall Exhaust Fan

**Plumbing**

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

<b>01 - Main Building:</b>	500 Gallon Water Storage Tank
	Gas Piping System
	100 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Toilets
	Urinals
	Air Compressor (2 hp)

**Electrical**

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

<b>01 - Main Building:</b>	50 kW Emergency Generator
	208/120v Switch
	75 KVA Transformer
	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A



# Facility Condition Assessment

Barrington - Sowams Elementary School

<b>01 - Main Building:</b>	Panelboard - 120/240 225A
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures



## Facility Deficiency Priority Levels

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

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

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

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

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

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



# Facility Condition Assessment

Barrington - Sowams Elementary School

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

System	Priority					Total	% of Total
	1	2	3	4	5		
Site	-	-	-	\$28,329	\$64,020	\$92,349	3.43 %
Roofing	-	\$7,330	-	-	-	\$7,330	0.27 %
Structural	-	-	-	-	-	\$0	0.00 %
Exterior	-	-	-	-	-	\$0	0.00 %
Interior	-	-	-	\$56,608	\$148,951	\$205,560	7.63 %
Mechanical	-	\$928,278	-	\$302,674	-	\$1,230,952	45.70 %
Electrical	-	\$25,669	\$734	\$10,249	\$35,731	\$72,383	2.69 %
Plumbing	-	-	\$5,322	\$5,153	\$18,647	\$29,122	1.08 %
Fire and Life Safety	\$31,928	-	-	-	-	\$31,928	1.19 %
Technology	-	-	\$1,019,119	-	-	\$1,019,119	37.84 %
Conveyances	-	-	-	-	-	\$0	0.00 %
Specialties	-	-	\$4,563	-	-	\$4,563	0.17 %
<b>Total</b>	<b>\$31,928</b>	<b>\$961,276</b>	<b>\$1,029,738</b>	<b>\$403,012</b>	<b>\$267,350</b>	<b>\$2,693,305</b>	

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

The building systems with the most need include:

Mechanical	-	\$1,230,952
Technology	-	\$1,019,119
Interior	-	\$205,560

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

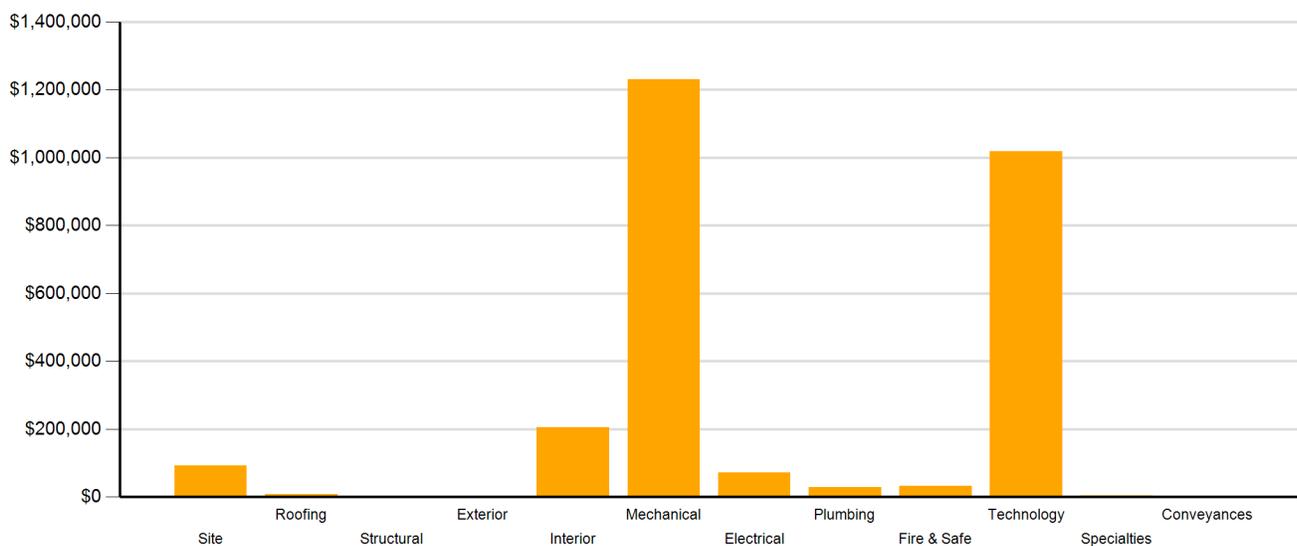


Figure 2: System Deficiencies



## Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insulation, 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

Category	Priority					Total
	1	2	3	4	5	
Acoustics	-	-	-	-	-	\$0
Barrier to Accessibility	-	-	-	-	-	\$0
Capital Renewal	\$31,928	\$961,276	\$6,056	\$318,075	\$146,670	\$1,464,006
Code Compliance	-	-	-	-	-	\$0
Educational Adequacy	-	-	\$10,268	\$68,186	\$120,680	\$199,133
Functional Deficiency	-	-	-	-	-	\$0
Hazardous Material	-	-	-	\$16,751	-	\$16,751
Technology	-	-	\$1,013,415	-	-	\$1,013,415
Traffic	-	-	-	-	-	\$0
<b>Total</b>	<b>\$31,928</b>	<b>\$961,276</b>	<b>\$1,029,738</b>	<b>\$403,012</b>	<b>\$267,350</b>	<b>\$2,693,305</b>

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

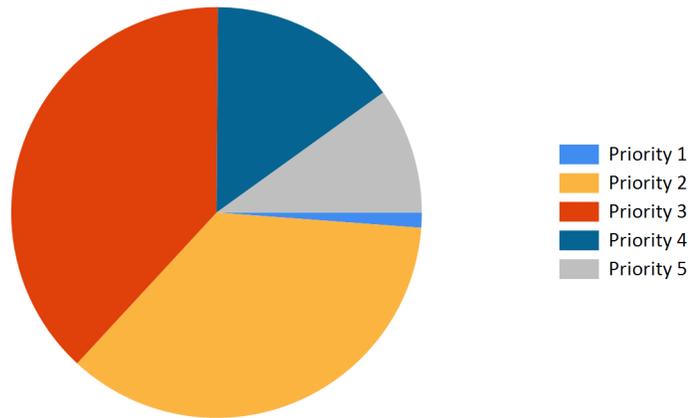


Figure 3: Current deficiencies by priority



### 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

System	Current Deficiencies	Life Cycle Capital Renewal Projections					LC Yr. 1-5 Total	Total 5-Year Need
		Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021		
Site	\$92,349	\$0	\$0	\$0	\$0	\$0	\$0	\$92,349
Roofing	\$7,330	\$0	\$0	\$0	\$0	\$0	\$0	\$7,330
Structural	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interior	\$205,560	\$0	\$0	\$0	\$0	\$0	\$0	\$205,560
Mechanical	\$1,230,952	\$0	\$0	\$0	\$0	\$0	\$0	\$1,230,952
Electrical	\$72,383	\$0	\$0	\$0	\$9,602	\$0	\$9,602	\$81,985
Plumbing	\$29,122	\$0	\$0	\$0	\$0	\$194,497	\$194,497	\$223,619
Fire and Life Safety	\$31,928	\$0	\$0	\$0	\$0	\$0	\$0	\$31,928
Technology	\$1,019,119	\$0	\$0	\$0	\$0	\$0	\$0	\$1,019,119
Conveyances	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specialties	\$4,563	\$0	\$0	\$0	\$0	\$0	\$0	\$4,563
<b>Total</b>	<b>\$2,693,305</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$9,602</b>	<b>\$194,497</b>	<b>\$204,099</b>	<b>\$2,897,404</b>

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

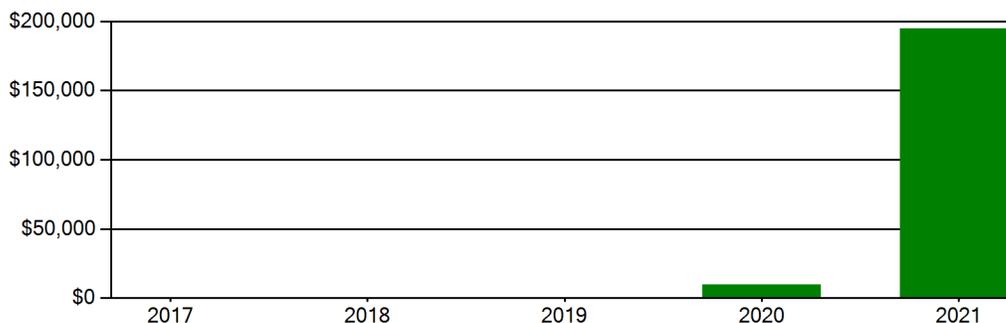


Figure 4: Life Cycle Capital Renewal Forecast



## 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 \$11,445,000. For planning purposes, the total 5-year need at the Sowams Elementary School is \$2,899,830 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Sowams Elementary School facility has a 5-year FCI of 25.32%.

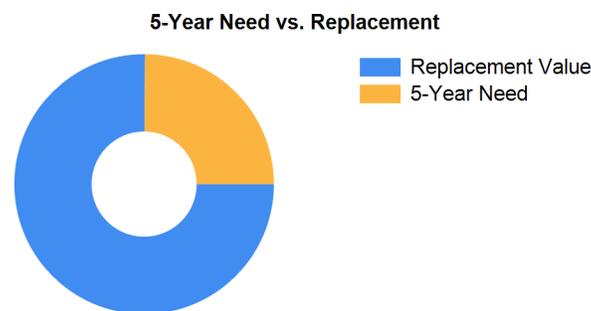


Figure 5: 5-Year FCI

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 182 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 Sowams Elementary School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be \$164,808.



### Summary of Findings

The Sowams Elementary School comprises 32,700 square feet and was constructed in 1962. Current deficiencies at this school total \$2,695,731. Five year capital renewal costs total \$204,099. The total identified need for the Sowams Elementary School (current deficiencies and 5-year capital renewal costs) is \$2,899,830. The 5-year FCI is 25.32%.

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
Sowams Elementary School Totals	32,700	1962	\$2,695,731	\$204,099	\$2,899,830	25.32%

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

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

### Cost Estimating

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

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



## Site Level Deficiencies

### Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	\$28,329	28403
<b>Note:</b> Backstops Require Replacement						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	\$64,020	54858
<b>Note:</b> PE / Recess Playfield is Missing and is Needed						
<b>Sub Total for System</b>		<b>2</b>	<b>items</b>		<b>\$92,349</b>	
<b>Sub Total for School and Site Level</b>		<b>2</b>	<b>items</b>		<b>\$92,349</b>	

## Building: 01 - Main Building

### Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Skylight Requires Replacement	Capital Renewal	3	Ea.	2	\$7,330	575
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$7,330</b>	

### Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
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	440	SF	4	\$4,183	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	9	Ea.	4	\$2,567	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	80	LF	4	\$1,825	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	860	SF	4	\$8,176	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	1,046	SF	4	\$39,857	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	\$2,282	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	22,198	SF	5	\$146,670	Rollup
<b>Sub Total for System</b>		<b>7</b>	<b>items</b>		<b>\$205,560</b>	

### Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	1,674	SF	2	\$24,610	562
Replace Unit Vent	Capital Renewal	26	Ea.	2	\$439,785	557
<b>Note:</b> Beyond useful life.						
Steam/HW Unit Heater Requires Replacement	Capital Renewal	3	Ea.	2	\$10,159	568
The Air Handler HVAC Component Requires Replacement	Capital Renewal	1	Ea.	2	\$43,137	560
The Copper Tube Boiler Requires Replacement	Capital Renewal	3	Ea.	2	\$410,587	900
<b>Note:</b> 1750 MBH each						
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	2	Ea.	4	\$5,355	902
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	32,700	SF	4	\$196,895	556
<b>Note:</b> Pneumatics system past useful life - upgrade to DDC						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	1	Ea.	4	\$9,530	552
<b>Note:</b> Beyond useful life.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	1	Ea.	4	\$7,628	553
The Exhaust Hood Requires Replacement	Capital Renewal	16	Ea.	4	\$83,266	571
<b>Sub Total for System</b>		<b>10</b>	<b>items</b>		<b>\$1,230,952</b>	

### Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	\$25,669	561
<b>Note:</b> Boiler room . Panel is beyond useful life and parts may not be available.						
The Distribution Panel Requires Repair	Capital Renewal	1	Ea.	3	\$734	548
<b>Note:</b> North hallway panel A - door can't be opened.						
The Incandescent Lighting Requires Replacement	Capital Renewal	14	Ea.	4	\$10,249	559
<b>Note:</b> Stage						



# Facility Condition Assessment

Barrington - Sowams Elementary School

## Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	72	Ea.	5	\$35,731	Rollup
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>		<b>\$72,383</b>	

## Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Gas Water Heater Requires Replacement <b>Note:</b> Beyond useful life.	Capital Renewal	1	Ea.	3	\$5,322	549
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	\$5,153	566
Room lacks a drinking fountain.	Educational Adequacy	10	Ea.	5	\$11,028	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	7	Ea.	5	\$7,619	Rollup
<b>Sub Total for System</b>		<b>4</b>	<b>items</b>		<b>\$29,122</b>	

## Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Kitchen Exhaust Hood	Capital Renewal	2	Ea.	1	\$31,928	901
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$31,928</b>	

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	\$5,704	Rollup
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	22	Ea.	3	\$439,222	3103
Technology: Instructional spaces do not have local sound reinforcement.	Technology	22	Ea.	3	\$104,577	3102
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	\$5,324	3090
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	\$5,324	3094
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	\$45,253	3093
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$37,648	3089
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	\$6,655	3087
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	\$42,591	3085
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	\$9,032	3088
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	120	Ea.	3	\$51,338	3096
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	\$15,211	3097
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	\$57,042	3098
Technology: Network system inadequate and/or near end of useful life	Technology	32,700	SF	3	\$9,326	3099
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	32,700	SF	3	\$55,958	3101
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	\$108,379	3100
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3086
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3091



# Facility Condition Assessment

Barrington - Sowams Elementary School

## Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	\$4,753	3095
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	\$6,275	3092
<b>Sub Total for System</b>		<b>20</b>	<b>items</b>		<b>\$1,019,119</b>	

## Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	\$4,563	Rollup
<b>Sub Total for System</b>		<b>1</b>	<b>items</b>		<b>\$4,563</b>	
<b>Sub Total for Building 01 - Main Building</b>		<b>48</b>	<b>items</b>		<b>\$2,600,956</b>	
<b>Total for Campus</b>		<b>50</b>	<b>items</b>		<b>\$2,693,305</b>	



**Sowams Elementary School - Life Cycle Summary Yrs 1-5**

**Building: 01 - Main Building**

**Electrical**

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Panelboard - 120/240 225A	1	Ea.	\$9,602	4
	<b>Note:</b> North hallway				
	<b>Sub Total for System</b>	<b>1</b>	<b>items</b>	<b>\$9,602</b>	

**Plumbing**

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories	20	Ea.	\$54,380	5
Compressed-Air Systems	Air Compressor (2 hp)	1	Ea.	\$6,383	5
	<b>Note:</b> For pneumatics				
Facility Potable-Water Storage Tanks	Water Storage Tank - 500 Gallon	1	Ea.	\$34,605	5
Plumbing Fixtures	Lavatories	17	Ea.	\$54,078	5
	<b>Note:</b> Porcelain				
Plumbing Fixtures	Toilets	13	Ea.	\$37,077	5
Plumbing Fixtures	Urinal (Ea.)	6	Ea.	\$7,974	5
	<b>Sub Total for System</b>	<b>6</b>	<b>items</b>	<b>\$194,497</b>	
	<b>Sub Total for Building 01 - Main Building</b>	<b>7</b>	<b>items</b>	<b>\$204,099</b>	
	<b>Total for: Sowams Elementary School</b>	<b>7</b>	<b>items</b>	<b>\$204,099</b>	



## Supporting Photos



Site Aerial



Custodial Sink



Typical Classroom



Stage Lighting



# Facility Condition Assessment

Barrington - Sowams Elementary School



High Roof



Library



Multipurpose Room



Unit Heater



Panel With Damaged Door



Multipurpose



# Facility Condition Assessment

Barrington - Sowams Elementary School



Main Entry



Typical Classroom Sink



Art Room



Skylight



Kitchen



Rear Elevation



# Facility Condition Assessment

Barrington - Sowams Elementary School



Bathroom Fixtures And Finishes



Aged Panel



School Sign



Aged Circulating Pump



Main Entrance