Cranston

LEA Summary

Cranston totals 1,641,481 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 April-June 2016. This report provides LEA summary findings for the statewide assessment program.

School Type by Count

School Type	SqFt
Elementary School	695,228
Middle School	413,258
High School	532,995
Total:	**1,641,481**

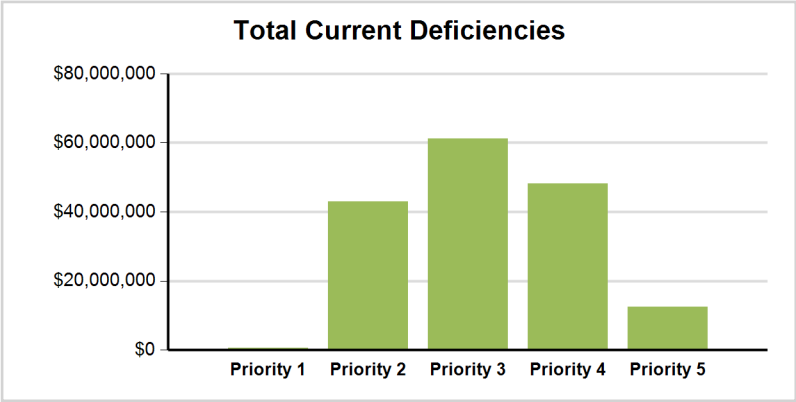
Demographics

Enrollment is projected to decrease by 9.1% over the next 10 years in Cranston. The total LEA enrollment at 24 school(s) is 10,307 students with a total capacity of 11,397 as reported by the LEA. Utilization is calculated by dividing enrollment by capacity, resulting in 90.4% utilization at Cranston.

90.4 % Utilization

Educational Program Space Analysis

In Cranston there are 726 instructional spaces; of these spaces 22.6% meet or exceed the space size standards. Of the total current deficiencies identified, $13,102,973 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 $165,588,929, with 37.0% categorized as Priority 3 and another 29.1% as Priority 4. The building systems with the highest current deficiency costs are Interior and Technology.

The projected life cycle need in Years 1 through 5 is $48,325,997. It is anticipated that the majority of the need will occur in Year 5. School(s) with the greatest need are represented in the adjacent table and make up 30.4% of the combined 5-Year need at Cranston.

School(s) with Greatest Need	Combined 5-Year Need
Cranston High School West	$25,183,153
Cranston High School East	$21,785,939
Hugh B. Bain Middle School	$17,993,738

Five Year Facility Condition Index (FCI)

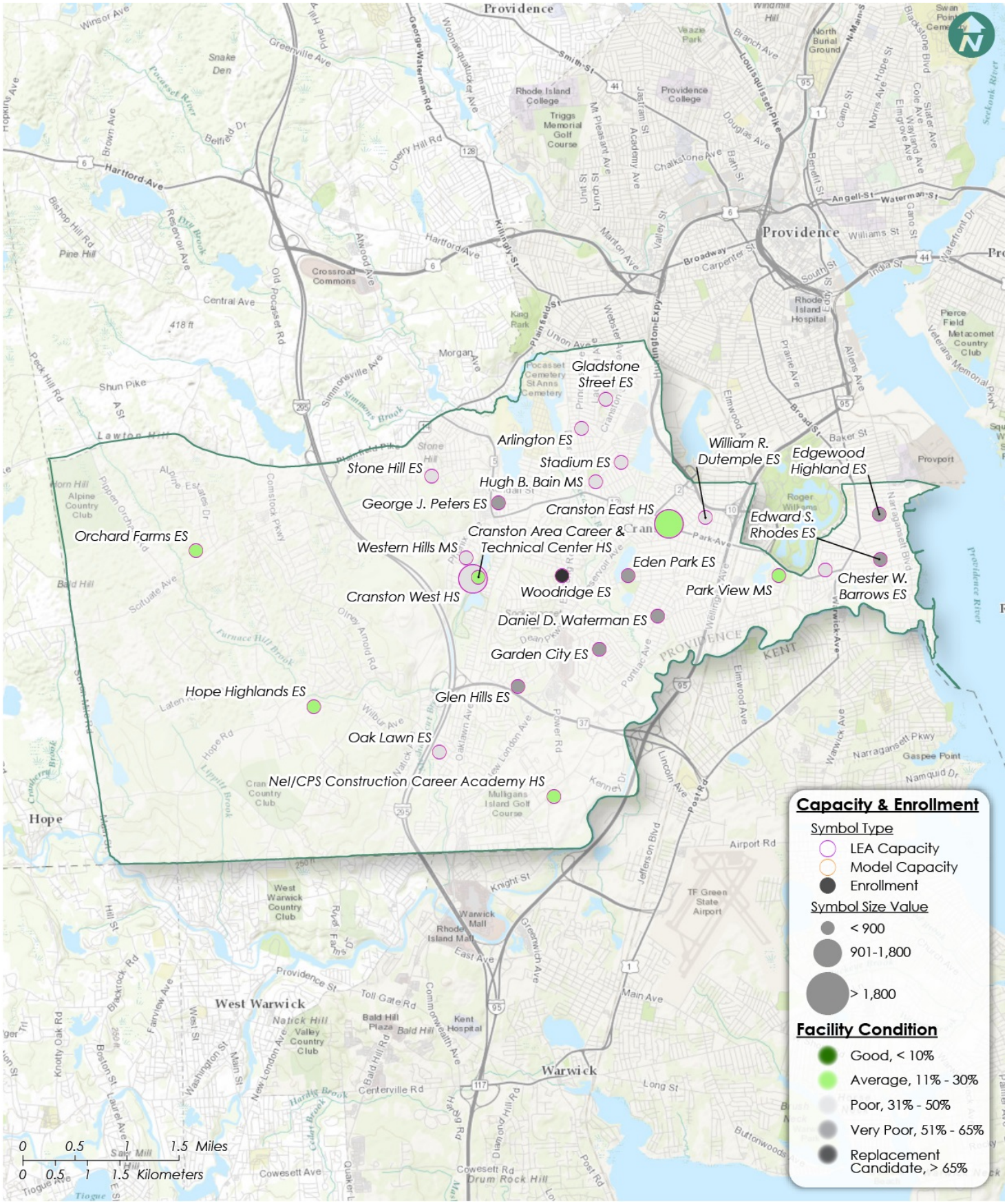
For master planning purposes, the total current deficiencies, less new construction, and the first 5 years of projected life cycle needs were combined. This provides an understanding of the current needs of a facility as well as the projected needs in the near future. A 5-Year FCI was calculated by dividing the 5-Year need by the total replacement cost. The 5-Year need is $213,914,926 with a district replacement value of $579,716,134. The resulting 5-Year FCI is 36.9%.

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
1,641,481	1955	$165,588,929	$48,325,997	$213,914,926	36.9%

Cranston



Facility Condition Assessment

Cranston - Arlington School | *June 2017*

155 Princess Avenue, Cranston, RI 02920

Introduction

Arlington School, located at 155 Princess Avenue in Cranston, Rhode Island, was built in 1957. It comprises 18,498 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.

Arlington School serves grades 1 - 6, has 17 instructional spaces, and has an enrollment of 276. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Arlington School is 278 with a resulting utilization of 99%.

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 Arlington School the 5-year need is $3,650,764. 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 Arlington 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 Arlington School campus, identified by discipline and building.

Site

The site level systems for this campus include:

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

Building Envelope

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

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

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

01 - Main Building:	Single Ply Roofing

Interior

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

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

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler

01 - Main Building:	Steam Condensate Receiver, Tank and Pump
	Radiant Steam Heater
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Window Units
	1 HP or Smaller Pump
	2-Pipe Steam Hydronic Distribution System
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	30 Gallon Electric Water Heater
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1/2 hp)

Electrical

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

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,774	$279,567	$9,090	$294,430	9.28 %
Roofing	-	$250,316	$2,015	-	-	$252,331	7.95 %
Structural	$10,024	-	-	-	-	$10,024	0.32 %
Exterior	-	$554,945	-	-	$107,367	$662,312	20.87 %
Interior	-	-	$234,055	$485,081	$18,367	$737,503	23.24 %
Mechanical	-	$281,834	-	-	$9,899	$291,733	9.19 %
Electrical	-	$58,567	-	-	$34,062	$92,629	2.92 %
Plumbing	-	$14,613	$165,331	$27,676	$9,702	$217,322	6.85 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$610,944	-	-	$610,944	19.25 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,619	-	-	$4,619	0.15 %
Total	$10,024	$1,160,274	$1,022,737	$792,323	$188,488	$3,173,846	

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

The building systems with the most need include:

Interior	-	$737,503
Exterior	-	$662,312
Technology	-	$610,944

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

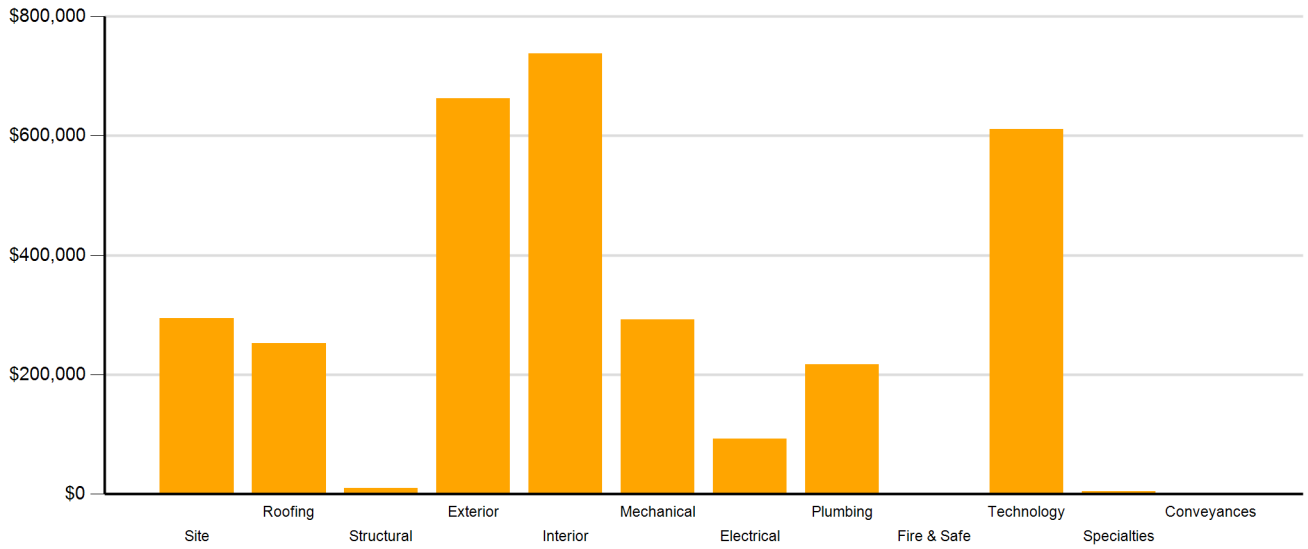


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$48,996	-	$48,996
Barrier to Accessibility	-	-	$12,429	-	-	$12,429
Capital Renewal	$10,024	$1,160,274	$388,971	$378,347	$118,959	$2,056,574
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$4,619	$41,871	$69,529	$116,019
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$323,110	-	$323,110
Technology	-	-	$610,944	-	-	$610,944
Traffic	-	-	$5,774	-	-	$5,774
Total	$10,024	$1,160,274	$1,022,737	$792,323	$188,488	$3,173,846

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

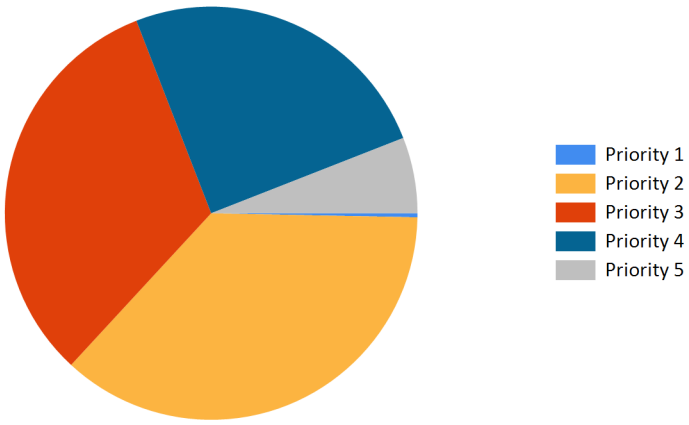


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$294,430	$0	$0	$0	$6,695	$9,815	$16,510	$310,940
Roofing	$252,331	$0	$0	$0	$0	$0	$0	$252,331
Structural	$10,024	$0	$0	$0	$0	$0	$0	$10,024
Exterior	$662,312	$0	$0	$0	$0	$0	$0	$662,312
Interior	$737,503	$0	$0	$0	$37,111	$332,704	$369,815	$1,107,318
Mechanical	$291,733	$0	$0	$0	$0	$0	$0	$291,733
Electrical	$92,629	$0	$0	$0	$0	$0	$0	$92,629
Plumbing	$217,322	$0	$0	$0	$0	$0	$0	$217,322
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$610,944	$0	$0	$0	$0	$0	$0	$610,944
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$4,619	$0	$0	$0	$0	$90,593	$90,593	$95,212
Total	**$3,173,846**	**$0**	**$0**	**$0**	**$43,806**	**$433,112**	**$476,918**	**$3,650,764**

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

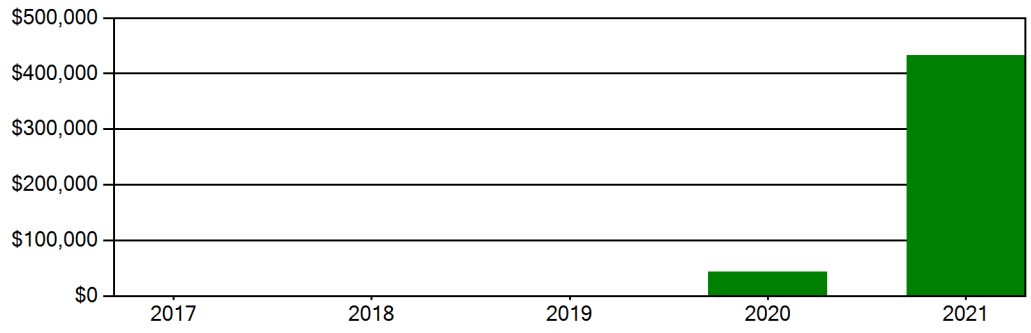
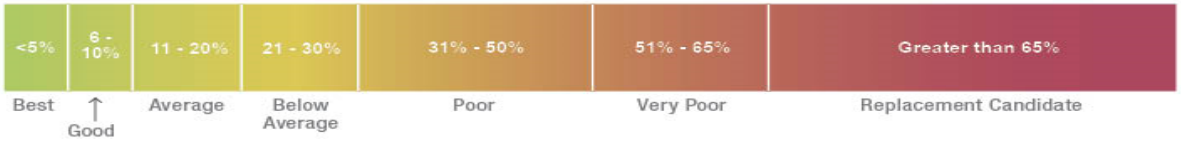


Figure 4: Life Cycle Capital Renewal Forecast

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 $9,134,300. For planning purposes, the total 5-year need at the Arlington School is $3,650,764 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Arlington School facility has a 5-year FCI of 39.97%.

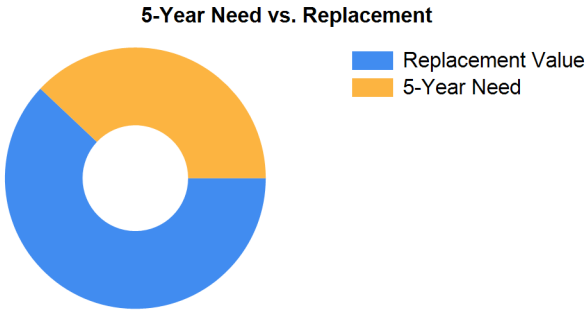


Figure 5: 5-Year FCI

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

Summary of Findings

The Arlington School comprises 18,498 square feet and was constructed in 1957. Current deficiencies at this school total $3,173,846. Five year capital renewal costs total $476,918. The total identified need for the Arlington School (current deficiencies and 5-year capital renewal costs) is $3,650,764. The 5-year FCI is 39.97%.

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
Arlington School Totals	18,498	1957	$3,173,846	$476,918	$3,650,764	39.97%

**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	Traffic	2	Ea.	3	$5,774	16960
Note: Update school zone signs and install flashing beacons on Princess Ave						
Asphalt Paving Requires Replacement	Capital Renewal	33	CAR	4	$138,139	16336
Asphalt Paving Requires Resurfacing	Capital Renewal	14,375	SF	4	$19,020	12581
Location: Asphalt play area						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28445
Note: Backstops Require Replacement						
Fencing Requires Replacement (8' Chain Link Fence)	Capital Renewal	1,000	LF	4	$85,059	16334
Gate Requires Replacement	Capital Renewal	1	Ea.	4	$1,263	16335
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28716
Note: Exterior Basketball Goals are Required						
Play Field Requires Repair	Capital Renewal	500	SF	5	$1,693	12580
Note: Grass play field has boulders and one large hole with a 6" PVC pipe open and exposed. Work orders have been sent in, but have not gotten a response.						
	Sub Total for System	**8**	**items**		**$294,430**	
	Sub Total for School and Site Level	**8**	**items**		**$294,430**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Single-Ply Membrane Roof Covering Requires Replacement	Capital Renewal	18,498	SF	2	$250,316	12601
Note: Roof membrane has deteriorated, warranty expired 2003.						
The Metal Downspouts Require Installation or Replacement	Capital Renewal	30	LF	3	$2,015	12586
Note: PVC downspout in southwest corner is broken.						
	Sub Total for System	**2**	**items**		**$252,331**	

Structural

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Foundation Study Recommended	Capital Renewal	1	Job	1	$10,024	12593
Note: Cracks in south side foundation, exterior brick veneer and interior plaster in Room 2.						
	Sub Total for System	**1**	**items**		**$10,024**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	3,015	SF	2	$537,945	12585
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	200	SF	2	$17,000	18987
The Exterior Requires Painting	Capital Renewal	18,498	SF Wall	5	$107,367	12584
Note: Fascia requires scraping, primer and paint.						
	Sub Total for System	**3**	**items**		**$662,312**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Existing Toilet Stall Does Not Meet Minimum ADA Requirements	Barrier to Accessibility	4	Ea.	3	$12,429	12590
The Interior Door Hardware Requires Replacement	Capital Renewal	67	Door	3	$221,625	18986
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	9,249	SF	4	$105,747	12603
Note: Tiles are damaged.						
Interior Wood Walls Require Replacement	Capital Renewal	150	SF	4	$1,443	12602
Note: Wood panel walls in kitchen are rotting.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	9,250	SF	4	$278,159	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	15	Ea.	4	$4,511	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	956	LF	4	$22,998	Rollup

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
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	1,740	SF	4	$17,441	Rollup
Room Is Excessively Reverberant	Acoustics	2,080	SF	4	$48,996	19816
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	150	SF	4	$5,785	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,309	Rollup
	Sub Total for System	**11**	**items**		**$721,445**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	10	Ea.	2	$178,343	12600
Note: Original unit vents, casing showing signs of deterioration						
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	19	Ea.	2	$103,491	12597
Note: Radiant heaters showing signs of deterioration.						
Remove Abandoned Equipment	Capital Renewal	3	Ea.	5	$9,899	12599
Note: Remove old DHW, fuel pump and fuel tank. Oil storage tank is no longer used.						
	Sub Total for System	**3**	**items**		**$291,733**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$27,064	12598
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$1,933	12588
Note: Main breaker is obsolete - arch flash danger if not maintained regularly.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,112	12595
Note: Panel is obsolete, casing shows signs of rust.						
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	$24,458	12596
Room Has Insufficient Electrical Outlets	Educational Adequacy	40	Ea.	5	$20,092	Rollup
	Sub Total for System	**5**	**items**		**$78,659**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backflow Preventer Requires Replacement	Capital Renewal	1	Ea.	2	$14,613	16339
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	18,498	SF	3	$156,923	12594
Note: Custodian reported brown water, etc. Signs of scaling.						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	6	Ea.	3	$8,408	12592
Note: Urinals are aging and discolored.						
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	1	Ea.	4	$10,776	12589
Note: No longer functioning.						
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	4	Ea.	4	$11,467	12583
Note: Original lavatories showing signs of deterioration.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,433	12591
Note: Does not meet facility's needs, showing signs of deterioration.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**8**	**items**		**$217,322**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$48,114	23323
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	12	Ea.	3	$120,285	23328
Technology: Instructional spaces do not have local sound reinforcement.	Technology	12	Ea.	3	$60,143	23333
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23322

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23320
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23321
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$43,303	23326
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	22	Ea.	3	$9,924	23324
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23331
Technology: Network system inadequate and/or near end of useful life	Technology	10	Ea.	3	$50,119	23332
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	48	Ea.	3	$24,057	23325
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	18,498	SF	3	$33,375	23330
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23327
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23329
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	12	Ea.	3	$19,246	23334
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23335
	Sub Total for System	**16**	**items**		**$610,944**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,619	Rollup
	Sub Total for System	**1**	**items**		**$4,619**	
	Sub Total for Building 01 - Main Building	**50**	**items**		**$2,849,388**	

Building: 02 - Portable A

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,294	Rollup
	Sub Total for System	**1**	**items**		**$2,294**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	4	Ea.	5	$1,996	Rollup
	Sub Total for System	**1**	**items**		**$1,996**	
	Sub Total for Building 02 - Portable A	**2**	**items**		**$4,290**	

Building: 03 - Portable B

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,588	Rollup
	Sub Total for System	**1**	**items**		**$4,588**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,991	Rollup
	Sub Total for System	**1**	**items**		**$3,991**	
	Sub Total for Building 03 - Portable B	**2**	**items**		**$8,579**	

Building: 04 - Portable C

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,588	Rollup
	Sub Total for System	**1**	**items**		**$4,588**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,991	Rollup
	Sub Total for System	**1**	**items**		**$3,991**	
	Sub Total for Building 04 - Portable C	**2**	**items**		**$8,579**	

Building: 05 - Portable D

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,588	Rollup
	Sub Total for System	**1**	**items**		**$4,588**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,991	Rollup
	Sub Total for System	**1**	**items**		**$3,991**	
	Sub Total for Building 05 - Portable D	**2**	**items**		**$8,579**	
	Total for Campus	**66**	**items**		**$3,173,846**	

Arlington 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 - Asphalt		774	SF	$6,695	4
Fences and Gates	Fencing - Chain Link (4 Ft)		150	LF	$9,815	5
		Sub Total for System	**2**	**items**	**$16,510**	
		Sub Total for Building -	**2**	**items**	**$16,510**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		5,549	SF	$37,111	4
Interior Swinging Doors	Wood		60	Door	$280,023	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		4,049	SF	$37,015	5
Suspended Plaster and	Painted ceilings		3,700	SF	$15,666	5
		Sub Total for System	**4**	**items**	**$369,815**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		8	Room	$90,593	5
		Sub Total for System	**1**	**items**	**$90,593**	
		Sub Total for Building 01 - Main Building	**5**	**items**	**$460,408**	
		Total for: Arlington School	**7**	**items**	**$476,918**	

Supporting Photos

Site Aerial

West View

Library In Portable A

Southeast View


Cafeteria/Gym


Northeast View


Northeast View


Typical Classroom


Typical Classroom


Restroom

Northwest View

Cafeteria/Gym

East View

Corridor

Southwest View

West View


West View


Typical Restroom Lavatories


Portable B


Portable A


Portable D


Southeast View


Portable C


Typical Casework


Lobby


Library In Portable A


Custodial Sink

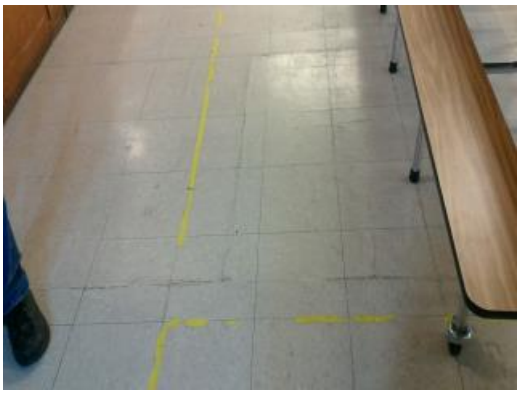

Typical Window


Fascia


PVC Downspout On Southwest Corner


Typical Window


Asphalt Play Area


Cafe/Gym VCT Floor

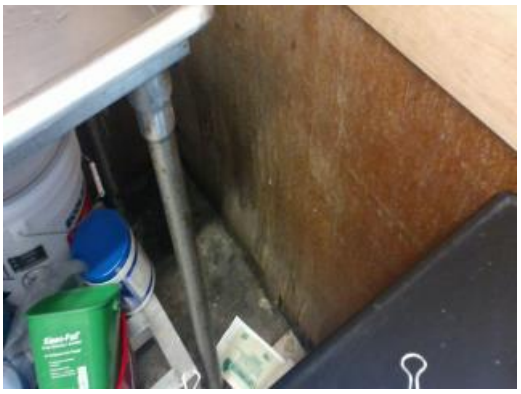

Large Boulder In Play Area


12" Deep Hole With Exposed Pipe


Damaged Ceiling Tiles


Damaged Ceiling Tiles


Rotted Wood Panel- Kitchen


Rotted Wood Panel- Kitchen


Roof


Roof View


Distribution Panel


Unit Vent


Classroom Lavatories


Radiant Heater


Panelboard


Panelboard


Electrical Disconnect


Drinking Fountain


Toilet Stall


Urinals


Cracks On Southeast Corner


Cracks On Southwest Corner


South Wall Foundation Cracks


Cracks On Southwest Corner


Panelboard

Facility Condition Assessment

Cranston - Chester W. Barrows School | *June 2017*

9 Beachmont Avenue, Cranston, RI 02905

Introduction

Chester W. Barrows School, located at 9 Beachmont Avenue in Cranston, Rhode Island, was built in 1924. It comprises 27,064 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.

Chester W. Barrows School serves grades KG - 5, has 16 instructional spaces, and has an enrollment of 190. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Chester W. Barrows School is 283 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 Chester W. Barrows School the 5-year need is $4,768,719. 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.

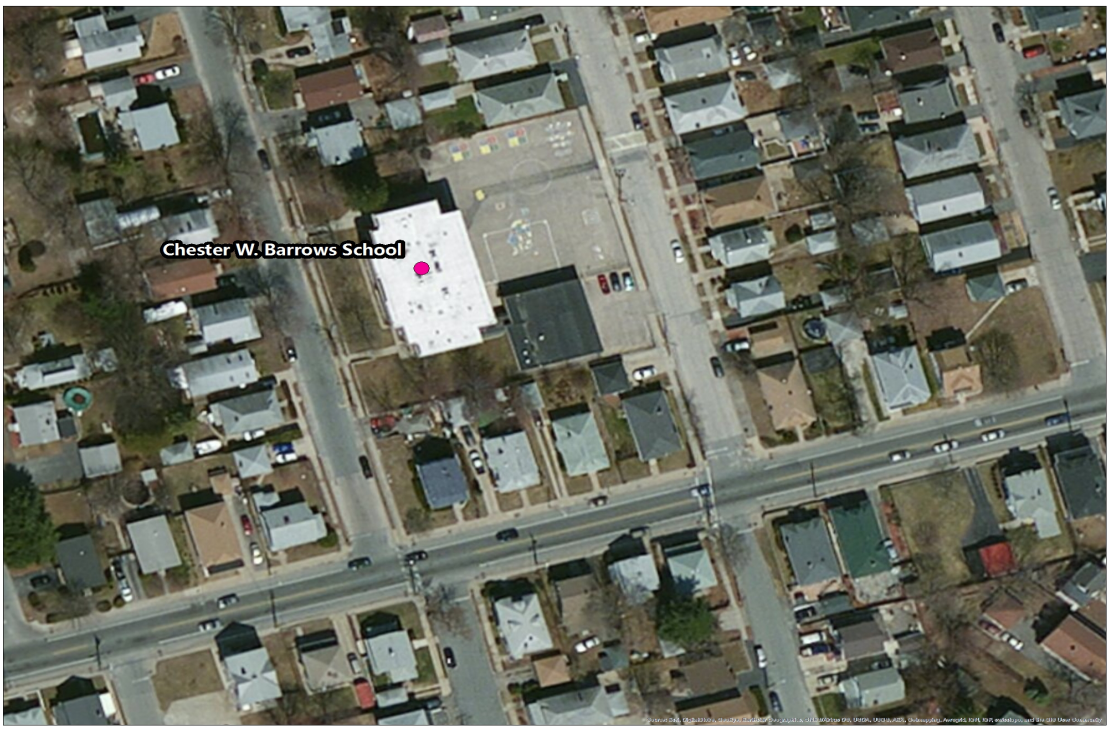


Figure 1: Aerial view of Chester W. Barrows School

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 Chester W. Barrows School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	Single Ply Roofing

Interior

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

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

Mechanical

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

01 - Main Building:	1,275 MBH Cast Iron Water Boiler

01 - Main Building:	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	36 MBH Steam Unit Heater
	Electronic Heating System Controls
	Window Units
	5 HP VFD
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	Large Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Wall Exhaust Fan
	4'x8' Ventilator/Relief Vent
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	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:

01 - Main Building:	400 Amp Distribution Panel
	Panelboard - 277/480 100A
	Building Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$8,769	$85,259	$72,444	$166,472	4.46 %
Roofing	-	$163,251	-	-	-	$163,251	4.37 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$607,031	-	-	-	$607,031	16.25 %
Interior	-	-	$399,540	$461,464	-	$861,004	23.05 %
Mechanical	-	$504,734	-	$37,221	-	$541,955	14.51 %
Electrical	-	$25,332	-	-	$35,790	$61,122	1.64 %
Plumbing	-	-	$366,810	$13,740	$11,233	$391,783	10.49 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$786,664	-	-	$786,664	21.06 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	$147,213	-	$156,451	4.19 %
Total	$0	$1,300,348	$1,571,021	$744,897	$119,467	$3,735,733	

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

The building systems with the most need include:

Interior	-	$861,004
Technology	-	$786,664
Exterior	-	$607,031

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

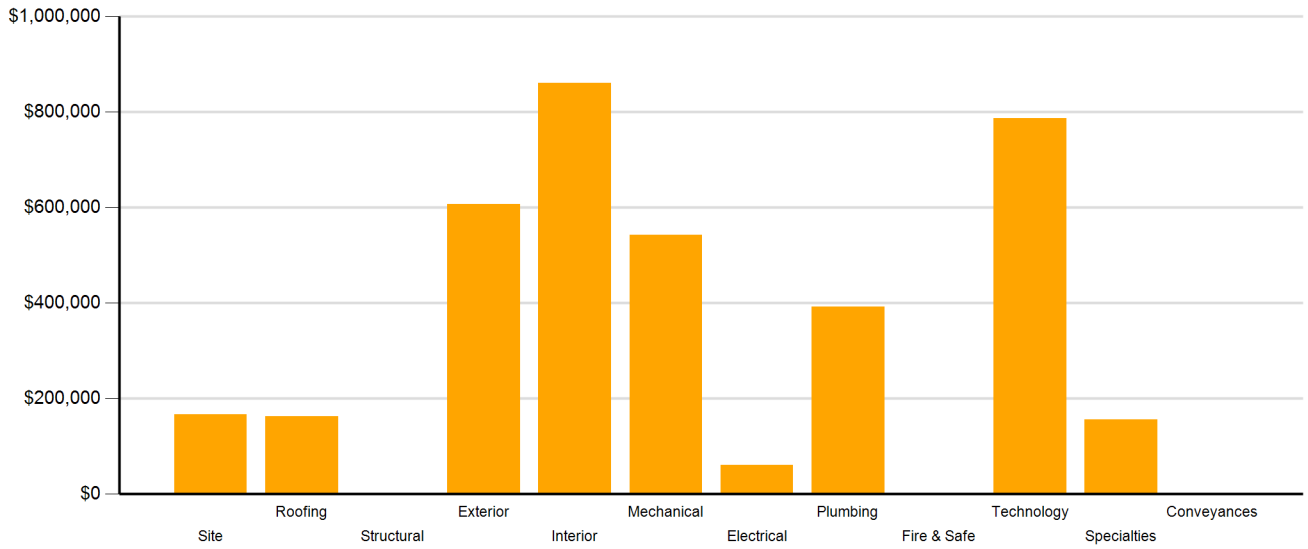


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$31,274	-	$31,274
Barrier to Accessibility	-	-	$253,320	-	-	$253,320
Capital Renewal	-	$1,300,348	$521,799	$246,145	$3,642	$2,071,934
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$9,238	$37,288	$115,824	$162,351
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$430,190	-	$430,190
Technology	-	-	$786,664	-	-	$786,664
Traffic	-	-	-	-	-	$0
Total	$0	$1,300,348	$1,571,021	$744,897	$119,467	$3,735,733

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

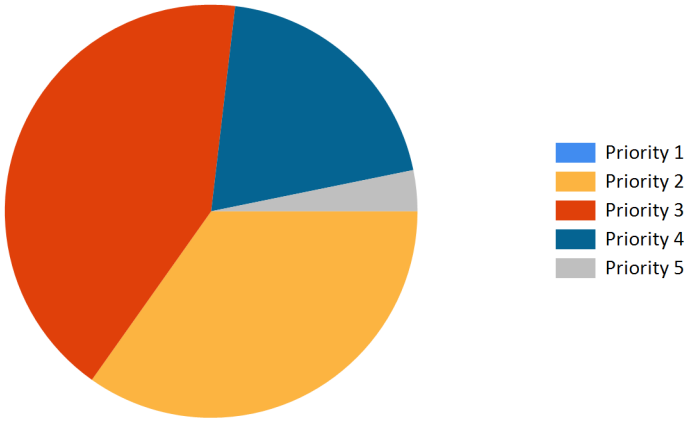


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$166,472	$0	$0	$0	$0	$182,538	$182,538	$349,010
Roofing	$163,251	$0	$0	$0	$0	$0	$0	$163,251
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$607,031	$0	$0	$0	$0	$38,972	$38,972	$646,003
Interior	$861,004	$0	$0	$0	$0	$604,046	$604,046	$1,465,050
Mechanical	$541,955	$0	$0	$0	$83,927	$123,503	$207,430	$749,385
Electrical	$61,122	$0	$0	$0	$0	$0	$0	$61,122
Plumbing	$391,783	$0	$0	$0	$0	$0	$0	$391,783
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$786,664	$0	$0	$0	$0	$0	$0	$786,664
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$156,451	$0	$0	$0	$0	$0	$0	$156,451
Total	**$3,735,733**	**$0**	**$0**	**$0**	**$83,927**	**$949,059**	**$1,032,986**	**$4,768,719**

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

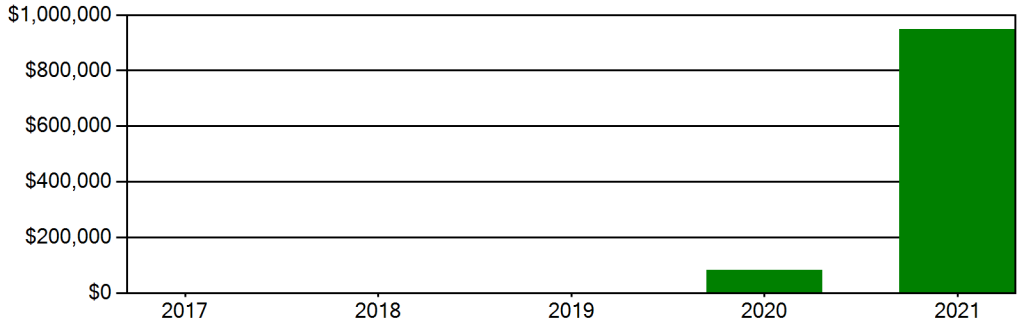
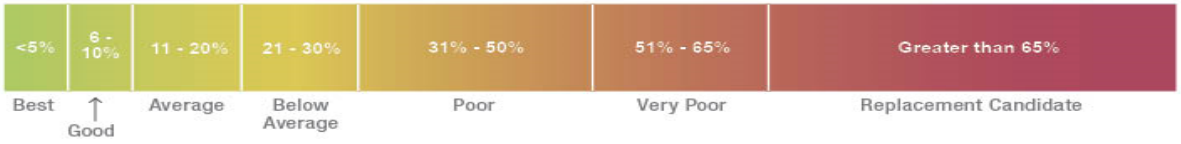


Figure 4: Life Cycle Capital Renewal Forecast

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 $9,472,400. For planning purposes, the total 5-year need at the Chester W. Barrows School is $4,768,719 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Chester W. Barrows School facility has a 5-year FCI of 50.34%.

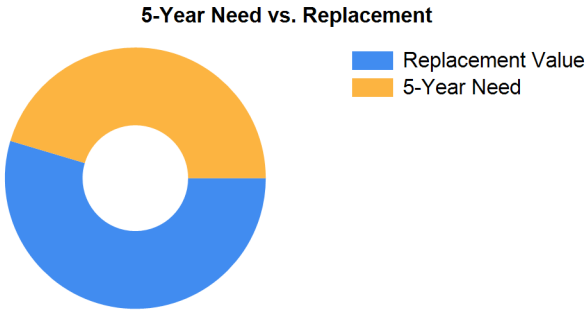


Figure 5: 5-Year FCI

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 150 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 Chester W. Barrows School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $468,720.

Summary of Findings

The Chester W. Barrows School comprises 27,064 square feet and was constructed in 1924. Current deficiencies at this school total $3,735,733. Five year capital renewal costs total $1,032,986. The total identified need for the Chester W. Barrows School (current deficiencies and 5-year capital renewal costs) is $4,768,719. The 5-year FCI is 50.34%.

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
Chester W. Barrows School Totals	27,064	1924	$3,735,733	$1,032,986	$4,768,719	50.34%

**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
Retaining Wall Requires Repair	Capital Renewal	100	SF	3	$8,769	10976
Note: Concrete retaining wall at exterior northwest stair is damaged.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28432
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	110	LF	4	$9,297	11586
Fencing Requires Replacement (8' Chain Link Fence)	Capital Renewal	440	LF	4	$38,673	11587
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,644	28706
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54871
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**6**	**items**		**$166,472**	
	Sub Total for School and Site Level	**6**	**items**		**$166,472**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Single-Ply Membrane Roof Covering Requires Replacement	Capital Renewal	11,600	SF	2	$163,251	10995
Note: The single ply roof membrane is buckling and insulation moves underfoot. The warranty expired 2013.						
	Sub Total for System	**1**	**items**		**$163,251**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	48	SF	2	$8,907	10978
Note: Multipurpose room windows are not functioning appropriately.						
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	6,766	SF	2	$598,124	10994
Note: Windows are aged with single pane glass. Water and air is infiltrating.						
	Sub Total for System	**2**	**items**		**$607,031**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	81	Door	3	$253,320	10981
The Vinyl Composition Tile Requires Replacement	Capital Renewal	11,624	SF	3	$146,220	10979
Note: VCT is cracked, bubbled, and worn.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	11,380	SF	4	$355,899	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	400	SF	4	$4,170	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	7	Ea.	4	$2,189	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	36	LF	4	$901	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - square feet)	Hazardous Material	6,430	SF	4	$67,031	Rollup
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	500	SF	4	$31,274	19751
Note: Gym						
	Sub Total for System	**8**	**items**		**$861,004**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Steam/HW Unit Heater Requires Replacement	Capital Renewal	4	Ea.	2	$7,222	10989
Note: Unit heaters are original to the building, are obsolete, and are deteriorating.						
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	2	Ea.	2	$68,544	10990
Note: Boilers are aged and obsolete.						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	109	Ea.	2	$200,215	10991
Note: Radiators are original to the building and are showing signs of deterioration.						

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	27,064	SF	2	$228,753	10992
Note: Piping is original to the building and should be replaced.						
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	2	Ea.	4	$5,872	10980
Note: Basement bathroom exhaust fans are outdated and obsolete.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	3	Ea.	4	$31,349	10986
Note: Pump bodies are corroded and showing signs of failure.						
	Sub Total for System	**6**	**items**		**$541,955**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$25,332	10987
Note: Panelboards are outdated and obsolete.						
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,642	10977
Note: 5,000 gallon storage tank						
Room Has Insufficient Electrical Outlets	Educational Adequacy	64	Ea.	5	$32,148	Rollup
	Sub Total for System	**3**	**items**		**$61,122**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	27,064	SF	3	$238,774	10985
Note: Domestic water piping is original to the 1924 building. There is occasional brown water and signs of scaling.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$128,036	10993
Note: Sanitary piping is original to the building and should be replaced.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,650	10983
Note: Mop sinks are original to the building and are outdated and deteriorating.						
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	1	Ea.	4	$8,090	10984
Note: Basement water fountain is non-functional.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	5	Ea.	5	$5,651	Rollup
	Sub Total for System	**6**	**items**		**$391,783**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$50,039	23645
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	13	Ea.	3	$284,594	23650
Technology: Instructional spaces do not have local sound reinforcement.	Technology	13	Ea.	3	$67,761	23652
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	23641
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	23640
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,903	23643
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$45,035	23644
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$33,359	23653
Technology: Network system inadequate and/or near end of useful life	Technology	14	Ea.	3	$72,973	23654
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	27,064	SF	3	$50,784	23649
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$59,421	23646
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	23651

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,340	23642
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	13	Ea.	3	$21,683	23648
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	23647
	Sub Total for System	**15**	**items**		**$786,664**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	12	Room	4	$147,213	11585
	Sub Total for System	**2**	**items**		**$156,451**	
	Sub Total for Building 01 - Main Building	**43**	**items**		**$3,569,261**	
	Total for Campus	**49**	**items**		**$3,735,733**	

Chester W. Barrows 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	1,300	SF	$26,895	5
Playfield Areas		ES Playgrounds	1	Ea.	$45,131	5
Parking Lot Pavement		Asphalt	25	CAR	$83,721	5
	Note:	Paved play area				
Parking Lot Pavement		Asphalt	8	CAR	$26,791	5
	Note:	East side of addition				
		Sub Total for System	**4**	**items**	**$182,538**	
		Sub Total for Building -	**4**	**items**	**$182,538**	

Building: 01 - Main Building

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Entrance Doors	Steel - Insulated and Painted	6	Door	$38,972	5
	Sub Total for System	**1**	**items**	**$38,972**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	18,945	SF	$173,189	5
Interior Operable Partitions	Foldable partition (Bldg SF)	300	SF Wall	$35,075	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System	18,945	SF	$227,435	5
Suspended Plaster and	Painted ceilings	5,413	SF	$22,919	5
Wall Painting and Coating	Painting/Staining (Bldg SF)	18,445	SF	$123,357	5
Tile Flooring	Ceramic Tile	812	SF	$22,071	5
	Sub Total for System	**6**	**items**	**$604,046**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	4	Ea.	$68,484	4
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)	2	Ea.	$15,443	4
Exhaust Air	Ventilator/Relief Vent (4'x8')	8	Ea.	$107,344	5
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	$16,159	5
	Sub Total for System	**4**	**items**	**$207,429**	
	Sub Total for Building 01 - Main Building	**11**	**items**	**$850,447**	
	Total for: Chester W. Barrows School	**15**	**items**	**$1,032,985**	

Supporting Photos


Corroded Pumps


Library


Aged Panelboard


Aged Radiant Heaters


Exterior Finishes


Non-Functional Water Fountain


Operable Partition Wall


Playground


Restroom Finishes


Art/Music Room


West Elevation


Gymnasium/Cafeteria


Painted Ceilings


Original Unit Heater


Evidence Of Ponding On Roof


Typical Classroom

Northwest Elevation

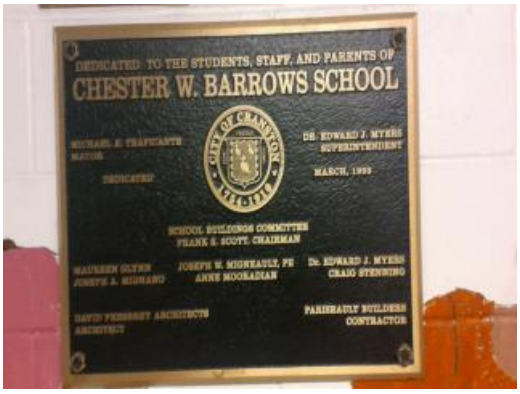
Damaged Retaining Wall

Worn VCT Bubbled At Seams

Aged Windows

Site Aerial

Cracked VCT


DEDICATED TO THE STUDENTS, STAFF, AND PARENTS OF
CHESTER W. BARROWS SCHOOL
DR. EDWARD J. MYERS
SUPERINTENDENT
MARCH, 1993
SCHOOL BUILDINGS COMMITTEE
FRANK S. SCOTT, CHAIRMAN
JOSEPH W. MIGNEAULT, PE
ANNE MOORADIAN
DR. EDWARD J. MYERS
CRAIG STENNING
PARKHEAULT BUILDERS
CONTRACTOR
Plaque

Facility Condition Assessment

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

100 Metropolitan Ave, Cranston, RI 02920

Introduction

Cranston Area Career & Technical Center, located at 100 Metropolitan Ave in Cranston, Rhode Island, was built in 1976. It comprises 43,050 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.

Cranston Area Career & Technical Center serves grades 9 - 12, has 15 instructional spaces, and enrollment was not provided. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Cranston Area Career & Technical Center is 230 with a resulting utilization of 0%.

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 Cranston Area Career & Technical Center the 5-year need is $2,505,405. 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 Cranston Area Career & Technical Center

Approach and Methodology

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

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

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

Discipline Specialists

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

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

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

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

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

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

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

System Summaries

The following tables summarize major building systems at the Cranston Area Career & Technical Center campus, identified by discipline and building.

Site

The site level systems for this campus include:

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

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	E.I.F.S. Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
02 - Greenhouse:	Clear Polycarbonate Exterior Wall
	Steel Exterior Entrance Doors
03 - Quonset Hut 1:	Metal Panel Exterior Wall
	Steel Exterior Entrance Doors
04 - Quonset Hut 2:	Metal Panel Exterior Wall
	Steel Exterior Entrance Doors
05 - Storage:	Vinyl Siding Exterior Wall
	Wood Exterior Doors

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

01 - Main Building:	EPDM Roofing
03 - Quonset Hut 1:	Metal Steep Slope Roofing
04 - Quonset Hut 2:	Metal Steep Slope Roofing
05 - Storage:	Composition Shingle Roofing

Interior

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

01 - Main Building:	Foldable Interior Partition
	Wood Interior Doors
	Steel Interior Doors
	Interior Door Hardware

01 - Main Building:	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Carpet
02 - Greenhouse:	Concrete Flooring
03 - Quonset Hut 1:	Concrete Flooring
04 - Quonset Hut 2:	Concrete Flooring
05 - Storage:	Concrete Flooring

Mechanical

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

01 - Main Building:	200 MBH Copper Tube Boiler
	750 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	20 MBH Steam Unit Heater
	DDC Heating System Controls
	3 Ton Ductless Split System
	3 Ton Outside Air Cooled Condenser
	2 Ton Fan Coil - Water Cool/Water Heat
	5 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	4-Pipe Hydronic Distribution System
	5 Ton DX Gas Roof Top Unit
	Ductwork
	8,000 CFM Energy Recovery Unit
	Supply Fan
	Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	250 Gallon Water Storage Tank
	2" Backflow Preventers

01 - Main Building:	Gas Piping System
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1 hp)

Electrical

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

01 - Main Building:	75 kW Emergency Generator
	Automatic Transfer Switch
	1,600 Amp Switchgear
	45 KVA Transformer
	75 KVA Transformer
	Motor Controller
	Panelboard - 120/208 100A
	Panelboard - 120/208 400A
	Panelboard - 120/240 225A
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	-	$223,570	$64,800	$288,370	16.36 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$38,490	$206,929	$4,588	$250,007	14.18 %
Mechanical	-	$20,452	-	$22,104	-	$42,556	2.41 %
Electrical	-	$100,238	$8,473	-	$3,991	$112,702	6.39 %
Plumbing	-	-	-	$1,701	$18,237	$19,938	1.13 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$858,143	-	-	$858,143	48.69 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$18,351	$136,411	$36,129	$190,892	10.83 %
Total	$0	$120,690	$923,458	$590,715	$127,745	$1,762,608	

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

The building systems with the most need include:

Technology	-	$858,143
Site	-	$288,370
Interior	-	$250,007

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

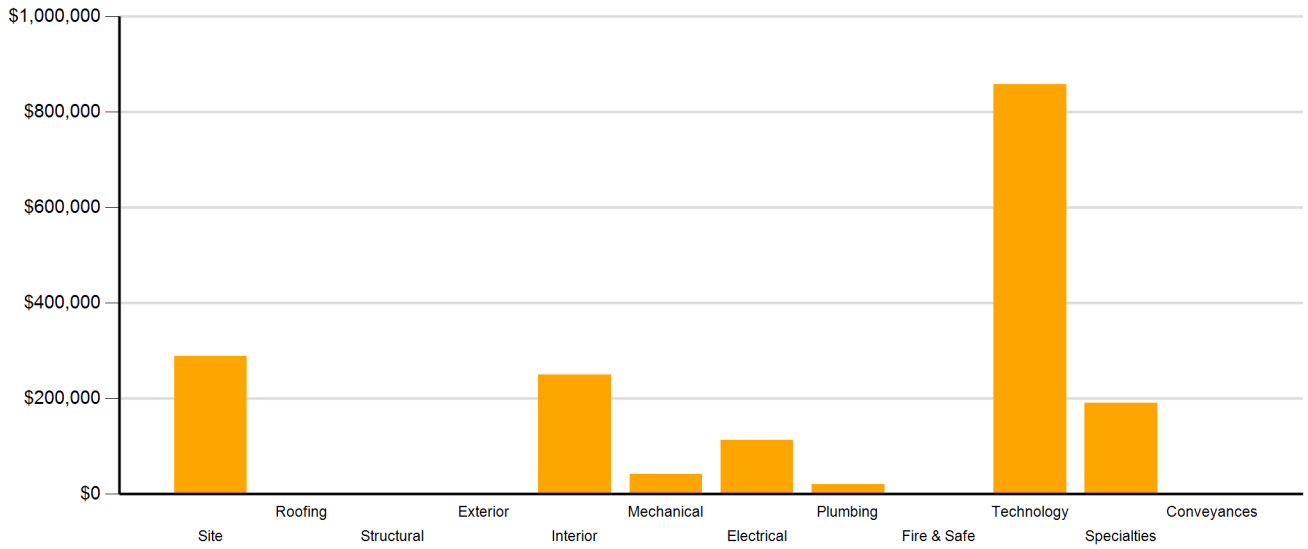


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$141,335	-	$141,335
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$120,690	$46,964	$223,570	-	$391,224
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$35,556	$224,307	$127,745	$387,608
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$1,504	-	$1,504
Technology	-	-	$840,939	-	-	$840,939
Traffic	-	-	-	-	-	$0
Total	$0	$120,690	$923,458	$590,715	$127,745	$1,762,608

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

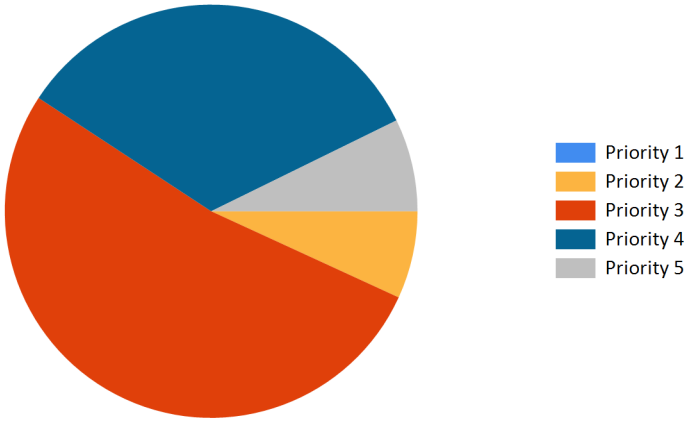


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$288,370	$0	$0	$0	$0	$23,194	$23,194	$311,564
Roofing	$0	$0	$0	$0	$0	$41,859	$41,859	$41,859
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$375,887	$375,887	$375,887
Interior	$250,007	$0	$0	$0	$0	$60,216	$60,216	$310,223
Mechanical	$42,556	$0	$0	$0	$0	$0	$0	$42,556
Electrical	$112,702	$0	$0	$0	$0	$83,103	$83,103	$195,805
Plumbing	$19,938	$0	$0	$0	$0	$0	$0	$19,938
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$858,143	$0	$0	$0	$0	$0	$0	$858,143
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$190,892	$0	$0	$0	$0	$158,538	$158,538	$349,430
Total	**$1,762,608**	**$0**	**$0**	**$0**	**$0**	**$742,797**	**$742,797**	**$2,505,405**

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

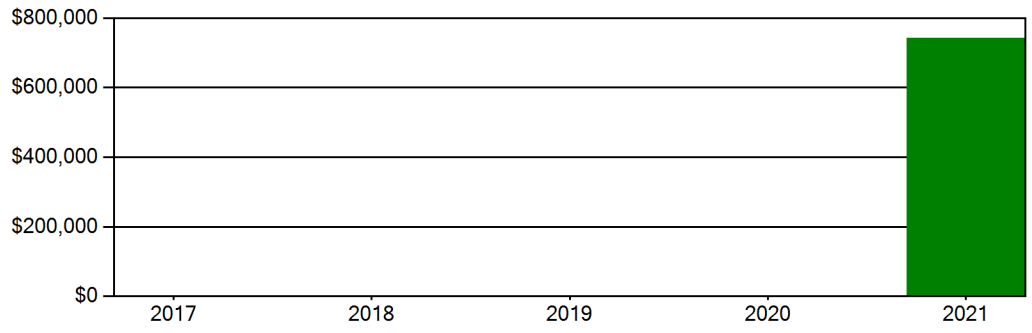
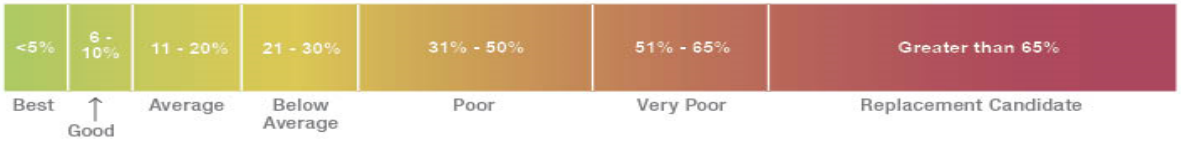


Figure 4: Life Cycle Capital Renewal Forecast

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 $15,498,000. For planning purposes, the total 5-year need at the Cranston Area Career & Technical Center is $2,505,405 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Cranston Area Career & Technical Center facility has a 5-year FCI of 16.17%.

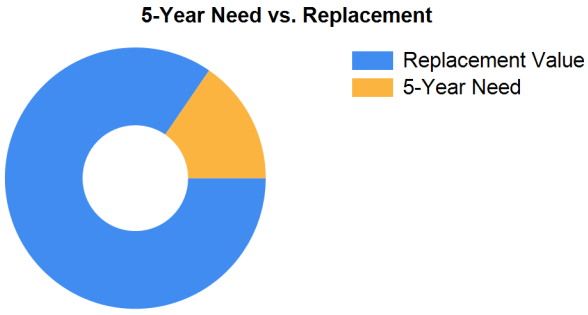


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 210 students.

Facility New Construction

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

The New Construction cost to bring the Cranston Area Career & Technical Center cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Cranston Area Career & Technical Center comprises 43,050 square feet and was constructed in 1976. Current deficiencies at this school total $1,762,608. Five year capital renewal costs total $742,797. The total identified need for the Cranston Area Career & Technical Center (current deficiencies and 5-year capital renewal costs) is $2,505,405. The 5-year FCI is 16.17%.

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
Cranston Area Career & Technical Center Totals	43,050	1976	$1,762,608	$742,797	$2,505,405	16.17%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Asphalt Paving Requires Replacement	Capital Renewal	41	CAR	4	$171,628	12109
Note: Parking lot pavement is deteriorated with cracks, heaving, and pot holes.						
Asphalt Paving Requires Replacement	Capital Renewal	24	CAR	4	$11,114	12110
Note: Roadway asphalt is cracked and weathered.						
Fencing Requires Replacement (8' Chain Link Fence)	Capital Renewal	480	LF	4	$40,828	13064
Note: Fence is rusted and damaged.						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54993
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**4**	**items**		**$288,370**	
	Sub Total for School and Site Level	**4**	**items**		**$288,370**	

Building: 01 - Main Building

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	4,042	SF	3	$38,490	13063
Note: Ceiling tiles are stained and broken.						
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	4	Ea.	4	$1,203	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	30	SF	4	$301	Rollup
Room Is Excessively Reverberant	Acoustics	6,000	SF	4	$141,335	19832
Note: Classrooms without ACT						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	1,673	SF	4	$64,090	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,588	Rollup
	Sub Total for System	**6**	**items**		**$250,007**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Package Roof Top Unit Requires Replacement	Capital Renewal	1	Ea.	2	$20,452	12111
Note: Roof top unit is rusted and deteriorating.						
Lab lacks an appropriate fume hood.	Educational Adequacy	1	Ea.	4	$22,104	Rollup
	Sub Total for System	**2**	**items**		**$42,556**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Generator Requires Replacement	Capital Renewal	1	Ea.	2	$100,238	12113
Note: Generator is old and replacement parts are no longer available.						
Transfer Switch Requires Replacement	Capital Renewal	225	Amps	3	$8,473	12114
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,991	Rollup
	Sub Total for System	**3**	**items**		**$112,702**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Floor Drains Are Required	Educational Adequacy	2	Ea.	4	$1,701	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	12	Ea.	5	$18,237	Rollup
	Sub Total for System	**2**	**items**		**$19,938**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$17,204	Rollup

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	126	Ea.	3	$63,150	23453
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	1	Ea.	3	$501	24387
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	264	Ea.	3	$132,314	24388
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	13	Ea.	3	$130,309	23457
Technology: Instructional spaces do not have local sound reinforcement.	Technology	20	Ea.	3	$100,238	24393
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23452
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	24386
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23450
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$22,854	24385
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23451
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	144	Ea.	3	$64,954	23456
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	24	Ea.	3	$10,826	23454
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	$60,143	23458
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	24	Ea.	3	$12,029	23455
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	38,970	SF	3	$70,313	24392
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	24389
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	25	Ea.	3	$40,095	24390
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	24391
	Sub Total for System	**19**	**items**		**$858,143**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	4	Ea.	3	$18,351	Rollup
Separate Student Kitchen Stations Are Required	Educational Adequacy	2	Ea.	4	$7,493	Rollup
Walk In Cooler/Freezer Is Required	Educational Adequacy	1	Ea.	4	$90,801	Rollup
Welding Bays Are Required	Educational Adequacy	3	Ea.	4	$16,344	Rollup
Work Tables Are Required	Educational Adequacy	6	Ea.	4	$21,773	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	1	Ea.	5	$8,602	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	2	Ea.	5	$27,527	Rollup
	Sub Total for System	**7**	**items**		**$190,892**	
	Sub Total for Building 01 - Main Building	**39**	**items**		**$1,474,238**	
	Total for Campus	**43**	**items**		**$1,762,608**	

Buildings with no reported deficiencies

02 - Greenhouse

03 - Quonset Hut 1

04 - Quonset Hut 2

05 - Storage

Cranston Area Career & Technical Center - 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 - Asphalt	400	SF	$3,460	5
Fences and Gates	Fencing - Chain Link (8 Ft)	290	LF	$19,734	5
	Sub Total for System	**2**	**items**	**$23,193**	
	Sub Total for Building -	**2**	**items**	**$23,193**	

Building: 01 - Main Building

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	E.I.F.S. - Bldg SF basis	18,001	SF	$375,887	5
	Sub Total for System	**1**	**items**	**$375,887**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Interior Operable Partitions	Foldable partition (Bldg SF)	100	SF Wall	$11,692	5
Note:	Director's office				
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System	4,042	SF	$48,524	5
	Sub Total for System	**2**	**items**	**$60,216**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Electrical Service	Switchgear - Main Dist Panel (1600 Amps)	1	Ea.	$83,103	5
	Sub Total for System	**1**	**items**	**$83,103**	

Specialties

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry	14	Room	$158,538	5
	Sub Total for System	**1**	**items**	**$158,538**	
	Sub Total for Building 01 - Main Building	**5**	**items**	**$677,743**	

Building: 03 - Quonset Hut 1

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Steep Slope Roofing	Metal (Architectural - Standing Seam)	1,000	SF	$34,642	5
Note:	Corrugated metal				
	Sub Total for System	**1**	**items**	**$34,642**	
	Sub Total for Building 03 - Quonset Hut 1	**1**	**items**	**$34,642**	

Building: 05 - Storage

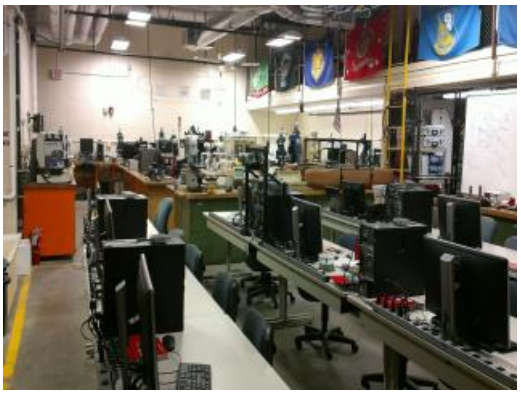
Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Steep Slope Roofing	Composition Shingle	250	SF	$7,217	5
	Sub Total for System	**1**	**items**	**$7,217**	
	Sub Total for Building 05 - Storage	**1**	**items**	**$7,217**	
	Total for: Cranston Area Career & Technical Center	**9**	**items**	**$742,796**	

Supporting Photos

Site Aerial

Southeast Elevation



Robotics Lab

ADA Stall


Typical Classroom


Greenhouse


Greenhouse


Quonset Hut 1


Quonset Hut 1


Quonset Hut 2

CAD Lab

Entry Signage

Green House

Wood Shop

Exterior Brick

Wood Shop


Corridor Finishes


North Elevation


Rusted Roof Top Unit


Generator


Transfer Switch

Facility Condition Assessment

Cranston - Cranston High School East | *June 2017*

899 Park Avenue, Cranston, RI 02910

Introduction

Cranston High School East, located at 899 Park Avenue in Cranston, Rhode Island, was built in 1925. It comprises 238,143 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.

Cranston High School East serves grades 9 - 12, has 86 instructional spaces, and has an enrollment of 1,577. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Cranston High School East is 1,595 with a resulting utilization of 99%.

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 Cranston High School East the 5-year need is $21,785,939. 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.

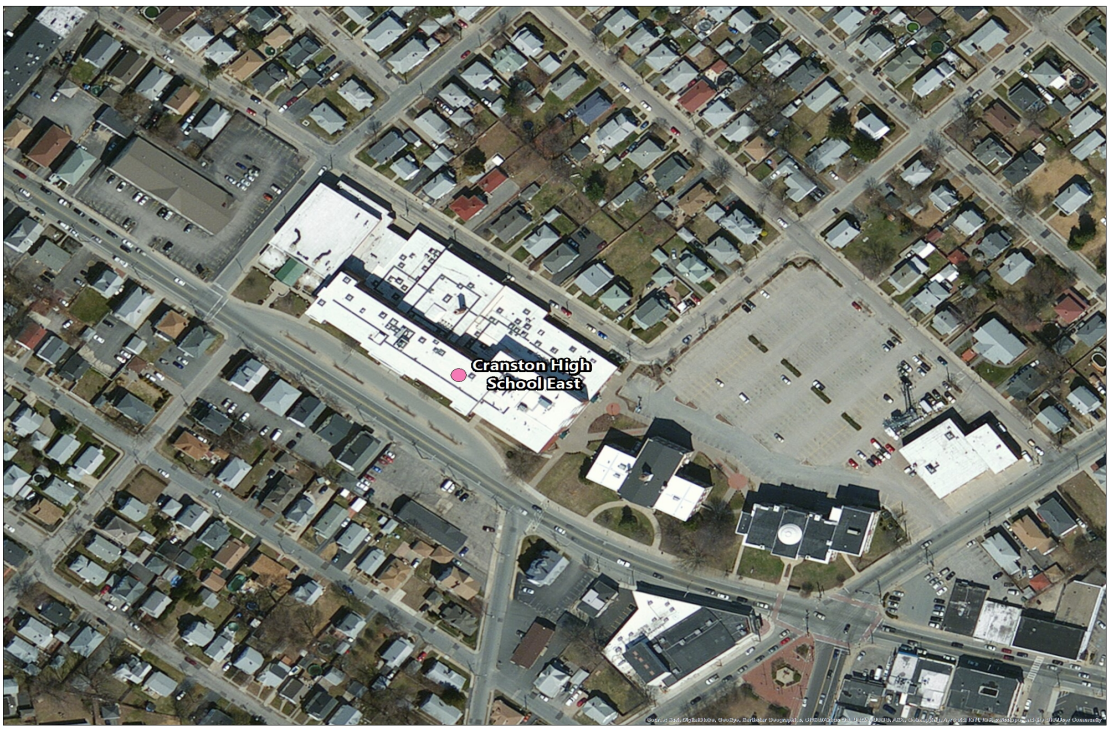


Figure 1: Aerial view of Cranston High School East

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 Cranston High School East campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	CMU Exterior Wall
	E.I.F.S. Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Storefront / Curtain Wall
	Wood Exterior Doors
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

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

01 - Main Building:	Single Ply Roofing

Interior

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

01 - Main Building:	Foldable Interior Partition
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring

01 - Main Building:	Terrazzo Flooring
	Carpet

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	200 MBH Copper Tube Boiler
	400 MBH Copper Tube Boiler
	750 MBH Copper Tube Boiler
	240 GPM Steam to Water Heat Exchanger
	Steam Condensate Receiver, Tank and Pump
	36 MBH Steam Unit Heater
	Steam/Hot Water Heating Unit Vent
	Finned Wall Radiator
	Electronic Heating System Controls
	Pneumatic Heating System Controls
	70 Ton Outdoor Air Cooled Chiller
	10 Ton Condensing Unit
	7.5 Ton Condensing Unit
	1 Ton Fan Coil - Water Cool/Water Heat
	Window Units
	10,000 CFM Energy Recovery Unit
	5 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	10 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	5,000 CFM Outdoor AHU
	Ductwork
	Kitchen Exhaust Hoods
	Laboratory Fume Hood
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	4'x6' Ventilator/Relief Vent
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	100 Gallon Water Storage Tank
	250 Gallon Water Storage Tank

01 - Main Building:	2" Backflow Preventers
	4" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Showers
	Toilets
	Urinals
	Air Compressor (1 hp)

Electrical

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

01 - Main Building:	80 KVA UPS
	1,200 Amp Switchgear
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 277/480 100A
	400 Amp Distribution Panel
	600 Amp Distribution Panel
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	-	$83,526	$1,301,692	$1,385,218	7.00 %
Roofing	-	$914,767	$87	-	-	$914,854	4.62 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$2,106,518	$5,464	$229	-	$2,112,212	10.67 %
Interior	-	-	$2,443,949	$653,724	$1,045,583	$4,143,257	20.93 %
Mechanical	-	$3,330,034	-	$1,037,705	-	$4,367,738	22.06 %
Electrical	$1,429	$395,413	-	-	$122,564	$519,406	2.62 %
Plumbing	-	-	$425,387	$77,174	$59,835	$562,396	2.84 %
Fire and Life Safety	$115,474	-	-	-	-	$115,474	0.58 %
Technology	-	-	$4,440,782	-	-	$4,440,782	22.43 %
Conveyances	-	-	$24,055	-	-	$24,055	0.12 %
Specialties	-	-	$27,714	$1,084,441	$100,462	$1,212,617	6.12 %
Total	$116,903	$6,746,732	$7,367,438	$2,936,800	$2,630,135	$19,798,009	

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

The building systems with the most need include:

Technology	-	$4,440,782
Mechanical	-	$4,367,738
Interior	-	$4,143,257

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

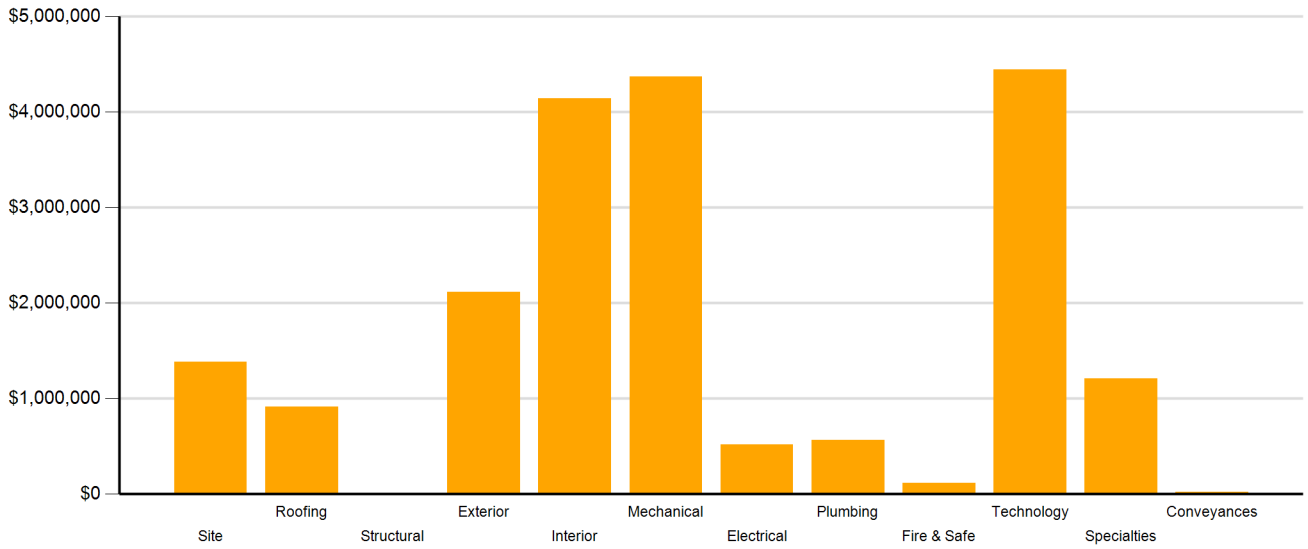


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$292,309	-	$292,309
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$6,746,732	$2,898,943	$2,143,980	$1,045,583	$12,835,238
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$116,903	-	$224,019	$217,293	$1,584,552	$2,142,767
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$283,218	-	$283,218
Technology	-	-	$4,244,476	-	-	$4,244,476
Traffic	-	-	-	-	-	$0
Total	$116,903	$6,746,732	$7,367,438	$2,936,800	$2,630,135	$19,798,009

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

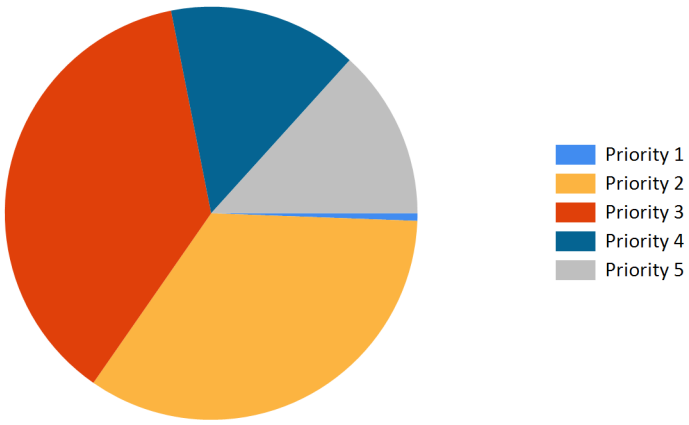


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,385,218	$0	$0	$0	$0	$550,732	$550,732	$1,935,950
Roofing	$914,854	$0	$0	$0	$0	$0	$0	$914,854
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$2,112,212	$0	$0	$0	$0	$285,876	$285,876	$2,398,088
Interior	$4,143,257	$0	$0	$0	$121,117	$311,824	$432,941	$4,576,198
Mechanical	$4,367,738	$0	$0	$0	$289,939	$73,896	$363,835	$4,731,574
Electrical	$519,406	$0	$0	$0	$0	$0	$0	$519,406
Plumbing	$562,396	$0	$0	$0	$65,862	$0	$65,862	$628,258
Fire and Life Safety	$115,474	$0	$0	$0	$0	$0	$0	$115,474
Technology	$4,440,782	$0	$0	$0	$0	$0	$0	$4,440,782
Conveyances	$24,055	$0	$0	$288,684	$0	$0	$288,684	$312,739
Specialties	$1,212,617	$0	$0	$0	$0	$0	$0	$1,212,617
Total	**$19,798,009**	**$0**	**$0**	**$288,684**	**$476,918**	**$1,222,328**	**$1,987,930**	**$21,785,939**

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

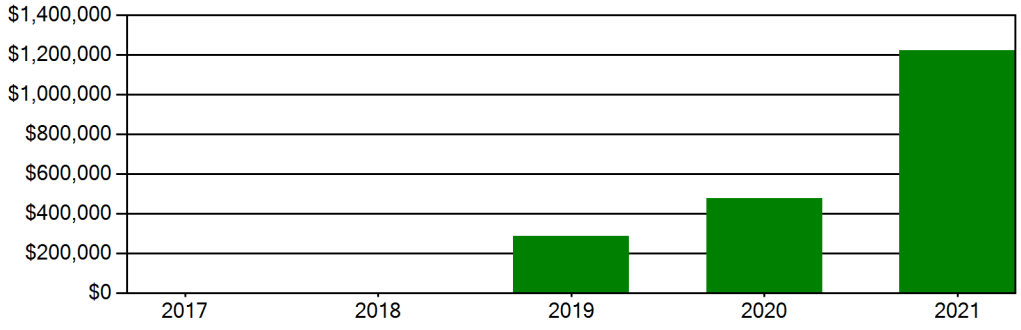
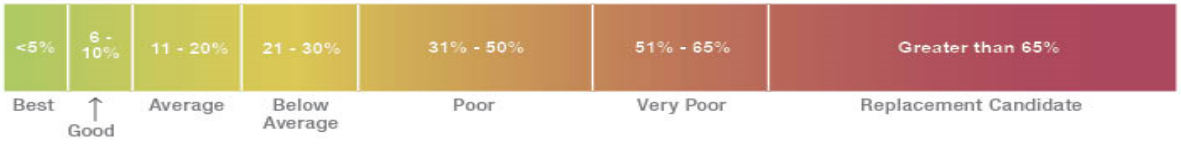


Figure 4: Life Cycle Capital Renewal Forecast

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 $85,731,480. For planning purposes, the total 5-year need at the Cranston High School East is $21,785,939 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Cranston High School East facility has a 5-year FCI of 25.41%.

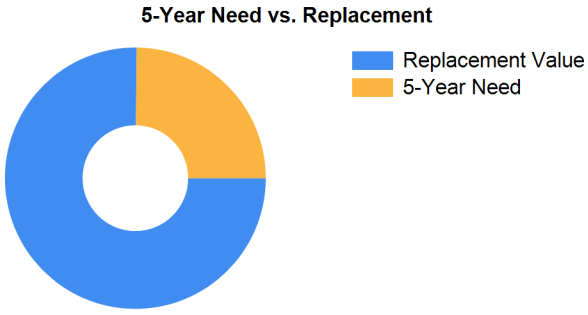


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 1,287 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 Cranston High School East cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $741,830.

Summary of Findings

The Cranston High School East comprises 238,143 square feet and was constructed in 1925. Current deficiencies at this school total $19,798,009. Five year capital renewal costs total $1,987,930. The total identified need for the Cranston High School East (current deficiencies and 5-year capital renewal costs) is $21,785,939. The 5-year FCI is 25.41%.

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
Cranston High School East Totals	238,143	1925	$19,798,009	$1,987,930	$21,785,939	25.41%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Asphalt Paving Requires Replacement	Capital Renewal	12	CAR	4	$46,238	11605
Note: Install visitor and handicap parking (exact number depends on available area for visitor/handicap parking. 7 Visitor, 5 Handicap)						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28434
Note: Backstops Require Replacement						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54873
Note: PE / Recess Playfield is Missing and is Needed						
School has insufficient # of tennis courts.	Educational Adequacy	1	Ea.	5	$212,705	29002
Note: School has insufficient # of tennis courts.						
School has insufficient baseball fields.	Educational Adequacy	1	Ea.	5	$273,448	28317
Note: School has insufficient baseball fields.						
School has insufficient football/soccer fields.	Educational Adequacy	1	Ea.	5	$124,295	28187
Note: School has insufficient football/soccer fields.						
School has insufficient softball fields.	Educational Adequacy	1	Ea.	5	$198,871	28359
Note: School has insufficient softball fields.						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$427,573	28233
Note: School lacks a competition track.						
	Sub Total for System	**8**	**items**		**$1,385,218**	
	Sub Total for School and Site Level	**8**	**items**		**$1,385,218**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Single-Ply Membrane Roof Covering Requires Replacement	Capital Renewal	65,000	SF	2	$914,767	9701
Note: Ponding, staining, buckling of membrane and insulation feels loose when you walk on it.						
Location: Orginal building and gym addition						
The Roof Drains Require Cleaning	Capital Renewal	2	Ea.	3	$87	9671
Note: At the front of the building between the gym addition and original building and on the low roof near the access ladder to the gym roof. Deep standing water in both areas.						
	Sub Total for System	**2**	**items**		**$914,854**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	7,000	SF	2	$618,810	9695
Note: Storefront windows in 3rd and 4th floor classrooms at rear of building are being kept shut with duct tape.						
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	16,829	SF	2	$1,487,708	9696
Note: Original single pane glass. Do not operate properly and let air in.						
Exterior Metal Door Requires Repainting	Capital Renewal	24	Door	3	$5,464	9670
Note: All exterior doors need scraping, priming and painting.						
Handrail Requires Repainting	Capital Renewal	20	LF	4	$229	9680
Note: Paint is peeling at exterior handrail.						
	Sub Total for System	**4**	**items**		**$2,112,212**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Doors Require Replacement	Capital Renewal	157	Door	3	$793,789	9673
Note: Doors and hardware are worn and damaged.						
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	16,000	SF	3	$158,455	9672
Location: 4th floor corridor, Nurses' Office, and miscellaneous older classrooms						
The Interior Door Hardware Requires Replacement	Capital Renewal	303	Door	3	$1,042,366	9681
Note: No master key. Custodian has ring with 20+ keys for all doors in building.						

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Vinyl Composition Tile Requires Replacement	Capital Renewal	35,721	SF	3	$449,339	9674
Note: VCT in classrooms needs replacement, it's damaged and seams are lifting.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	5,000	SF	4	$59,453	9703
Note: Adhesive is failing and the tiles are falling in cafe.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	130	SF	4	$4,066	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	76	Ea.	4	$23,768	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	320	LF	4	$8,006	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	23,730	SF	4	$247,378	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	1,200	SF	4	$37,529	19754
Note: Classrooms adjacent to auditorium						
Room Is Excessively Reverberant	Acoustics	10,400	SF	4	$254,780	19757
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	486	SF	4	$18,744	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	105,542	SF	5	$764,669	Rollup
The Gypsum Board Ceilings Require Repainting	Capital Renewal	61,243	SF	5	$280,914	Rollup
	Sub Total for System	**14**	**items**		**$4,143,257**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	26,000	SF	2	$419,128	9688
Note: Ductwork was installed around the 1950's.						
Replace Unit Vent	Capital Renewal	8	Ea.	2	$148,381	9700
Note: Cabinet unit heaters are falling apart.						
The Air Handler HVAC Component Requires Replacement	Capital Renewal	4	Ea.	2	$189,204	9682
Note: Air handling units are outdated and their components are no longer available.						
Location: Boiler room, cafeteria, kitchen, and shop area						
The Boiler HVAC Component Requires Replacement	Capital Renewal	3	Ea.	2	$560,357	9683
Note: Boilers installed in the early 1970's are inefficient and their components are no longer available.						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	128	Ea.	2	$235,115	9687
Note: Fin tube radiator in oldest part of building is in disrepair. Casings show signs of rust and deterioration.						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	119,071	SF	2	$1,006,422	9689
Note: HVAC piping in majority of building is original to 1930's install						
The Steam Condensate Receiver Requires Replacement	Capital Renewal	2	Ea.	2	$771,428	18006
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	119,071	SF	4	$881,929	9692
Note: Controls are very unreliable, many leaks throughout building per HVAC mechanics.						
Lab lacks an appropriate fume hood.	Educational Adequacy	7	Ea.	4	$155,776	Rollup
	Sub Total for System	**9**	**items**		**$4,367,738**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	1	Ea.	1	$1,429	Rollup
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$75,725	9690
The Distribution Panel Requires Replacement	Capital Renewal	2	Ea.	2	$63,883	9691
The Electrical Disconnect Requires Replacement	Capital Renewal	28	Ea.	2	$56,277	9675
The Panelboard Requires Replacement	Capital Renewal	22	Ea.	2	$185,768	9684
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$8,444	9685
Note: Panelboard in Shop is missing blanks over bus bar.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,317	9686
Note: Panelboard is being used as a junction box, is not secured, and poses a hazard.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	244	Ea.	5	$122,564	Rollup
	Sub Total for System	**8**	**items**		**$519,406**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Gas Water Heater Requires Replacement	Capital Renewal	2	Ea.	3	$12,818	9699
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	23,814	SF	3	$210,101	9679
Note: Domestic water piping in original part of building is deteriorating and scaling.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$128,036	9694
Note: Sanitary sewer piping is well beyond its anticipated life cycle. District plumber reported backups, etc.						
Water Storage Tank Requires Replacement	Capital Renewal	3	Ea.	3	$74,432	9702
Note: Storage tanks were installed in 1970's						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	13	Ea.	4	$36,726	9677
Note: Mop sinks are deteriorating and outdated.						
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	5	Ea.	4	$40,448	9678
Note: Water fountains outside Room 413, in the gym and adjacent areas are no longer operable.						
Room lacks a drinking fountain.	Educational Adequacy	7	Ea.	5	$7,814	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	34	Ea.	5	$52,021	Rollup
	Sub Total for System	**8**	**items**		**$562,396**	

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	10	Ea.	1	$115,474	Rollup
	Sub Total for System	**1**	**items**		**$115,474**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	34	Ea.	3	$196,305	Rollup
Technology: Auditorium AV/Multimedia system is inadequate.	Technology	1	Room	3	$364,865	24608
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	816	Ea.	3	$425,328	24607
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	75	Ea.	3	$781,853	24610
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	75	Ea.	3	$781,853	24618
Technology: Gymnasium sound system is nonexistent, inadequate, or near end of useful life.	Technology	1	Ea.	3	$10,008	24609
Technology: Instructional spaces do not have local sound reinforcement.	Technology	75	Ea.	3	$390,926	24615
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	6	Ea.	3	$35,027	24602
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,622	24599
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,622	24600
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,622	24601
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$41,282	24596
Technology: Intermediate Telecommunications Room needs M/E improvements.	Technology	1	Ea.	3	$26,687	24597
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$18,347	24598
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	3	Ea.	3	$15,637	24603
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	24594
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	24593

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,903	24595
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	400	Ea.	3	$187,645	24605
Technology: Network system inadequate and/or near end of useful life	Technology	13	Ea.	3	$108,417	24613
Technology: Network system inadequate and/or near end of useful life	Technology	38	Ea.	3	$198,069	24614
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	238,143	SF	3	$446,862	24612
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	24611
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	6	Ea.	3	$31,274	24604
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	2	Ea.	3	$13,761	24606
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	75	Ea.	3	$125,096	24616
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	24617
	Sub Total for System	**27**	**items**		**$4,440,782**	

Conveyances

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Dumbwaiter Requires Replacement	Capital Renewal	1	Ea.	3	$24,055	9693
	Sub Total for System	**1**	**items**		**$24,055**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	6	Ea.	3	$27,714	Rollup
The Metal Student Lockers Require Replacement	Capital Renewal	2,000	Ea.	4	$1,078,956	9697
Note: Many lockers are broken and the locks do not function well.						
Welding Bays Are Required	Educational Adequacy	1	Ea.	4	$5,485	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	10	Ea.	5	$86,605	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	1	Ea.	5	$13,857	Rollup
	Sub Total for System	**5**	**items**		**$1,212,617**	
	Sub Total for Building 01 - Main Building	**79**	**items**		**$18,412,791**	
	Total for Campus	**87**	**items**		**$19,798,009**	

Cranston High School East - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Landscape Lighting	Ground Mounted Fixtures (Ea.)	8	Ea.	$14,919	5
Note:	In stone walkway, gym entrance				
Parking Lot Pavement	Asphalt	160	CAR	$535,813	5
Note:	Shared with fire department and city hall				
	Sub Total for System	**2**	**items**	**$550,732**	
	Sub Total for Building -	**2**	**items**	**$550,732**	

Building: 01 - Main Building

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	E.I.F.S. - Bldg SF basis	11,907	SF	$248,636	5
Exterior Utility Doors	Overhead	1	Door	$37,240	5
	Sub Total for System	**2**	**items**	**$285,876**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet	5,500	SF	$121,117	4
Interior Operable Partitions	Foldable partition (Bldg SF)	1,200	SF Wall	$140,300	5
Note:	Rooms 220, 314, 302 & 304.				
Wall Paneling	Wood Panel wall	2,381	SF	$21,995	5
Resilient Flooring	Vinyl Composition Tile Flooring	11,908	SF	$138,270	5
Terrazzo Flooring	Terrazzo	150	SF	$11,259	5
	Sub Total for System	**5**	**items**	**$432,941**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	12	Ea.	$205,451	4
Decentralized Cooling	Window Units	25	Ea.	$84,488	4
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	$16,159	5
Exhaust Air	Laboratory Fume Hood	2	Ea.	$57,737	5
	Sub Total for System	**4**	**items**	**$363,834**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Compressed-Air Systems	Air Compressor (1 hp)	1	Ea.	$6,124	4
Plumbing Fixtures	Refrigerated Drinking Fountain	8	Ea.	$59,738	4
	Sub Total for System	**2**	**items**	**$65,862**	

Conveyances

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Elevators	Hydraulic (Passenger Elev)	1	Ea.	$288,684	3
	Sub Total for System	**1**	**items**	**$288,684**	
	Sub Total for Building 01 - Main Building	**14**	**items**	**$1,437,198**	
	Total for: Cranston High School East	**16**	**items**	**$1,987,930**	

Supporting Photos


Ponding On Roof


Ponding On Roof


Ponding And Debris On Roof


Weathered Roof Membrane

Site Aerial

Computer Lab

Front

Cafeteria

Rear Of Building

Child Development


Side Of Building


Front


Life Skills


Cafeteria Ceiling


Gymnasium

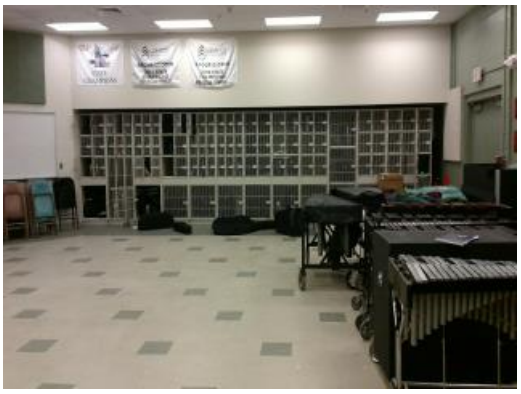
Interior Entry

Music Room

Music Room

Side Of Building

Auditorium



Band Room

Classroom


Rear Of Building


Front


Front

Wrestling Room


Child Development


Cafeteria


Life Skills


Art Room


Typical Classroom


Gymnasium


Science Lab


Library


Toilet Room Upper Floors


New Wing Typical Classroom


Toilet Room Lower Floor


Art Room


Cabinet Unit Heater


Toilet Room Gym Addition


Weight Room


Cafeteria


Auto Shop

Typical Exterior Metal Door


Art Director's Office Ceiling Tiles


4th Floor Corridor Acoustical Ceiling Tiles

Damaged Interior Wood Door


Damaged VCT In Classrooms


Original Disconnects


Peeling Handrail


Fin Tube Radiant Heater


Single Pane Windows


Storefront Windows


Classroom


Damaged Lockers

Facility Condition Assessment

Cranston - Cranston High School West | *June 2017*

80 Metropolitan Avenue, Cranston, RI 02920

Introduction

Cranston High School West, located at 80 Metropolitan Avenue in Cranston, Rhode Island, was built in 1958. It comprises 205,632 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.

Cranston High School West serves grades 9 - 12, has 92 instructional spaces, and has an enrollment of 1,476. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Cranston High School West is 1,494 with a resulting utilization of 99%.

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 Cranston High School West the 5-year need is $25,183,153. 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 Cranston High School West

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 Cranston High School West campus, identified by discipline and building.

Site

The site level systems for this campus include:

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

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	E.I.F.S. Exterior Wall
	Aluminum Exterior Windows
	Vinyl on Wood Frame Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
03 - Auditorium and Music:	Brick Exterior Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors
04 - Gymnasium:	Wood Siding Exterior Wall
	Brick Exterior Wall
	Painted Exterior Wall
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
	Overhead Exterior Utility Doors
05 - E Building:	Brick Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
06 - Building 6:	Metal Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors

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

01 - Main Building:	Built-Up Roofing With Ballast
	EPDM Roofing
03 - Auditorium and Music:	Composition Shingle Roofing
	EPDM Roofing
04 - Gymnasium:	EPDM Roofing

05 - E Building:	EPDM Roofing
06 - Building 6:	Metal Steep Slope Roofing

Interior

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

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Interior Wall Painting
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
03 - Auditorium and Music:	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Acoustical Wall Paneling
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
04 - Gymnasium:	Wood Interior Doors
	Steel Interior Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings

04 - Gymnasium:	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
05 - E Building:	Steel Interior Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Interior Wall Painting
	Vinyl Composition Tile Flooring
	Carpet
06 - Building 6:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Interior Wall Painting
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	1,275 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	36 MBH Steam Unit Heater
	DDC Heating System Controls
	1 Ton Ductless Split System
	Window Units
	Make-up Air Unit
	50 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	15 Ton DX Gas Roof Top Unit
	Ductwork
	Roof Exhaust Fan
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Laboratory Fume Hood
	4'x6' Ventilator/Relief Vent
	Fire Sprinkler System

03 - Auditorium and Music:	200 MBH Gas Furnace
	DDC Heating System Controls
	2-Pipe Hot Water Hydronic Distribution System
	20,000 CFM Interior AHU
	Ductwork
	Large Roof Exhaust Fan
	Fire Sprinkler System
04 - Gymnasium:	75 MBH Gas Furnace
	DDC Heating System Controls
	2-Pipe Hot Water Hydronic Distribution System
	20,000 CFM Interior AHU
	Ductwork
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Fire Sprinkler System
05 - E Building:	400 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	36 MBH Steam Unit Heater
	DDC 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
	Roof Exhaust Fan
	Fire Sprinkler System
06 - Building 6:	Electronic Heating System Controls
	2,000 CFM Interior AHU
	Roof Exhaust Fan

Plumbing

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

04 - Gymnasium:	500 Gallon Water Storage Tank
01 - Main Building:	4" Backflow Preventers
	Gas Piping System
	200 Gallon Electric Water Heater
05 - E Building:	Gas Piping System
	6.4 GPM Instant Water Heater
04 - Gymnasium:	Gas Piping System
	75 Gallon Gas Water Heater
03 - Auditorium and Music:	Gas Piping System

03 - Auditorium and Music:	40 Gallon Gas Water Heater
01 - Main Building:	Domestic Water Piping System
05 - E Building:	Domestic Water Piping System
04 - Gymnasium:	Domestic Water Piping System
03 - Auditorium and Music:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
05 - E Building:	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
04 - Gymnasium:	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Showers
	Toilets
	Urinals
03 - Auditorium and Music:	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
05 - E Building:	Air Compressor (1/2 hp)

Electrical

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

01 - Main Building:	600 Amp Switchgear
	30 KVA Transformer
	45 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 277/480 225A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Light Fixtures

01 - Main Building:	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
03 - Auditorium and Music:	600 Amp Switchgear
	600 Amp Distribution Panel
	Panelboard - 120/208 225A
	Panelboard - 120/240 100A
	Light Fixtures
	Building Mounted Lighting Fixtures
04 - Gymnasium:	100 kW Emergency Generator
	Automatic Transfer Switch
	600 Amp Switchgear
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
05 - E Building:	600 Amp Switchgear
	Panelboard - 120/208 125A
	Panelboard - 120/240 100A
	Building Mounted Lighting Fixtures
	Light Fixtures
06 - Building 6:	Panelboard - 120/208 100A
	Electrical Disconnect
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$334,594	$1,949,868	$192,456	$2,476,918	14.91 %
Roofing	-	$1,281,363	-	-	-	$1,281,363	7.71 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$160,380	-	$45,207	-	$205,587	1.24 %
Interior	-	-	$1,392,339	$3,139,026	$954,531	$5,485,896	33.03 %
Mechanical	-	$267,415	-	$176,287	-	$443,701	2.67 %
Electrical	$2,859	$696,989	$3,766	-	$114,010	$817,625	4.92 %
Plumbing	-	-	$2,003,601	$198,382	$46,767	$2,248,749	13.54 %
Fire and Life Safety	$92,379	-	-	-	-	$92,379	0.56 %
Technology	-	-	$3,000,351	-	-	$3,000,351	18.06 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	$460,410	$96,998	$557,408	3.36 %
Total	$95,238	$2,406,147	$6,734,651	$5,969,180	$1,404,761	$16,609,978	

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

The building systems with the most need include:

Interior	-	$5,485,896
Technology	-	$3,000,351
Site	-	$2,476,918

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

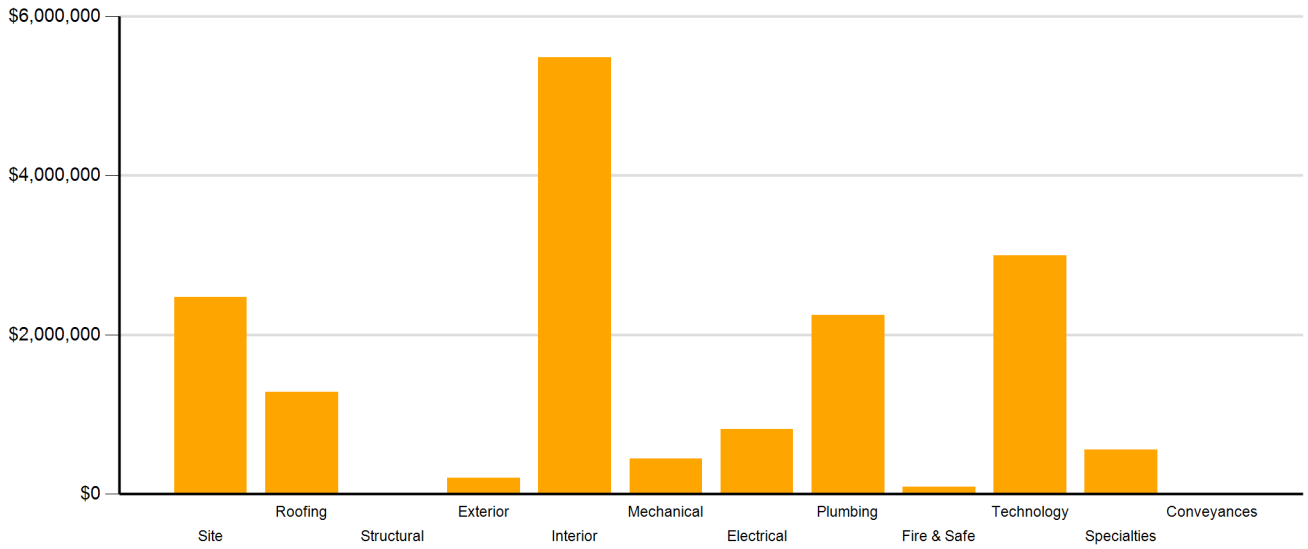


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$527,650	-	$527,650
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$2,406,147	$3,566,286	$2,721,822	$950,989	$9,645,244
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$95,238	-	$161,663	$208,995	$453,773	$919,668
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$2,510,713	-	$2,510,713
Technology	-	-	$2,838,688	-	-	$2,838,688
Traffic	-	-	$168,014	-	-	$168,014
Total	$95,238	$2,406,147	$6,734,651	$5,969,180	$1,404,761	$16,609,978

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

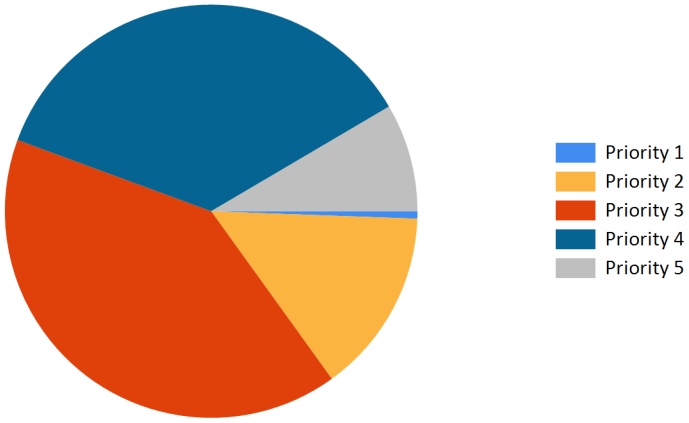


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$2,476,918	$0	$0	$0	$27,586	$495,783	$523,369	$3,000,287
Roofing	$1,281,363	$0	$0	$0	$0	$241,760	$241,760	$1,523,123
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$205,587	$0	$0	$0	$0	$620,907	$620,907	$826,494
Interior	$5,485,896	$0	$0	$5,208,110	$104,845	$979,417	$6,292,372	$11,778,270
Mechanical	$443,701	$0	$0	$230,947	$63,933	$380,176	$675,056	$1,118,757
Electrical	$817,625	$0	$0	$0	$0	$0	$0	$817,625
Plumbing	$2,248,749	$0	$0	$0	$0	$219,711	$219,711	$2,468,461
Fire and Life Safety	$92,379	$0	$0	$0	$0	$0	$0	$92,379
Technology	$3,000,351	$0	$0	$0	$0	$0	$0	$3,000,351
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$557,408	$0	$0	$0	$0	$0	$0	$557,408
Total	**$16,609,978**	**$0**	**$0**	**$5,439,057**	**$196,364**	**$2,937,754**	**$8,573,175**	**$25,183,153**

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

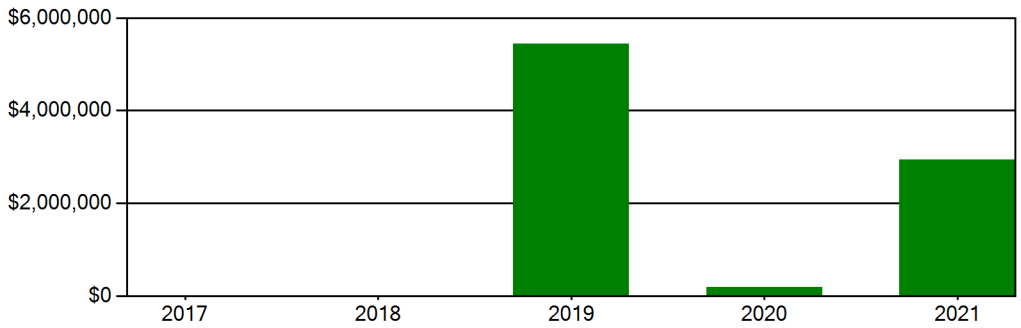
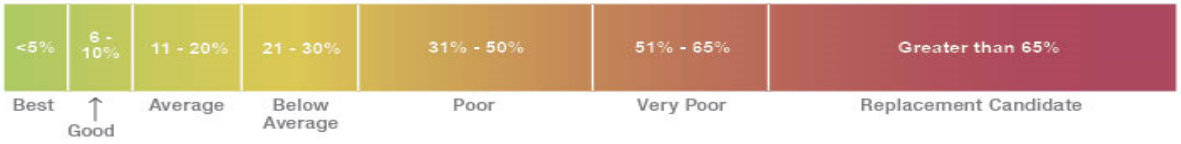


Figure 4: Life Cycle Capital Renewal Forecast

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 $74,387,520. For planning purposes, the total 5-year need at the Cranston High School West is $25,183,153 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Cranston High School West facility has a 5-year FCI of 33.85%.

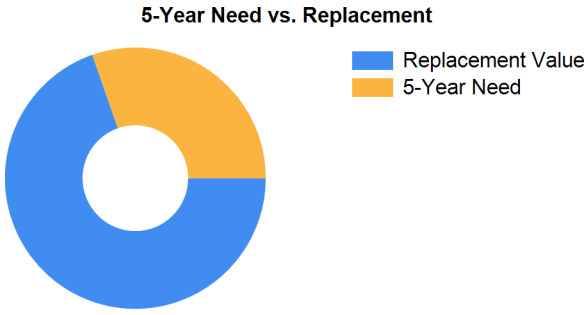


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 1,117 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 Cranston High School West cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Cranston High School West comprises 205,632 square feet and was constructed in 1958. Current deficiencies at this school total $16,609,978. Five year capital renewal costs total $8,573,175. The total identified need for the Cranston High School West (current deficiencies and 5-year capital renewal costs) is $25,183,153. The 5-year FCI is 33.85%.

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
Cranston High School West Totals	205,632	1958	$16,609,978	$8,573,175	$25,183,153	33.85%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Asphalt Walks Require Replacement	Capital Renewal	6,507	SF	3	$70,352	12117
Note: Asphalt walkways are cracked and uneven.						
Crosswalk Requires Repainting	Traffic	3	Ea.	3	$2,887	16915
Note: Repaint crosswalk on Curtis St and crosswalks at intersection of Curtis St and Cranston St						
Parking Or Roadway Curbs Require Replacement	Capital Renewal	1,000	LF	3	$96,228	12120
Note: Concrete curbs at the front of the school are cracked and broken and pose a tripping hazard.						
Sidewalk Requires Replacement	Traffic	5,520	SF	3	$159,354	16914
Note: Replace sidewalk along Metropolitan Ave and Curtis St from school campus to Cranston St. (920' long x 6' wide)						
Traffic Signage Is Required	Traffic	2	Ea.	3	$5,774	16913
Note: Add school zone signage on Curtis St.						
Asphalt Paving Requires Replacement	Capital Renewal	448	CAR	4	$1,875,345	12116
Note: Asphalt is alligatored and heaving.						
Asphalt Paving Requires Resurfacing	Capital Renewal	1,850	SF	4	$2,448	12118
Note: Roadway surface is weathered.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28447
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	440	LF	4	$35,989	12115
Note: Chain link fence is bent, overgrown, and failing in places.						
School has insufficient softball fields.	Educational Adequacy	1	Ea.	5	$192,456	28360
Note: School has insufficient softball fields.						
	Sub Total for System	**10**	**items**		**$2,476,918**	
	Sub Total for School and Site Level	**10**	**items**		**$2,476,918**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Built-up Roofing With Aggregate Ballast Requires Replacement	Capital Renewal	18,890	SF	2	$757,395	12127
Note: Original roof has some membrane patching and is showing signs of wear and age. Staff reported that is is scheduled to be replaced in the summer of 2016.						
	Sub Total for System	**1**	**items**		**$757,395**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Doors Require Replacement	Capital Renewal	170	Door	3	$826,458	12122
Note: Original wood doors are aged and worn.						
The Tectum Decking Requires Repair	Capital Renewal	18,890	SF	3	$146,082	12129
Note: Tar from roof is leaking into tectum decking in the B wing classrooms.						
Asbestos 9x9 Tile is Present. Limited Areas of Lifting or Broken Tiles Exist	Hazardous Material	68,003	SF	4	$2,044,935	Rollup
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	4,134	LF	4	$82,876	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	752	Ea.	4	$226,136	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	1,731	LF	4	$41,643	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	11,463	SF	4	$114,902	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	2	SF	4	$20	Rollup
Room Is Excessively Reverberant	Acoustics	22,400	SF	4	$527,650	19833
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	2,610	SF	4	$100,663	Rollup
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	20	SF	4	$200	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	136,006	SF	5	$947,487	Rollup
	Sub Total for System	**12**	**items**		**$5,059,053**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Lab lacks an appropriate fume hood.	Educational Adequacy	3	Ea.	4	$66,761	Rollup
The Chemistry Lab Fume Hood(s) Require Replacement	Capital Renewal	2	Ea.	4	$60,143	12121
Note: Fume hood stack is rusted and deteriotating.						
The Exhaust Hood Requires Replacement	Capital Renewal	9	Ea.	4	$49,383	12136
Note: Exhast fans are outdated and deteriorating.						
	Sub Total for System	**3**	**items**		**$176,287**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	2	Ea.	1	$2,859	Rollup
Switchgear Is Needed Or Requires Replacement	Capital Renewal	2	Ea.	2	$40,656	12137
Note: Electrical service and distribution switchgear is obsolete.						
The Electrical Disconnect Requires Replacement	Capital Renewal	6	Ea.	2	$121,969	12119
Note: Electrical disconnects in the remote vault are heavily corroded and should be replaced.						
The Panelboard Requires Replacement	Capital Renewal	8	Ea.	2	$40,897	12131
Note: The panelboards are obsolete.						
The Panelboard Requires Replacement	Capital Renewal	7	Ea.	2	$42,801	12132
Note: The panelboards are obsolete.						
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$56,263	12133
Note: Panelboards are obsolete.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	204	Ea.	5	$102,471	Rollup
	Sub Total for System	**7**	**items**		**$407,917**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	151,118	SF	3	$1,281,971	12130
Note: Water piping is aged with signs of scaling. Staff reports that water runs brown after periods of low use.						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	39	Ea.	3	$54,651	12128
Note: Urinals are aged and stained and should be replaced.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	8	Ea.	4	$21,731	12126
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	35	Ea.	4	$117,388	12124
Room lacks a drinking fountain.	Educational Adequacy	4	Ea.	5	$4,465	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	23	Ea.	5	$35,191	Rollup
	Sub Total for System	**6**	**items**		**$1,515,397**	

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	8	Ea.	1	$92,379	Rollup
	Sub Total for System	**1**	**items**		**$92,379**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	21	Ea.	3	$121,247	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	624	Ea.	3	$312,741	23438
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	75	Ea.	3	$751,781	23449
Technology: Gymnasium sound system is nonexistent, inadequate, or near end of useful life.	Technology	1	Ea.	3	$9,623	23440
Technology: Instructional spaces do not have local sound reinforcement.	Technology	75	Ea.	3	$375,891	23446
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23417

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23420
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23424
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23428
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23432
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23436
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$47,713	23431
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23423
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23419
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23427
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23435
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23418
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23421
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23425
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23429
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23433
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23437
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23414
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23416
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23413
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	624	Ea.	3	$188,547	23439
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	$96,228	23444
Technology: Network system inadequate and/or near end of useful life	Technology	38	Ea.	3	$190,451	23445
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	237,479	SF	3	$428,477	23443
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23442
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,019	23415
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23422
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23426

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23430
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23434
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	75	Ea.	3	$120,285	23447
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23448
	Sub Total for System	**37**	**items**		**$2,959,935**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Student Lockers Require Replacement	Capital Renewal	720	Ea.	4	$373,485	12134
Note: Student lockers are damaged. Most are unable to close or lock.						
Room lacks an appropriate refrigerator.	Educational Adequacy	8	Ea.	5	$69,284	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	2	Ea.	5	$27,714	Rollup
	Sub Total for System	**3**	**items**		**$470,483**	
	Sub Total for Building 01 - Main Building	**70**	**items**		**$11,438,846**	

Building: 03 - Auditorium and Music

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Carpet Flooring Requires Replacement	Capital Renewal	4,480	SF	3	$102,766	12138
Note: Carpet is worn and according to staff, slated to be replaced during auditorium restoration 2016.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	4,480	SF	3	$54,187	12139
Note: Vinyl composition tile is cracked and worn.						
Room lacks appropriate sound control.	Educational Adequacy	200	SF	5	$7,044	Rollup
	Sub Total for System	**3**	**items**		**$163,997**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Air Handler HVAC Component Requires Replacement	Capital Renewal	1	Ea.	2	$196,078	12142
Note: Air handling unit is old and should be replaced.						
	Sub Total for System	**1**	**items**		**$196,078**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$20,328	18004
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$30,713	12145
Note: The electrical service and distribution panel is obsolete.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$6,114	12143
Note: Panelboard is obsolete.						
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	$24,458	12144
Note: Panelboards are obsolete.						
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,502	12141
Note: Abandoned air compressor should be removed.						
	Sub Total for System	**5**	**items**		**$85,115**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,433	12140
Room lacks a drinking fountain.	Educational Adequacy	1	Ea.	5	$1,116	Rollup
	Sub Total for System	**2**	**items**		**$6,549**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,547	Rollup
	Sub Total for System	**1**	**items**		**$11,547**	
	Sub Total for Building 03 - Auditorium and Music	**12**	**items**		**$463,286**	

Building: 04 - Gymnasium

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	15,950	SF	2	$212,639	12156
Note: Roof is buckled and stained with evidence of ponding. The insulation moves when underfoot. Site staff noted that the roof is scheduled for replacment in 2016.						
	Sub Total for System	**1**	**items**		**$212,639**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Handrail Requires Repainting	Capital Renewal	40	LF	4	$441	12151
Note: Handrails show chipped paint and require repainting.						
The Exterior Requires Painting (Bldg SF)	Capital Renewal	3,190	SF	4	$44,766	12155
Note: Wood louvers need to be cleaned, prepped, and painted.						
	Sub Total for System	**2**	**items**		**$45,207**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Vinyl Composition Tile Requires Replacement	Capital Renewal	160	SF	3	$1,935	18005
	Sub Total for System	**1**	**items**		**$1,935**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Generator Requires Replacement	Capital Renewal	1	Ea.	2	$110,261	12154
Note: The generator is obsolete and should be replaced.						
Switchgear Is Needed Or Requires Replacement	Capital Renewal	3	Ea.	2	$60,985	12159
The Electrical Disconnect Requires Replacement	Capital Renewal	3	Ea.	2	$5,798	12146
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$48,715	12152
Note: Power distribution panelboards are obsolete.						
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$25,220	12153
Transfer Switch Requires Replacement	Capital Renewal	100	Amps	3	$3,766	12158
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$4,018	Rollup
	Sub Total for System	**7**	**items**		**$258,763**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	83	Ea.	3	$665,577	12149
Note: Shower plumbing fixtures are original to the building and should be replaced.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,433	12150
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	12	Ea.	4	$40,247	12147
Note: The sinks are original to the building and are rusted.						
Room lacks a drinking fountain.	Educational Adequacy	4	Ea.	5	$4,465	Rollup
	Sub Total for System	**4**	**items**		**$715,722**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Student Lockers Require Replacement	Capital Renewal	157	Ea.	4	$81,440	12157
Note: Student lockers are rusting and damaged.						
	Sub Total for System	**1**	**items**		**$81,440**	
	Sub Total for Building 04 - Gymnasium	**16**	**items**		**$1,315,707**	

Building: 05 - E Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	20,646	SF	2	$275,244	12165
Note: Warranty for EPDM roofing has expired. The roof is scheduled for replacement in 2016.						
	Sub Total for System	**1**	**items**		**$275,244**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Carpet Flooring Requires Replacement	Capital Renewal	1,032	SF	3	$23,673	12160
Note: Carpet is stained and worn.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	19,614	SF	3	$237,238	12161
Note: Vinyl composition tile is old, worn, and stained.						
	Sub Total for System	**2**	**items**		**$260,911**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	4	Ea.	2	$71,337	12166
Note: The heating equipment unit ventilators are original to the building and should be replaced.						
	Sub Total for System	**1**	**items**		**$71,337**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$20,328	12167
Note: The electrical service and distribution switchgear is obsolete.						
The Panelboard Requires Replacement	Capital Renewal	5	Ea.	2	$30,572	12164
Note: The power distribution panelboards are obsolete.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$4,018	Rollup
	Sub Total for System	**3**	**items**		**$54,919**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	1	Ea.	3	$1,401	12163
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	3	Ea.	4	$8,149	12162
Note: Original mop sinks should be replaced.						
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	1	Ea.	5	$1,530	Rollup
	Sub Total for System	**3**	**items**		**$11,081**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	5	Ea.	3	$28,868	Rollup
	Sub Total for System	**1**	**items**		**$28,868**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Welding Bays Are Required	Educational Adequacy	1	Ea.	4	$5,485	Rollup
	Sub Total for System	**1**	**items**		**$5,485**	
	Sub Total for Building 05 - E Building	**12**	**items**		**$707,845**	

Building: 06 - Building 6

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Roof Architectural Roof Covering Requires Replacement	Capital Renewal	1,000	SF	2	$36,086	12168
Note: The corrugated roof is rusted. Interior finishes show evidence of leaks.						
	Sub Total for System	**1**	**items**		**$36,086**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Metal Panel Exterior Requires Replacement (Bldg SF)	Capital Renewal	1,000	SF	2	$160,380	12171
Note: The building metal panel walls are rusting and walls have been damaged by snow plows.						
	Sub Total for System	**1**	**items**		**$160,380**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Disconnect Requires Replacement	Capital Renewal	3	Ea.	2	$5,798	12169
Note: The electrical disconnects are obsolete.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,112	12170
Note: The power distribution panelboard is obsolete.						
	Sub Total for System	**2**	**items**		**$10,910**	
	Sub Total for Building 06 - Building 6	**4**	**items**		**$207,375**	
	Total for Campus	**124**	**items**		**$16,609,978**	

Cranston High School West - 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)	290	LF	$19,734	4
Fences and Gates	Fencing - Chain Link (4 Ft)	120	LF	$7,852	4
Roadway Pavement	Asphalt	53	CAR	$177,488	5
Pedestrian Pavement	Sidewalks - Concrete	15,385	SF	$318,295	5
	Sub Total for System	**4**	**items**	**$523,368**	
	Sub Total for Building -	**4**	**items**	**$523,368**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	EPDM - Rubber Roofing Material	18,890	SF	$241,760	5
Note:	'A' wing				
	Sub Total for System	**1**	**items**	**$241,760**	

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Operating Windows	Aluminum - Windows per SF	2,132	SF	$365,181	5
Note:	2x4				
	Sub Total for System	**1**	**items**	**$365,181**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Exposed Tectum Ceilings	68,003	SF	$5,106,776	3
Carpeting	Carpet	4,534	SF	$99,844	4
Interior Operable Partitions	Foldable partition (Bldg SF)	2,280	SF Wall	$266,571	5
Note:	East cafeteria				
Suspended Plaster and	Painted ceilings	7,556	SF	$31,992	5
Tile Flooring	Ceramic Tile	3,022	SF	$82,141	5
	Sub Total for System	**5**	**items**	**$5,587,324**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Ventilator/Relief Vent (4'x6')	12	Ea.	$230,947	3
Air Distribution	Make-up Air Unit	1	Ea.	$16,093	4
	Sub Total for System	**2**	**items**	**$247,040**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Electric - 200 Gallon	1	Ea.	$45,175	5
	Sub Total for System	**1**	**items**	**$45,175**	
	Sub Total for Building 01 - Main Building	**10**	**items**	**$6,486,481**	

Building: 03 - Auditorium and Music

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Entrance Doors	Steel - Insulated and Painted	16	Door	$103,926	5
	Sub Total for System	**1**	**items**	**$103,926**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Paneling	Acoustical Panel Wall	538	SF	$5,001	4
Suspended Plaster and	Painted ceilings	5,375	SF	$22,758	5
Wall Painting and Coating	Painting/Staining (Bldg SF)	17,201	SF	$115,038	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	12,543	SF	$114,664	5
	Sub Total for System	**4**	**items**	**$257,460**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Heat Generation	Furnace - Gas (200 MBH)	1	Ea.	$7,698	4
Facility Hydronic Distribution	2-Pipe Water System (Hot)	17,918	SF	$139,798	5
Exhaust Air	Roof Exhaust Fan - Large	3	Ea.	$42,188	5
	Sub Total for System	**3**	**items**	**$189,685**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 40 gallon	2	Ea.	$6,397	5
	Sub Total for System	**1**	**items**	**$6,397**	
	Sub Total for Building 03 - Auditorium and Music	**9**	**items**	**$557,469**	

Building: 04 - Gymnasium

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Utility Doors	Overhead	1	Door	$37,240	5
	Sub Total for System	**1**	**items**	**$37,240**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	15,152	SF	$101,334	3
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System	300	SF	$3,602	5
Tile Flooring	Ceramic Tile	478	SF	$12,992	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	300	SF	$2,743	5
	Sub Total for System	**4**	**items**	**$120,671**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Heat Generation	Furnace - Gas (75 MBH)	1	Ea.	$2,521	4
Facility Hydronic Distribution	2-Pipe Water System (Hot)	15,950	SF	$124,444	5
	Sub Total for System	**2**	**items**	**$126,965**	
	Sub Total for Building 04 - Gymnasium	**7**	**items**	**$284,876**	

Building: 05 - E Building

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Entrance Doors	Steel - Insulated and Painted	13	Door	$84,440	5
	Sub Total for System	**1**	**items**	**$84,440**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	20,646	SF	$138,077	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	15,484	SF	$141,549	5
	Sub Total for System	**2**	**items**	**$279,627**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Unit Heater Steam/HW (36 MBH)	14	Ea.	$23,333	4
Note:	Cabinet unit heaters				
Decentralized Cooling	Ductless Split System (1 Ton)	1	Ea.	$14,288	4
Exhaust Air	Roof Exhaust Fan	13	Ea.	$68,478	5
	Sub Total for System	**3**	**items**	**$106,099**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)	20,646	SF	$168,139	5
	Sub Total for System	**1**	**items**	**$168,139**	
	Sub Total for Building 05 - E Building	**7**	**items**	**$638,305**	

Building: 06 - Building 6

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Operating Windows	Aluminum - Windows per SF	100	SF	$17,129	5
Exterior Entrance Doors	Steel - Insulated and Painted	2	Door	$12,991	5
	Sub Total for System	**2**	**items**	**$30,119**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Interior Swinging Doors	Wood		1	Door	$4,667	5
Interior Door Supplementary Components	Door Hardware		1	Door	$3,176	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		1,000	SF	$9,142	5
Wall Painting and Coating	Painting/Staining (Bldg SF)		1,000	SF	$6,688	5
Resilient Flooring	Vinyl Composition Tile Flooring		1,000	SF	$11,612	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System		1,000	SF	$12,005	5
		Sub Total for System	**6**	**items**	**$47,289**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Roof Exhaust Fan		1	Ea.	$5,268	5
		Sub Total for System	**1**	**items**	**$5,268**	
		Sub Total for Building 06 - Building 6	**9**	**items**	**$82,675**	
		Total for: Cranston High School West	**46**	**items**	**$8,573,175**	

Supporting Photos

Site Aerial

Weathered Roadway Asphalt

Cracked And Weathered Sidewalk

E Building Exterior


Rusted Disconnects


Uneven Sidewalk


Damaged Curb At Main Entrance


Corroded Disconnect

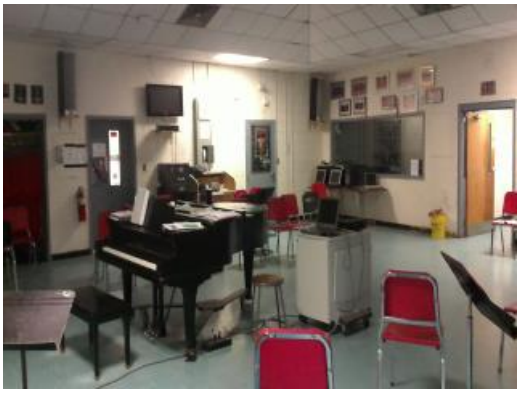

East Cafeteria


E Building Entrance

Gymnasium South Entry


Art Room


Library


Vocal Music Room


Gymnasium


E Building Classroom

Science Classroom

West Building Exterior


Exterior Brick


Science Classroom


Original Wood Door


Restroom Finishes


Weathered Roof


9x9 Tile


Worn Vinyl Composition Tile


Damaged Lockers


Southwest Facade


Auditorium Seating


Auditorium Stage


Gymnasium Elevation


Gymnasium


South Elevation Main Entrance


Typical Classroom


Band Classroom


Computer Lab

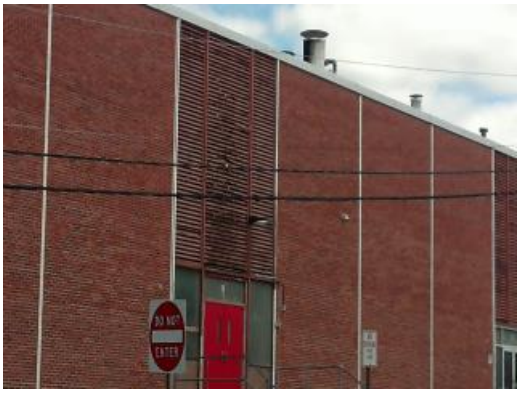

Auditorium Exterior


East Building Cafeteria


Southwest Elevation


Auditorium Exterior Doors


Chipped Handrail Paint



Wood Louver


Weathered Gym Roofing


Ponding On Roof


Worn And Stained Carpet


Worn And Stained VCT


Damaged Metal Facade


Metal Classroom Building


Damaged Facade


Damaged Facade

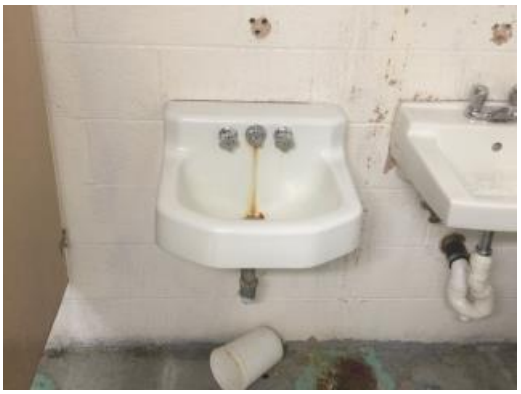

Asphalt Parking Pot Holes


Alligatored Parking Lot


Aged Panelboard


Aged Electrical Distribution


Aged Shower Fixtures


Rusted Sink


Aged Heating Unit


Aged Panelboard


Aged Urinal

Fume Hood Exhaust Fan Stack

Aged Exhaust Fans

Facility Condition Assessment

Cranston - Daniel D. Waterman School | *June 2017*

722 Pontiac Avenue, Cranston, RI 02910

Introduction

Daniel D. Waterman School, located at 722 Pontiac Avenue in Cranston, Rhode Island, was built in 1926. It comprises 27,900 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.

Daniel D. Waterman School serves grades 1 - 6, has 18 instructional spaces, and has an enrollment of 269. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Daniel D. Waterman School is 253 with a resulting utilization of 106%.

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 Daniel D. Waterman School the 5-year need is $4,945,884. 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.

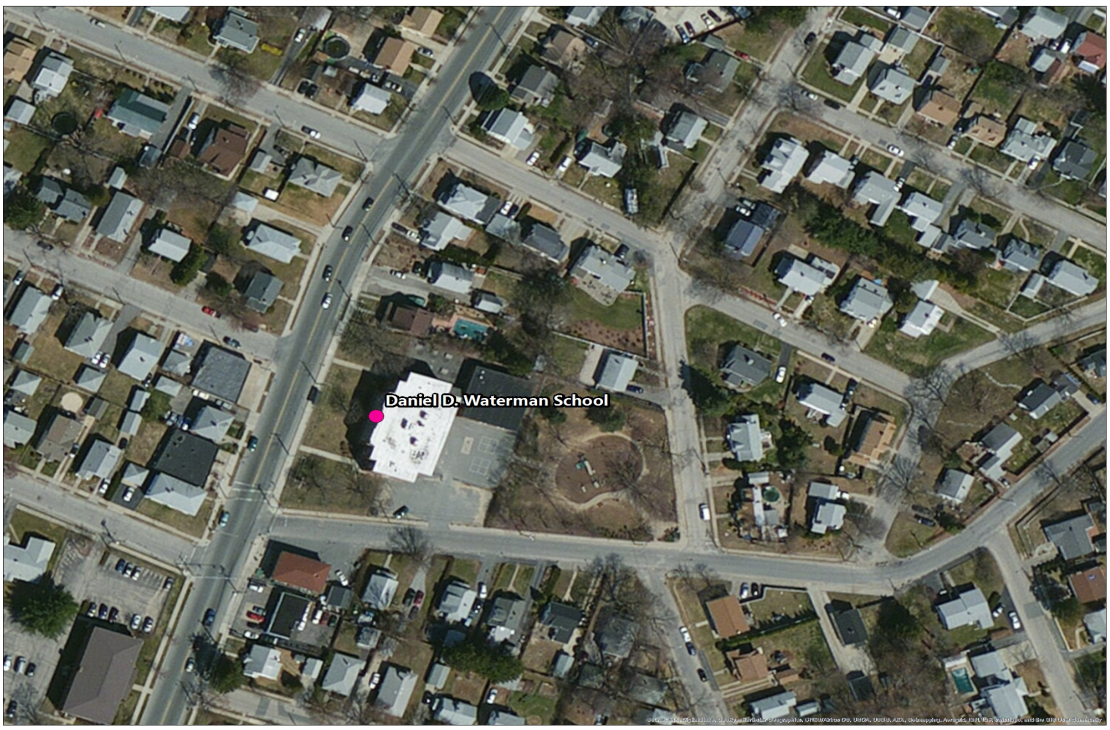


Figure 1: Aerial view of Daniel D. Waterman School

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 Daniel D. Waterman School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	Single Ply Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Interior Wall Painting
	Concrete Flooring
	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
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	DDC Heating System Controls

01 - Main Building:	Window Units
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Fire Sprinkler System

Plumbing

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

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

Electrical

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

01 - Main Building:	75 KVA Transformer
	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	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

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$1,052	$37,288	$73,786	$112,127	3.87 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$266,324	-	-	-	$266,324	9.19 %
Interior	-	-	$312,887	$1,228,996	$2,309	$1,544,193	53.28 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	-	-	-	$36,166	$36,166	1.25 %
Plumbing	-	-	-	$123,272	$4,121	$127,393	4.40 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$793,461	-	-	$793,461	27.38 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$18,476	-	-	$18,476	0.64 %
Total	$0	$266,324	$1,125,876	$1,389,557	$116,384	$2,898,140	

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

The building systems with the most need include:

Interior	-	$1,544,193
Technology	-	$793,461
Exterior	-	$266,324

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

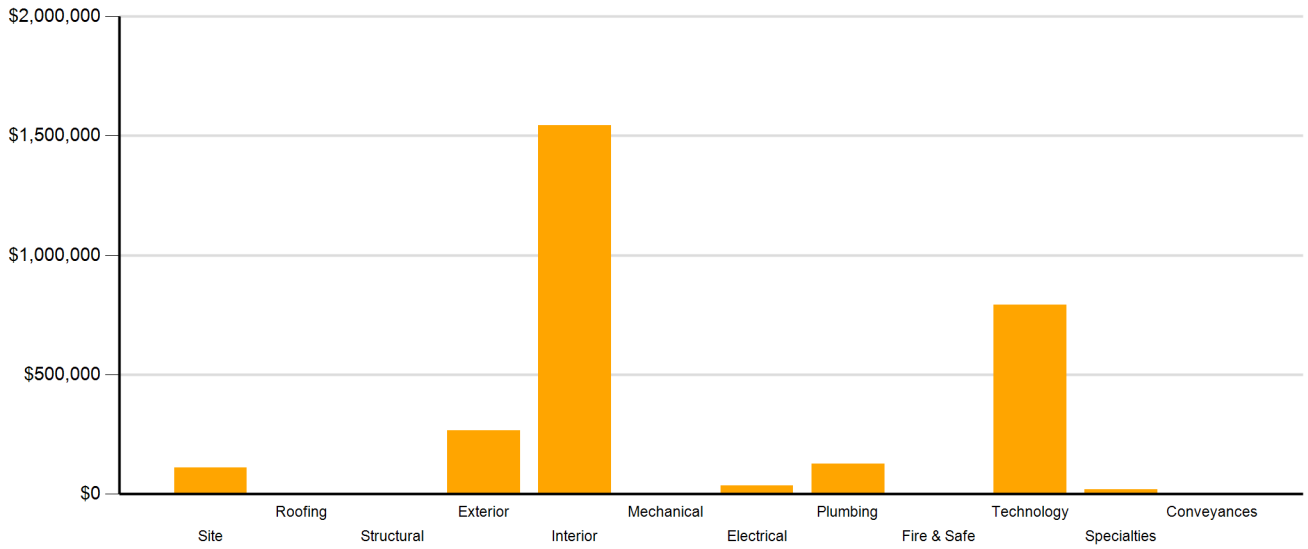


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$31,274	-	$31,274
Barrier to Accessibility	-	-	$172,529	$19,849	-	$192,377
Capital Renewal	-	$266,324	$141,410	$123,272	-	$531,006
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$35,797	$422,353	$115,041	$573,191
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$792,809	-	$792,809
Technology	-	-	$776,140	-	-	$776,140
Traffic	-	-	-	-	$1,342	$1,342
Total	$0	$266,324	$1,125,876	$1,389,557	$116,384	$2,898,140

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

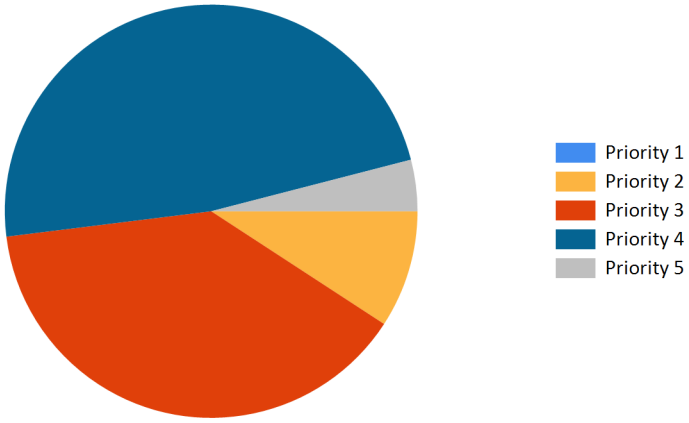


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$112,127	$0	$0	$0	$46,884	$57,544	$104,428	$216,555
Roofing	$0	$0	$0	$0	$0	$120,814	$120,814	$120,814
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$266,324	$0	$0	$0	$0	$1,262,865	$1,262,865	$1,529,189
Interior	$1,544,193	$0	$0	$0	$0	$344,696	$344,696	$1,888,889
Mechanical	$0	$0	$0	$0	$13,518	$16,159	$29,677	$29,677
Electrical	$36,166	$0	$0	$0	$13,597	$0	$13,597	$49,763
Plumbing	$127,393	$0	$0	$0	$35,778	$0	$35,778	$163,171
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$793,461	$0	$0	$0	$0	$0	$0	$793,461
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$18,476	$0	$0	$0	$0	$135,889	$135,889	$154,365
Total	**$2,898,140**	**$0**	**$0**	**$0**	**$109,777**	**$1,937,967**	**$2,047,744**	**$4,945,884**

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

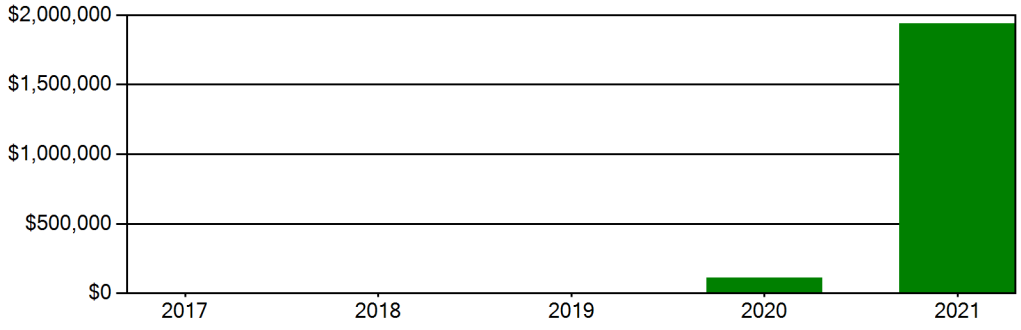
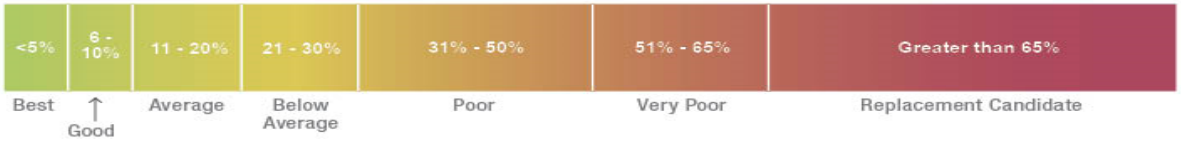


Figure 4: Life Cycle Capital Renewal Forecast

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 $9,765,000. For planning purposes, the total 5-year need at the Daniel D. Waterman School is $4,945,884 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Daniel D. Waterman School facility has a 5-year FCI of 50.65%.

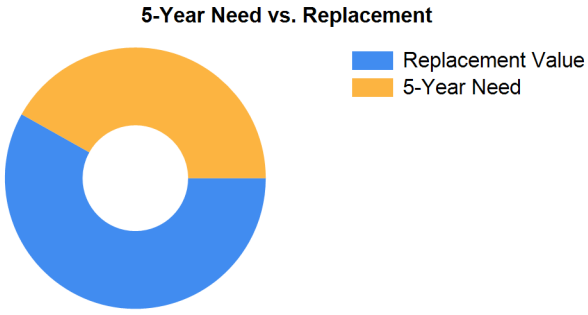


Figure 5: 5-Year FCI

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 155 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 Daniel D. Waterman School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $541,296.

Summary of Findings

The Daniel D. Waterman School comprises 27,900 square feet and was constructed in 1926. Current deficiencies at this school total $2,898,140. Five year capital renewal costs total $2,047,744. The total identified need for the Daniel D. Waterman School (current deficiencies and 5-year capital renewal costs) is $4,945,884. The 5-year FCI is 50.65%.

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
Daniel D. Waterman School Totals	27,900	1926	$2,898,140	$2,047,744	$4,945,884	50.65%

**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
Retaining Wall Requires Repair	Capital Renewal	12	SF	3	$1,052	8851
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28433
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,644	28707
Note: Exterior Basketball Goals are Required						
Paving Requires Restriping	Traffic	18	CAR	5	$1,342	9335
Note: Repaint parking spots in lot						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54872
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**5**	**items**		**$112,127**	
	Sub Total for School and Site Level	**5**	**items**		**$112,127**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	360	SF	2	$66,801	8852
Note: Single-pane windows						
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	2,257	SF	2	$199,522	9282
Note: Single pane window system						
	Sub Total for System	**2**	**items**		**$266,324**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	50	Door	3	$156,371	8855
The Existing Toilet Stall Does Not Meet Minimum ADA Requirements	Barrier to Accessibility	5	Ea.	3	$16,158	8856
Note: There is no ADA stall in any restroom.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	11,158	SF	3	$140,358	8853
Note: Seams are lifting and tiles are chipped and broken.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	15,348	SF	4	$479,995	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	14	Ea.	4	$4,378	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	29,587	SF	4	$308,436	Rollup
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	500	SF	4	$31,274	19689
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	9,984	SF	4	$385,065	Rollup
The Handrails In The Stair Area Are Not ADA Compliant	Barrier to Accessibility	140	LF	4	$19,849	8857
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,309	Rollup
	Sub Total for System	**10**	**items**		**$1,544,193**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	72	Ea.	5	$36,166	Rollup
	Sub Total for System	**1**	**items**		**$36,166**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	11	Ea.	4	$123,272	9287

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**2**	**items**		**$127,393**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$17,321	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$50,039	23678
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	12	Ea.	3	$262,702	23683
Technology: Instructional spaces do not have local sound reinforcement.	Technology	12	Ea.	3	$62,548	23685
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	23674
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	23673
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,903	23676
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$45,035	23677
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$50,039	23686
Technology: Network system inadequate and/or near end of useful life	Technology	14	Ea.	3	$72,973	23687
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	27,900	SF	3	$52,353	23682
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$59,421	23679
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	23684
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,340	23675
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	12	Ea.	3	$20,015	23681
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	23680
	Sub Total for System	**16**	**items**		**$793,461**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	4	Ea.	3	$18,476	Rollup
	Sub Total for System	**1**	**items**		**$18,476**	
	Sub Total for Building 01 - Main Building	**32**	**items**		**$2,786,012**	
	Total for Campus	**37**	**items**		**$2,898,140**	

Daniel D. Waterman School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Parking Lot Pavement	Asphalt		14	CAR	$46,884	4
Pedestrian Pavement	Sidewalks - Concrete		600	SF	$12,413	5
Playfield Areas	ES Playgrounds		1	Ea.	$45,131	5
		Sub Total for System	**3**	**items**	**$104,428**	
		Sub Total for Building -	**3**	**items**	**$104,428**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Single Ply		9,300	SF	$120,814	5
		Sub Total for System	**1**	**items**	**$120,814**	

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Brick - Bldg SF basis		27,341	SF	$1,262,865	5
		Sub Total for System	**1**	**items**	**$1,262,865**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Carpeting	Carpet		557	SF	$12,266	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		25,934	SF	$237,080	5
Interior Swinging Doors	Steel		22	Door	$95,350	5
		Sub Total for System	**3**	**items**	**$344,696**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units		4	Ea.	$13,518	4
Exhaust Air	Kitchen Exhaust Hoods		1	Ea.	$16,159	5
		Sub Total for System	**2**	**items**	**$29,677**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)		9	Ea.	$13,597	4
		Sub Total for System	**1**	**items**	**$13,597**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories		13	Ea.	$35,778	4
		Sub Total for System	**1**	**items**	**$35,778**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		12	Room	$135,889	5
		Sub Total for System	**1**	**items**	**$135,889**	
		Sub Total for Building 01 - Main Building	**10**	**items**	**$1,943,316**	
		Total for: Daniel D. Waterman School	**13**	**items**	**$2,047,744**	

Supporting Photos

Site Aerial

Front Elevation

Plaque

Gymnasium / Cafeteria


Library


Exterior Brick

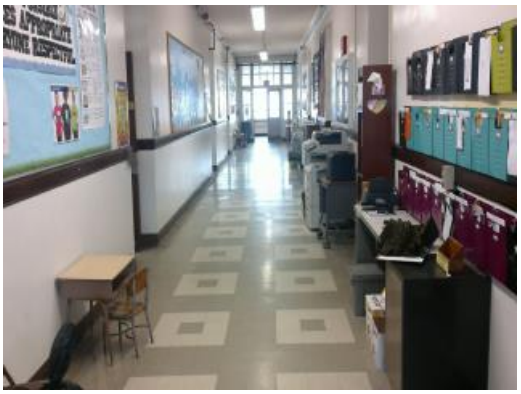
Plaque


Typical Single-Pane Windows


Typical classroom


Chipped Concrete

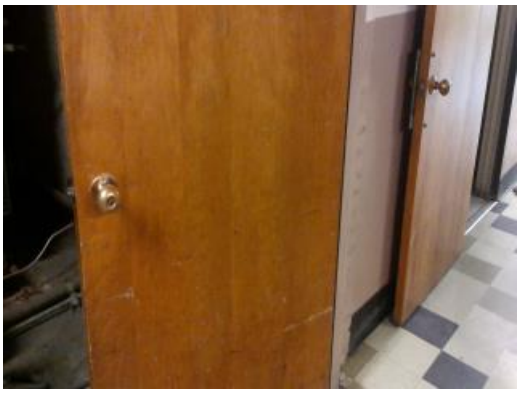
Classroom Cabinetry



Hallway Finishes

Cracked And Lifting VCT

Typical Classroom



Non-Compliant Door Hardware

Chipped And Separating VCT Flooring

Typical Restroom Stall

Staff Restroom

Peeling Wall Paint

Chipped And Bubbled Ceiling Paint

Facility Condition Assessment

Cranston - Eden Park School | *June 2017*

180 Oakland Avenue, Cranston, RI 02910

Introduction

Eden Park School, located at 180 Oakland Avenue in Cranston, Rhode Island, was built in 1951. It comprises 39,289 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.

Eden Park School serves grades 1 - 6, has 17 instructional spaces, and has an enrollment of 352. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Eden Park School is 321 with a resulting utilization of 110%.

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 Eden Park School the 5-year need is $7,681,721. 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.

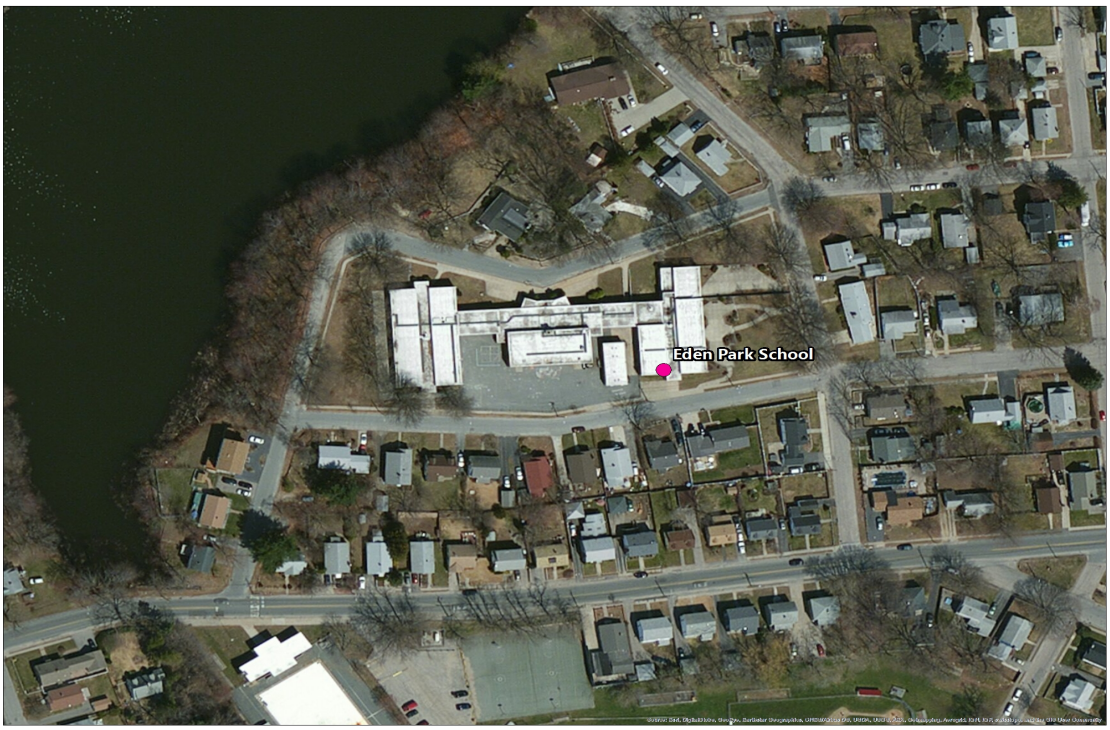


Figure 1: Aerial view of Eden Park School

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 Eden Park School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors
02 - Portable-01:	Wood Siding Exterior Wall
	Vinyl on Wood Frame Exterior Windows
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing
02 - Portable-01:	EPDM Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Wood Wall Paneling
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Quarry Tile Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
02 - Portable-01:	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile

02 - Portable-01:	Vinyl/Fabric Wall Covering
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	Radiant Steam Heater
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Pneumatic Heating System Controls
	Window Units
	1 HP or Smaller Pump
	2-Pipe Steam Hydronic Distribution System
	2,000 CFM Interior AHU
	Ductwork
	Roof Exhaust Fan
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Supply Fan
	Wall Exhaust Fan
02 - Portable-01:	Electric Heating Unit Vent
	Ductwork
	4'x6' Ventilator/Relief Vent

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1 hp)
	10,000 Gallon Underground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	1,200 Amp Switchgear
	Panelboard - 120/208 225A
	Panelboard - 120/240 100A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
02 - Portable-01:	Panelboard - 120/208 125A
	Building Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$91,728	$36,086	$72,198	$200,011	3.84 %
Roofing	-	$523,785	-	-	-	$523,785	10.05 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	$7,142	$7,142	0.14 %
Interior	-	-	$525,104	$842,141	$2,309	$1,369,554	26.28 %
Mechanical	-	$922,704	$114,996	$282,635	-	$1,320,335	25.33 %
Electrical	-	$169,205	-	-	$34,144	$203,348	3.90 %
Plumbing	-	-	$345,910	$259,026	$104,359	$709,295	13.61 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$854,946	-	-	$854,946	16.40 %
Conveyances	-	-	$23,130	-	-	$23,130	0.44 %
Specialties	-	-	-	-	-	$0	0.00 %
Total	$0	$1,615,693	$1,955,814	$1,419,887	$220,151	$5,211,545	

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

The building systems with the most need include:

Interior	-	$1,369,554
Mechanical	-	$1,320,335
Technology	-	$854,946

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

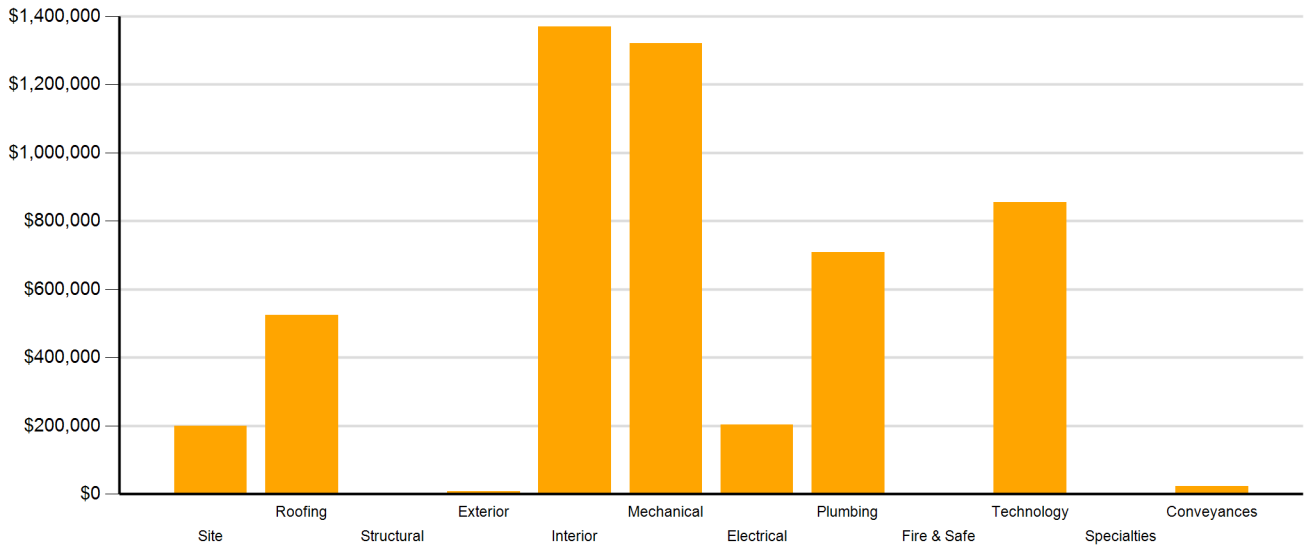


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$100,348	$70,667	-	$171,015
Barrier to Accessibility	-	-	$606,066	-	-	$606,066
Capital Renewal	-	$1,615,693	$391,567	$586,582	$107,379	$2,701,222
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	-	$221,830	$112,772	$334,602
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$540,807	-	$540,807
Technology	-	-	$854,946	-	-	$854,946
Traffic	-	-	$2,887	-	-	$2,887
Total	$0	$1,615,693	$1,955,814	$1,419,887	$220,151	$5,211,545

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

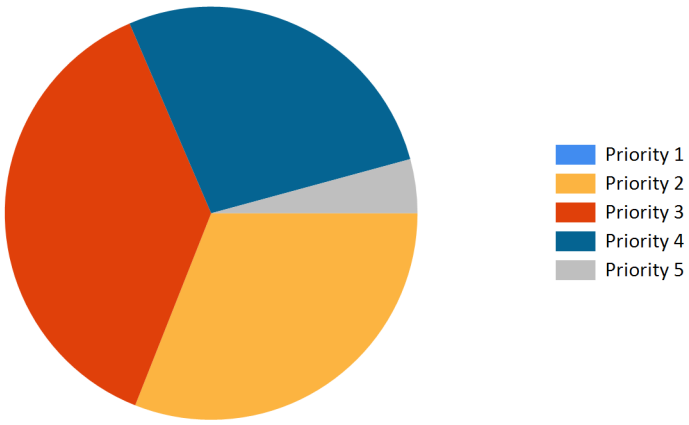


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$200,011	$0	$0	$556,198	$0	$387,723	$943,921	$1,143,932
Roofing	$523,785	$0	$0	$15,358	$0	$0	$15,358	$539,143
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$7,142	$0	$0	$0	$0	$244,261	$244,261	$251,403
Interior	$1,369,554	$0	$0	$0	$0	$665,614	$665,614	$2,035,168
Mechanical	$1,320,335	$0	$28,657	$5,268	$16,898	$140,058	$190,881	$1,511,216
Electrical	$203,348	$0	$0	$0	$240,826	$7,217	$248,043	$451,392
Plumbing	$709,295	$0	$0	$0	$0	$0	$0	$709,295
Fire and Life Safety	$0	$0	$0	$3,560	$0	$0	$3,560	$3,560
Technology	$854,946	$0	$0	$0	$0	$0	$0	$854,946
Conveyances	$23,130	$0	$0	$0	$0	$0	$0	$23,130
Specialties	$0	$0	$0	$0	$0	$158,538	$158,538	$158,538
Total	**$5,211,545**	**$0**	**$28,657**	**$580,384**	**$257,724**	**$1,603,411**	**$2,470,176**	**$7,681,721**

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

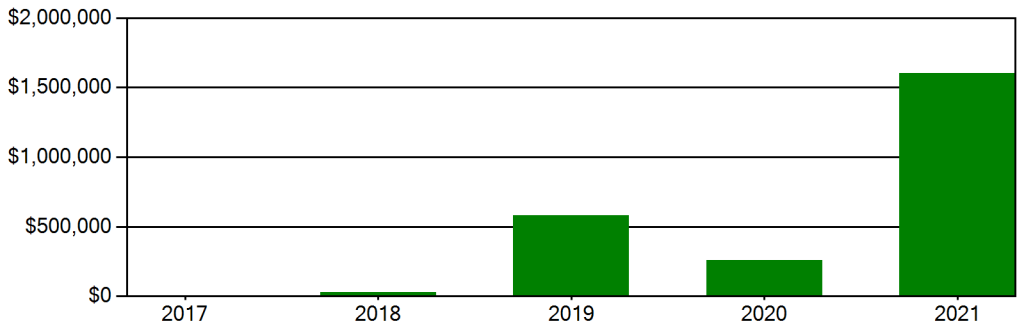
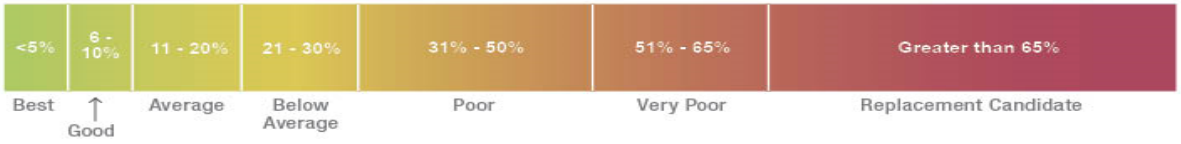


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

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



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

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

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $14,171,150. For planning purposes, the total 5-year need at the Eden Park School is $7,681,721 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Eden Park School facility has a 5-year FCI of 54.21%.

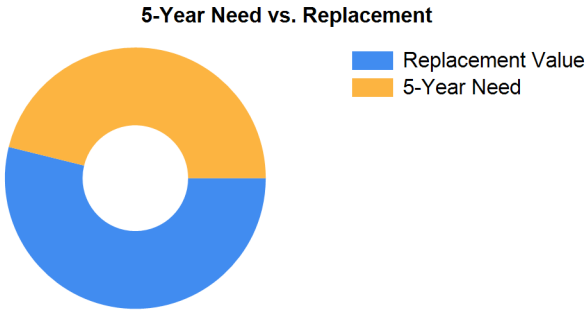


Figure 5: 5-Year FCI

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 225 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 Eden Park School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $375,732.

Summary of Findings

The Eden Park School comprises 39,289 square feet and was constructed in 1951. Current deficiencies at this school total $5,211,545. Five year capital renewal costs total $2,470,176. The total identified need for the Eden Park School (current deficiencies and 5-year capital renewal costs) is $7,681,721. The 5-year FCI is 54.21%.

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
Eden Park School Totals	39,289	1951	$5,211,545	$2,470,176	$7,681,721	54.21%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Crosswalk: Needs to be added	Traffic	3	Ea.	3	$2,887	11604
Note: Add 2 crosswalks at intersection of Glengrove Ave and Oakland Ave and one crosswalk at intersection of Chestnut Ave and Glengrove Ave						
Install New Playground Equipment	Barrier to Accessibility	1	SF	3	$88,841	54877
Note: Install New Playground Equipment						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28439
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28711
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54878
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**5**	**items**		**$200,011**	
	Sub Total for School and Site Level	**5**	**items**		**$200,011**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	39,289	SF	2	$523,785	9420
Note: Roof is showing signs of wear, tear, and pooling. There are frequent roof leaks.						
	Sub Total for System	**1**	**items**		**$523,785**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Requires Cleaning	Capital Renewal	2,500	SF Wall	5	$7,142	9396
Note: Stone veneer and precast concrete are stained and need cleaning.						
	Sub Total for System	**1**	**items**		**$7,142**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	172	Door	3	$517,226	9404
Rubber Flooring Requires Replacement	Capital Renewal	400	SF	3	$7,879	9423
Note: Rubber floor is chipped and peeling.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	3,929	SF	4	$44,922	9422
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	16,825	SF	4	$505,949	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	$3,909	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	24	LF	4	$577	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	3,030	SF	4	$30,372	Rollup
Room Is Excessively Reverberant	Acoustics	3,000	SF	4	$70,667	19762
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	4,816	SF	4	$185,744	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,309	Rollup
	Sub Total for System	**10**	**items**		**$1,369,554**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	3,000	SF	2	$46,501	11686
The Air Handler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$90,964	9409
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$359,203	9410
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	8	Ea.	2	$14,129	9413

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	39,289	SF	2	$319,309	9415
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	17	Ea.	2	$92,597	9412
Note: Radiant heaters are beginning to deteriorate.						
The Large Diameter Exhausts/Hoods Require Replacement	Capital Renewal	1	Ea.	3	$14,649	9399
Unit Ventilators Are Excessively Noisy	Acoustics	15	Ea.	3	$100,348	19761
Note: All classrooms						
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	1	Ea.	4	$2,823	9400
Note: Exhaust fan is no longer operable.						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	39,289	SF	4	$279,811	9418
	Sub Total for System	**10**	**items**		**$1,320,335**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Switchgear Is Needed Or Requires Replacement	Capital Renewal	1	Ea.	2	$72,813	9416
The Electrical Disconnect Requires Replacement	Capital Renewal	13	Ea.	2	$25,124	9398
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$36,687	9411
Note: Panelboards are aged and parts are no longer available.						
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$18,343	11437
Note: Panelboards are aged and parts are no longer available.						
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$16,238	11438
Note: Panelboards are aged and parts are no longer available.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	64	Ea.	5	$32,148	Rollup
	Sub Total for System	**6**	**items**		**$201,353**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	39,289	SF	3	$333,298	9408
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	9	Ea.	3	$12,612	9407
Note: Urinals are beginning to fail according to the head custodian.						
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	14	Ea.	4	$150,857	9403
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	15	Ea.	4	$43,002	9394
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	3	Ea.	4	$8,149	9406
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	17	Ea.	4	$57,017	9401
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
Underground Fuel/Oil Storage Tank Requires Replacement	Capital Renewal	1	Ea.	5	$100,238	9417
	Sub Total for System	**8**	**items**		**$709,295**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$48,114	23663
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	14	Ea.	3	$294,698	23668
Technology: Instructional spaces do not have local sound reinforcement.	Technology	14	Ea.	3	$70,166	23670
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23660
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$47,713	23659
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23658
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23661
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23656

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	$44,906	23655
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$43,303	23662
Technology: Network system inadequate and/or near end of useful life	Technology	2	Ea.	3	$16,038	23671
Technology: Network system inadequate and/or near end of useful life	Technology	18	Ea.	3	$90,214	23672
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	34,289	SF	3	$61,867	23667
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23664
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23669
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,019	23657
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	14	Ea.	3	$22,453	23666
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23665
	Sub Total for System	**18**	**items**		**$854,946**	

Conveyances

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Dumbwaiter Requires Replacement	Capital Renewal	1	Ea.	3	$23,130	11685
Note: Dumbwaiter is inoperable.						
	Sub Total for System	**1**	**items**		**$23,130**	
	Sub Total for Building 01 - Main Building	**55**	**items**		**$5,009,539**	

Building: 02 - Portable-01

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	4	Ea.	5	$1,996	Rollup
	Sub Total for System	**1**	**items**		**$1,996**	
	Sub Total for Building 02 - Portable-01	**1**	**items**		**$1,996**	
	Total for Campus	**61**	**items**		**$5,211,545**	

Eden Park School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (4 Ft)		8,500	LF	$556,198	3
Pedestrian Pavement	Sidewalks - Concrete		10,000	SF	$206,886	5
Parking Lot Pavement	Asphalt		54	CAR	$180,837	5
		Sub Total for System	**3**	**items**	**$943,921**	
		Sub Total for Building -	**3**	**items**	**$943,921**	

Building: 01 - Main Building

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Entrance Doors	Steel - Insulated and Painted		32	Door	$207,852	5
		Sub Total for System	**1**	**items**	**$207,852**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Interior Coiling Doors	Overhead		1	Door	$37,240	5
Note:	Kitchen/cafe					
Suspended Plaster and	Painted ceilings		35,360	SF	$149,715	5
Wall Paneling	Wood Panel wall		15,716	SF	$145,183	5
Wall Painting and Coating	Painting/Staining (Bldg SF)		5,893	SF	$39,411	5
Tile Flooring	Quarry Tile		300	SF	$13,828	5
Note:	Slate floor at entrance					
Resilient Flooring	Vinyl Composition Tile Flooring		16,764	SF	$194,655	5
Interior Swinging Doors	Steel		14	Door	$60,678	5
		Sub Total for System	**7**	**items**	**$640,711**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Roof Exhaust Fan		1	Ea.	$5,268	3
Decentralized Cooling	Window Units		5	Ea.	$16,898	4
Exhaust Air	Roof Exhaust Fan - Small		2	Ea.	$5,339	5
		Sub Total for System	**3**	**items**	**$27,504**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)		39,289	SF	$236,294	4
		Sub Total for System	**1**	**items**	**$236,294**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		14	Room	$158,538	5
		Sub Total for System	**1**	**items**	**$158,538**	
		Sub Total for Building 01 - Main Building	**13**	**items**	**$1,270,898**	

Building: 02 - Portable-01

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	EPDM - Rubber Roofing Material		1,200	SF	$15,358	3
		Sub Total for System	**1**	**items**	**$15,358**	

Exterior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Wood Siding - Bldg SF basis		1,200	SF	$36,409	5
		Sub Total for System	**1**	**items**	**$36,409**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		1,200	SF	$10,970	5

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Resilient Flooring	Vinyl Composition Tile Flooring		1,200	SF	$13,934	5
		Sub Total for System	**2**	**items**	**$24,904**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Heating Unit Vent - Electric		2	Ea.	$28,657	2
Exhaust Air	Ventilator/Relief Vent (4'x6')		7	Ea.	$134,719	5
		Sub Total for System	**2**	**items**	**$163,376**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)		3	Ea.	$4,532	4
Lighting Fixtures	Light Fixtures (Bldg SF)		1,200	SF	$7,217	5
		Sub Total for System	**2**	**items**	**$11,749**	

Fire and Life Safety

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fire Detection and Alarm	Fire Alarm		1,200	SF	$3,560	3
		Sub Total for System	**1**	**items**	**$3,560**	
		Sub Total for Building 02 - Portable-01	**9**	**items**	**$255,356**	
		Total for: Eden Park School	**25**	**items**	**$2,470,175**	

Supporting Photos

Site Aerial

Southeast Elevation

Library

Southwest Elevation


South Elevation


Entry


Art Room


Typical Drinking Fountain


Aged Panelboard


Weathered Roof


Restroom Finishes


North Elevation


Cafe/Gym


Library


Portable Building


Typical Classroom

Plaque


Typical Windows


Stained Concrete Exterior

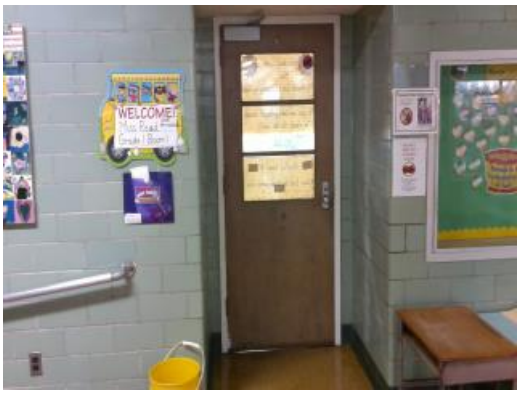

Dirty Stone Veneer Wall


Typical Urinals


Damaged Corridor VCT

Worn Gymnasium Floor

Air Handler



Typical Door With Non-Compliant Hardware

Peeling Rubber Flooring

Adhered Ceiling

Aged Boiler


Restroom Lavatories


Exhaust Hood


Inoperable Exhaust Fan


Typical Toilet


Evidence Of Ponding On Roof


Typical Radiant Heater


Switchgear


Typical Mop Sink


Unit Ventilator

Facility Condition Assessment

Cranston - Edgewood Highland School | *June 2017*

160 Pawtuxet Avenue, Cranston, RI 02905

Introduction

Edgewood Highland School, located at 160 Pawtuxet Avenue in Cranston, Rhode Island, was built in 1970. It comprises 44,239 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.

Edgewood Highland School serves grades 1 - 6, has 21 instructional spaces, and has an enrollment of 244. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Edgewood Highland School is 324 with a resulting utilization of 75%.

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 Edgewood Highland School the 5-year need is $9,031,906. 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.

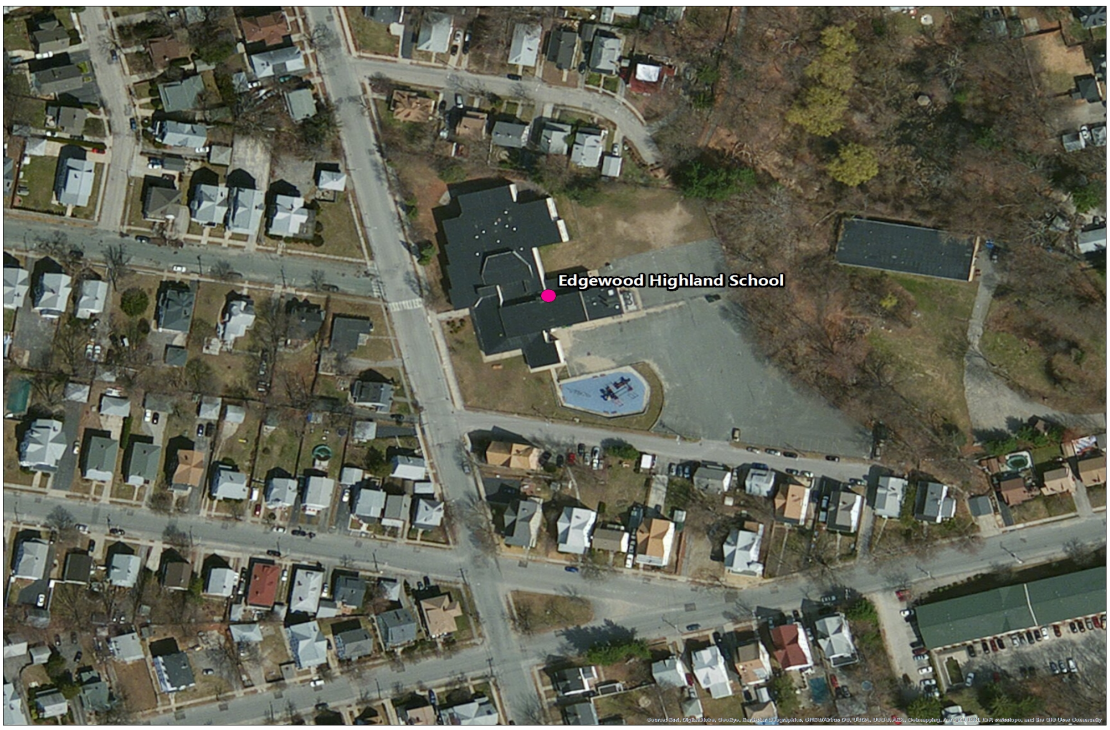


Figure 1: Aerial view of Edgewood Highland School

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 Edgewood Highland 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:	CMU Exterior Wall
	E.I.F.S. Exterior Wall
	Painted Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing

Interior

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

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

Mechanical

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

01 - Main Building:	3,264 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	7 kW Electric Unit Heater
	20 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	130 Ton Metal Cooling Tower
	210 Ton Outdoor Air Cooled Chiller
	1 Ton Fan Coil - Water Cool/Water Heat
	Window Units
	1 HP or Smaller Pump
	5 HP Pump
	4-Pipe Hydronic Distribution System
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Showers
	Toilets
	Urinals
	Air Compressor (1 hp)

Electrical

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

01 - Main Building:	50 kW Emergency Generator
	Automatic Transfer Switch
	1,200 Amp Switchgear
	225 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A

01 - Main Building:	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$192,456	$333,294	$72,198	$597,948	8.18 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$508,163	-	$625,328	-	$1,133,491	15.51 %
Interior	-	-	$398,527	$1,048,221	$266,976	$1,713,725	23.46 %
Mechanical	-	$2,219,487	$107,038	$345,208	-	$2,671,732	36.57 %
Electrical	-	$50,019	-	-	$39,914	$89,933	1.23 %
Plumbing	-	-	$112,266	-	$14,922	$127,188	1.74 %
Fire and Life Safety	$33,664	-	-	-	-	$33,664	0.46 %
Technology	-	-	$919,974	-	-	$919,974	12.59 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$18,351	-	-	$18,351	0.25 %
Total	$33,664	$2,777,669	$1,748,612	$2,352,051	$394,010	$7,306,005	

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

The building systems with the most need include:

Mechanical	-	$2,671,732
Interior	-	$1,713,725
Exterior	-	$1,133,491

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

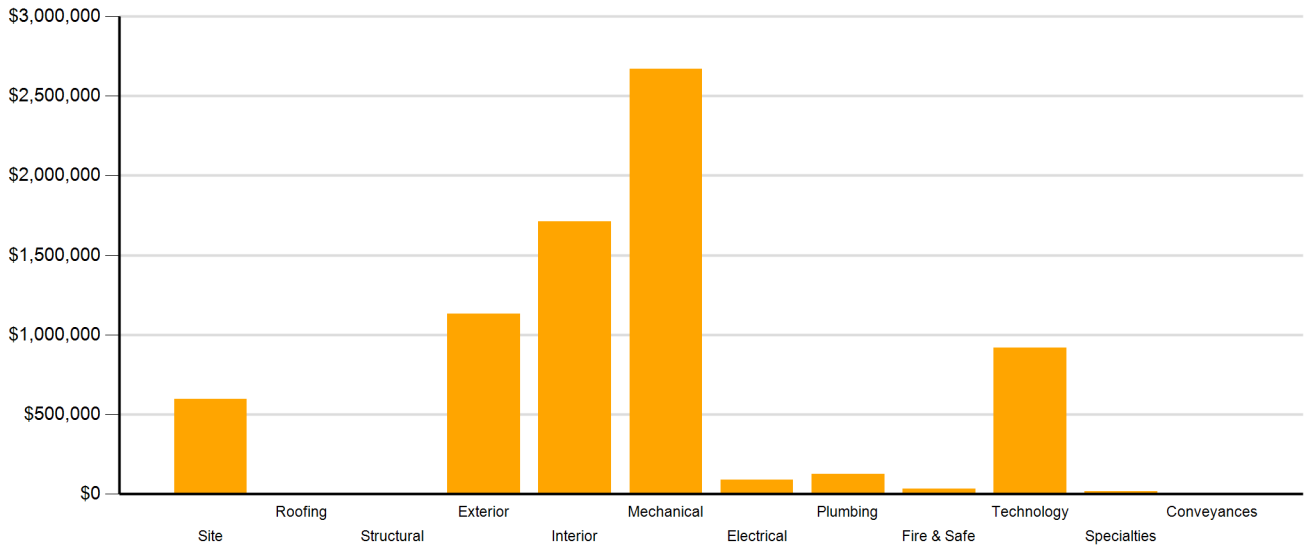


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$107,038	$111,301	-	$218,339
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	$33,664	$2,777,669	$510,793	$1,555,321	$260,095	$5,137,541
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$35,556	$577,614	$133,915	$747,085
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$107,815	-	$107,815
Technology	-	-	$902,769	-	-	$902,769
Traffic	-	-	$192,456	-	-	$192,456
Total	$33,664	$2,777,669	$1,748,612	$2,352,051	$394,010	$7,306,005

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

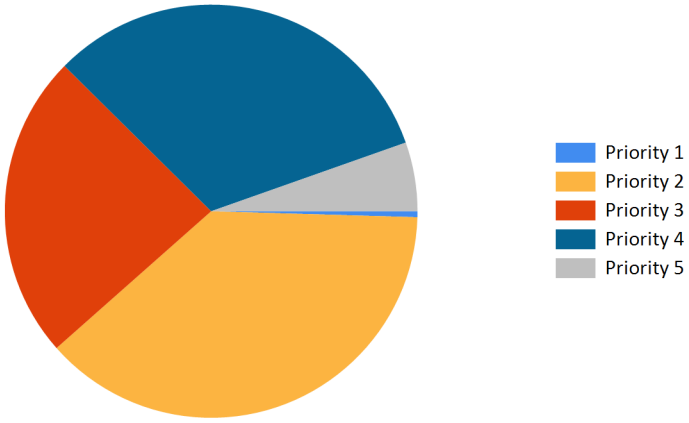


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$597,948	$0	$0	$0	$265,956	$310,866	$576,822	$1,174,770
Roofing	$0	$0	$0	$283,086	$0	$0	$283,086	$283,086
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$1,133,491	$0	$0	$0	$0	$0	$0	$1,133,491
Interior	$1,713,725	$0	$0	$0	$385,258	$0	$385,258	$2,098,983
Mechanical	$2,671,732	$0	$0	$0	$32,341	$52,675	$85,016	$2,756,748
Electrical	$89,933	$0	$0	$71,755	$30,317	$287,523	$389,595	$479,528
Plumbing	$127,188	$0	$0	$0	$6,124	$0	$6,124	$133,312
Fire and Life Safety	$33,664	$0	$0	$0	$0	$0	$0	$33,664
Technology	$919,974	$0	$0	$0	$0	$0	$0	$919,974
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$18,351	$0	$0	$0	$0	$0	$0	$18,351
Total	**$7,306,005**	**$0**	**$0**	**$354,841**	**$719,996**	**$651,064**	**$1,725,901**	**$9,031,906**

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

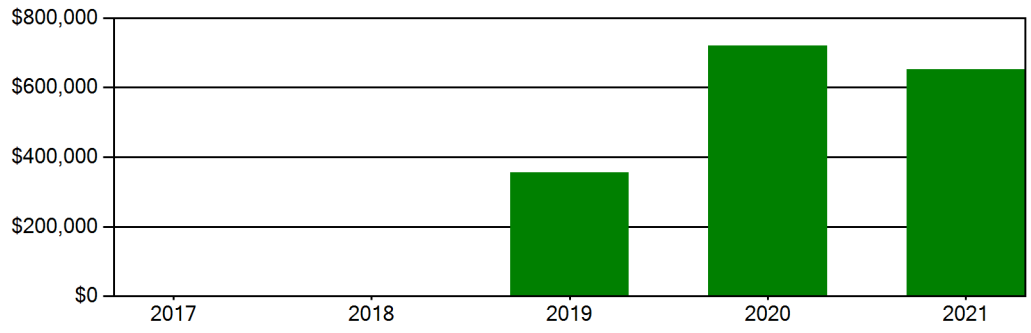
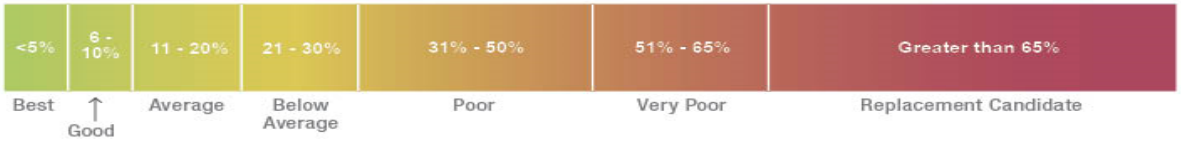


Figure 4: Life Cycle Capital Renewal Forecast

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 $15,483,650. For planning purposes, the total 5-year need at the Edgewood Highland School is $9,031,906 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Edgewood Highland School facility has a 5-year FCI of 58.33%.

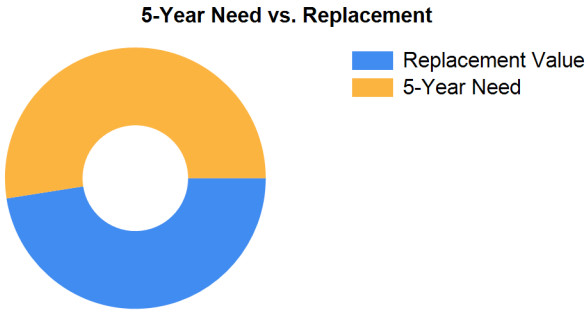


Figure 5: 5-Year FCI

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 246 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 Edgewood Highland School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Edgewood Highland School comprises 44,239 square feet and was constructed in 1970. Current deficiencies at this school total $7,306,005. Five year capital renewal costs total $1,725,901. The total identified need for the Edgewood Highland School (current deficiencies and 5-year capital renewal costs) is $9,031,906. The 5-year FCI is 58.33%.

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
Edgewood Highland School Totals	44,239	1970	$7,306,005	$1,725,901	$9,031,906	58.33%

**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	Traffic	4	Ea.	3	$192,456	9352
Note: Add warning signs for school zone						
Asphalt Paving Requires Replacement	Capital Renewal	46	CAR	4	$192,558	9153
Asphalt Paving Requires Replacement	Capital Renewal	25	CAR	4	$104,651	9229
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28450
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28720
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54884
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**6**	**items**		**$597,948**	
	Sub Total for School and Site Level	**6**	**items**		**$597,948**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	816	SF	2	$145,593	9157
Note: Windows are aged with cracked and broken seals.						
The EIFS Exterior Requires Replacement (Bldg SF)	Capital Renewal	11,060	SF	2	$240,572	9172
Note: EIFS exterior is cracked and peeling.						
The Storefront/Curtain Wall Requires Replacement	Capital Renewal	608	SF Wall	2	$121,999	9162
Note: Fixed window seals are broken.						
The Concrete/CMU Exterior Requires Repair	Capital Renewal	50	LF	4	$4,511	9156
The Exterior Requires Painting (Bldg SF)	Capital Renewal	44,239	SF	4	$620,817	9173
	Sub Total for System	**5**	**items**		**$1,133,491**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	22,120	SF	3	$210,639	9158
The Ceramic Tile Flooring Requires Replacement	Capital Renewal	6,636	SF	3	$187,888	9159
Ceiling Grid Requires Replacement	Capital Renewal	22,120	SF	4	$276,615	9175
Moveable Partitions Require Replacement	Capital Renewal	90	SF Wall	4	$10,961	9154
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	194	Ea.	4	$58,338	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	140	LF	4	$3,368	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	4,600	SF	4	$46,109	Rollup
Room Is Excessively Reverberant	Acoustics	4,725	SF	4	$111,301	19691
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	14,136	SF	4	$541,528	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	3	Ea.	5	$6,882	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	37,335	SF	5	$260,095	Rollup
	Sub Total for System	**11**	**items**		**$1,713,725**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Ductwork Requires Replacement (SF Basis)	Capital Renewal	44,239	SF	2	$685,717	9169
Electric Unit Heater Requires Replacement	Capital Renewal	2	Ea.	2	$4,008	9166
Steam/HW Unit Heater Requires Replacement	Capital Renewal	16	Ea.	2	$47,505	9177
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	2	Ea.	2	$381,696	9168

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Chiller Requires Replacement	Capital Renewal	1	Ea.	2	$631,496	9165
The Exterior Metal Cooling Tower Requires Replacement	Capital Renewal	1	Ea.	2	$195,463	9160
The Fan Coil (Chilled Water) HVAC Component Requires Replacement	Capital Renewal	26	Ea.	2	$121,813	9167
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	44,239	SF	2	$151,789	9163
Unit Ventilators Are Excessively Noisy	Acoustics	16	Ea.	3	$107,038	19690
Note: All classrooms						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	44,239	SF	4	$315,065	9171
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	3	Ea.	4	$30,143	9164
	Sub Total for System	**11**	**items**		**$2,671,732**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	5	Ea.	2	$25,561	11425
Note: Parts may not be available for all electrical panels throughout the building.						
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	$24,458	11426
Note: Parts may not be available for all electrical panels throughout the building.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	$39,914	Rollup
	Sub Total for System	**3**	**items**		**$89,933**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	14	Ea.	3	$112,266	9161
Room lacks a drinking fountain.	Educational Adequacy	7	Ea.	5	$7,761	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	6	Ea.	5	$7,161	Rollup
	Sub Total for System	**3**	**items**		**$127,188**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Kitchen Exhaust Hood	Capital Renewal	2	Ea.	1	$33,664	11424
	Sub Total for System	**1**	**items**		**$33,664**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	3	Ea.	3	$17,204	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	144	Ea.	3	$72,171	23631
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	16	Ea.	3	$336,798	23635
Technology: Instructional spaces do not have local sound reinforcement.	Technology	16	Ea.	3	$80,190	23637
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23629
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$47,713	23628
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23626
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23625
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	144	Ea.	3	$64,954	23630
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$32,076	23638
Technology: Network system inadequate and/or near end of useful life	Technology	14	Ea.	3	$70,166	23639
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	44,239	SF	3	$79,819	23634

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23636
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,019	23627
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	16	Ea.	3	$25,661	23633
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23632
	Sub Total for System	**16**	**items**		**$919,974**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	4	Ea.	3	$18,351	Rollup
	Sub Total for System	**1**	**items**		**$18,351**	
	Sub Total for Building 01 - Main Building	**51**	**items**		**$6,708,058**	
	Total for Campus	**57**	**items**		**$7,306,005**	

Edgewood Highland School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Playfield Areas	ES Playgrounds		1	Ea.	$45,131	4
Fences and Gates	Fencing - Chain Link (4 Ft)		1,428	LF	$93,441	4
Fences and Gates	Fencing - Chain Link (8 Ft)		1,872	LF	$127,384	4
Pedestrian Pavement	Sidewalks - Concrete		8,824	SF	$182,556	5
Fences and Gates	Fencing - Ornamental		118	LF	$128,310	5
		Sub Total for System	**5**	**items**	**$576,823**	
		Sub Total for Building -	**5**	**items**	**$576,823**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	EPDM - Rubber Roofing Material		22,119	SF	$283,086	3
		Sub Total for System	**1**	**items**	**$283,086**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Resilient Flooring	Vinyl Composition Tile Flooring		33,179	SF	$385,258	4
		Sub Total for System	**1**	**items**	**$385,258**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units		5	Ea.	$16,898	4
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)		2	Ea.	$15,443	4
Exhaust Air	Roof Exhaust Fan		10	Ea.	$52,675	5
		Sub Total for System	**3**	**items**	**$85,016**	

Electrical

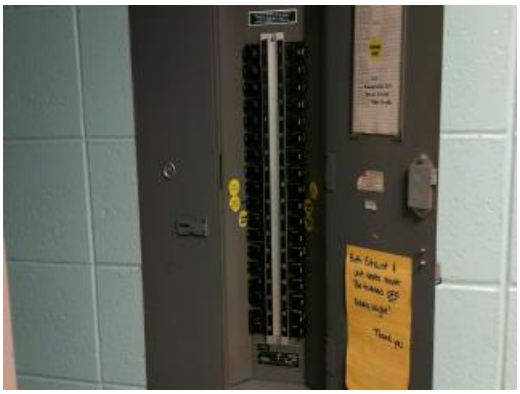
Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Electrical Service	Switchgear - Main Dist Panel (1200 Amps)		1	Ea.	$69,900	3
Wiring Devices	Electrical Disconnect		1	Ea.	$1,855	3
Transfer Switches	Automatic Transfer Switch (Amps)		800	Amps	$28,922	4
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)		1	Ea.	$1,395	4
Electrical Service	Transformer (225 KVA)		1	Ea.	$21,459	5
Lighting Fixtures	Light Fixtures (Bldg SF)		44,239	SF	$266,064	5
		Sub Total for System	**6**	**items**	**$389,596**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Compressed-Air Systems	Air Compressor (1 hp)		1	Ea.	$6,124	4
		Sub Total for System	**1**	**items**	**$6,124**	
		Sub Total for Building 01 - Main Building	**12**	**items**	**$1,149,080**	
		Total for: Edgewood Highland School	**17**	**items**	**$1,725,903**	

Supporting Photos

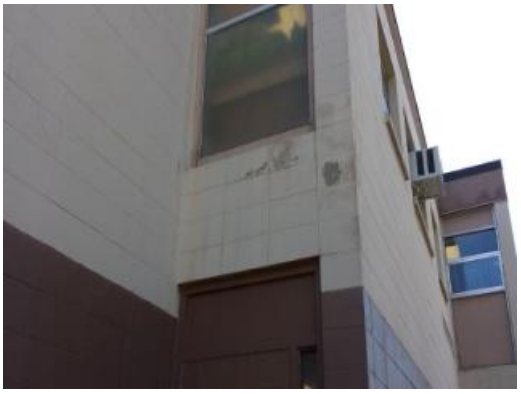
Site Aerial



Aged Panelboard

Aged And Corroded Boiler

Electric Unit Heater

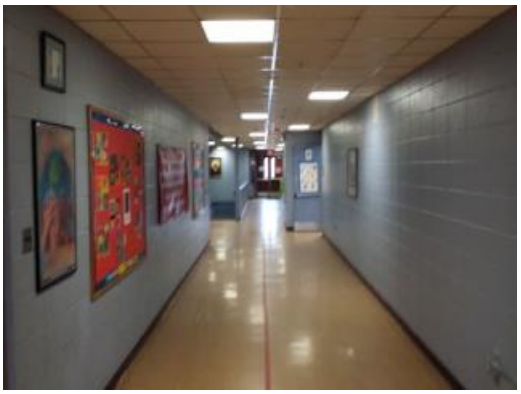


Peeling Exterior Paint

Cracked EIFS

Hot Water Unit Heater

Chipped Interior Paint



Hallway Finishes

Typical Classroom


Library


Restroom Finishes


Computer Lab


Cafeteria/Gymnasium/Auditorium


North Elevation


Cracked Parking Lot Pavement

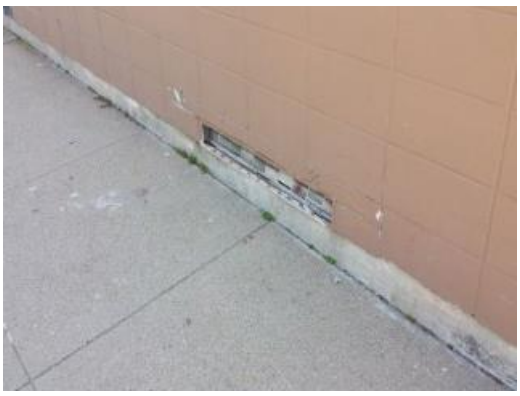
West Elevation

South Elevation

HVAC Circulating Pump

East Elevation

Main Entrance



Damaged Exterior CMU

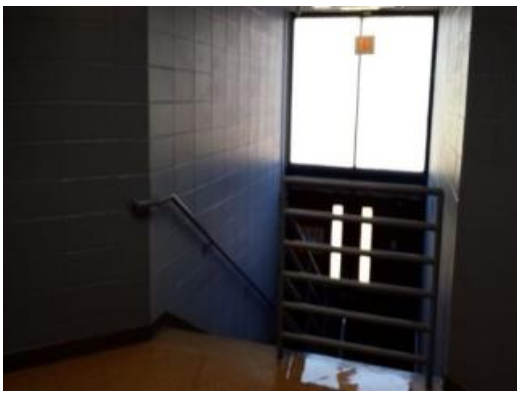

Typical Aged Window


Stained Acoustical Ceiling Tiles


Damaged Ceramic Floor Tile


Cooling Tower


Typical Shower


Broken Window Seals

Facility Condition Assessment

Cranston - Edward S. Rhodes School | *June 2017*

160 Shaw Avenue, Cranston, RI 02905

Introduction

Edward S. Rhodes School, located at 160 Shaw Avenue in Cranston, Rhode Island, was built in 1930. It comprises 35,051 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.

Edward S. Rhodes School serves grades KG - 6, has 21 instructional spaces, and has an enrollment of 248. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Edward S. Rhodes School is 307 with a resulting utilization of 81%.

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 Edward S. Rhodes School the 5-year need is $7,003,147. 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.

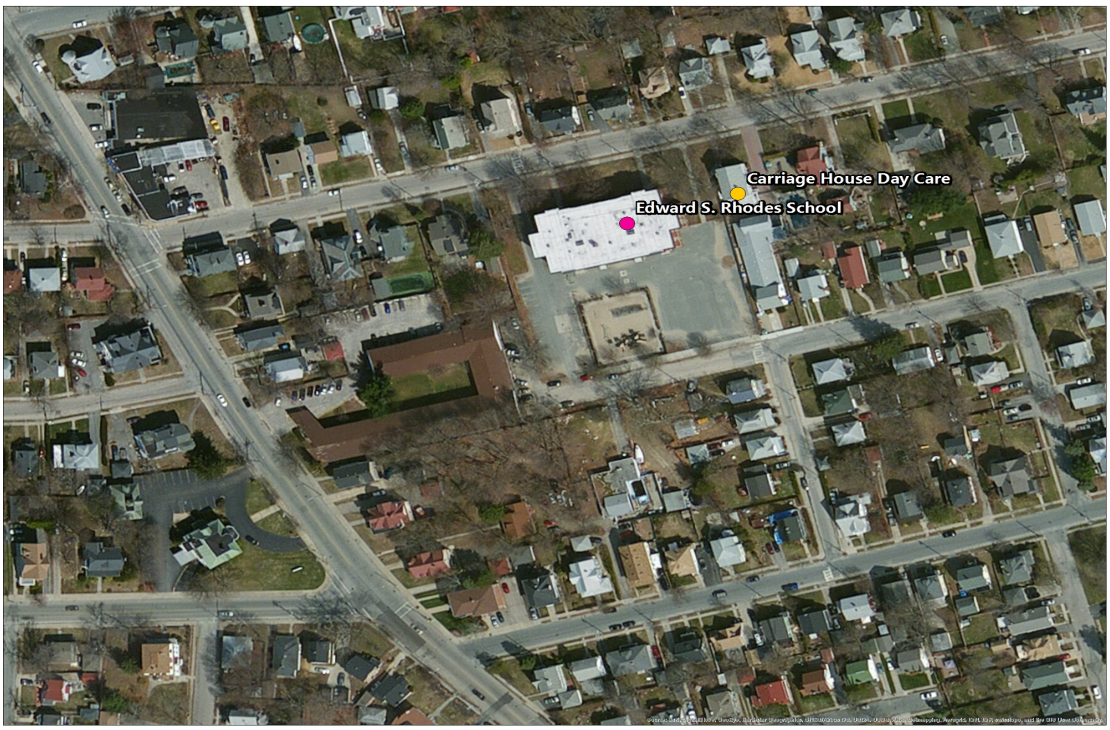


Figure 1: Aerial view of Edward S. Rhodes School

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 Edward S. Rhodes 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
	Pre-cast Concrete Panel Exterior Wall
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	Single Ply Roofing

Interior

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

01 - Main Building:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	1,275 MBH Cast Iron Steam Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Steam Heater
	36 MBH Steam Unit Heater
	Electronic Heating System Controls
	Window Units

01 - Main Building:	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	4'x6' Ventilator/Relief Vent
	Wall Exhaust Fan
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	5,000 Gallon Underground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	Panelboard - 120/240 100A
	Panelboard - 120/240 225A
	Building Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$8,017	$286,182	$72,444	$366,643	5.95 %
Roofing	-	$164,433	-	-	-	$164,433	2.67 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$1,084,509	-	-	-	$1,084,509	17.59 %
Interior	-	-	$290,849	$1,540,539	$6,928	$1,838,317	29.81 %
Mechanical	-	$886,523	-	$31,410	-	$917,933	14.89 %
Electrical	-	$69,533	-	-	$40,185	$109,718	1.78 %
Plumbing	-	-	$437,276	$13,740	$93,100	$544,116	8.82 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$930,853	-	-	$930,853	15.09 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$13,857	$196,285	-	$210,141	3.41 %
Total	$0	$2,204,997	$1,680,852	$2,068,156	$212,657	$6,166,663	

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

The building systems with the most need include:

Interior	-	$1,838,317
Exterior	-	$1,084,509
Technology	-	$930,853

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

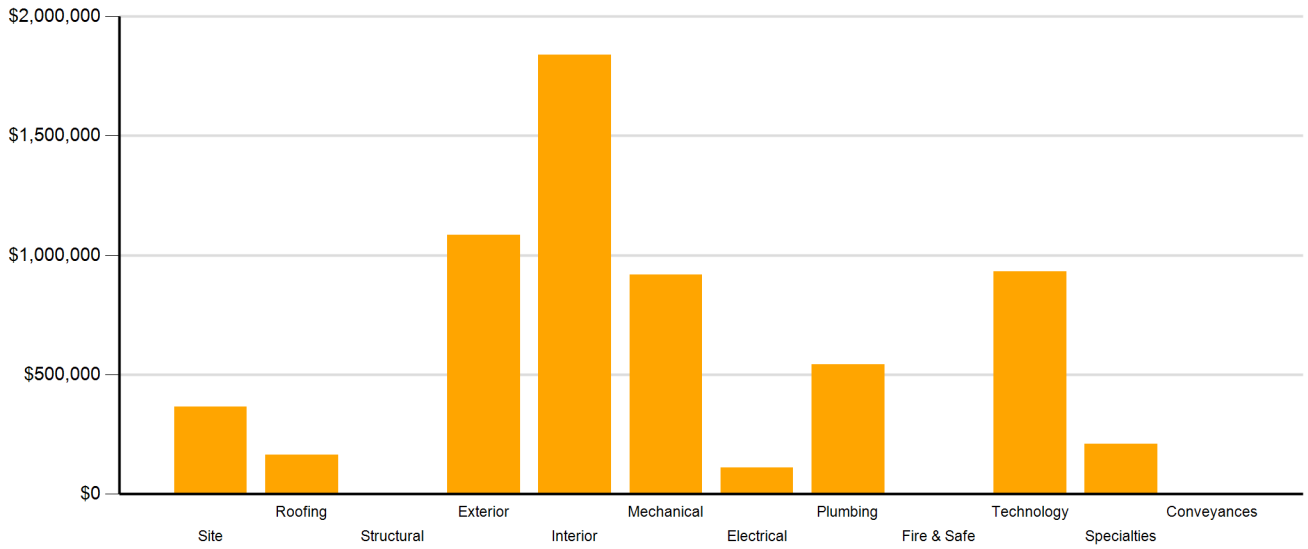


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$69,116	-	$69,116
Barrier to Accessibility	-	-	$290,849	-	-	$290,849
Capital Renewal	-	$2,204,997	$445,293	$490,329	$83,398	$3,224,017
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$19,631	$562,973	$129,260	$711,863
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$945,739	-	$945,739
Technology	-	-	$925,079	-	-	$925,079
Traffic	-	-	-	-	-	$0
Total	$0	$2,204,997	$1,680,852	$2,068,156	$212,657	$6,166,663

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

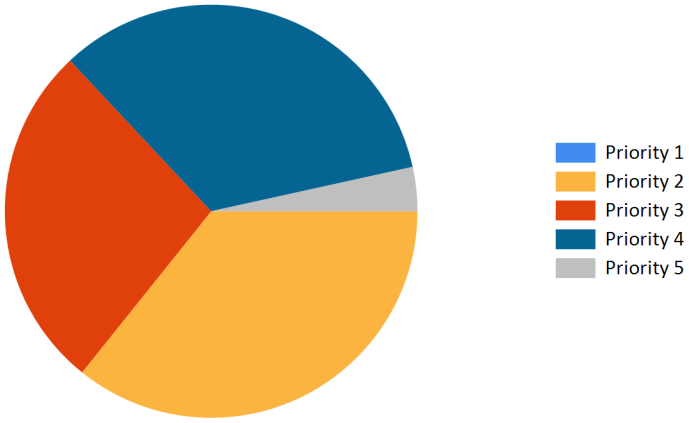


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$366,643	$0	$0	$0	$0	$135,144	$135,144	$501,787
Roofing	$164,433	$0	$0	$0	$0	$0	$0	$164,433
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$1,084,509	$0	$0	$0	$0	$0	$0	$1,084,509
Interior	$1,838,317	$0	$0	$0	$0	$504,061	$504,061	$2,342,378
Mechanical	$917,933	$0	$0	$0	$1,667	$173,210	$174,877	$1,092,810
Electrical	$109,718	$0	$0	$0	$0	$0	$0	$109,718
Plumbing	$544,116	$0	$0	$0	$22,402	$0	$22,402	$566,518
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$930,853	$0	$0	$0	$0	$0	$0	$930,853
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$210,141	$0	$0	$0	$0	$0	$0	$210,141
Total	**$6,166,663**	**$0**	**$0**	**$0**	**$24,069**	**$812,415**	**$836,484**	**$7,003,147**

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

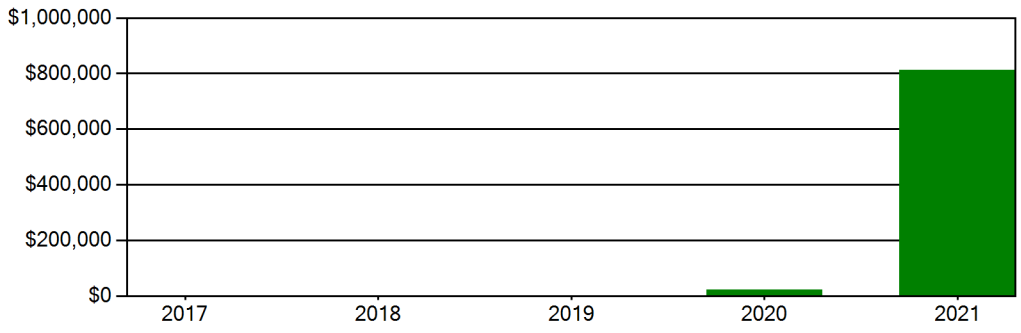
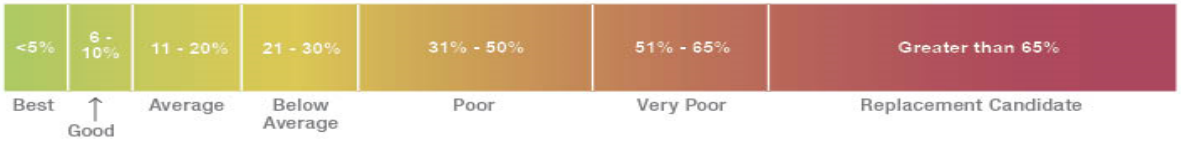


Figure 4: Life Cycle Capital Renewal Forecast

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 $12,267,850. For planning purposes, the total 5-year need at the Edward S. Rhodes School is $7,003,147 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Edward S. Rhodes School facility has a 5-year FCI of 57.09%.

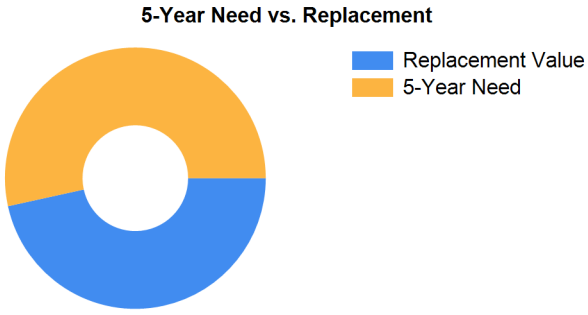


Figure 5: 5-Year FCI

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 195 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 Edward S. Rhodes School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $275,940.

Summary of Findings

The Edward S. Rhodes School comprises 35,051 square feet and was constructed in 1930. Current deficiencies at this school total $6,166,663. Five year capital renewal costs total $836,484. The total identified need for the Edward S. Rhodes School (current deficiencies and 5-year capital renewal costs) is $7,003,147. The 5-year FCI is 57.09%.

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
Edward S. Rhodes School Totals	35,051	1930	$6,166,663	$836,484	$7,003,147	57.09%

**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	300	SF	3	$8,017	11183
Note: Sidewalk is cracked and broken at the front entry.						
Asphalt Paving Requires Replacement	Capital Renewal	55	CAR	4	$237,907	11184
Note: Asphalt play yard has large cracks.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28436
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	130	LF	4	$10,988	11182
Note: A portion of the exterior fence is rusting and in disrepair.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,644	28709
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54875
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**6**	**items**		**$366,643**	
	Sub Total for School and Site Level	**6**	**items**		**$366,643**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Single-Ply Membrane Roof Covering Requires Replacement	Capital Renewal	11,684	SF	2	$164,433	11202
Note: Roof insulation is failing and moves underfoot. The membrane is buckling and the warranty expired in 2007.						
	Sub Total for System	**1**	**items**		**$164,433**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	12,268	SF	2	$1,084,509	11198
Note: Windows are single pane with air and water infiltration issues.						
	Sub Total for System	**1**	**items**		**$1,084,509**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	93	Door	3	$290,849	11188
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	25,237	SF	4	$789,264	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	22	Ea.	4	$6,880	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	360	LF	4	$9,007	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	13,486	SF	4	$140,588	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	800	SF	4	$25,019	19763
Note: Classrooms adjacent to auditorium/cafeteria						
Room Is Excessively Reverberant	Acoustics	1,800	SF	4	$44,096	19764
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	13,630	SF	4	$525,684	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	3	Ea.	5	$6,928	Rollup
	Sub Total for System	**9**	**items**		**$1,838,317**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	10	Ea.	2	$185,476	11201
Note: Heating units are antiquated and obsolete.						
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$163,061	11192
Note: Steam boilers very antiquated and obsolete with poor control.						

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	35,501	SF	2	$300,064	11195
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	42	Ea.	2	$237,921	11194
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	5	Ea.	4	$14,681	11186
Note: Fans are aged and should be replaced.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$16,730	11203
Note: Fuel oil pumps are aged and obsolete.						
	Sub Total for System	**6**	**items**		**$917,933**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$63,174	11193
Note: Power distribution in the building is old and obsolete. Service should be updated.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$6,359	11551
Note: Power distribution in the building is old and obsolete. Service should be updated.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	$40,185	Rollup
	Sub Total for System	**3**	**items**		**$109,718**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	35,051	SF	3	$309,240	11191
Note: Domestic water piping is aged and should be replaced. Water is brown after periods of low usage and there is evidence of scaling.						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$128,036	11197
Note: Sanitary piping is original to the building and should be replaced.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,650	11189
Note: Original mop sinks should be replaced.						
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	1	Ea.	4	$8,090	11190
Note: Inoperable drinking fountain on first floor.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
Underground Fuel/Oil Storage Tank Requires Replacement	Capital Renewal	1	Ea.	5	$83,398	11196
Note: Tank is very old and should be replaced.						
	Sub Total for System	**7**	**items**		**$544,116**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	$5,774	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	72	Ea.	3	$37,529	23615
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	16	Ea.	3	$350,270	23620
Technology: Instructional spaces do not have local sound reinforcement.	Technology	16	Ea.	3	$83,398	23622
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	23611
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	23610
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,903	23613
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	144	Ea.	3	$67,552	23614
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$50,039	23623
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$83,398	23624

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	35,051	SF	3	$65,771	23619
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$59,421	23616
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	23621
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,340	23612
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	16	Ea.	3	$26,687	23618
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	23617
	Sub Total for System	**16**	**items**		**$930,853**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	3	Ea.	3	$13,857	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	16	Room	4	$196,285	11199
Note: Cabinetry is aged and functions poorly.						
	Sub Total for System	**2**	**items**		**$210,141**	
	Sub Total for Building 01 - Main Building	**45**	**items**		**$5,800,020**	
	Total for Campus	**51**	**items**		**$6,166,663**	

Edward S. Rhodes School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Roadway Pavement	Asphalt		4	CAR	$13,395	5
Pedestrian Pavement	Sidewalks - Concrete		2,000	SF	$41,377	5
Parking Lot Pavement	Asphalt		24	CAR	$80,372	5
		Sub Total for System	**3**	**items**	**$135,145**	
		Sub Total for Building -	**3**	**items**	**$135,145**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings		8,763	SF	$37,103	5
Wood Flooring	Wood Flooring - All Types		3,505	SF	$117,710	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		26,288	SF	$240,316	5
Wall Painting and Coating	Painting/Staining (Bldg SF)		16,288	SF	$108,932	5
		Sub Total for System	**4**	**items**	**$504,061**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Unit Heater Steam/HW (36 MBH)		1	Ea.	$1,667	4
Exhaust Air	Ventilator/Relief Vent (4'x6')		9	Ea.	$173,210	5
		Sub Total for System	**2**	**items**	**$174,877**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain		3	Ea.	$22,402	4
		Sub Total for System	**1**	**items**	**$22,402**	
		Sub Total for Building 01 - Main Building	**7**	**items**	**$701,340**	
		Total for: Edward S. Rhodes School	**10**	**items**	**$836,484**	

Supporting Photos


Weathered Roof With Ponding


Aged Boiler


Aged Heating Unit


Aged Pumps


Aged Wall Exhaust


Cracked And Spalled Sidewalk


Cracked Play Area


Gym


Site Aerial


Cafeteria


Typical Classroom


Typical Toilet Fixture


Exterior Finishes


Typical Windows


Library


Non-Compliant Door Hardware


VCT Lifting At Seams

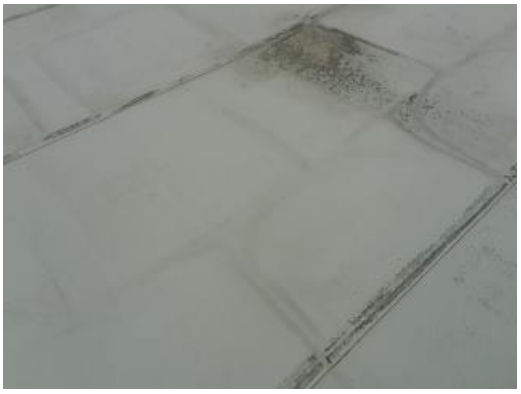

Aged Window System


Radiators


Peeling Paint


Aged Cabinetry


Single Ply Roofing



Weathered Roof Membrane

Facility Condition Assessment

Cranston - Garden City School | *June 2017*

70 Plantations Drive, Cranston, RI 02920

Introduction

Garden City School, located at 70 Plantations Drive in Cranston, Rhode Island, was built in 1953. It comprises 33,186 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.

Garden City School serves grades PK - 6, has 18 instructional spaces, and has an enrollment of 350. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Garden City School is 310 with a resulting utilization of 113%.

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 Garden City School the 5-year need is $6,382,209. 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.

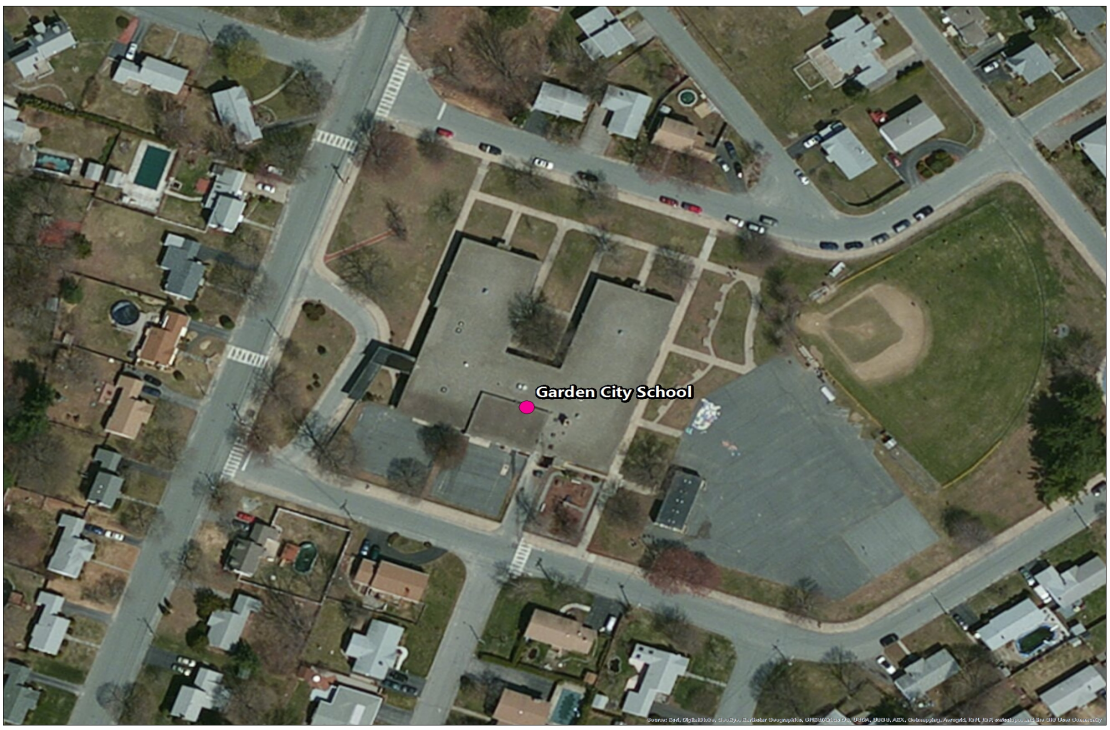


Figure 1: Aerial view of Garden City School

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 Garden City 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

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

01 - Main Building:	EPDM Roofing
	Canopy Roofing

Interior

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

01 - Main Building:	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Ceramic Tile Wall
	Vinyl/Fabric Wall Covering
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler

01 - Main Building:	Steam Condensate Receiver, Tank and Pump
	Steam/Hot Water Heating Unit Vent
	Fin Tube Water Radiant Heater
	Window Units
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	Roof Exhaust Fan
	Supply Fan

Plumbing

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

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

Electrical

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

01 - Main Building:	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	-	$36,086	$72,198	$108,283	2.48 %
Roofing	-	-	$30,071	-	-	$30,071	0.69 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$47,817	-	-	-	$47,817	1.09 %
Interior	-	-	$43,002	$1,123,276	$2,294	$1,168,572	26.73 %
Mechanical	-	$910,684	$121,686	-	-	$1,032,370	23.61 %
Electrical	-	$82,924	-	-	$36,153	$119,077	2.72 %
Plumbing	-	-	$415,847	$237,152	$5,238	$658,237	15.05 %
Fire and Life Safety	$52,841	-	-	-	-	$52,841	1.21 %
Technology	-	-	$862,935	-	-	$862,935	19.74 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	$283,103	-	$292,341	6.69 %
Total	$52,841	$1,041,426	$1,482,780	$1,679,616	$115,882	$4,372,544	

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

The building systems with the most need include:

Interior	-	$1,168,572
Mechanical	-	$1,032,370
Technology	-	$862,935

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

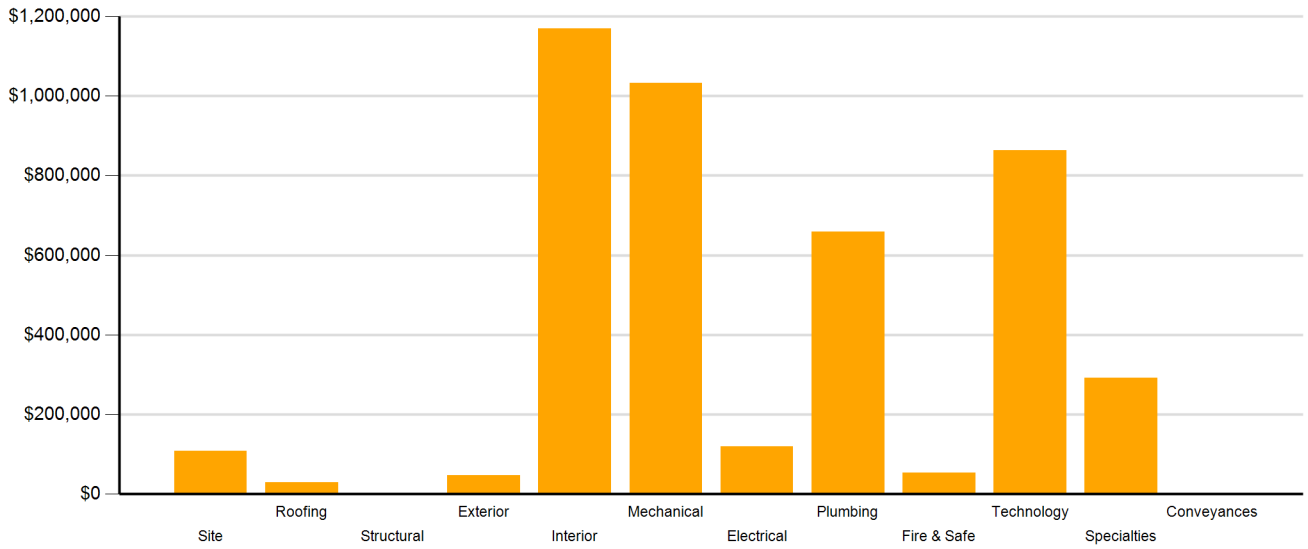


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$107,038	$69,164	-	$176,201
Barrier to Accessibility	-	-	$43,002	-	-	$43,002
Capital Renewal	$52,841	$1,041,426	$460,567	$766,883	-	$2,321,717
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$66,975	$36,086	$115,882	$218,942
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$807,483	-	$807,483
Technology	-	-	$805,198	-	-	$805,198
Traffic	-	-	-	-	-	$0
Total	$52,841	$1,041,426	$1,482,780	$1,679,616	$115,882	$4,372,544

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

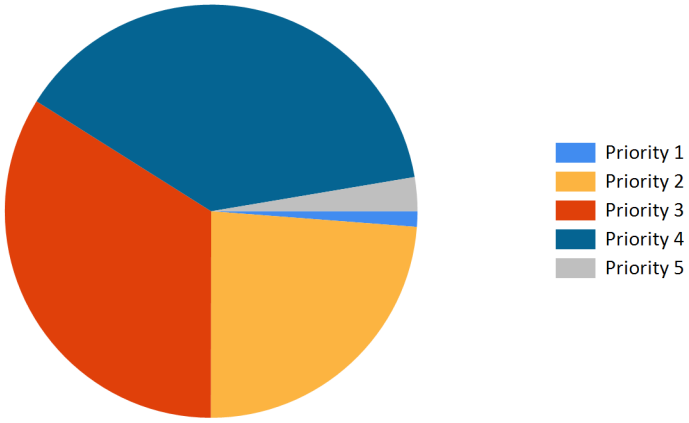


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$108,283	$0	$0	$0	$155,642	$103,443	$259,085	$367,368
Roofing	$30,071	$0	$0	$0	$0	$436,272	$436,272	$466,343
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$47,817	$0	$0	$0	$0	$0	$0	$47,817
Interior	$1,168,572	$0	$99,876	$0	$42,802	$106,180	$248,858	$1,417,430
Mechanical	$1,032,370	$0	$0	$0	$739,123	$47,408	$786,531	$1,818,901
Electrical	$119,077	$0	$0	$0	$12,904	$199,589	$212,493	$331,570
Plumbing	$658,237	$0	$0	$0	$22,402	$44,024	$66,426	$724,663
Fire and Life Safety	$52,841	$0	$0	$0	$0	$0	$0	$52,841
Technology	$862,935	$0	$0	$0	$0	$0	$0	$862,935
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$292,341	$0	$0	$0	$0	$0	$0	$292,341
Total	**$4,372,544**	**$0**	**$99,876**	**$0**	**$972,873**	**$936,916**	**$2,009,665**	**$6,382,209**

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

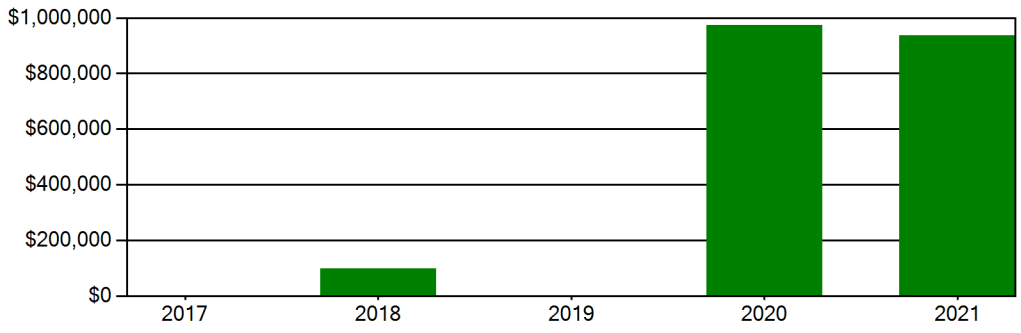
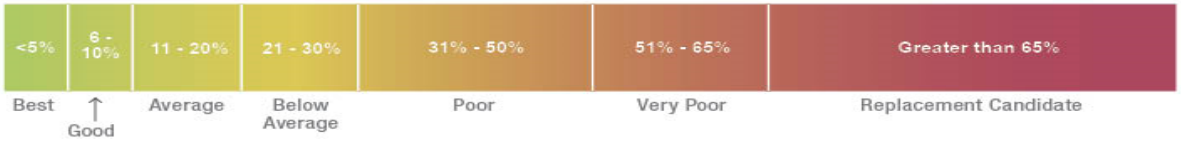


Figure 4: Life Cycle Capital Renewal Forecast

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 $12,455,100. For planning purposes, the total 5-year need at the Garden City School is $6,382,209 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Garden City School facility has a 5 -year FCI of 51.24%.

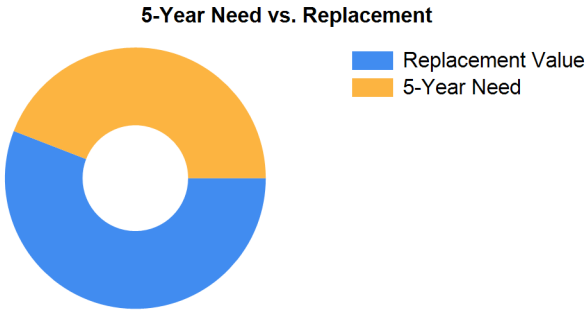


Figure 5: 5-Year FCI

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 198 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 Garden City School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $313,740.

Summary of Findings

The Garden City School comprises 33,186 square feet and was constructed in 1953. Current deficiencies at this school total $4,372,544. Five year capital renewal costs total $2,009,665. The total identified need for the Garden City School (current deficiencies and 5-year capital renewal costs) is $6,382,209. The 5-year FCI is 51.24%.

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
Garden City School Totals	33,186	1953	$4,372,544	$2,009,665	$6,382,209	51.24%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28441
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28713
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54880
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**3**	**items**		**$108,283**	
	Sub Total for School and Site Level	**3**	**items**		**$108,283**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Awning Or Canopy Metal Roofing System Requires Replacement	Capital Renewal	500	SF	3	$30,071	9011
Note: Canopy deteriorating						
	Sub Total for System	**1**	**items**		**$30,071**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	268	SF	2	$47,817	9004
	Sub Total for System	**1**	**items**		**$47,817**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	13	Door	3	$43,002	9013
Note: Door knobs to be replaced with ADA levers.						
9x9 Asbestos Tile Present and In Active Use, Greater than 25 Percent has Significant Deterioration	Hazardous Material	26,549	SF	4	$798,362	Rollup
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	21,571	SF	4	$246,629	9023
Note: Tiles are cracking and falling down						
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	18	Ea.	4	$5,413	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	100	LF	4	$2,406	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	130	SF	4	$1,303	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	1,500	SF	4	$45,107	19695
Note: All classrooms & offices						
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	400	SF	4	$24,057	19697
Note: Gym						
	Sub Total for System	**8**	**items**		**$1,166,278**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	5	Ea.	2	$89,171	9021
Note: Unit heaters visually deteriorating and require constant attention per building operator						
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$359,203	9016
Note: Boilers obsolete						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	33,186	SF	2	$269,709	9017
Note: Based on condition of mechanical equipment, piping is passed is expected life. Reco,mend replacement						
The Radiant Heat HVAC Component Requires Replacement	Capital Renewal	24	Ea.	2	$192,600	9022
The Large Diameter Exhausts/Hoods Require Replacement	Capital Renewal	1	Ea.	3	$14,649	9006
Note: Boiler fan obsolete.						
Unit Ventilators Are Excessively Noisy	Acoustics	16	Ea.	3	$107,038	19696

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Note: All classrooms						
	Sub Total for System	**6**	**items**		**$1,032,370**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$27,064	9268
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$1,933	9273
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	$32,477	9018
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$15,336	9271
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$6,114	9272
Room Has Insufficient Electrical Outlets	Educational Adequacy	68	Ea.	5	$34,157	Rollup
	Sub Total for System	**6**	**items**		**$117,082**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	33,186	SF	3	$281,525	9015
Note: Piping has surpassed expected life cycle. Based on condition of other mech equipment piping is ready to be replaced						
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$123,112	9019
Note: Piping is outdated and should be replaced. Sewage backups have occurred in the past						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	8	Ea.	3	$11,211	9014
Note: Urinals outdated and obsolete						
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	21	Ea.	4	$226,286	9008
Note: Outdated and obsolete.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	4	Ea.	4	$10,866	9010
Note: Mop sinks original to building, visually deteriorating						
Room lacks a drinking fountain.	Educational Adequacy	1	Ea.	5	$1,116	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**7**	**items**		**$658,237**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Emergency Lighting Is Inadequate Or Not Present And Should be Installed	Capital Renewal	33,186	SF	1	$52,841	9012
Note: Throughout building						
	Sub Total for System	**1**	**items**		**$52,841**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	10	Ea.	3	$57,737	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	72	Ea.	3	$36,086	23466
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	15	Ea.	3	$150,356	23471
Technology: Instructional spaces do not have local sound reinforcement.	Technology	15	Ea.	3	$75,178	23476
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23463
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23462
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23464
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23461
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23459

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23460
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	160	Ea.	3	$72,171	23469
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	30	Ea.	3	$13,532	23467
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23474
Technology: Network system inadequate and/or near end of useful life	Technology	18	Ea.	3	$90,214	23475
Technology: Network system inadequate and/or near end of useful life	Technology	33,186	SF	3	$9,979	24943
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	48	Ea.	3	$24,057	23468
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	33,186	SF	3	$59,877	23473
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23470
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23472
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23465
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	15	Ea.	3	$24,057	23477
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23478
	Sub Total for System	**22**	**items**		**$862,935**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	24	Room	4	$283,103	9020
	Sub Total for System	**2**	**items**		**$292,341**	
	Sub Total for Building 01 - Main Building	**54**	**items**		**$4,259,971**	

Building: 02 - Portable

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,294	Rollup
	Sub Total for System	**1**	**items**		**$2,294**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	4	Ea.	5	$1,996	Rollup
	Sub Total for System	**1**	**items**		**$1,996**	
	Sub Total for Building 02 - Portable	**2**	**items**		**$4,290**	
	Total for Campus	**59**	**items**		**$4,372,544**	

Garden City School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Roadway Pavement	Asphalt		33	CAR	$110,511	4
Playfield Areas	ES Playgrounds		1	Ea.	$45,131	4
Pedestrian Pavement	Sidewalks - Concrete		5,000	SF	$103,443	5
		Sub Total for System	**3**	**items**	**$259,085**	
		Sub Total for Building -	**3**	**items**	**$259,085**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Canopy Roofing	Canopies		200	SF	$11,547	5
Low-Slope Roofing	EPDM - Rubber Roofing Material		33,186	SF	$424,725	5
		Sub Total for System	**2**	**items**	**$436,273**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		14,934	SF	$99,876	2
Wall Coverings	Vinyl/Fabric Wall Covering		1,659	SF	$11,973	4
Resilient Flooring	Vinyl Composition Tile Flooring		2,655	SF	$30,829	4
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		11,615	SF	$106,180	5
		Sub Total for System	**4**	**items**	**$248,858**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Heat Generation	Steam Condensate Reciever, Tank and Pump		2	Ea.	$712,087	4
Decentralized Cooling	Window Units		8	Ea.	$27,036	4
Exhaust Air	Roof Exhaust Fan		9	Ea.	$47,408	5
		Sub Total for System	**3**	**items**	**$786,531**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)		3	Ea.	$4,532	4
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)		6	Ea.	$8,372	4
Lighting Fixtures	Light Fixtures (Bldg SF)		33,186	SF	$199,589	5
		Sub Total for System	**3**	**items**	**$212,493**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain		3	Ea.	$22,402	4
Domestic Water Equipment	Water Heater - Gas - 100 Gallon		1	Ea.	$5,387	5
Plumbing Fixtures	Lavatories		12	Ea.	$38,637	5
		Sub Total for System	**3**	**items**	**$66,426**	
		Sub Total for Building 01 - Main Building	**15**	**items**	**$1,750,581**	
		Total for: Garden City School	**18**	**items**	**$2,009,667**	

Supporting Photos

North Elevation

South Elevation

Site Aerial

Courtyard Elevation


Main Entrance


West Elevation


North Elevation


Broken Window Seals


East Elevation


Boiler Exhaust Fan


Patched/Broken Tile


Custodial Sink


Drinking Fountain


Canopy


Custodial Sink


Boiler


Urinals


Electrical Panel


Electric Panel


Worn Casework


Electric Panel

Radiant Heater

Unit Heater

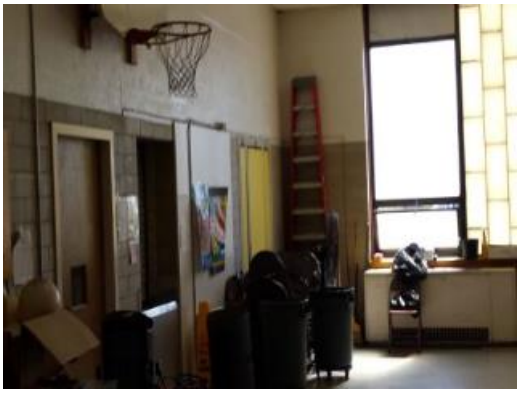
Ceiling Tiles - Falling Down

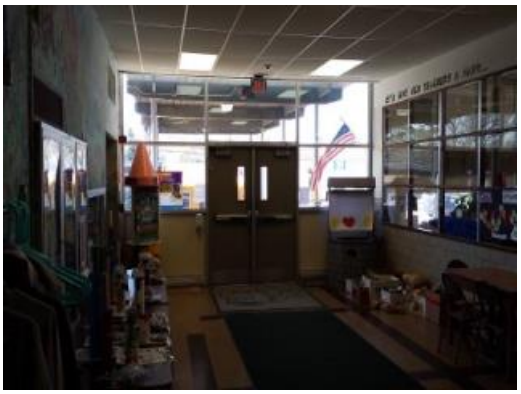
Radiant Heater

Entrance Lobby

Typical Classroom

Typical Restroom


Cafeteria/Gym


Entrance Lobby


Library


Library


Portable Interior


Elevation


Portable Exterior


Portable Side View


Elevation


Portable Front Elevation

Facility Condition Assessment

Cranston - George J. Peters School | *June 2017*

15 Mayberry Street, Cranston, RI 02920

Introduction

George J. Peters School, located at 15 Mayberry Street in Cranston, Rhode Island, was built in 1957. It comprises 38,800 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.

George J. Peters School serves grades 1 - 6, has 18 instructional spaces, and has an enrollment of 347. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for George J. Peters School is 307 with a resulting utilization of 113%.

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 George J. Peters School the 5-year need is $7,257,028. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.

Figure 1: Aerial view of George J. Peters 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 George J. Peters 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
	Steel Exterior Entrance Doors

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

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

Interior

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

01 - Main Building:	Foldable Interior Partition
	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
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	Steam Condensate Receiver, Tank and Pump

01 - Main Building:	36 MBH Steam Unit Heater
	Radiant Steam Heater
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	DDC Heating System Controls
	Window Units
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	10 HP Pump
	2,000 CFM Interior AHU
	Kitchen Exhaust Hoods
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1/2 hp)

Electrical

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

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,774	$36,086	$7,398	$49,257	0.76 %
Roofing	-	$1,555,686	-	-	-	$1,555,686	24.03 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$719,505	$1,271,121	$6,928	$1,997,554	30.86 %
Mechanical	-	$1,513,536	$58,595	-	-	$1,572,131	24.29 %
Electrical	-	$71,798	-	-	$46,672	$118,470	1.83 %
Plumbing	-	-	-	$2,716	$9,702	$12,419	0.19 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$969,738	-	-	$969,738	14.98 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	$188,735	-	$197,973	3.06 %
Total	$0	$3,141,020	$1,762,849	$1,498,658	$70,701	$6,473,228	

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

The building systems with the most need include:

Interior	-	$1,997,554
Mechanical	-	$1,572,131
Roofing	-	$1,555,686

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

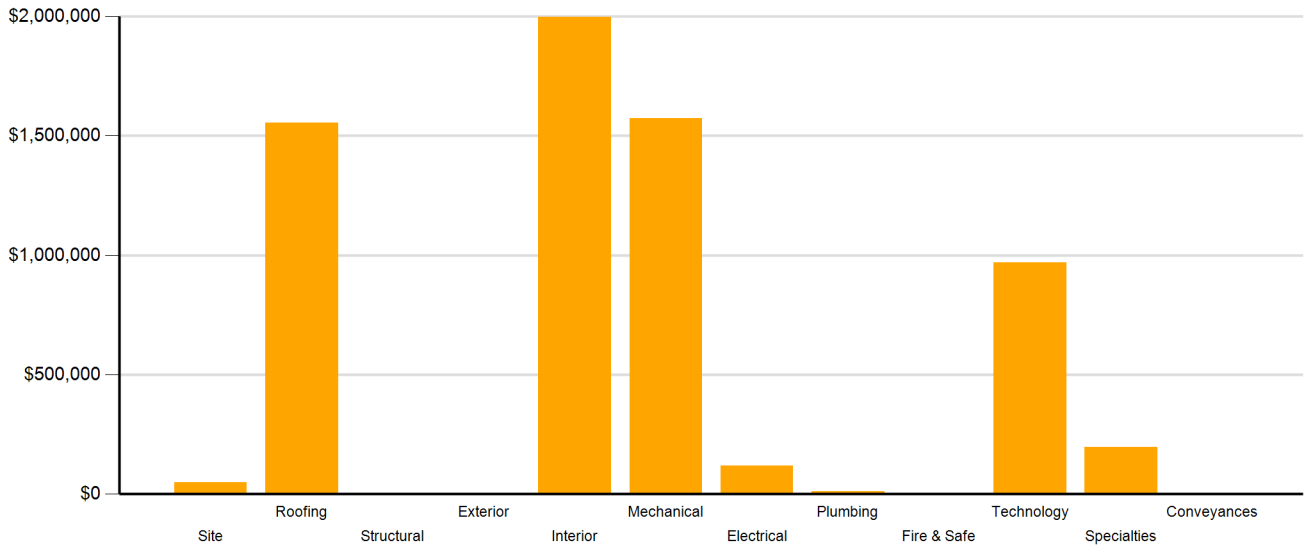


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$169,602	-	$169,602
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$3,141,020	$778,100	$191,452	$10,506	$4,121,077
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$9,238	$70,797	$60,195	$140,229
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$1,066,808	-	$1,066,808
Technology	-	-	$969,738	-	-	$969,738
Traffic	-	-	$5,774	-	-	$5,774
Total	$0	$3,141,020	$1,762,849	$1,498,658	$70,701	$6,473,228

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

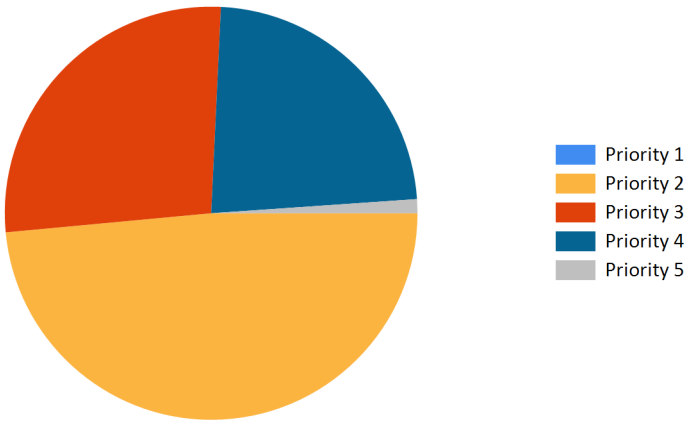


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$49,257	$0	$0	$0	$361,674	$0	$361,674	$410,931
Roofing	$1,555,686	$0	$0	$0	$0	$0	$0	$1,555,686
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$0	$0	$0
Interior	$1,997,554	$0	$0	$0	$0	$115,341	$115,341	$2,112,895
Mechanical	$1,572,131	$0	$0	$0	$0	$306,785	$306,785	$1,878,916
Electrical	$118,470	$0	$0	$0	$0	$0	$0	$118,471
Plumbing	$12,419	$0	$0	$0	$0	$0	$0	$12,419
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$969,738	$0	$0	$0	$0	$0	$0	$969,738
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$197,973	$0	$0	$0	$0	$0	$0	$197,973
Total	**$6,473,228**	**$0**	**$0**	**$0**	**$361,674**	**$422,126**	**$783,800**	**$7,257,028**

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

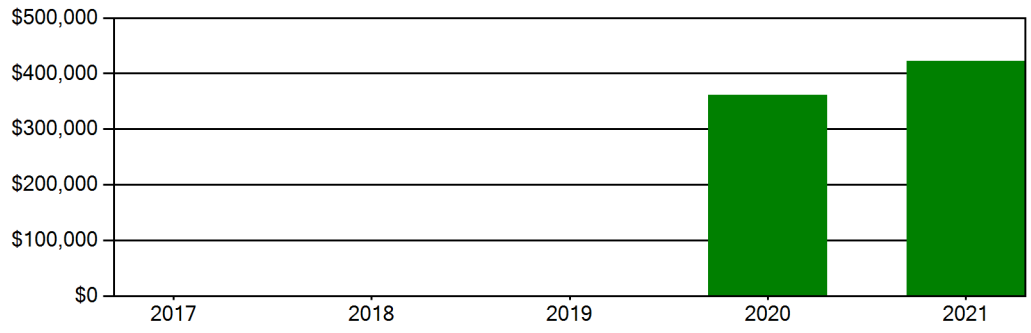
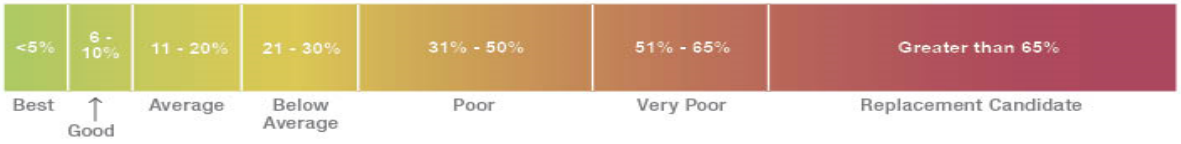


Figure 4: Life Cycle Capital Renewal Forecast

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 $13,580,000. For planning purposes, the total 5-year need at the George J. Peters School is $7,257,028 (Life Cycle Years 1-5 plus the FCI deficiency cost). The George J. Peters School facility has a 5-year FCI of 53.44%.

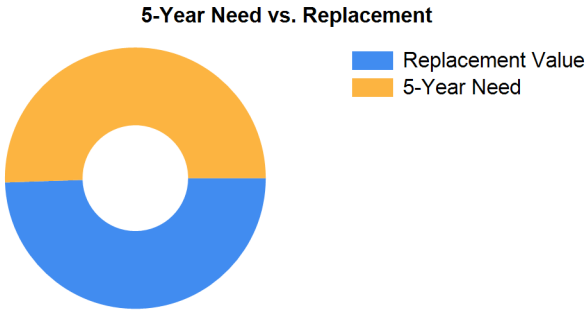


Figure 5: 5-Year FCI

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 216 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 George J. Peters School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $423,360.

Summary of Findings

The George J. Peters School comprises 38,800 square feet and was constructed in 1957. Current deficiencies at this school total $6,473,228. Five year capital renewal costs total $783,800. The total identified need for the George J. Peters School (current deficiencies and 5-year capital renewal costs) is $7,257,028. The 5-year FCI is 53.44%.

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
George J. Peters School Totals	38,800	1957	$6,473,228	$783,800	$7,257,028	53.44%

**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	Traffic	2	Ea.	3	$5,774	16925
Note: Add school zone signage with speed limitations						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28446
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28717
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**3**	**items**		**$49,257**	
	Sub Total for School and Site Level	**3**	**items**		**$49,257**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Built-up Roofing With Aggregate Ballast Requires Replacement	Capital Renewal	38,800	SF	2	$1,555,686	12288
Note: The roof is original to the building. There are multiple locations of ponding and leaks at flashing.						
	Sub Total for System	**1**	**items**		**$1,555,686**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Doors Require Replacement	Capital Renewal	148	Door	3	$719,505	12281
Note: Interior wood doors are aged and chipped with non-compliant hardware. They should be replaced.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	34,920	SF	4	$1,050,088	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	30	Ea.	4	$9,021	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	320	LF	4	$7,698	Rollup
Room Is Excessively Reverberant	Acoustics	7,200	SF	4	$169,602	27943
Location: Cafeteria						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	900	SF	4	$34,711	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	3	Ea.	5	$6,928	Rollup
	Sub Total for System	**7**	**items**		**$1,997,554**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	17	Ea.	2	$303,182	12300
Note: Unit vents are original to the building and obsolete with damaged casings.						
Steam/HW Unit Heater Requires Replacement	Capital Renewal	2	Ea.	2	$3,472	12294
Note: Unit heaters are obsolete and should be replaced.						
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$359,203	12291
Note: Boilers are aged and should be replaced.						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	76	Ea.	2	$134,230	12297
Note: Fin tube heaters are original to the building with deteriorating casings.						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	38,800	SF	2	$315,335	13480
The Steam Condensate Receiver Requires Replacement	Capital Renewal	1	Ea.	2	$370,879	12295
Note: Condensate receiver, tank, and pump are original to the building and heavily corroded. They should be replaced.						
The Steam/Hot Water Radiant Heater Requires Replacement	Capital Renewal	5	Ea.	2	$27,235	12296
Note: Radiant heaters are original to the building and should be replaced.						
The Large Diameter Exhausts/Hoods Require Replacement	Capital Renewal	4	Ea.	3	$58,595	12284
Note: Original exhaust fans are rusted and non-functional.						
	Sub Total for System	**8**	**items**		**$1,572,131**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$27,064	12298

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$1,933	12283
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$6,114	12292
Note: Panelboard is obsolete and should be replaced.						
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$36,687	12293
Note: Panelboards are aged and obsolete.						
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,502	12289
Note: Water heater						
Remove Abandoned Equipment	Capital Renewal	2	Ea.	5	$7,004	12290
Note: Fuel oil pumps						
Room Has Insufficient Electrical Outlets	Educational Adequacy	72	Ea.	5	$36,166	Rollup
	Sub Total for System	**7**	**items**		**$118,470**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	1	Ea.	4	$2,716	12287
Note: Service sink is aged and stained.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**3**	**items**		**$12,419**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	120	Ea.	3	$60,143	23361
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	21	Ea.	3	$210,499	23366
Technology: Instructional spaces do not have local sound reinforcement.	Technology	21	Ea.	3	$105,249	23371
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23359
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23358
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23360
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23357
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23355
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23356
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	99	Ea.	3	$44,656	23364
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	63	Ea.	3	$28,417	23362
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23369
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$80,190	23370
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	168	Ea.	3	$84,200	23363
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	38,800	SF	3	$70,006	23368
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23365
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23367

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	21	Ea.	3	$33,680	23372
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23373
	Sub Total for System	**19**	**items**		**$969,738**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	16	Room	4	$188,735	12299
Note: Cabinets are original and in disrepair.						
	Sub Total for System	**2**	**items**		**$197,973**	
	Sub Total for Building 01 - Main Building	**47**	**items**		**$6,423,971**	
	Total for Campus	**50**	**items**		**$6,473,228**	

George J. Peters School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Roadway Pavement	Asphalt		108	CAR	$361,674	4
		Sub Total for System	**1**	**items**	**$361,674**	
		Sub Total for Building -	**1**	**items**	**$361,674**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Interior Operable Partitions	Foldable partition (Bldg SF)		128	SF Wall	$14,965	5
Interior Coiling Doors	Overhead		1	Door	$37,240	5
Suspended Plaster and	Painted ceilings		3,880	SF	$16,428	5
Wall Painting and Coating	Painting/Staining (Bldg SF)		6,984	SF	$46,708	5
		Sub Total for System	**4**	**items**	**$115,342**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Roof Exhaust Fan - Large		1	Ea.	$14,063	5
Exhaust Air	Roof Exhaust Fan - Large		4	Ea.	$56,251	5
Heating System Supplementary Components	Controls - DDC (Bldg.SF)		38,800	SF	$236,471	5
		Sub Total for System	**3**	**items**	**$306,784**	
		Sub Total for Building 01 - Main Building	**7**	**items**	**$422,126**	
		Total for: George J. Peters School	**8**	**items**	**$783,800**	

Supporting Photos


Aged Unit Heater


Aged Boilers


Obsolete Panelboard


Restroom Finishes And Fixtures

Site Aerial

Exterior Finishes

Cafeteria/Gym

West Elevation

Library

Typical Classroom


Cafetorium Exterior


Main Office


South Elevation


Kindergarten Toilet


Plaque


Worn 9x9 Flooring


Chipped And Worn Wood Door


Vegetation Growing On Roof


Ponding At Roof Edge


Original Radiant Heater


Ponding At Roof Drain


Radiant Heater


Corroded Condensate Receiver


Aged Distribution Panel


Aged Unit Vent


Typical Aged Casework


Aged Service Sink


Rusted Exhaust Fan

Facility Condition Assessment

Cranston - Gladstone Street School | *June 2017*

50 Gladstone Street, Cranston, RI 02920

Introduction

Gladstone Street School, located at 50 Gladstone Street in Cranston, Rhode Island, was built in 1952. It comprises 95,925 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.

Gladstone Street School serves grades 1 - 6, has 33 instructional spaces, and has an enrollment of 565. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Gladstone Street School is 520 with a resulting utilization of 109%.

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 Gladstone Street School the 5-year need is $14,477,893. 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.

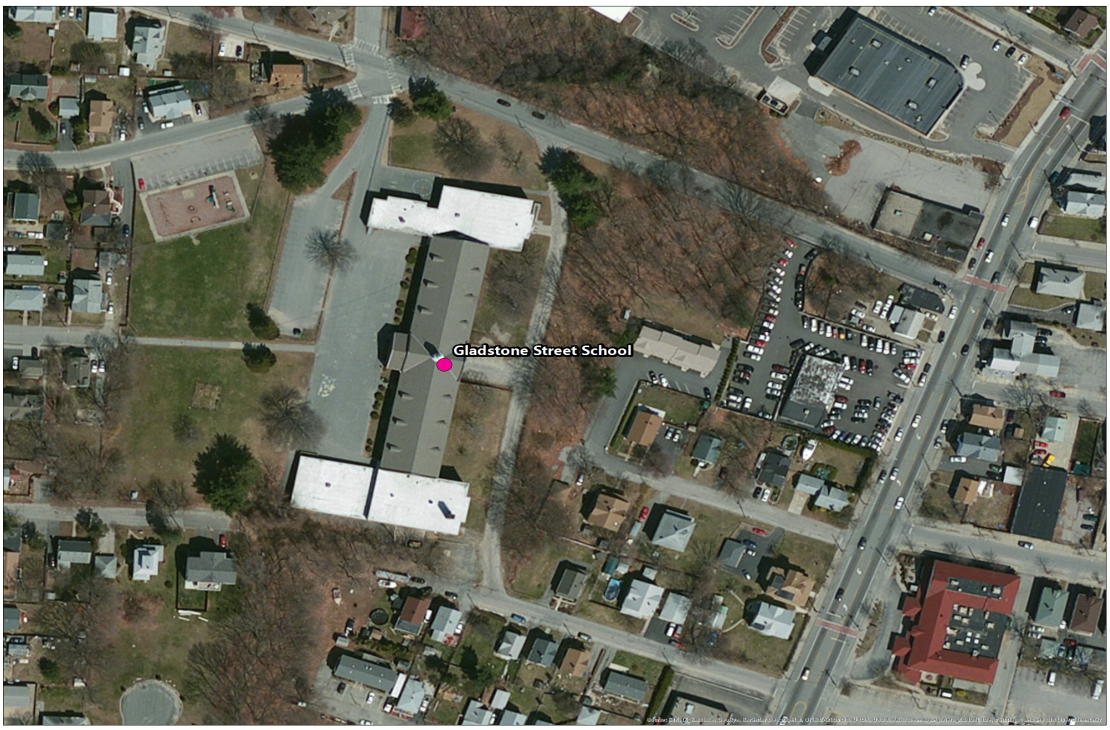


Figure 1: Aerial view of Gladstone Street School

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 Gladstone Street School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Asphalt Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Painted Gypsum Soffit
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors
02 - Greenhouse:	Clear Polycarbonate Exterior Wall
	Wood Exterior Doors

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

01 - Main Building:	Composition Shingle Roofing
	Single Ply Roofing
	Canopy Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring

01 - Main Building:	Terrazzo Flooring

Mechanical

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

01 - Main Building:	400 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	250 MBH Steam Unit Heater
	50 MBH Steam Unit Heater
	Pneumatic Heating System Controls
	1 Ton Ductless Split System
	Window Units
	1 HP or Smaller Pump
	5 HP Pump
	10 HP Pump
	25 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	Kitchen Exhaust Hoods
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	100 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
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (2 hp)
	10,000 Gallon Underground Fuel Oil Storage Tank

Electrical

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

01 - Main Building:	300 kW Emergency Generator
	Automatic Transfer Switch
	600 Amp Switchgear
	400 Amp Distribution Panel
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,774	$870,688	$72,198	$948,659	7.88 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$2,861,484	-	$1,654	$378,369	$3,241,507	26.92 %
Interior	-	-	$1,122,102	$1,928,695	$914,503	$3,965,300	32.93 %
Mechanical	-	$313,743	-	$706,939	-	$1,020,682	8.48 %
Electrical	-	$42,902	-	-	$60,277	$103,179	0.86 %
Plumbing	-	-	$818,936	$154,719	$25,314	$998,969	8.30 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,699,823	-	-	$1,699,823	14.12 %
Conveyances	-	-	$50,119	-	-	$50,119	0.42 %
Specialties	-	-	$13,857	-	-	$13,857	0.12 %
Total	$0	$3,218,129	$3,710,610	$3,662,694	$1,450,660	$12,042,094	

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

The building systems with the most need include:

Interior	-	$3,965,300
Exterior	-	$3,241,507
Technology	-	$1,699,823

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

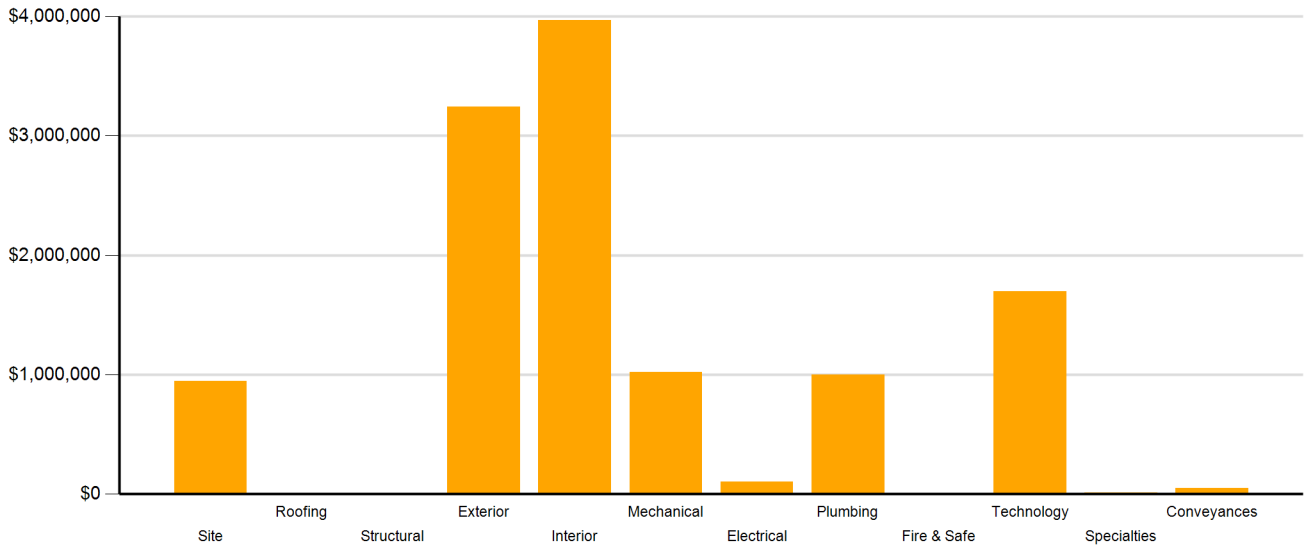


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$270,731	-	$270,731
Barrier to Accessibility	-	-	$843,499	-	-	$843,499
Capital Renewal	-	$3,218,129	$1,147,659	$1,457,344	$1,287,040	$7,110,171
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$25,404	$159,002	$163,620	$348,027
Functional Deficiency	-	-	-	$240,570	-	$240,570
Hazardous Material	-	-	-	$1,535,047	-	$1,535,047
Technology	-	-	$1,688,275	-	-	$1,688,275
Traffic	-	-	$5,774	-	-	$5,774
Total	$0	$3,218,129	$3,710,610	$3,662,694	$1,450,660	$12,042,094

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

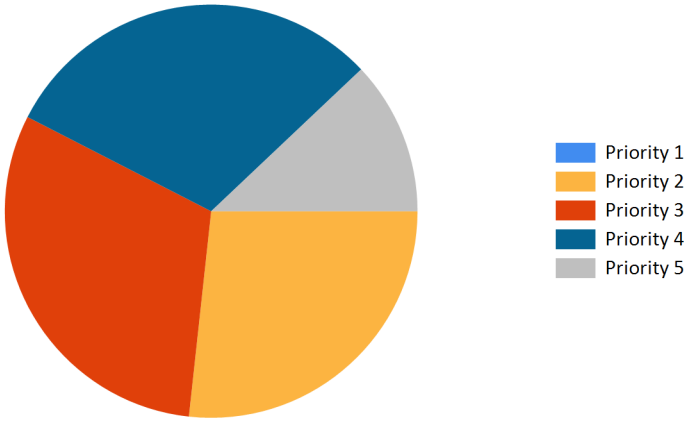


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$948,659	$0	$0	$0	$134,796	$12,109	$146,905	$1,095,564
Roofing	$0	$0	$0	$0	$725,290	$297,755	$1,023,045	$1,023,045
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$3,241,507	$0	$0	$0	$0	$1,925	$1,925	$3,243,432
Interior	$3,965,300	$0	$0	$0	$0	$25,031	$25,031	$3,990,332
Mechanical	$1,020,682	$0	$0	$0	$625,430	$585,606	$1,211,036	$2,231,718
Electrical	$103,179	$0	$0	$0	$0	$0	$0	$103,179
Plumbing	$998,969	$0	$0	$0	$27,857	$0	$27,857	$1,026,826
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$1,699,823	$0	$0	$0	$0	$0	$0	$1,699,823
Conveyances	$50,119	$0	$0	$0	$0	$0	$0	$50,119
Specialties	$13,857	$0	$0	$0	$0	$0	$0	$13,857
Total	**$12,042,094**	**$0**	**$0**	**$0**	**$1,513,373**	**$922,426**	**$2,435,799**	**$14,477,893**

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

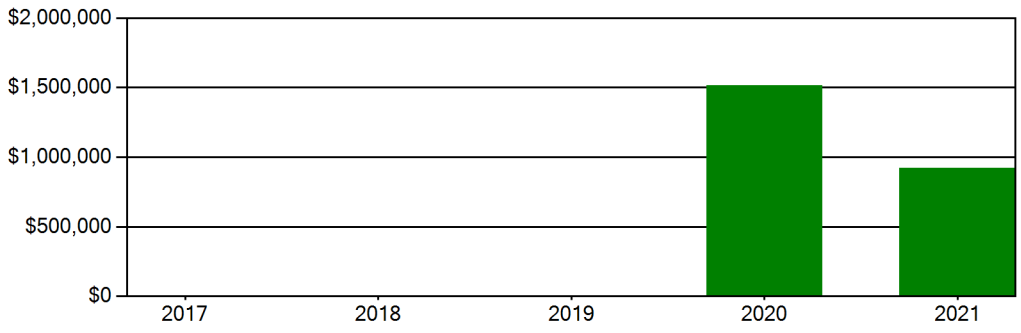
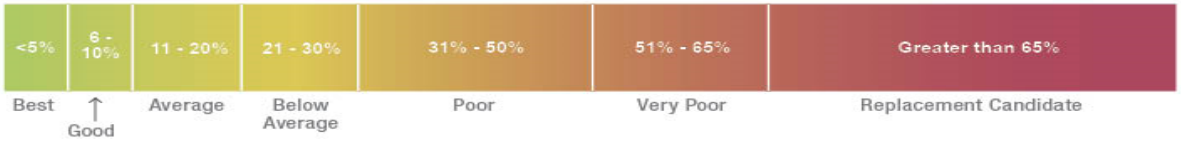


Figure 4: Life Cycle Capital Renewal Forecast

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 $33,573,748. For planning purposes, the total 5-year need at the Gladstone Street School is $14,477,893 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Gladstone Street School facility has a 5-year FCI of 43.12%.

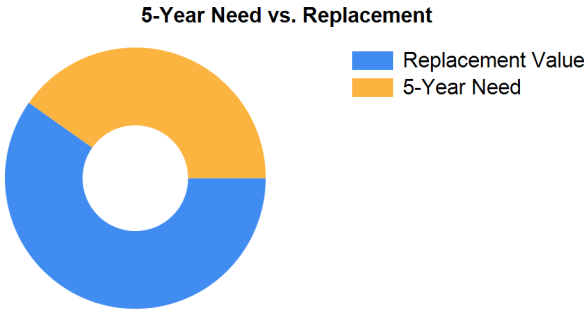


Figure 5: 5-Year FCI

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 662 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 Gladstone Street School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $1,612,170.

Summary of Findings

The Gladstone Street School comprises 95,925 square feet and was constructed in 1952. Current deficiencies at this school total $12,042,094. Five year capital renewal costs total $2,435,799. The total identified need for the Gladstone Street School (current deficiencies and 5-year capital renewal costs) is $14,477,893. The 5-year FCI is 43.12%.

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
Gladstone Street School Totals	95,925	1952	$12,042,094	$2,435,799	$14,477,893	43.12%

**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	Traffic	2	Ea.	3	$5,774	11670
Note: Add school zone signs						
Asphalt Paving Requires Replacement	Capital Renewal	13	CAR	4	$54,419	11501
Note: Back parking lot is splitting and cracking.						
Asphalt Paving Requires Replacement	Capital Renewal	6	CAR	4	$25,116	11502
Note: The south parking lot is weathered and cracked.						
Asphalt Paving Requires Replacement	Capital Renewal	30	CAR	4	$125,581	11503
Note: Roadway asphalt is weathered with alligator cracking and potholes.						
Asphalt Paving Requires Replacement	Capital Renewal	89	CAR	4	$372,557	11504
Note: Paved play area has large cracks and a weathered surface.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28440
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	200	LF	4	$16,359	11500
Note: A portion of the fence is rusting and should be replaced.						
Site Requires Regrading And Gravel Fill	Functional Deficiency	10,000	SF	4	$240,570	11530
Note: The south end of the parking lot floods. The custodian places a large board over the water for teachers to walk on to exit lot.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28712
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54879
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**10**	**items**		**$948,659**	
	Sub Total for School and Site Level	**10**	**items**		**$948,659**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	33,556	SF	2	$2,852,307	11528
Note: Original single pane windows are aged with snow, air, and water infiltrating.						
Handrail Requires Repainting	Capital Renewal	150	LF	4	$1,654	11519
Note: Exterior handrails are weathered and should be repainted.						
The Exterior Requires Cleaning	Capital Renewal	95,875	SF Wall	5	$273,893	11507
The Exterior Requires Painting	Capital Renewal	18,000	SF Wall	5	$104,476	11508
Note: Exposed painted concrete foundation, soffit dentil moulding, cupola and six roof dormers need to be painted.						
	Sub Total for System	**4**	**items**		**$3,232,330**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	255	Door	3	$843,499	11515
Note: Interior doors are not keyed for safe lockdown procedures and are not ADA compliant.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	23,034	SF	3	$278,604	11509
Note: VCT is cracked, peeling, scratched, and worn.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	46,766	SF	4	$1,406,312	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	27	Ea.	4	$8,119	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	3,620	LF	4	$87,086	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	3,345	SF	4	$33,529	Rollup
Partitions Provide Insufficient Sound Isolation	Acoustics	2,000	SF	4	$60,143	19771
Note: Classrooms adjacent to gym/cafeteria						

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Is Excessively Reverberant	Acoustics	5,340	SF	4	$125,788	19772
Note: Gym						
Room Is Excessively Reverberant	Acoustics	3,600	SF	4	$84,801	19773
Note: Music Space						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	3,187	SF	4	$122,917	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,309	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	67,112	SF	5	$467,536	Rollup
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	$3,522	Rollup
The Concrete Flooring Requires Repair Or Repainting	Capital Renewal	3,600	SF	5	$28,868	11510
Note: Auditorium flooring paint is chipped and worn.						
The Gypsum Board Ceilings Require Repainting	Capital Renewal	93,475	SF	5	$412,267	Rollup
	Sub Total for System	**15**	**items**		**$3,965,300**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Air Handler HVAC Component Requires Replacement	Capital Renewal	4	Ea.	2	$181,927	11521
Note: Interior AHU's (blower coils) are re-built as needed and still operate, but they are antiquated and do not introduce any outside air. The systems should be updated given that they serve places of assembly.						
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	4	Ea.	2	$131,816	11526
Note: Boilers are corroded and non-functional. 272 MBH						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	95,875	SF	4	$682,810	11527
Note: Controls system is outdated and erratic with hot and cold areas throughout.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	3	Ea.	4	$24,129	11529
Note: Fuel oil pumps are aged and deteriorating.						
	Sub Total for System	**4**	**items**		**$1,020,682**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$30,673	11523
Note: Original panelboards should be replaced.						
The Panelboard Requires Replacement	Capital Renewal	2	Ea.	2	$12,229	11525
Note: Original panelboards should be replaced.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	120	Ea.	5	$60,277	Rollup
	Sub Total for System	**3**	**items**		**$103,179**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	95,875	SF	3	$813,331	11518
Note: Domestic water comes out brown after long weekends or periods of low use. There are signs of scaling in the pipes.						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	4	Ea.	3	$5,605	11516
Note: Original urinals should be replaced.						
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	32	Ea.	4	$91,737	11505
Note: Classroom lavatories are outdated and aged.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	8	Ea.	4	$21,731	11514
Note: Service sinks are aged and should be replaced.						
The Refrigerated Water Cooler Requires Repair	Capital Renewal	1	Ea.	4	$1,002	11517
Note: Drinking fountain is missing front part of casing.						
Location: Outside gym						
The Restroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	12	Ea.	4	$40,247	11511
Note: Original restroom lavatories should be replaced.						
Room lacks a drinking fountain.	Educational Adequacy	13	Ea.	5	$14,511	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	10	Ea.	5	$10,803	Rollup
	Sub Total for System	**8**	**items**		**$998,969**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,547	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	168	Ea.	3	$84,200	23342
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	44	Ea.	3	$441,045	23347
Technology: Instructional spaces do not have local sound reinforcement.	Technology	44	Ea.	3	$220,523	23352
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23340
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23339
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23341
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23338
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23336
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23337
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	168	Ea.	3	$75,780	23345
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	168	Ea.	3	$75,780	23343
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23350
Technology: Network system inadequate and/or near end of useful life	Technology	42	Ea.	3	$210,499	23351
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	168	Ea.	3	$84,200	23344
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	95,875	SF	3	$172,985	23349
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23346
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23348
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	44	Ea.	3	$70,567	23353
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23354
	Sub Total for System	**20**	**items**		**$1,699,823**	

Conveyances

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Elevator Finishes Require Replacement	Capital Renewal	1	Ea.	3	$50,119	11520
Note: Flooring and wall laminate in elevator cab is worn and should be replaced.						
	Sub Total for System	**1**	**items**		**$50,119**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	3	Ea.	3	$13,857	Rollup
	Sub Total for System	**1**	**items**		**$13,857**	
	Sub Total for Building 01 - Main Building	**56**	**items**		**$11,084,258**	

Building: 02 - Greenhouse

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Greenhouse (polycarbonate) Walls Require Replacement (Bldg SF)	Capital Renewal	10	SF	2	$401	11533
Note: There are four missing panels.						

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Wood Exterior Door Requires Replacement	Capital Renewal	1	Door	2	$8,776	11532
	Sub Total for System	**2**	**items**		**$9,177**	
	Sub Total for Building 02 - Greenhouse	**2**	**items**		**$9,177**	
	Total for Campus	**68**	**items**		**$12,042,094**	

Gladstone Street School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (4 Ft)	1,230	LF	$80,485	4
Fences and Gates	Fencing - Chain Link (4 Ft)	830	LF	$54,311	4
Pedestrian Pavement	Sidewalks - Asphalt	1,400	SF	$12,109	5
	Sub Total for System	**3**	**items**	**$146,905**	
	Sub Total for Building -	**3**	**items**	**$146,905**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Steep Slope Roofing	Composition Shingle	25,124	SF	$725,290	4
Low-Slope Roofing	Single Ply	22,476	SF	$291,981	5
Canopy Roofing	Canopies	100	SF	$5,774	5
	Sub Total for System	**3**	**items**	**$1,023,044**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	800	SF	$7,313	5
Note:	Restrooms				
Wall Paneling	Wood Panel wall	1,918	SF	$17,718	5
	Sub Total for System	**2**	**items**	**$25,032**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Facility Hydronic Distribution	Pump - 5HP	2	Ea.	$19,292	4
Decentralized Heating Equipment	Unit Heater Steam/HW (250 MBH)	17	Ea.	$58,270	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water	32	Ea.	$547,868	4
Exhaust Air	Kitchen Exhaust Hoods	1	Ea.	$16,159	5
Heat Generation	Boiler - Cast Iron - Water (400 MBH)	18	Ea.	$569,447	5
Note:	272 MBH				
	Sub Total for System	**5**	**items**	**$1,211,035**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Refrigerated Drinking Fountain	2	Ea.	$14,935	4
Compressed-Air Systems	Air Compressor (2 hp)	2	Ea.	$12,922	4
	Sub Total for System	**2**	**items**	**$27,856**	
	Sub Total for Building 01 - Main Building	**12**	**items**	**$2,286,967**	

Building: 02 - Greenhouse

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Wall Veneer	Clear Polycarbonate (Greenhouse) walls	50	SF	$1,925	5
	Sub Total for System	**1**	**items**	**$1,925**	
	Sub Total for Building 02 - Greenhouse	**1**	**items**	**$1,925**	
	Total for: Gladstone Street School	**16**	**items**	**$2,435,797**	

Supporting Photos

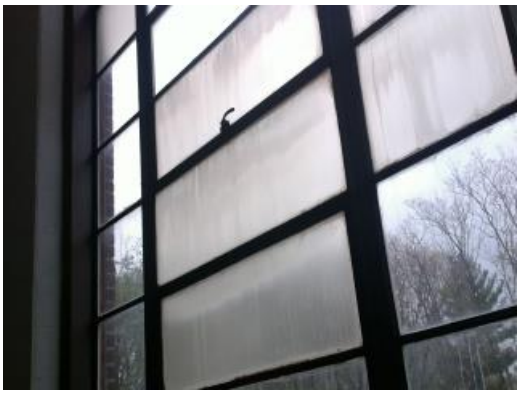
Typical Classroom Cabinetry

Southwest Elevation

Original Panelboard

Elevator Floor


Chipped Ceiling Paint


Aged Windows


Typical Aged Windows


Northwest Elevation


Greenhouse


Typical Classroom


Peeling Exterior Paint


Dirty Exterior Walls


Cupola


Dentil Molding At Soffit Worn Paint


Aged VCT Flooring


Scratched And Worn VCT


Library


Worn Painted Auditorium Floor


Vandalized Exterior Wall


Non-Compliant Door Hardware


Gymnasium

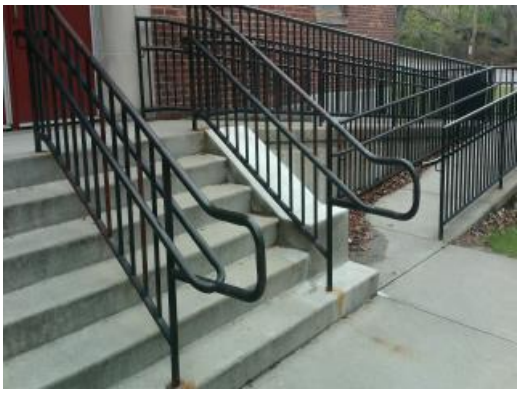

Weathered Asphalt Roadway


Large Cracks In Play Area Paving

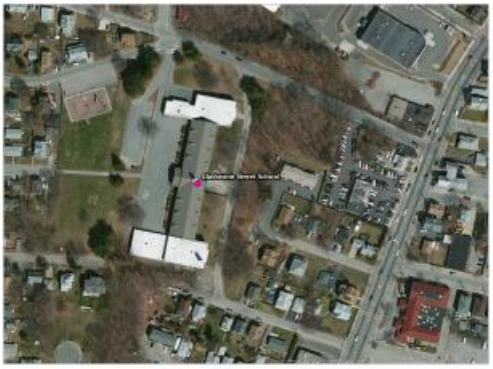

Aged Classroom Sink


Auditorium


Abandoned Pool Area


Worn Handrails


Restroom Fixtures And Finishes



Site Aerial

Kindergarten Exterior

West Side Entry

Typical Classroom

Plaque

Drinking Fountain Missing Front Casing

Aged Service Sink

Facility Condition Assessment

Cranston - Glen Hills School | *June 2017*

50 Glen Hills Drive, Cranston, RI 02920

Introduction

Glen Hills School, located at 50 Glen Hills Drive in Cranston, Rhode Island, was built in 1964. It comprises 40,800 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.

Glen Hills School serves grades PK - 6, has 19 instructional spaces, and has an enrollment of 347. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Glen Hills School is 334 with a resulting utilization of 104%.

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 Glen Hills School the 5-year need is $7,849,445. 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.

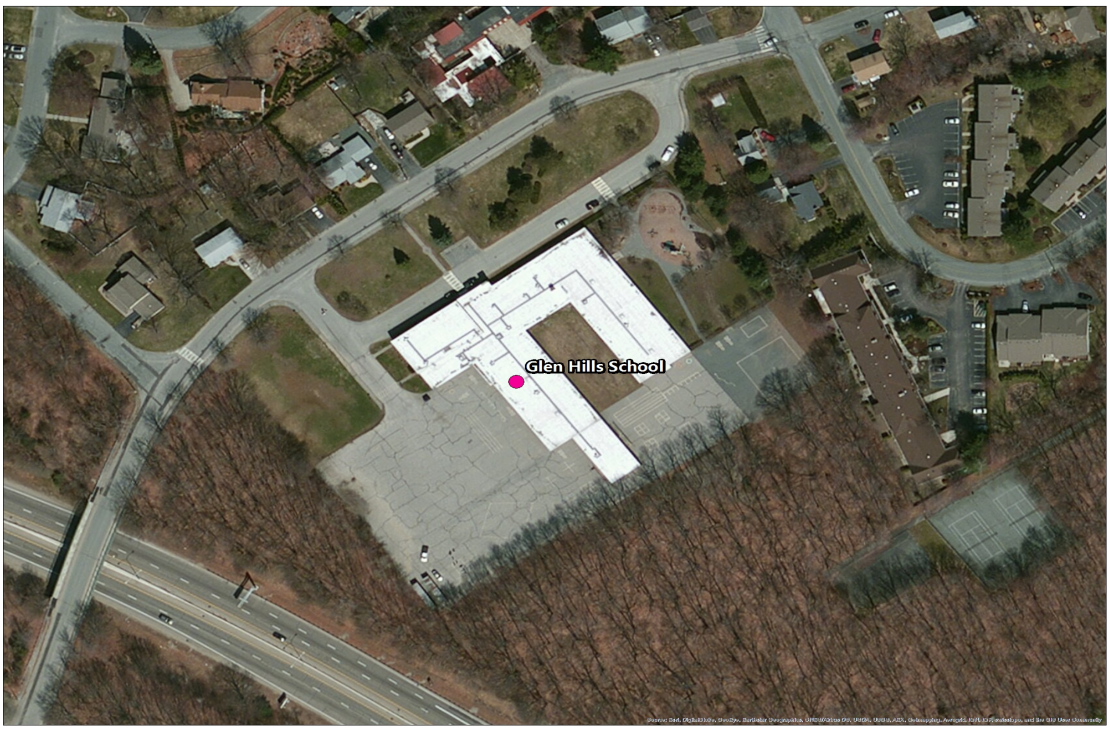


Figure 1: Aerial view of Glen Hills School

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 Glen Hills School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

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

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

01 - Main Building:	EPDM Roofing
	Canopy Roofing

Interior

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

01 - Main Building:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Carpet

Mechanical

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

01 - Main Building:	1,275 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	36 MBH Steam Unit Heater
	Electronic Heating System Controls
	Window Units
	5 HP VFD
	2-Pipe Hot Water Hydronic Distribution System
	5 HP Pump
	Roof Mounted Exhaust Fan
	Kitchen Exhaust Hoods

Plumbing

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

01 - Main Building:	Gas Piping System
	100 Gallon Gas 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:

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$56,414	$730,968	$7,398	$794,779	11.77 %
Roofing	-	$543,929	-	-	-	$543,929	8.06 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$1,064,827	-	$902	-	$1,065,729	15.79 %
Interior	-	-	$346,734	$1,583,324	$113,693	$2,043,752	30.27 %
Mechanical	-	$311,308	$120,417	-	-	$431,725	6.39 %
Electrical	-	$67,616	$200,635	$13,081	$38,176	$319,508	4.73 %
Plumbing	-	-	$123,112	-	$10,819	$133,930	1.98 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,129,917	-	-	$1,129,917	16.74 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,619	$283,103	-	$287,722	4.26 %
Total	$0	$1,987,680	$1,981,848	$2,611,378	$170,085	$6,750,991	

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

The building systems with the most need include:

Interior	-	$2,043,752
Technology	-	$1,129,917
Exterior	-	$1,065,729

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

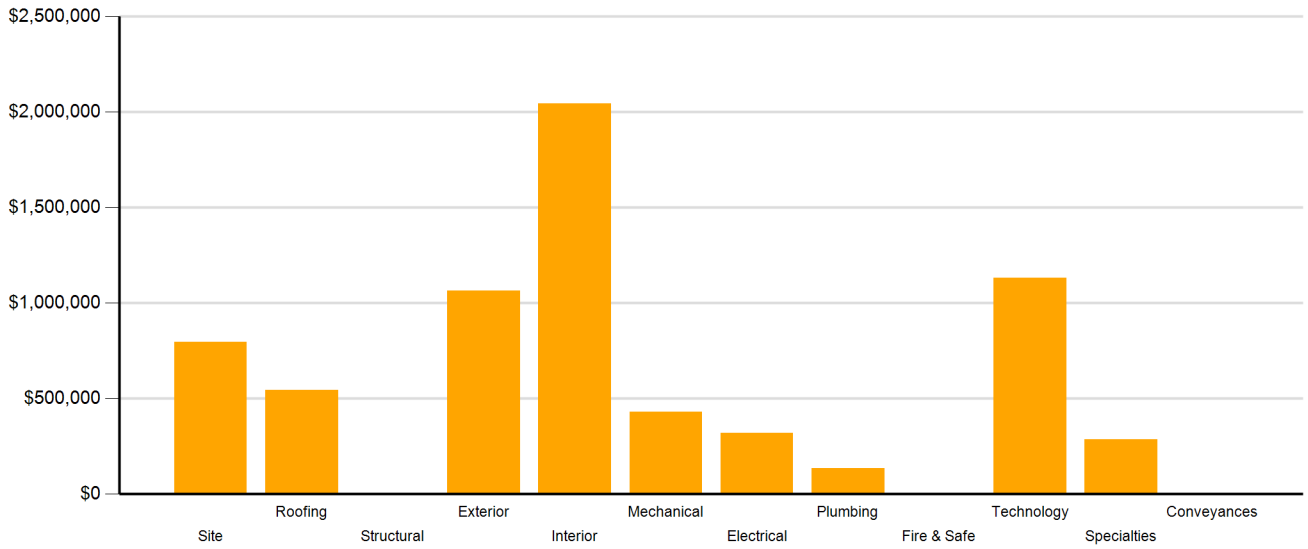


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$120,417	$30,071	-	$150,489
Barrier to Accessibility	-	-	$145,545	-	-	$145,545
Capital Renewal	-	$1,987,680	$380,714	$1,475,056	$113,693	$3,957,143
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$4,619	$36,086	$56,392	$97,096
Functional Deficiency	-	-	$200,635	-	-	$200,635
Hazardous Material	-	-	-	$1,070,166	-	$1,070,166
Technology	-	-	$1,129,917	-	-	$1,129,917
Traffic	-	-	-	-	-	$0
Total	$0	$1,987,680	$1,981,848	$2,611,378	$170,085	$6,750,991

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

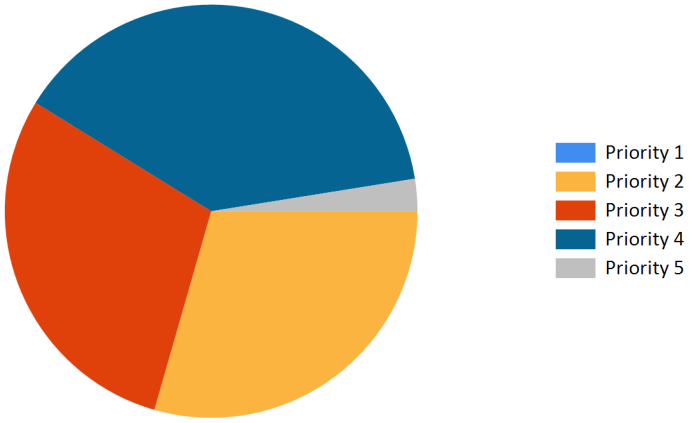


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$794,779	$0	$0	$0	$24,342	$114,450	$138,792	$933,571
Roofing	$543,929	$0	$0	$0	$0	$17,321	$17,321	$561,250
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$1,065,729	$0	$0	$0	$0	$0	$0	$1,065,729
Interior	$2,043,752	$0	$17,275	$0	$0	$0	$17,275	$2,061,027
Mechanical	$431,725	$0	$0	$0	$0	$369,718	$369,718	$801,443
Electrical	$319,508	$0	$0	$0	$24,172	$0	$24,172	$343,680
Plumbing	$133,930	$0	$5,387	$0	$0	$525,789	$531,176	$665,106
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$1,129,917	$0	$0	$0	$0	$0	$0	$1,129,917
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$287,722	$0	$0	$0	$0	$0	$0	$287,722
Total	**$6,750,991**	**$0**	**$22,662**	**$0**	**$48,514**	**$1,027,278**	**$1,098,454**	**$7,849,445**

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

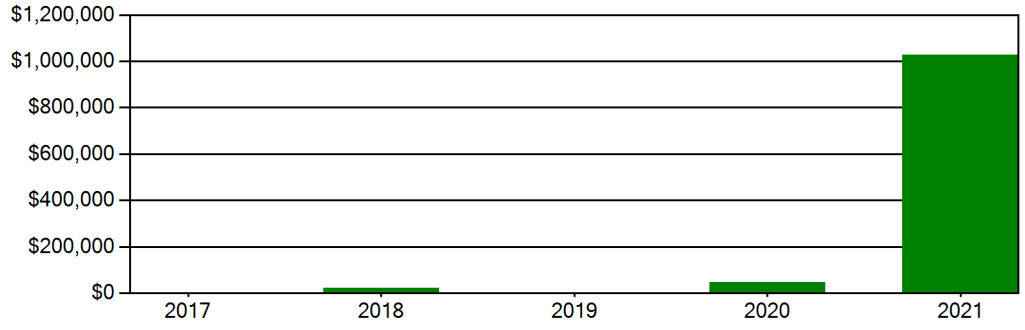
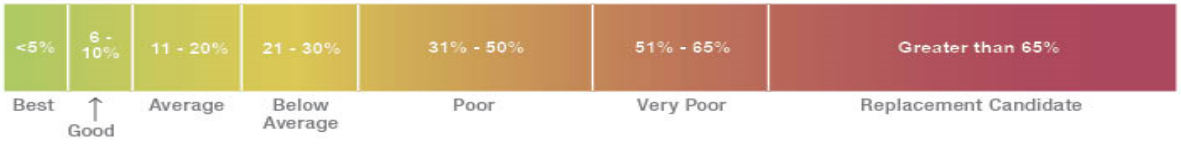


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

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



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

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

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $14,280,000. For planning purposes, the total 5-year need at the Glen Hills School is $7,849,445 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Glen Hills School facility has a 5-year FCI of 54.97%.

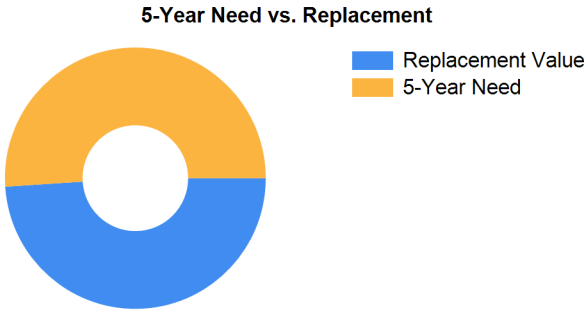


Figure 5: 5-Year FCI

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 227 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 Glen Hills School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $388,584.

Summary of Findings

The Glen Hills School comprises 40,800 square feet and was constructed in 1964. Current deficiencies at this school total $6,750,991. Five year capital renewal costs total $1,098,454. The total identified need for the Glen Hills School (current deficiencies and 5-year capital renewal costs) is $7,849,445. The 5-year FCI is 54.97%.

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
Glen Hills School Totals	40,800	1964	$6,750,991	$1,098,454	$7,849,445	54.97%

**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
Playground Equipment Requires Replacement	Capital Renewal	1	Ea.	3	$56,414	8978
Note: Cracked and broken pavement, ponding.						
Asphalt Paving Requires Replacement	Capital Renewal	92	CAR	4	$385,116	8979
Note: Cracked and broken pavement						
Asphalt Paving Requires Replacement	Capital Renewal	74	CAR	4	$309,767	8980
Note: Cracked and broken, ponding along edges, needs to be repaved.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28449
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28719
Note: Exterior Basketball Goals are Required						
	Sub Total for System	**5**	**items**		**$794,779**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Pole Lighting Is Missing And Needed	Functional Deficiency	8	Ea.	3	$200,635	8981
Note: All around the building perimeter						
	Sub Total for System	**1**	**items**		**$200,635**	
	Sub Total for School and Site Level	**6**	**items**		**$995,414**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	40,800	SF	2	$543,929	8996
Note: Roof has many leaks per building operator. Shows wear and tear						
	Sub Total for System	**1**	**items**		**$543,929**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	5,952	SF	2	$1,061,972	8983
The Aluminum Window Requires Replacement	Capital Renewal	16	SF	2	$2,855	8984
The Concrete/CMU Exterior Requires Repair	Capital Renewal	10	LF	4	$902	8982
Note: Natural stone pier in front of building is leaning and should be repaired.						
	Sub Total for System	**3**	**items**		**$1,065,729**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	4,080	SF	3	$38,852	8985
The Carpet Flooring Requires Replacement	Capital Renewal	2,041	SF	3	$46,818	8987
The Ceramic Tile Flooring Requires Replacement	Capital Renewal	4,080	SF	3	$115,519	8989
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	44	Door	3	$145,545	8990
Note: 95% of door hardware is knobs, not levers, not ADA compliant.						
9x9 Asbestos Tile Present and In Active Use, Greater than 25 Percent has Significant Deterioration	Hazardous Material	33,047	SF	4	$993,765	Rollup
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	32,640	SF	4	$373,184	9003
Note: Tiles cracked/missing/falling down, Comment: (null)						
Ceiling Grid Requires Replacement	Capital Renewal	4,080	SF	4	$51,021	8999
Interior Wood Walls Require Replacement	Capital Renewal	6,119	SF	4	$58,882	9001
Note: Remove/replace paneling.						
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	130	Ea.	4	$39,093	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	1,330	LF	4	$31,996	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	530	SF	4	$5,313	Rollup

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	500	SF	4	$30,071	19700
Note: Gym						
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	16,320	SF	5	$113,693	Rollup
	Sub Total for System	**13**	**items**		**$2,043,752**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	5	Ea.	2	$89,171	9000
Note: Univents are original to building and obsolete. Constantly failing per principal						
Steam/HW Unit Heater Requires Replacement	Capital Renewal	8	Ea.	2	$13,889	8991
Note: Unit heater original to building and past expected life. Equipment is obsolete in event of failure						
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	2	Ea.	2	$158,794	8992
Note: Boilers are original to building and obsolete and wrapped in asbestos insulation						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	28	Ea.	2	$49,453	8993
Note: Fin tube heater is original to building and past expected life. Equipment is obsolete in event of failure						
Unit Ventilators Are Excessively Noisy	Acoustics	18	Ea.	3	$120,417	19699
Note: Some classrooms						
	Sub Total for System	**5**	**items**		**$431,725**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Disconnect Requires Replacement	Capital Renewal	2	Ea.	2	$3,865	10958
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$36,687	8994
Note: Every electrical distribution panel throughout building is past it's lifetime and parts may not be available, installed in 1964						
The Panelboard Requires Replacement	Capital Renewal	4	Ea.	2	$20,448	10956
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$6,616	10957
The Canopy Lighting Requires Replacement	Capital Renewal	9	Ea.	4	$13,081	9002
Note: Canopy lights at every entry						
Room Has Insufficient Electrical Outlets	Educational Adequacy	76	Ea.	5	$38,176	Rollup
	Sub Total for System	**6**	**items**		**$118,873**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Sanitary Sewer Piping Requires Replacement	Capital Renewal	750	LF	3	$123,112	8995
Note: Waste water is constantly backing up and slow drainage per building operator						
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	$6,697	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**3**	**items**		**$133,930**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	84	Ea.	3	$42,100	23485
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	16	Ea.	3	$160,380	23490
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	16	Ea.	3	$336,798	23499
Technology: Instructional spaces do not have local sound reinforcement.	Technology	16	Ea.	3	$80,190	23495
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23482
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23481
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23483
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23480

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	$44,906	23479
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	144	Ea.	3	$64,954	23488
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	16	Ea.	3	$7,217	23486
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23493
Technology: Network system inadequate and/or near end of useful life	Technology	18	Ea.	3	$90,214	23494
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	48	Ea.	3	$24,057	23487
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	40,800	SF	3	$73,614	23492
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23489
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23491
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23484
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,616	23498
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	16	Ea.	3	$25,661	23496
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23497
	Sub Total for System	**21**	**items**		**$1,129,917**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,619	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	24	Room	4	$283,103	8997
	Sub Total for System	**2**	**items**		**$287,722**	
	Sub Total for Building 01 - Main Building	**54**	**items**		**$5,755,577**	
	Total for Campus	**60**	**items**		**$6,750,991**	

Glen Hills School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (4 Ft)		372	LF	$24,342	4
Pedestrian Pavement	Sidewalks - Concrete		5,532	SF	$114,450	5
		Sub Total for System	**2**	**items**	**$138,791**	
		Sub Total for Building -	**2**	**items**	**$138,791**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Canopy Roofing	Canopies		300	SF	$17,321	5
		Sub Total for System	**1**	**items**	**$17,321**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings		4,080	SF	$17,275	2
		Sub Total for System	**1**	**items**	**$17,275**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Exhaust Fan - Roof Mounted (CFM)		13	CFM	$35,233	5
Facility Hydronic Distribution	2-Pipe Water System (Hot)		40,800	SF	$318,326	5
Exhaust Air	Kitchen Exhaust Hoods		1	Ea.	$16,159	5
		Sub Total for System	**3**	**items**	**$369,718**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Building Mounted Fixtures (Ea.)		16	Ea.	$24,172	4
		Sub Total for System	**1**	**items**	**$24,172**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 100 Gallon		1	Ea.	$5,387	2
Plumbing Fixtures	Urinals		7	Ea.	$9,417	5
Plumbing Fixtures	Classroom Lavatories		23	Ea.	$63,299	5
Plumbing Fixtures	Lavatories		16	Ea.	$51,517	5
Domestic Water Piping	Domestic Water Piping System (Bldg.SF)		40,800	SF	$332,272	5
Plumbing Fixtures	Toilets		24	Ea.	$69,284	5
		Sub Total for System	**6**	**items**	**$531,175**	
		Sub Total for Building 01 - Main Building	**12**	**items**	**$959,661**	
		Total for: Glen Hills School	**14**	**items**	**$1,098,453**	

Supporting Photos

Site Aerial

North Elevation

East Elevation

Roof


South Elevation


West elevation


East Side Building Lighting


Leaning Stone Pier


Windows (Broken Seals)


Floor Tile

Damaged Ceramic TIle

Boiler

Pavement Crack

Cracked and Damaged Pavement

Casework Requires Replacement

Main Entrance

Classroom Heating

Missing Ceiling TIles

Canopy Lighting

Damaged Wood Panel Wall

Typical Restroom

Canopy Lighting


Library


Computer Lab


Cafeteria


Typical Classroom


Electrical Panels

Electric Panel

Roof

Facility Condition Assessment

Cranston - Hope Highlands Elementary School | *June 2017*

300 Hope Road, Cranston, RI 02921

Introduction

Hope Highlands Elementary School, located at 300 Hope Road in Cranston, Rhode Island, was built in 1991. It comprises 68,700 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.

Hope Highlands Elementary School serves grades PK - 6, has 30 instructional spaces, and has an enrollment of 363. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Hope Highlands Elementary School is 417 with a resulting utilization of 87%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Hope Highlands Elementary School the 5-year need is $6,993,849. The findings contained within this report resulted from an assessment of building systems performed by building professionals experienced in disciplines including: architecture, mechanical, plumbing, electrical, acoustics, hazardous materials, and technology infrastructure.

Figure 1: Aerial view of Hope Highlands Elementary School

Approach and Methodology

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

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

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

Discipline Specialists

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

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

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

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

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

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

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

System Summaries

The following tables summarize major building systems at the Hope Highlands 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
	Brick Pedestrian Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

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

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

01 - Main Building:	Composition Shingle Roofing
	EPDM Roofing
	Fabric Canopy Roofing

Interior

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

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

01 - Main Building:	Carpet
	Athletic/Sport Flooring

Mechanical

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

01 - Main Building:	3,264 MBH Cast Iron Water Boiler
	Steam/Hot Water Heating Unit Vent
	Radiant Water Heater
	DDC Heating System Controls
	210 Ton Outdoor Air Cooled Chiller
	3 Ton Outside Air Cooled Condenser
	Window Units
	Make-up Air Unit
	15 HP VFD
	1 HP or Smaller Pump
	10 HP Pump
	4-Pipe Hydronic Distribution System
	5,000 CFM Interior AHU
	10,000 CFM Interior AHU
	15,000 CFM Interior AHU
	Ductwork
	Roof Mounted Exhaust Fan
	Wall Exhaust Fan
	Laboratory Fume Hood
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	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
	Restroom Lavatories
	Showers
	Toilets
	Urinals

Electrical

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

01 - Main Building:	1,600 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$288,684	$1,181,644	$72,198	$1,542,525	27.02 %
Roofing	-	$745,444	-	-	-	$745,444	13.06 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	$8,921	-	-	$8,921	0.16 %
Interior	-	-	$740,488	$218,518	$410,307	$1,369,313	23.99 %
Mechanical	-	-	-	$2,823	-	$2,823	0.05 %
Electrical	-	-	-	-	-	$0	0.00 %
Plumbing	-	-	$16,712	$577	$20,387	$37,676	0.66 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,592,507	-	-	$1,592,507	27.90 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	-	$401,062	$8,602	$409,664	7.18 %
Total	$0	$745,444	$2,647,311	$1,804,624	$511,494	$5,708,873	

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

The building systems with the most need include:

Technology	-	$1,592,507
Site	-	$1,542,525
Interior	-	$1,369,313

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

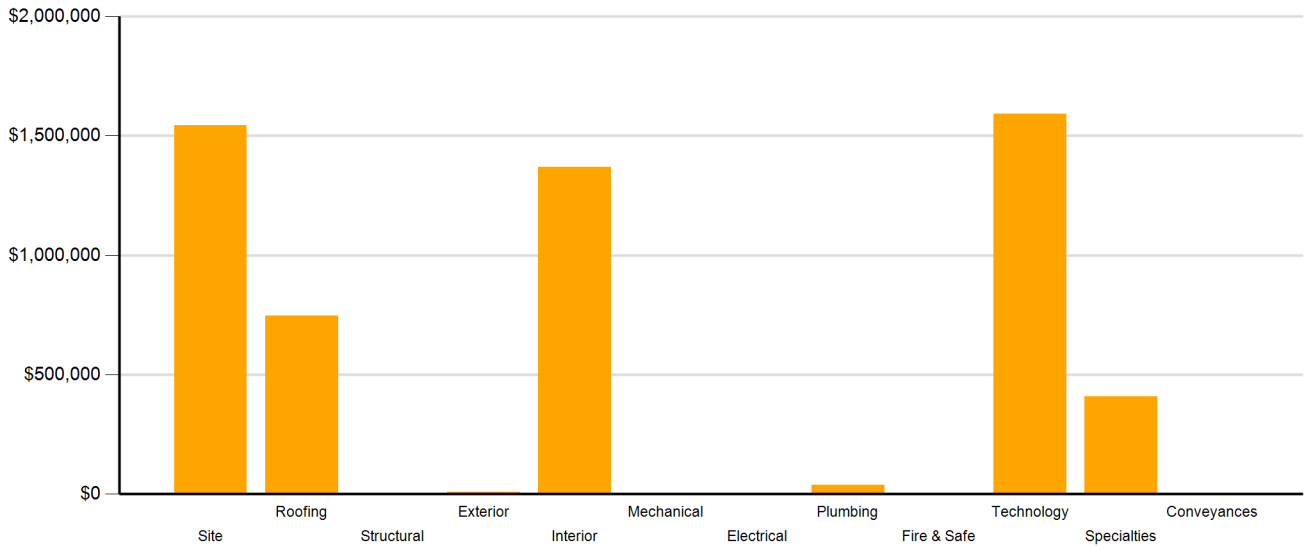


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$111,264	$218,518	-	$329,781
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$745,444	$654,857	$1,549,444	$406,809	$3,356,554
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$63,083	$36,662	$104,685	$204,430
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	-	-	$0
Technology	-	-	$1,529,424	-	-	$1,529,424
Traffic	-	-	$288,684	-	-	$288,684
Total	$0	$745,444	$2,647,311	$1,804,624	$511,494	$5,708,873

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

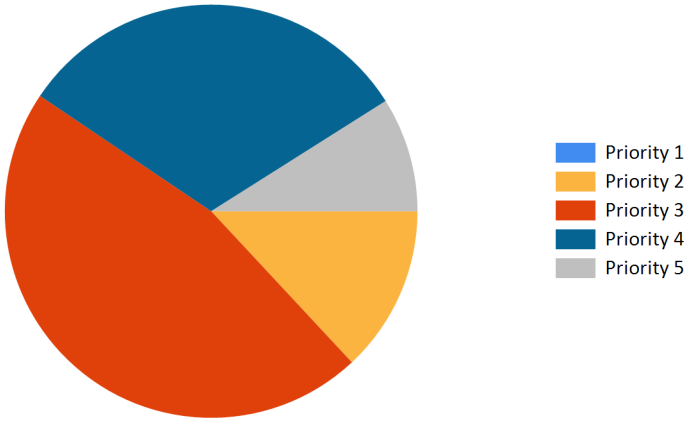


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,542,525	$0	$0	$0	$0	$172,893	$172,893	$1,715,418
Roofing	$745,444	$0	$0	$0	$0	$0	$0	$745,444
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$8,921	$0	$0	$0	$0	$0	$0	$8,921
Interior	$1,369,313	$0	$0	$0	$478,627	$545,504	$1,024,131	$2,393,444
Mechanical	$2,823	$0	$0	$0	$0	$0	$0	$2,823
Electrical	$0	$0	$0	$0	$0	$0	$0	$0
Plumbing	$37,676	$0	$0	$0	$0	$0	$0	$37,676
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$1,592,507	$0	$0	$0	$0	$0	$0	$1,592,507
Conveyances	$0	$0	$0	$0	$0	$48,114	$48,114	$48,114
Specialties	$409,664	$0	$0	$0	$0	$39,838	$39,838	$449,503
Total	**$5,708,873**	**$0**	**$0**	**$0**	**$478,627**	**$806,349**	**$1,284,976**	**$6,993,849**

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

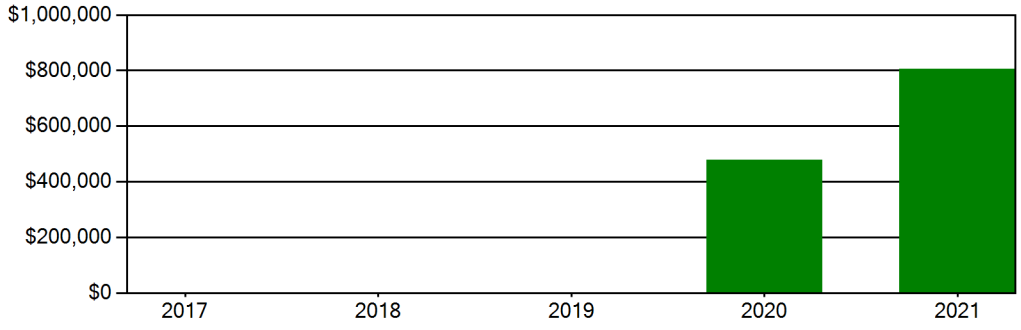
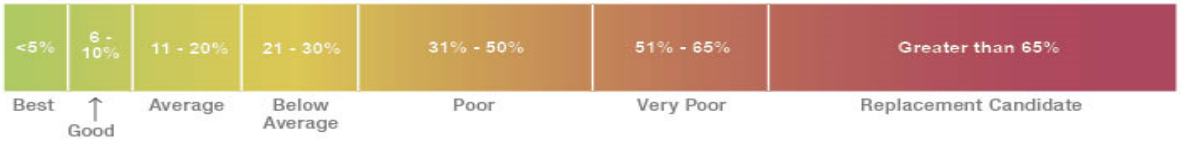


Figure 4: Life Cycle Capital Renewal Forecast

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 $24,045,000. For planning purposes, the total 5-year need at the Hope Highlands Elementary School is $6,993,849 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Hope Highlands Elementary School facility has a 5-year FCI of 29.09%.

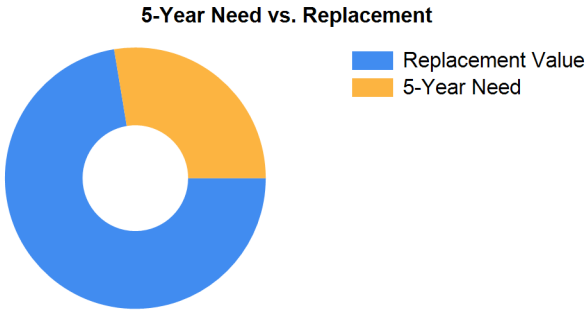


Figure 5: 5-Year FCI

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 409 students.

Facility New Construction

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

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

Summary of Findings

The Hope Highlands Elementary School comprises 68,700 square feet and was constructed in 1991. Current deficiencies at this school total $5,708,873. Five year capital renewal costs total $1,284,976. The total identified need for the Hope Highlands Elementary School (current deficiencies and 5-year capital renewal costs) is $6,993,849. The 5-year FCI is 29.09%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Hope Highlands Elementary School Totals	68,700	1991	$5,708,873	$1,284,976	$6,993,849	29.09%

**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	Traffic	4	Ea.	3	$192,456	9341
Note: Install signs for school zone						
Traffic Signage Is Required	Traffic	2	Ea.	3	$96,228	9342
Note: Add flashing beacons to school zone speed limit signs						
Asphalt Paving Requires Replacement	Capital Renewal	118	CAR	4	$493,953	8949
Asphalt Paving Requires Replacement	Capital Renewal	143	CAR	4	$598,603	8950
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28451
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	648	LF	4	$53,002	8948
Note: Fence was knocked over by snow plow and needs to be replaced.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28722
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54885
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**8**	**items**		**$1,542,525**	
	Sub Total for School and Site Level	**8**	**items**		**$1,542,525**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	17,175	SF	2	$228,970	8960
Note: Roof is patched and leaking and should be replaced.						
Shingle Roof Requires Replacement	Capital Renewal	17,175	SF	2	$516,474	8953
Note: Shingles are falling off and need to be replaced.						
	Sub Total for System	**2**	**items**		**$745,444**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Repair	Capital Renewal	3	Ea.	3	$3,308	8951
Note: Seals of windows are broken and windows should be replaced.						
The Brick Exterior Requires Repair	Capital Renewal	80	SF Wall	3	$5,613	8954
Note: Large crack in front column brick.						
	Sub Total for System	**2**	**items**		**$8,921**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Interior Doors Provide Insufficient Sound Isolation	Acoustics	12	Ea.	3	$111,264	19703
Note: All classrooms						
The Athletic Sport Flooring Requires Replacement	Capital Renewal	5,496	SF	3	$198,326	8959
Note: Gym flooring is cracking and should be replaced.						
The Carpet Flooring Requires Replacement	Capital Renewal	10,305	SF	3	$236,385	8955
Note: Carpet is worn, faded, and wrinkled and needs to be replaced.						
The Ceramic Tile Flooring Requires Replacement	Capital Renewal	6,870	SF	3	$194,514	8956
Note: Tile is dirty and cracked and should be replaced.						
Room Is Excessively Reverberant	Acoustics	8,000	SF	4	$188,447	19705
Note: Gym						
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	500	SF	4	$30,071	19706
Note: Music Space						
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	58,395	SF	5	$406,809	Rollup
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	$3,498	Rollup
	Sub Total for System	**8**	**items**		**$1,369,313**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	1	Ea.	4	$2,823	19897
	Sub Total for System	**1**	**items**		**$2,823**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Non-Refrigerated Drinking Fountain Requires Repair	Capital Renewal	10	Ea.	3	$16,712	8957
Note: Classrooms						
Floor Drains Are Required	Educational Adequacy	1	Ea.	4	$577	Rollup
Room lacks a drinking fountain.	Educational Adequacy	11	Ea.	5	$12,196	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	7	Ea.	5	$8,191	Rollup
	Sub Total for System	**4**	**items**		**$37,676**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	11	Ea.	3	$63,083	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$48,114	23539
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	27	Ea.	3	$270,641	23531
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	27	Ea.	3	$568,347	23538
Technology: Instructional spaces do not have local sound reinforcement.	Technology	27	Ea.	3	$135,321	23535
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23529
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$22,854	23528
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$43,303	23540
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	$96,228	23533
Technology: Network system inadequate and/or near end of useful life	Technology	22	Ea.	3	$110,261	23534
Technology: Special Space AV/Multimedia system is inadequate.	Technology	2	Ea.	3	$114,271	23530
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23543
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23541
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	27	Ea.	3	$43,303	23536
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23537
	Sub Total for System	**15**	**items**		**$1,592,507**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Cabinetry In Classes/Labs	Capital Renewal	34	Room	4	$401,062	8961
Note: Casework in classrooms and toilet rooms is delaminating.						
Room lacks an appropriate refrigerator.	Educational Adequacy	1	Ea.	5	$8,602	Rollup
	Sub Total for System	**2**	**items**		**$409,664**	
	Sub Total for Building 01 - Main Building	**34**	**items**		**$4,166,348**	
	Total for Campus	**42**	**items**		**$5,708,873**	

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

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Ornamental		159	LF	$172,893	5
		Sub Total for System	**1**	**items**	**$172,893**	
		Sub Total for Building -	**1**	**items**	**$172,893**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Resilient Flooring	Vinyl Composition Tile Flooring		41,220	SF	$478,627	4
Interior Coiling Doors	Overhead		2	Door	$74,480	5
Note:	In cafeteria					
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		51,525	SF	$471,024	5
		Sub Total for System	**3**	**items**	**$1,024,131**	

Conveyances

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Elevators	Passenger elevator cab finishes		1	Ea.	$48,114	5
		Sub Total for System	**1**	**items**	**$48,114**	

Specialties

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Lockers		80	Ea.	$39,838	5
		Sub Total for System	**1**	**items**	**$39,838**	
		Sub Total for Building 01 - Main Building	**5**	**items**	**$1,112,083**	
		Total for: Hope Highlands Elementary School	**6**	**items**	**$1,284,976**	

Supporting Photos

Site Aerial

Cracked Paving

East Elevation

Loading Dock


North Elevation


Historic Cemetary


West Elevation


Main Entrance


South Elevation


North Elevation


Windows With Broken Seals


Roof Shingles


Front Column Brick Cracking


Auditorium Carpet


Classroom Drinking Fountain


Gym Flooring


Delaminating Laminate


Delaminating Laminate


Peeling/chipped Paint Throughout School


Kindergarten Playground


Cafeteria


Gymnasium


Music


Computer Lab


Art


Library


Playground


Typical Classroom


Typical Classroom


Auditorium


Entry Lobby


Typical Restroom

Facility Condition Assessment

Cranston - Hugh B. Bain Middle School | *June 2017*

135 Gansett Avenue, Cranston, RI 02910

Introduction

Hugh B. Bain Middle School, located at 135 Gansett Avenue in Cranston, Rhode Island, was built in 1929. It comprises 132,813 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.

Hugh B. Bain Middle School serves grades 7 - 8, has 49 instructional spaces, and has an enrollment of 479. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Hugh B. Bain Middle School is 726 with a resulting utilization of 66%.

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 Hugh B. Bain Middle School the 5-year need is $17,993,738. 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.

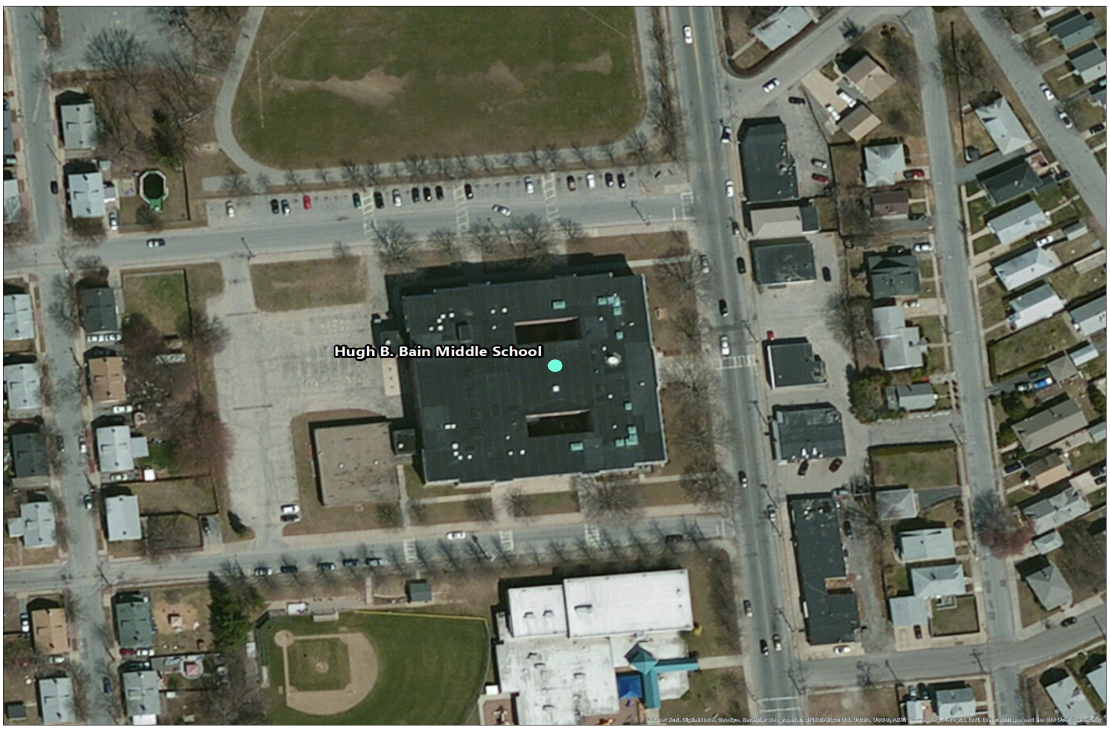


Figure 1: Aerial view of Hugh B. Bain Middle School

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 Hugh B. Bain Middle School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel 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

Interior

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

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Wood Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	200 MBH Copper Tube Boiler
	120 GPM Steam to Water Heat Exchanger
	Steam Condensate Receiver, Tank and Pump
	36 MBH Steam Unit Heater
	Steam/Hot Water Heating Unit Vent
	Radiant Steam Heater
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	25 Ton DX Cool w/Electric Heat Fan Coil
	20 Ton Condensing Unit
	Window Units
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	2,000 CFM Interior AHU
	Ductwork
	Roof Exhaust Fan
	Large Roof Exhaust Fan
	Kitchen Exhaust Hoods
	Laboratory Fume Hood
	Wall Exhaust Fan
	Fire Sprinkler System

Plumbing

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

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

Electrical

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

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$23,865	$638,543	$506,431	$1,168,838	7.39 %
Roofing	-	$610,053	-	-	-	$610,053	3.86 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$2,394,276	$5,692	-	$38,624	$2,438,592	15.42 %
Interior	-	-	$1,946,246	$1,230,880	$880,023	$4,057,149	25.66 %
Mechanical	-	$1,151,131	-	$1,104,001	$6,864	$2,261,996	14.31 %
Electrical	$1,429	$191,927	-	-	$86,397	$279,754	1.77 %
Plumbing	-	-	$1,463,644	$45,014	$19,226	$1,527,884	9.66 %
Fire and Life Safety	$86,789	-	-	-	-	$86,789	0.55 %
Technology	-	-	$2,484,264	-	-	$2,484,264	15.71 %
Conveyances	-	-	$312,741	-	-	$312,741	1.98 %
Specialties	-	-	$9,238	$516,350	$57,159	$582,747	3.69 %
Total	$88,219	$4,347,388	$6,245,689	$3,534,788	$1,594,724	$15,810,807	

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

The building systems with the most need include:

Interior	-	$4,057,149
Technology	-	$2,484,264
Exterior	-	$2,438,592

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

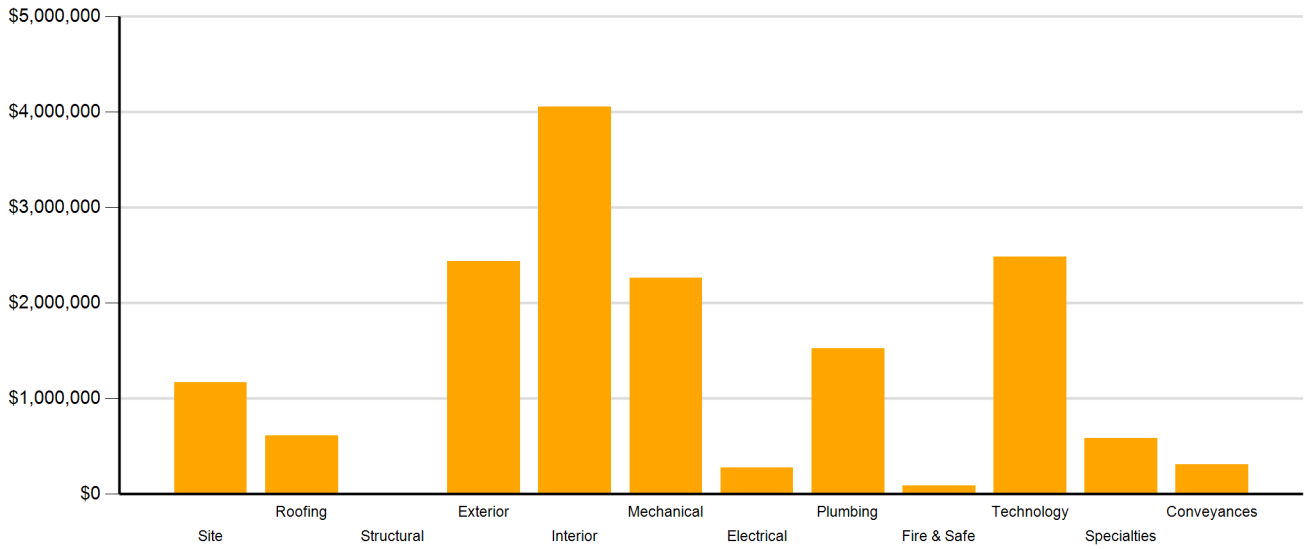


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$56,835	-	$56,835
Barrier to Accessibility	-	-	$312,741	-	-	$312,741
Capital Renewal	$17,505	$4,347,388	$3,415,581	$2,510,289	$906,288	$11,197,052
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$70,714	-	$38,106	$217,679	$688,435	$1,014,935
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$749,984	-	$749,984
Technology	-	-	$2,455,396	-	-	$2,455,396
Traffic	-	-	$23,865	-	-	$23,865
Total	$88,219	$4,347,388	$6,245,689	$3,534,788	$1,594,724	$15,810,807

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

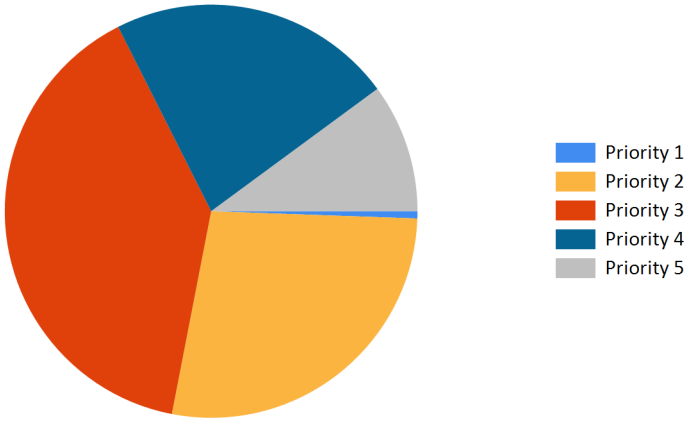


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,168,838	$0	$0	$0	$0	$127,442	$127,442	$1,296,280
Roofing	$610,053	$0	$0	$0	$0	$0	$0	$610,053
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$2,438,592	$0	$0	$0	$0	$0	$0	$2,438,592
Interior	$4,057,149	$0	$0	$0	$0	$209,143	$209,143	$4,266,292
Mechanical	$2,261,996	$0	$0	$0	$1,173,227	$70,420	$1,243,647	$3,505,643
Electrical	$279,754	$0	$0	$0	$0	$0	$0	$279,754
Plumbing	$1,527,884	$0	$0	$233,930	$0	$6,397	$240,327	$1,768,211
Fire and Life Safety	$86,789	$0	$0	$0	$0	$0	$0	$86,789
Technology	$2,484,264	$0	$0	$0	$0	$0	$0	$2,484,264
Conveyances	$312,741	$0	$0	$0	$0	$0	$0	$312,741
Specialties	$582,747	$0	$0	$0	$0	$362,372	$362,372	$945,119
Total	**$15,810,807**	**$0**	**$0**	**$233,930**	**$1,173,227**	**$775,774**	**$2,182,931**	**$17,993,738**

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

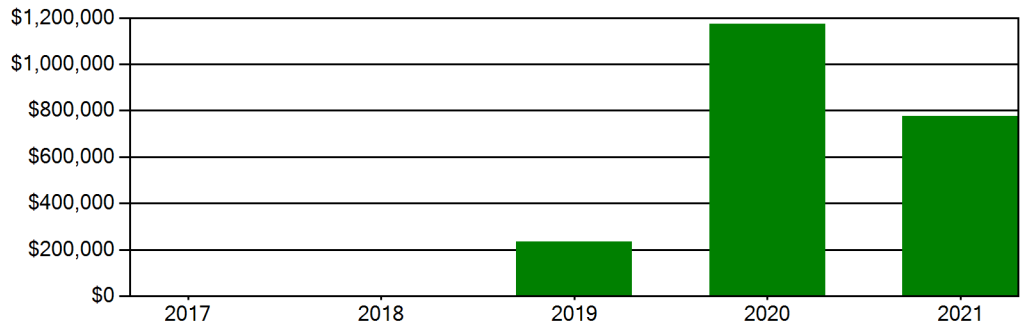
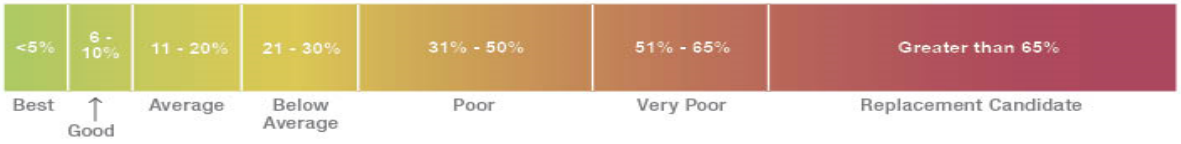


Figure 4: Life Cycle Capital Renewal Forecast

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 $43,828,288. For planning purposes, the total 5-year need at the Hugh B. Bain Middle School is $17,993,738 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Hugh B. Bain Middle School facility has a 5-year FCI of 41.06%.

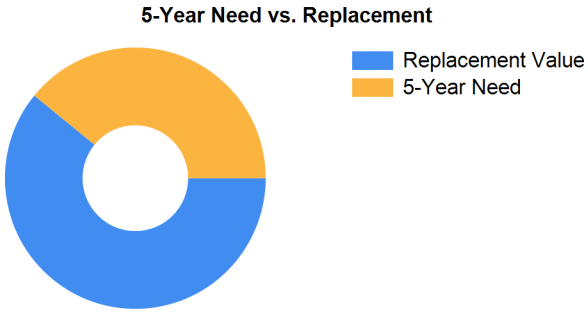


Figure 5: 5-Year FCI

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 734 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 Hugh B. Bain Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $741,312.

Summary of Findings

The Hugh B. Bain Middle School comprises 132,813 square feet and was constructed in 1929. Current deficiencies at this school total $15,810,807. Five year capital renewal costs total $2,182,931. The total identified need for the Hugh B. Bain Middle School (current deficiencies and 5-year capital renewal costs) is $17,993,738. The 5-year FCI is 41.06%.

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
Hugh B. Bain Middle School Totals	132,813	1929	$15,810,807	$2,182,931	$17,993,738	41.06%

**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	Traffic	4	Ea.	3	$11,932	11677
Note: Add school zone signage on adjacent streets						
Traffic Signage Is Required	Traffic	4	Ea.	3	$11,932	16936
Note: Add school zone signage on adjacent streets						
Asphalt Paving Requires Replacement	Capital Renewal	27	CAR	4	$116,790	12536
Asphalt Paving Requires Replacement	Capital Renewal	112	CAR	4	$484,464	12537
Note: Asphalt parking is weathered, alligatored, and breaking.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28435
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,644	28708
Note: Exterior Basketball Goals are Required						
Paving Requires Restriping	Capital Renewal	43	CAR	5	$3,207	11676
Note: Repaint parking spaces on campus (quantity provided is an estimate)						
Paving Requires Restriping	Capital Renewal	43	CAR	5	$3,207	16935
Note: Repaint parking spaces on campus (quantity provided is an estimate)						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54874
Note: PE / Recess Playfield is Missing and is Needed						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$427,573	28234
Note: School lacks a competition track.						
	Sub Total for System	**10**	**items**		**$1,168,838**	
	Sub Total for School and Site Level	**10**	**items**		**$1,168,838**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	44,000	SF	2	$610,053	12562
Note: Membrane is buckling and insulation is deteriorating and feels soft underfoot. The warranty expired in 1998.						
	Sub Total for System	**1**	**items**		**$610,053**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	12,903	SF	2	$2,394,276	12542
Note: Single pane windows allow water and air infiltration.						
Exterior Metal Door Requires Repainting	Capital Renewal	25	Door	3	$5,692	12541
Note: Exterior doors are weathered, faded, and have chipped paint.						
The Exterior Requires Cleaning	Capital Renewal	13,000	SF Wall	5	$38,624	12540
Note: Limestone exterior is stained and should be cleaned.						
	Sub Total for System	**3**	**items**		**$2,438,592**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Doors Require Replacement	Capital Renewal	280	Door	3	$1,415,674	12543
Note: Wood doors are aged, stained, and chipped.						
The Carpet Flooring Requires Replacement	Capital Renewal	3,984	SF	3	$95,044	12544
Note: Carpet is aged and worn.						
Location: Library and music rooms						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	34,623	SF	3	$435,527	12545
Note: Tile is chipped, worn, and lifting at the seams.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	13,281	SF	4	$157,920	12568
Note: Tiles are separating from the ceiling.						
Interior Toilet Partition Requires Repair	Capital Renewal	36	Ea.	4	$20,641	12552

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	9,205	SF	4	$287,878	Rollup
Moveable Partitions Require Replacement	Capital Renewal	648	SF Wall	4	$82,076	12567
Note: Partition opens, but is extremely difficult to close.						
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	123	Ea.	4	$38,467	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	30	LF	4	$751	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	40,566	SF	4	$422,888	Rollup
Room Is Excessively Reverberant	Acoustics	2,320	SF	4	$56,835	19775
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	2,227	SF	4	$85,891	Rollup
The Terrazzo Flooring Requires Repair	Capital Renewal	1,328	SF	4	$77,533	12554
Note: Cracks in restrooms.						
Classroom Door Requires Vision Panel	Educational Adequacy	5	Ea.	5	$11,547	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	70,038	SF	5	$507,437	Rollup
Room lacks appropriate sound control.	Educational Adequacy	400	SF	5	$14,088	Rollup
The Gypsum Board Ceilings Require Repainting	Capital Renewal	75,640	SF	5	$346,951	Rollup
	Sub Total for System	**17**	**items**		**$4,057,149**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	14	Ea.	2	$259,667	12566
Note: Unit vents are no longer functional.						
The Air Handler HVAC Component Requires Replacement	Capital Renewal	7	Ea.	2	$331,107	12556
The Boiler HVAC Component Requires Replacement	Capital Renewal	3	Ea.	2	$560,357	12557
Note: Steam boilers and antiquated and should be replaced.						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	132,813	SF	4	$983,713	12561
Lab lacks an appropriate fume hood.	Educational Adequacy	4	Ea.	4	$89,015	Rollup
The Chemistry Lab Fume Hood(s) Require Replacement	Capital Renewal	1	Ea.	4	$31,274	12539
Remove Abandoned Equipment	Capital Renewal	2	Ea.	5	$6,864	13481
Note: Hot water storage tanks						
	Sub Total for System	**7**	**items**		**$2,261,996**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	1	Ea.	1	$1,429	Rollup
Switchgear Is Needed Or Requires Replacement	Capital Renewal	2	Ea.	2	$151,450	12560
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$2,010	12546
The Panelboard Requires Replacement	Capital Renewal	9	Ea.	2	$38,467	12558
Note: Electrical distribution is obsolete and should be replaced.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	172	Ea.	5	$86,397	Rollup
	Sub Total for System	**5**	**items**		**$279,754**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	132,813	SF	3	$1,171,752	12555
Note: The custodian reported occasional brown water and signs of scaling in the pipes.						
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	35	Ea.	3	$291,892	12548
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	2	Ea.	4	$22,413	12549
Note: Water fountains are not functional.						
Location: Second floor						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	8	Ea.	4	$22,601	12553
Note: Service sinks are aged and corroded and should be replaced.						

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	9	Ea.	5	$10,046	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	6	Ea.	5	$9,180	Rollup
	Sub Total for System	**6**	**items**		**$1,527,884**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Kitchen Exhaust Hood	Capital Renewal	1	Ea.	1	$17,505	12559
Note: Exhaust hood performs poorly according to staff and should be replaced.						
Room lacks shut-off valves for utilities. (International Fuel Gas Code, Section 409.6)	Educational Adequacy	6	Ea.	1	$69,284	Rollup
	Sub Total for System	**2**	**items**		**$86,789**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	5	Ea.	3	$28,868	Rollup
Technology: Auditorium AV/Multimedia system is in need of minor improvements.	Technology	1	Room	3	$104,247	23580
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	478	Ea.	3	$249,150	23579
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	46	Ea.	3	$1,007,026	23584
Technology: Instructional spaces do not have local sound reinforcement.	Technology	46	Ea.	3	$239,768	23586
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,838	23573
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,838	23576
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,622	23572
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$49,622	23575
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,212	23571
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,212	23574
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,212	23577
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	23569
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	23568
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	322	Ea.	3	$151,054	23578
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$66,718	23587
Technology: Network system inadequate and/or near end of useful life	Technology	18	Ea.	3	$93,822	23588
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	132,813	SF	3	$249,216	23583
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	23585
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,340	23570
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	46	Ea.	3	$76,726	23582

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	23581
	Sub Total for System	**22**	**items**		**$2,484,264**	

Conveyances

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Elevator Cab Requires Replacement	Barrier to Accessibility	1	Ea.	3	$312,741	12547
Note: Elevator is obsolete and not ADA compliant. It is difficult to get replacement parts when necessary.						
	Sub Total for System	**1**	**items**		**$312,741**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	4	Room	4	$49,071	12564
Note: Science wing cabinetry is in disrepair with doors falling off.						
The Metal Student Lockers Require Replacement	Capital Renewal	856	Ea.	4	$461,793	12563
Note: Lockers are aged and rusted with poorly functioning locks.						
Welding Bays Are Required	Educational Adequacy	1	Ea.	4	$5,485	Rollup
Room lacks an appropriate refrigerator.	Educational Adequacy	5	Ea.	5	$43,303	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	1	Ea.	5	$13,857	Rollup
	Sub Total for System	**6**	**items**		**$582,747**	
	Sub Total for Building 01 - Main Building	**70**	**items**		**$14,641,969**	
	Total for Campus	**80**	**items**		**$15,810,807**	

Hugh B. Bain Middle School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Pedestrian Pavement	Sidewalks - Concrete		6,160	SF	$127,442	5
		Sub Total for System	**1**	**items**	**$127,442**	
		Sub Total for Building -	**1**	**items**	**$127,442**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles		13,281	SF	$121,410	5
Carpeting	Carpet		3,984	SF	$87,733	5
		Sub Total for System	**2**	**items**	**$209,143**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Heat Generation	Steam Condensate Reciever, Tank and Pump		3	Ea.	$1,068,131	4
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		2	Ea.	$34,242	4
Decentralized Heating Equipment	Unit Heater Steam/HW (36 MBH)		2	Ea.	$3,333	4
Facility Hydronic Distribution	Pump - 5HP		7	Ea.	$67,521	4
Exhaust Air	Roof Exhaust Fan		7	Ea.	$36,873	5
Exhaust Air	Roof Exhaust Fan - Large		2	Ea.	$28,126	5
Exhaust Air	Wall Exhaust Fan		2	Ea.	$5,421	5
		Sub Total for System	**7**	**items**	**$1,243,646**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories		85	Ea.	$233,930	3
Domestic Water Equipment	Water Heater - Gas - 40 gallon		2	Ea.	$6,397	5
		Sub Total for System	**2**	**items**	**$240,328**	

Specialties

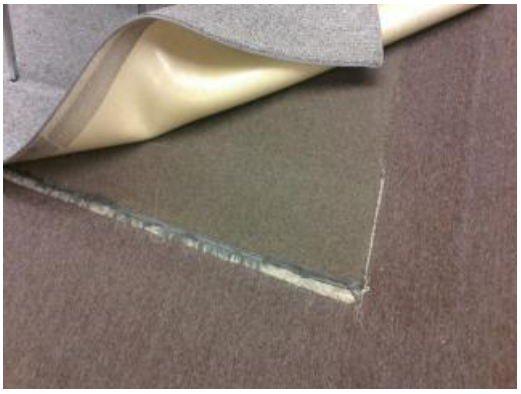
Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry		32	Room	$362,372	5
		Sub Total for System	**1**	**items**	**$362,372**	
		Sub Total for Building 01 - Main Building	**12**	**items**	**$2,055,488**	
		Total for: Hugh B. Bain Middle School	**13**	**items**	**$2,182,930**	

Supporting Photos


Weathered Exterior Doors


Damaged Wood Door


Damaged Interior Door


Frayed Carpet


Worn Carpet


Aged Steam Boilers


Chipped, Mismatched, And Missing VCT


Chipped And Worn VCT


Typical Single Pane Windows


Weathered Exterior Doors


Peeling Ceiling Paint


Aged Elevator


Cracked Terrazzo


Toilet Partitions


Non-Functional Unit Vent


Buckled EPDM


Obsolete Panelboard


Aged Air Handling Unit


Deteriorated Asphalt Parking


Weathered Asphalt


Site Aerial


Typical Built-In Casework


Cafeteria

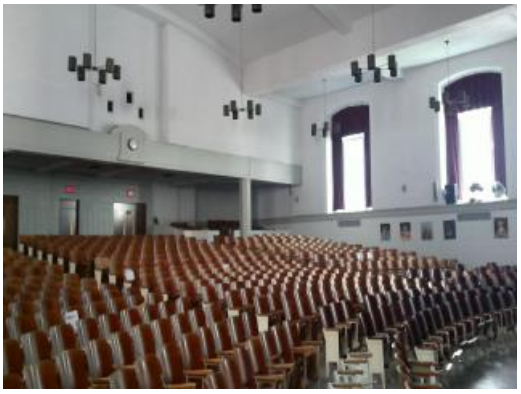

Science Room


Art Room


Gym


Exterior Finishes

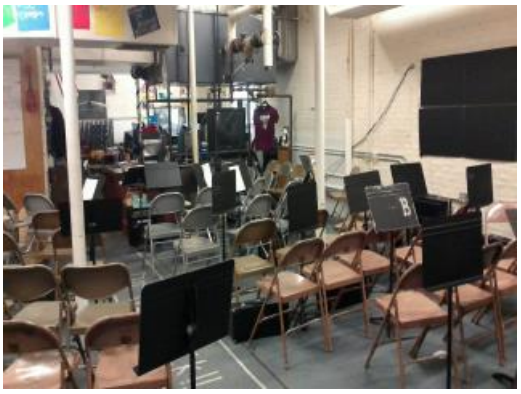

Typical Classroom


Auditorium


Exterior Finishes


Music Room


Weight Room


Band Room


Main Entry

Site Signage


Dirty Exterior


Stained Roof Membrane


Aged Lockers


Damaged Science Cabinetry


Peeling Classroom Paint

Peeling Classroom Paint

Facility Condition Assessment

Charter - Nel/CPS Construction Career Academy | *June 2017*

4 Sharpe Dr, Cranston, RI 02920

Introduction

Nel/CPS Construction Career Academy, located at 4 Sharpe Dr in Cranston, Rhode Island, was built in 1980. It comprises 46,170 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.

Nel/CPS Construction Career Academy serves grades 9 - 12, has 23 instructional spaces, and has an enrollment of 170. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Nel/CPS Construction Career Academy is 192 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 Nel/CPS Construction Career Academy the 5-year need is $5,416,948. 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.

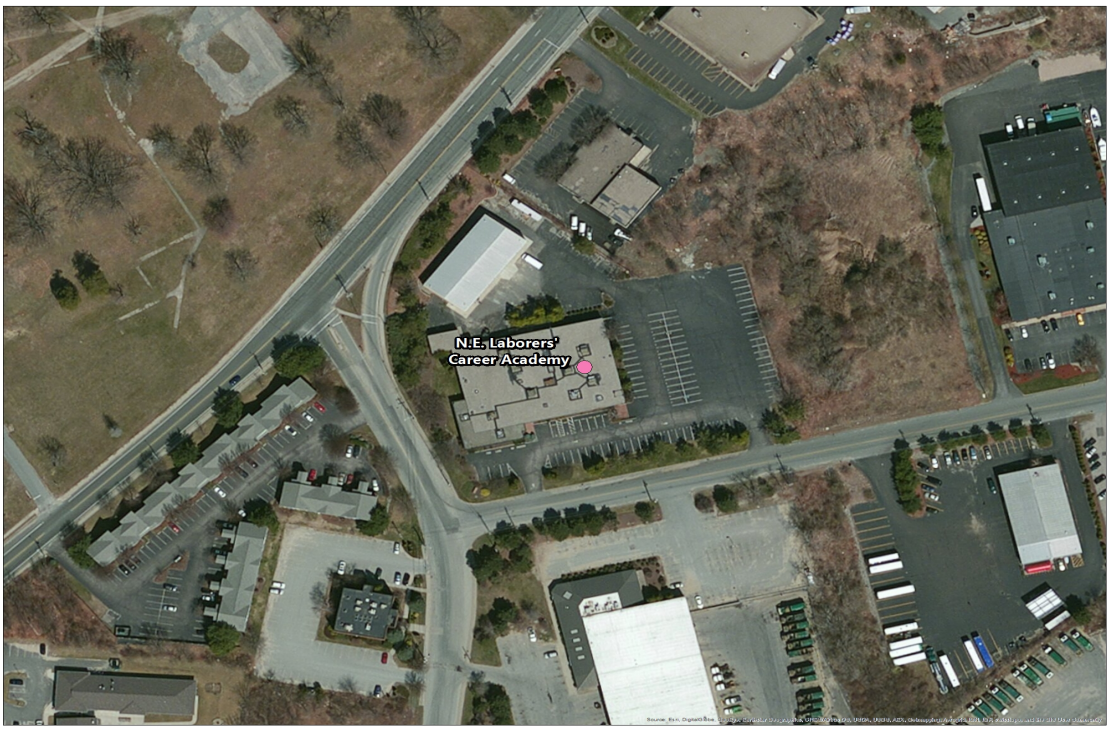


Figure 1: Aerial view of Nel/CPS Construction Career Academy

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 Nel/CPS Construction Career Academy campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Painted Exterior Wall
	Metal Panel Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Steel Exterior Entrance Doors
	Storefront Entrance Doors
	Overhead Exterior Utility Doors
02 - Building 02:	Metal Panel Exterior Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

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

01 - Main Building:	Built-Up Roofing With Ballast
02 - Building 02:	Metal Steep Slope Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Aluminum/Glass Storefront Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Exposed Metal Structure Ceiling
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Vinyl/Fabric Wall Covering
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring

01 - Main Building:	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Carpet
02 - Building 02:	Exposed Metal Structure Ceiling
	Vinyl/Fabric Wall Covering
	Interior Wall Painting
	Concrete Flooring

Mechanical

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

01 - Main Building:	20 kW Electric Unit Heater
	5 kW Electric Unit Heater
	Electronic Heating System Controls
	5 Ton Package DX Unit
	10 Ton Package DX Unit
	Ductwork
	Wall Exhaust Fan
	Fire Sprinkler System
02 - Building 02:	20 kW Electric Unit Heater
	Wall Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	4" Backflow Preventers
	40 Gallon Gas Water Heater
	Domestic Water Piping System
02 - Building 02:	Domestic Water Piping System
01 - Main Building:	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals

Electrical

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

01 - Main Building:	50 kW Emergency Generator
	1,200 Amp Switchgear

01 - Main Building:	500 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	400 Amp Distribution Panel
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
02 - Building 02:	75 KVA Transformer
	Panelboard - 120/208 225A
	Panelboard - 277/480 100A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,774	$504,922	$1,055,948	$1,566,644	51.18 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	$164,063	-	$164,063	5.36 %
Interior	-	-	$299,766	$514,778	$228,657	$1,043,201	34.08 %
Mechanical	-	-	-	-	-	$0	0.00 %
Electrical	-	-	$30,071	-	$43,906	$73,977	2.42 %
Plumbing	-	-	-	-	$24,958	$24,958	0.82 %
Fire and Life Safety	$11,470	-	-	-	-	$11,470	0.37 %
Technology	-	-	$28,674	-	-	$28,674	0.94 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$18,351	$129,755	-	$148,107	4.84 %
Total	$11,470	$0	$382,636	$1,313,518	$1,353,469	$3,061,093	

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

The building systems with the most need include:

Site	-	$1,566,644
Interior	-	$1,043,201
Exterior	-	$164,063

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

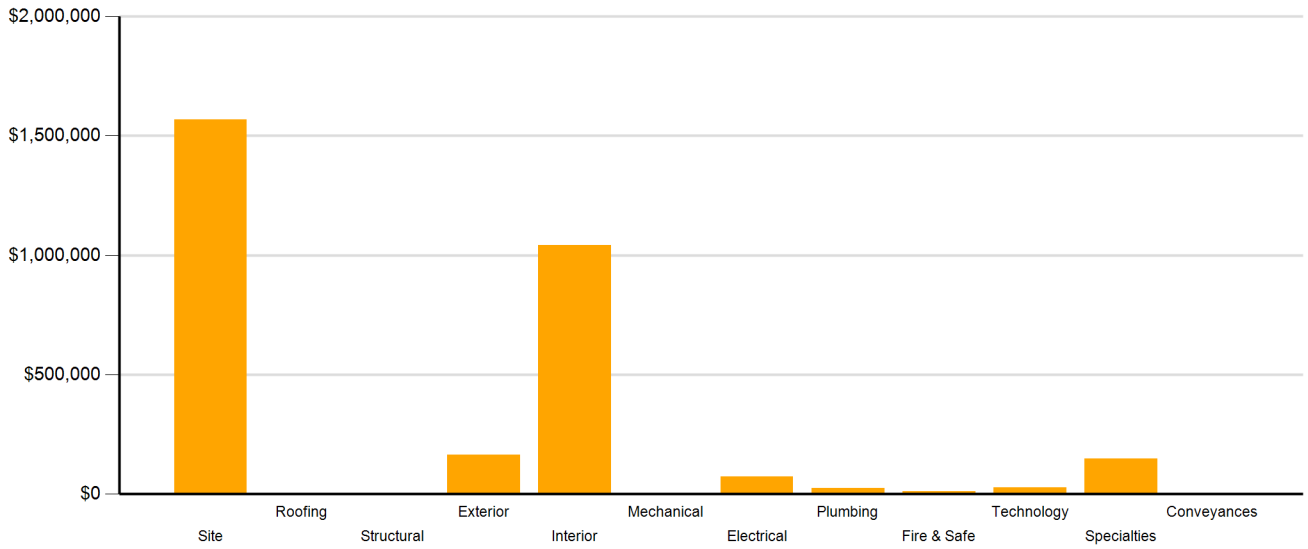


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	-	-	$0
Barrier to Accessibility	-	-	$238,164	-	-	$238,164
Capital Renewal	-	-	$61,601	$843,551	$231,221	$1,136,373
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$11,470	-	$47,025	$469,967	$1,122,248	$1,650,711
Functional Deficiency	-	-	$30,071	-	-	$30,071
Hazardous Material	-	-	-	-	-	$0
Technology	-	-	-	-	-	$0
Traffic	-	-	$5,774	-	-	$5,774
Total	$11,470	$0	$382,636	$1,313,518	$1,353,469	$3,061,093

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

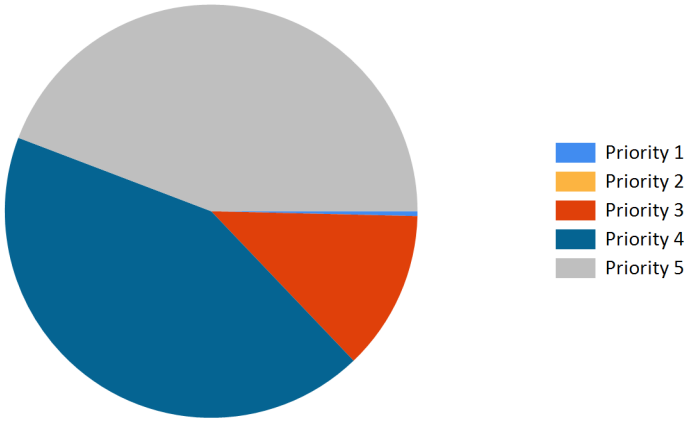


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,566,644	$0	$0	$0	$0	$0	$0	$1,566,644
Roofing	$0	$0	$0	$0	$1,500,002	$0	$1,500,002	$1,500,002
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$164,063	$0	$0	$0	$0	$0	$0	$164,063
Interior	$1,043,201	$0	$0	$0	$53,503	$21,315	$74,818	$1,118,019
Mechanical	$0	$0	$0	$0	$750,001	$0	$750,001	$750,001
Electrical	$73,977	$0	$0	$0	$0	$0	$0	$73,977
Plumbing	$24,958	$0	$0	$0	$0	$31,034	$31,034	$55,992
Fire and Life Safety	$11,470	$0	$0	$0	$0	$0	$0	$11,470
Technology	$28,674	$0	$0	$0	$0	$0	$0	$28,674
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$148,107	$0	$0	$0	$0	$0	$0	$148,107
Total	**$3,061,093**	**$0**	**$0**	**$0**	**$2,303,506**	**$52,349**	**$2,355,855**	**$5,416,948**

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

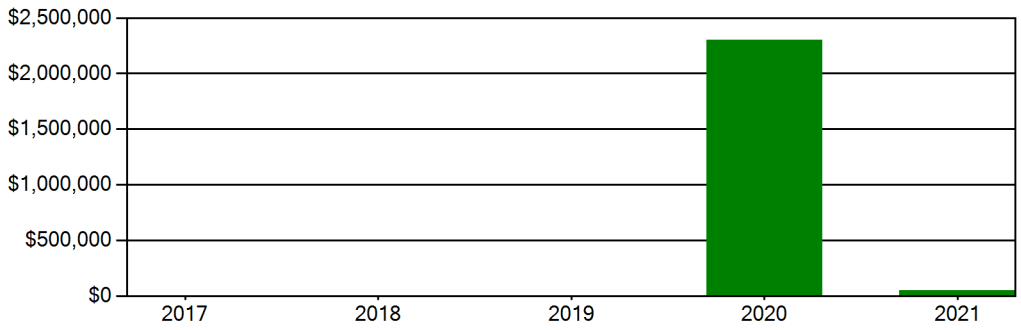
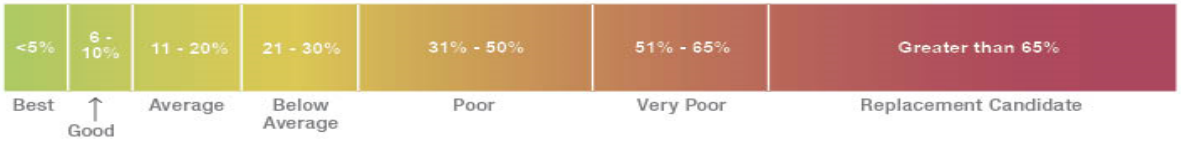


Figure 4: Life Cycle Capital Renewal Forecast

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 $16,621,200. For planning purposes, the total 5-year need at the Nel/CPS Construction Career Academy is $5,416,948 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Nel/CPS Construction Career Academy facility has a 5-year FCI of 32.59%.

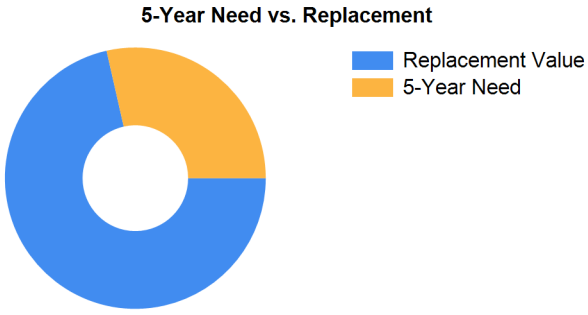


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 225 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 Nel/CPS Construction Career Academy cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $276,048.

Summary of Findings

The Nel/CPS Construction Career Academy comprises 46,170 square feet and was constructed in 1980. Current deficiencies at this school total $3,061,093. Five year capital renewal costs total $2,355,855. The total identified need for the Nel/CPS Construction Career Academy (current deficiencies and 5-year capital renewal costs) is $5,416,948. The 5-year FCI is 32.59%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Nel/CPS Construction Career Academy Totals	46,170	1980	$3,061,093	$2,355,855	$5,416,948	32.59%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Traffic Signage Is Required	Traffic	2	Ea.	3	$5,774	9324
Note: Add school zone signs on East Street / Pontiac Avenue.						
Asphalt Paving Requires Replacement	Capital Renewal	112	CAR	4	$468,836	8758
Note: Paving is cracked and in need of replacement.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28652
Note: Backstops Require Replacement						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54981
Note: PE / Recess Playfield is Missing and is Needed						
School has insufficient baseball fields.	Educational Adequacy	1	Ea.	5	$264,627	28339
Note: School has insufficient baseball fields.						
School has insufficient football/soccer fields.	Educational Adequacy	1	Ea.	5	$120,285	28207
Note: School has insufficient football/soccer fields.						
School has insufficient softball fields.	Educational Adequacy	1	Ea.	5	$192,456	28382
Note: School has insufficient softball fields.						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$413,780	28291
Note: School lacks a competition track.						
	Sub Total for System	**8**	**items**		**$1,566,644**	
	Sub Total for School and Site Level	**8**	**items**		**$1,566,644**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Exterior Requires Painting (Bldg SF)	Capital Renewal	11,691	SF	4	$164,063	8762
Note: Metal panels require repainting.						
	Sub Total for System	**1**	**items**		**$164,063**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	6,469	SF	3	$61,601	8759
Note: Cracked/sagging/stained tiles.						
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	72	Door	3	$238,164	8761
Note: Non-ADA compliant door knobs.						
Ceiling Grid Requires Replacement	Capital Renewal	6,469	SF	4	$80,896	8764
Note: Sagging grid. Needs to be replaced.						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	11,326	SF	4	$433,882	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	5	Ea.	5	$11,470	Rollup
Interior Walls Require Repainting (Bldg SF)	Capital Renewal	31,176	SF	5	$217,188	Rollup
	Sub Total for System	**6**	**items**		**$1,043,201**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Receptacles Are Inadequate And More are Needed	Functional Deficiency	50	Ea.	3	$30,071	8765
Room Has Insufficient Electrical Outlets	Educational Adequacy	88	Ea.	5	$43,906	Rollup
	Sub Total for System	**2**	**items**		**$73,977**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	3	Ea.	5	$3,326	Rollup

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	5	Ea.	5	$7,599	Rollup
The Custodial Mop Or Service Sink Is Missing And Should Be Installed	Capital Renewal	2	Ea.	5	$14,033	8760
Note: Both floors						
	Sub Total for System	**3**	**items**		**$24,958**	

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	1	Ea.	1	$11,470	Rollup
	Sub Total for System	**1**	**items**		**$11,470**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	5	Ea.	3	$28,674	Rollup
	Sub Total for System	**1**	**items**		**$28,674**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	4	Ea.	3	$18,351	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	11	Room	4	$129,755	8763
Note: Base cabinets are delaminating and broken.						
	Sub Total for System	**2**	**items**		**$148,107**	
	Sub Total for Building 01 - Main Building	**16**	**items**		**$1,494,449**	
	Total for Campus	**24**	**items**		**$3,061,093**	

Buildings with no reported deficiencies

02 - Building 02

Nel/CPS Construction Career Academy - 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	Built-Up Roofing (BUR) w/ballast	38,970	SF	$1,500,002	4
	Sub Total for System	**1**	**items**	**$1,500,002**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Coverings	Vinyl/Fabric Wall Covering	5,845	SF	$42,184	4
Carpeting	Carpet	514	SF	$11,319	4
Suspended Plaster and	Painted ceilings	3,897	SF	$16,500	5
	Sub Total for System	**3**	**items**	**$70,003**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Water-Based Fire-Suppression	Fire Sprinkler System (Bldg.SF)	38,970	SF	$750,001	4
	Sub Total for System	**1**	**items**	**$750,001**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Non-Refrigerated Drinking Fountain	3	Ea.	$31,034	5
	Sub Total for System	**1**	**items**	**$31,034**	
	Sub Total for Building 01 - Main Building	**6**	**items**	**$2,351,040**	

Building: 02 - Building 02

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	720	SF	$4,815	5
Note:	Painted metal structure.				
	Sub Total for System	**1**	**items**	**$4,815**	
	Sub Total for Building 02 - Building 02	**1**	**items**	**$4,815**	
	Total for: Nel/CPS Construction Career Academy	**7**	**items**	**$2,355,855**	

Supporting Photos

Site Aerial

Cracked Asphalt Pavement

Main Building West Elevation

Building 2 East Elevation

Main Building Front Entrance

Main Building East Elevation

Building 2 West Elevation

Building 2 North Elevation

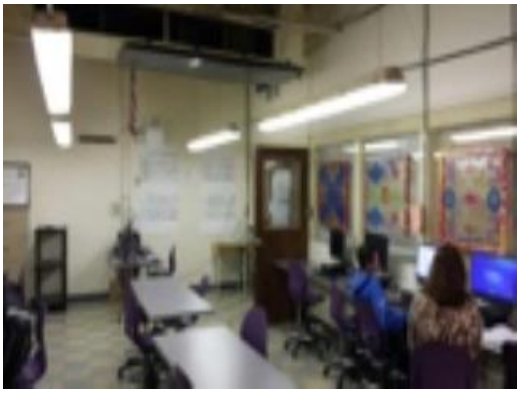
Main Building South Elevation

Building 2 South Elevation


Main Building North Elevation


Delaminating Wood Base Cabinet

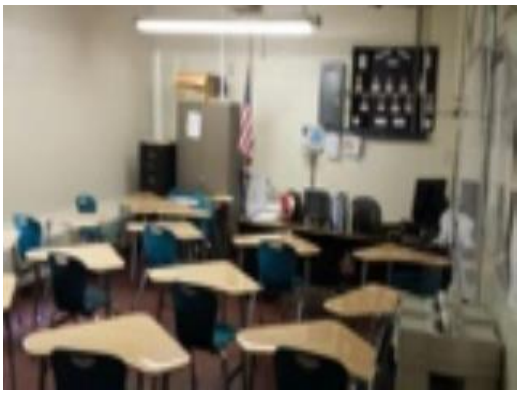

Art Room


Computer Lab


Cafeteria


Restroom


Fitness Room


Classroom


Stained and Sagging Ceiling Tiles


Exterior Door


Interior

Main Building Front Entrance

Facility Condition Assessment

Cranston - Oak Lawn School | *June 2017*

36 Stoneham Street, Cranston, RI 02920

Introduction

Oak Lawn School, located at 36 Stoneham Street in Cranston, Rhode Island, was built in 1950. It comprises 30,102 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.

Oak Lawn School serves grades 1 - 6, has 20 instructional spaces, and has an enrollment of 249. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Oak Lawn School is 297 with a resulting utilization of 84%.

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 Oak Lawn School the 5-year need is $4,288,623. 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 Oak Lawn 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 Oak Lawn School campus, identified by discipline and building.

Site

The site level systems for this campus include:

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

Building Envelope

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

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

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

01 - Main Building:	Single Ply Roofing

Interior

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

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Vinyl/Fabric Wall Covering
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring

Mechanical

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

01 - Main Building:	1,200 MBH Copper Tube Boiler
	100 MBH Gas Furnace
	Radiant Water Heater
	10 kW Electric Unit Heater
	Electronic Heating System Controls
	3 Ton Ductless Split System
	15 Ton Condensing Unit
	Window Units
	5 Ton Package DX Unit
	10 Ton Package DX Unit
	Make-up Air Unit
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	5,000 CFM Interior AHU
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Sump Pump
	Air Compressor (1/2 hp)

Electrical

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

01 - Main Building:	225 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 120/208 400A
	Panelboard - 400+ Amps

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$108,257	$111,434	$161,362	$381,053	11.17 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$393,823	-	-	-	$393,823	11.55 %
Interior	-	-	$273,648	$1,103,443	$9,714	$1,386,805	40.67 %
Mechanical	-	-	$120,417	$16,086	-	$136,503	4.00 %
Electrical	-	-	$33,078	-	$40,185	$73,263	2.15 %
Plumbing	-	-	-	-	$8,711	$8,711	0.26 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,020,662	-	-	$1,020,662	29.93 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	-	-	$9,238	0.27 %
Total	$0	$393,823	$1,565,300	$1,230,963	$219,972	$3,410,058	

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

The building systems with the most need include:

Interior	-	$1,386,805
Technology	-	$1,020,662
Exterior	-	$393,823

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

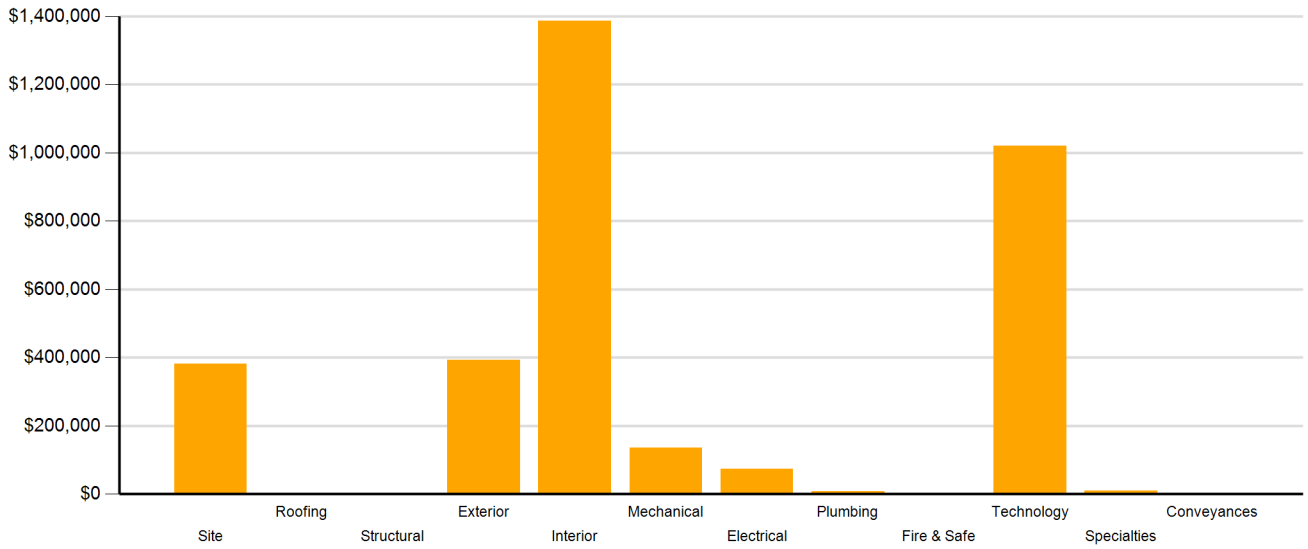


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$120,417	$30,071	-	$150,489
Barrier to Accessibility	-	-	$285,677	-	-	$285,677
Capital Renewal	-	$393,823	-	$91,435	$160,156	$645,414
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$15,012	$328,432	$59,816	$403,260
Functional Deficiency	-	-	$33,078	-	-	$33,078
Hazardous Material	-	-	-	$781,025	-	$781,025
Technology	-	-	$1,014,888	-	-	$1,014,888
Traffic	-	-	$96,228	-	-	$96,228
Total	$0	$393,823	$1,565,300	$1,230,963	$219,972	$3,410,058

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

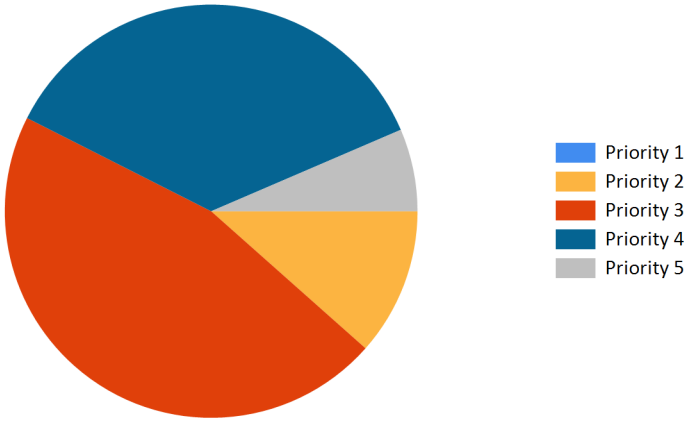


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$381,053	$0	$0	$0	$0	$0	$0	$381,053
Roofing	$0	$0	$0	$0	$0	$0	$0	$0
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$393,823	$0	$0	$0	$0	$0	$0	$393,823
Interior	$1,386,805	$0	$0	$0	$0	$841,864	$841,864	$2,228,669
Mechanical	$136,503	$0	$0	$0	$0	$0	$0	$136,503
Electrical	$73,263	$0	$0	$0	$11,932	$0	$11,932	$85,195
Plumbing	$8,711	$0	$0	$0	$24,769	$0	$24,769	$33,480
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$1,020,662	$0	$0	$0	$0	$0	$0	$1,020,662
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$9,238	$0	$0	$0	$0	$0	$0	$9,238
Total	**$3,410,058**	**$0**	**$0**	**$0**	**$36,701**	**$841,864**	**$878,565**	**$4,288,623**

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

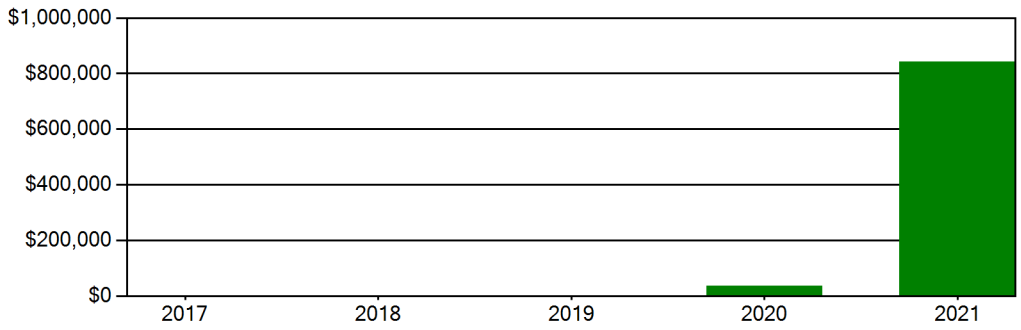
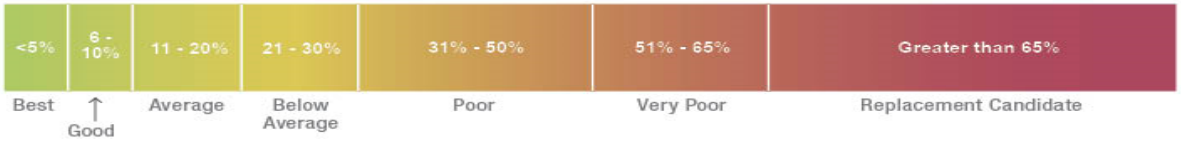


Figure 4: Life Cycle Capital Renewal Forecast

Facility Condition Index (FCI)

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



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

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

The replacement value represents the estimated cost of replacing the current building with another building of like size, based on today's estimated cost of construction in the Providence, Rhode Island area. The estimated replacement cost for this facility is $10,535,700. For planning purposes, the total 5-year need at the Oak Lawn School is $4,288,623 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Oak Lawn School facility has a 5-year FCI of 40.71%.

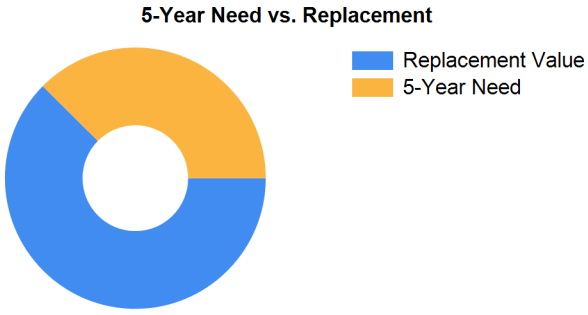


Figure 5: 5-Year FCI

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 167 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 Oak Lawn School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $0.

Summary of Findings

The Oak Lawn School comprises 30,102 square feet and was constructed in 1950. Current deficiencies at this school total $3,410,058. Five year capital renewal costs total $878,565. The total identified need for the Oak Lawn School (current deficiencies and 5-year capital renewal costs) is $4,288,623. The 5-year FCI is 40.71%.

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
Oak Lawn School Totals	30,102	1950	$3,410,058	$878,565	$4,288,623	40.71%

**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	Traffic	2	Ea.	3	$96,228	9334
Note: Add flashing beacons to school zone speed limit signs						
Asphalt Paving Requires Replacement	Capital Renewal	18	CAR	4	$75,349	8842
Note: Asphalt roadways have cracks and patched potholes that are deteriorating.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28438
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28710
Note: Exterior Basketball Goals are Required						
Paved Play Requires Recoating And Resurfacing	Capital Renewal	4,000	SF	5	$153,965	8841
Note: Large cracks in play area asphalt.						
	Sub Total for System	**5**	**items**		**$369,025**	
	Sub Total for School and Site Level	**5**	**items**		**$369,025**	

Building: 01 - Main Building

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Access Is Not ADA Compliant And Requires An ADA Compliant Ramp	Barrier to Accessibility	1	Ea.	3	$12,029	8847
	Sub Total for System	**1**	**items**		**$12,029**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	48	SF	2	$8,564	8843
Note: Single-pane windows should be replaced.						
The Storefront/Curtain Wall Requires Replacement	Capital Renewal	1,920	SF Wall	2	$385,258	8848
	Sub Total for System	**2**	**items**		**$393,823**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	91	Door	3	$273,648	8846
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	25,587	SF	4	$769,433	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	19	Ea.	4	$5,714	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	36	LF	4	$866	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	500	SF	4	$5,012	Rollup
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	500	SF	4	$30,071	19717
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	7,580	SF	4	$292,347	Rollup
Interior Doors Require Repainting	Capital Renewal	87	Door	5	$6,192	8844
Note: Wood doors are worn and need to be sanded and refinished.						
Room lacks appropriate sound control.	Educational Adequacy	100	SF	5	$3,522	Rollup
	Sub Total for System	**9**	**items**		**$1,386,805**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Unit Ventilators Are Excessively Noisy	Acoustics	18	Ea.	3	$120,417	19716
Note: All classrooms						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$16,086	9265
	Sub Total for System	**2**	**items**		**$136,503**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Receptacles Are Inadequate And More are Needed	Functional Deficiency	55	Ea.	3	$33,078	8849
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	$40,185	Rollup
	Sub Total for System	**2**	**items**		**$73,263**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	7	Ea.	5	$8,711	Rollup
	Sub Total for System	**1**	**items**		**$8,711**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	$5,774	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	48	Ea.	3	$24,057	23502
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	18	Ea.	3	$180,428	23506
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	18	Ea.	3	$378,898	23515
Technology: Instructional spaces do not have local sound reinforcement.	Technology	18	Ea.	3	$90,214	23511
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23501
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23500
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23504
Technology: Network system inadequate and/or near end of useful life	Technology	5	Ea.	3	$40,095	23509
Technology: Network system inadequate and/or near end of useful life	Technology	12	Ea.	3	$60,143	23510
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	30,102	SF	3	$54,312	23508
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23505
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23507
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23503
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,616	23514
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	18	Ea.	3	$28,868	23512
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23513
	Sub Total for System	**17**	**items**		**$1,020,662**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
	Sub Total for System	**1**	**items**		**$9,238**	
	Sub Total for Building 01 - Main Building	**35**	**items**		**$3,041,034**	
	Total for Campus	**40**	**items**		**$3,410,058**	

Oak Lawn School - Life Cycle Summary Yrs 1-5

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Interior Operable Partitions	Foldable partition (Bldg SF)	1,600	SF Wall	$187,067	5
Note:	4 @ 400 sf				
Interior Coiling Doors	Overhead	1	Door	$37,240	5
Suspended Plaster and	Painted ceilings	3,010	SF	$12,744	5
Wall Coverings	Vinyl/Fabric Wall Covering	1,505	SF	$10,862	5
Stone Facing	CMU Wall	12,041	SF	$442,616	5
Note:	Glazed block				
Wall Painting and Coating	Painting/Staining (Bldg SF)	13,546	SF	$90,594	5
Flooring Treatment	Concrete Floor - Finished	1,505	SF	$19,834	5
Tile Flooring	Ceramic Tile	1,505	SF	$40,907	5
	Sub Total for System	**8**	**items**	**$841,865**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Panelboard - 120/208 400A	1	Ea.	$6,351	4
Lighting Fixtures	Canopy Mounted Fixtures (Ea.)	4	Ea.	$5,581	4
	Sub Total for System	**2**	**items**	**$11,932**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Classroom Lavatories	9	Ea.	$24,769	4
	Sub Total for System	**1**	**items**	**$24,769**	
	Sub Total for Building 01 - Main Building	**11**	**items**	**$878,566**	
	Total for: Oak Lawn School	**11**	**items**	**$878,566**	

Supporting Photos

Patched Asphalt Roadway Deteriorating

Signage

Site Aerial

Worn Paved Play Area


Music Classroom


Exterior Brick


Restroom Finishes

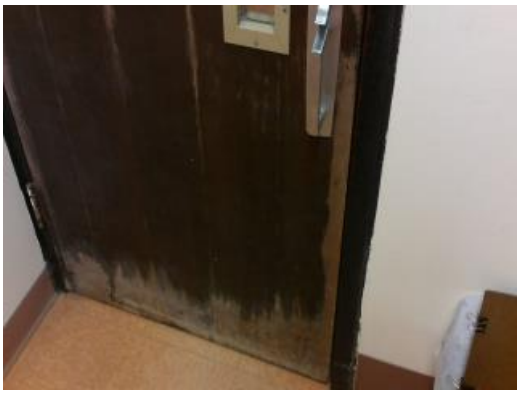

Typical Classroom


Art Classroom


Playground Equipment


Library


Gymnasium / Cafeteria


Worn Finish On Wood Door

Plaque


Typical Non-Compliant Hardware


Typical Aged VCT

Single-Pane Windows

Main Entry Without ADA Access

Facility Condition Assessment

Cranston - Orchard Farms Elementary School | *June 2017*

1555 Scituate Avenue, Cranston, RI 02921

Introduction

Orchard Farms Elementary School, located at 1555 Scituate Avenue in Cranston, Rhode Island, was built in 2002. It comprises 67,600 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.

Orchard Farms Elementary School serves grades PK - 6, has 30 instructional spaces, and has an enrollment of 304. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Orchard Farms Elementary School is 364 with a resulting utilization of 84%.

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 Orchard Farms Elementary School the 5-year need is $5,203,273. 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 Orchard Farms 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 Orchard Farms 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
	Steel Exterior Entrance Doors

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

01 - Main Building:	Composition Shingle Roofing
	Single Ply Roofing
	Canopy Roofing

Interior

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

01 - Main Building:	Moveable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Ceramic Tile Wall
	Interior Wall Painting
	Quarry Tile Flooring
	Ceramic Tile Flooring
	Rubber Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet
	Athletic/Sport Flooring

Mechanical

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

01 - Main Building:	14,000 MBH Cast Iron Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Fin Tube Water Radiant Heater
	50 MBH Steam Unit Heater
	Electronic Heating System Controls
	2 Ton Ductless Split System
	Window Units
	2-Pipe Hot Water Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	75 HP Pump
	10 HP Pump
	15 Ton DX Gas Roof Top Unit
	25 Ton DX Gas Roof Top Unit
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	4" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1 hp)

Electrical

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

01 - Main Building:	300 kW Emergency Generator
	Automatic Transfer Switch
	800 Amp Switchgear
	112.5 KVA Transformer

01 - Main Building:	225 KVA Transformer
	30 KVA Transformer
	Panelboard - 120/208 100A
	Panelboard - 120/208 225A
	Panelboard - 120/240 400A
	Panelboard - 277/480 100A
	Panelboard - 277/480 225A
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$96,228	$948,425	$64,800	$1,109,453	24.58 %
Roofing	-	-	$2,456	-	-	$2,456	0.05 %
Structural	$10,024	-	-	-	-	$10,024	0.22 %
Exterior	-	$2,855	-	-	-	$2,855	0.06 %
Interior	-	-	$664,645	$1,101,542	-	$1,766,187	39.14 %
Mechanical	-	-	-	$25,583	-	$25,583	0.57 %
Electrical	-	-	$64,834	-	$55,880	$120,714	2.67 %
Plumbing	-	-	-	-	$11,882	$11,882	0.26 %
Fire and Life Safety	$48,659	-	-	-	-	$48,659	1.08 %
Technology	-	-	$1,410,554	-	-	$1,410,554	31.26 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,588	-	-	$4,588	0.10 %
Total	$58,683	$2,855	$2,243,304	$2,075,550	$132,562	$4,512,954	

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

The building systems with the most need include:

Interior	-	$1,766,187
Technology	-	$1,410,554
Site	-	$1,109,453

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

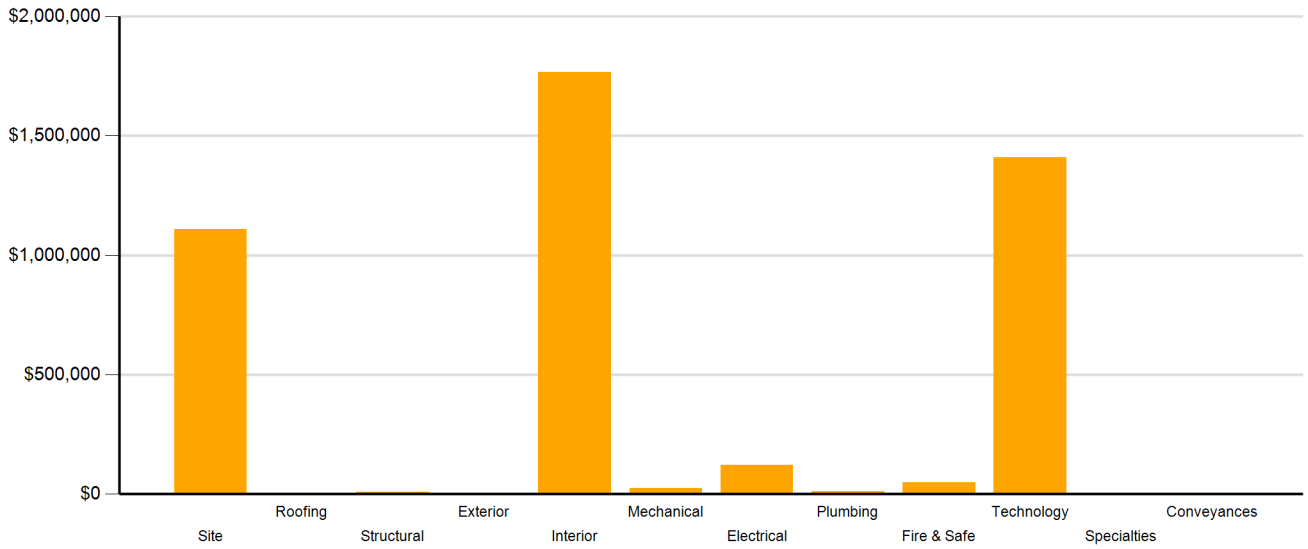


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$240,971	-	$240,971
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	$58,683	$2,855	$828,162	$956,167	-	$1,845,867
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$61,936	$878,412	$132,562	$1,072,910
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	-	-	$0
Technology	-	-	$1,353,206	-	-	$1,353,206
Traffic	-	-	-	-	-	$0
Total	$58,683	$2,855	$2,243,304	$2,075,550	$132,562	$4,512,954

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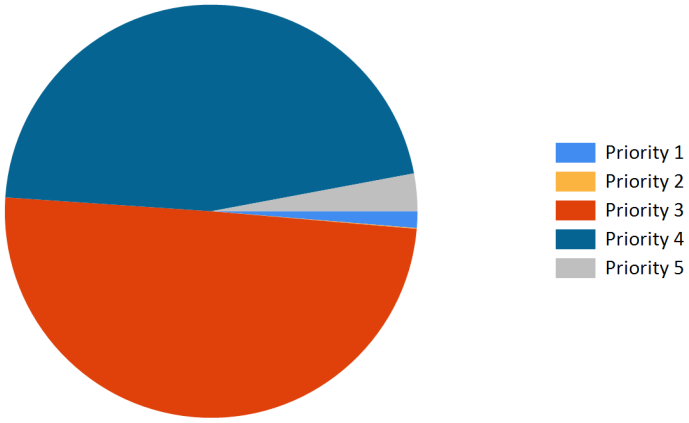

Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,109,453	$0	$0	$0	$0	$170,131	$170,131	$1,279,584
Roofing	$2,456	$0	$0	$0	$0	$0	$0	$2,456
Structural	$10,024	$0	$0	$0	$0	$0	$0	$10,024
Exterior	$2,855	$0	$0	$0	$0	$0	$0	$2,855
Interior	$1,766,187	$0	$0	$0	$0	$514,272	$514,272	$2,280,459
Mechanical	$25,583	$0	$0	$0	$0	$0	$0	$25,583
Electrical	$120,714	$0	$0	$0	$0	$0	$0	$120,714
Plumbing	$11,882	$0	$0	$0	$0	$5,916	$5,916	$17,798
Fire and Life Safety	$48,659	$0	$0	$0	$0	$0	$0	$48,659
Technology	$1,410,554	$0	$0	$0	$0	$0	$0	$1,410,554
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$4,588	$0	$0	$0	$0	$0	$0	$4,588
Total	**$4,512,954**	**$0**	**$0**	**$0**	**$0**	**$690,319**	**$690,319**	**$5,203,273**

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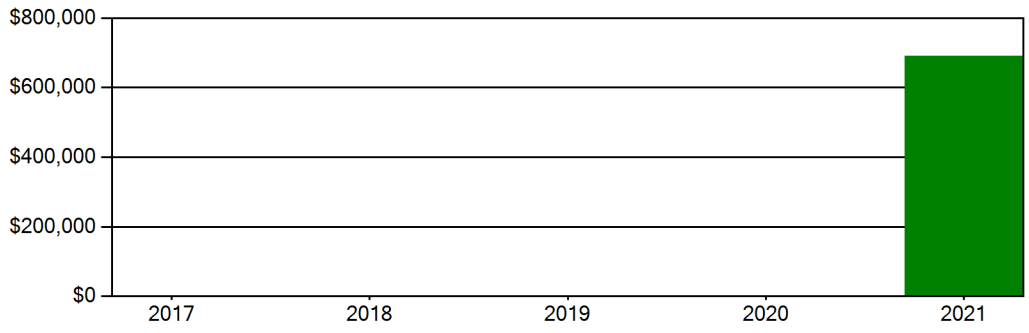
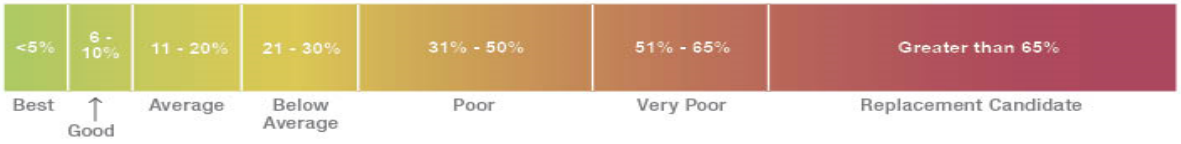


Figure 4: Life Cycle Capital Renewal Forecast

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 $23,660,000. For planning purposes, the total 5-year need at the Orchard Farms Elementary School is $5,203,273 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Orchard Farms Elementary School facility has a 5-year FCI of 21.99%.

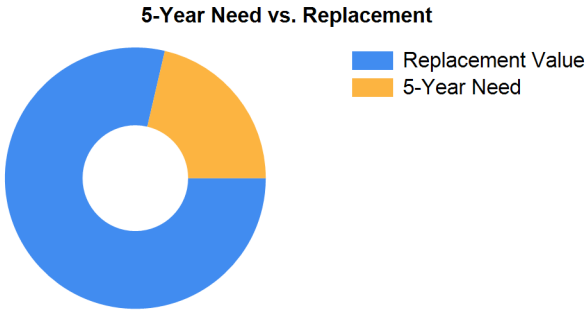


Figure 5: 5-Year FCI

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

Summary of Findings

The Orchard Farms Elementary School comprises 67,600 square feet and was constructed in 2002. Current deficiencies at this school total $4,512,954. Five year capital renewal costs total $690,319. The total identified need for the Orchard Farms Elementary School (current deficiencies and 5-year capital renewal costs) is $5,203,273. The 5-year FCI is 21.99%.

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
Orchard Farms Elementary School Totals	67,600	2002	$4,512,954	$690,319	$5,203,273	21.99%

**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
Parking Or Roadway Curbs Require Replacement	Capital Renewal	1,000	LF	3	$96,228	9828
Note: Asphalt curb is crumbled and deteriorated.						
Asphalt Paving Requires Replacement	Capital Renewal	115	CAR	4	$481,394	9823
Note: Asphalt approaching end of useful life with cracks throughout, and striping no longer visible						
Asphalt Paving Requires Replacement	Capital Renewal	102	CAR	4	$426,976	9824
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28452
Note: Backstops Require Replacement						
Concrete Sidewalks Require Repair	Capital Renewal	50	LF	4	$3,969	9825
Note: Concrete walkway in front of building has some cracking.						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54886
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**6**	**items**		**$1,109,453**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Pole Lighting Requires Repair	Capital Renewal	14	Ea.	3	$64,834	9826
Note: Pole lighting is no longer operable due to water infiltration. The infiltration issue should be resolved and the short repaired.						
	Sub Total for System	**1**	**items**		**$64,834**	
	Sub Total for School and Site Level	**7**	**items**		**$1,174,287**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Concrete Column Requires Repair	Capital Renewal	1	Ea.	3	$2,456	9834
Note: Column base at kindergarten entrance is spalling.						
	Sub Total for System	**1**	**items**		**$2,456**	

Structural

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Foundation Study Recommended	Capital Renewal	1	Job	1	$10,024	9832
Note: There are cracks in the CMU wall in the corridor and main entry lobby.						
	Sub Total for System	**1**	**items**		**$10,024**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	16	SF	2	$2,855	9829
Location: Room 128						
	Sub Total for System	**1**	**items**		**$2,855**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Rubber Flooring Requires Replacement	Capital Renewal	160	SF	3	$3,151	9837
Note: Seams have lifted and flooring is no longer adhered to the floor.						
Location: Ramp in cafetorium						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	54,690	SF	3	$661,493	9830
Note: Seams are separating and tiles are chipped and cracked.						
Room Is Excessively Reverberant	Acoustics	6,400	SF	4	$150,757	19792
Note: Gym						
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	1,500	SF	4	$90,214	19793
Note: Music Space						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	21,988	SF	4	$842,327	Rollup
The Terrazzo Flooring Requires Repair	Capital Renewal	325	SF	4	$18,245	9831
Note: There is a large crack in the terrazzo floor in girl's restroom room of the library wing.						
	Sub Total for System	**6**	**items**		**$1,766,187**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$20,096	9833
Note: Domestic water booster pumps have bad seals and are rusting and deteriorating prematurely.						
The Exhaust Hood Requires Replacement	Capital Renewal	1	Ea.	4	$5,487	9836
Note: Fan is not functional.						
Location: Kitchen staff bathroom						
	Sub Total for System	**2**	**items**		**$25,583**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	112	Ea.	5	$55,880	Rollup
	Sub Total for System	**1**	**items**		**$55,880**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks a drinking fountain.	Educational Adequacy	7	Ea.	5	$7,761	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**2**	**items**		**$11,882**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Fire Pump Requires Repair	Capital Renewal	1	Ea.	1	$48,659	9835
Note: Fire pump has a bad seal.						
	Sub Total for System	**1**	**items**		**$48,659**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	10	Ea.	3	$57,348	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	148	Ea.	3	$74,176	23527
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	26	Ea.	3	$260,618	23519
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	26	Ea.	3	$547,297	23526
Technology: Instructional spaces do not have local sound reinforcement.	Technology	26	Ea.	3	$130,309	23523
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23517
Technology: Main Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$22,854	23516
Technology: Network system inadequate and/or near end of useful life	Technology	8	Ea.	3	$64,152	23521
Technology: Network system inadequate and/or near end of useful life	Technology	28	Ea.	3	$140,333	23522
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23518
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	26	Ea.	3	$41,699	23524
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23525
	Sub Total for System	**12**	**items**		**$1,410,554**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,588	Rollup
	Sub Total for System	**1**	**items**		**$4,588**	
	Sub Total for Building 01 - Main Building	**28**	**items**		**$3,338,668**	
	Total for Campus	**35**	**items**		**$4,512,954**	

Orchard Farms Elementary School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Wood		680	LF	$170,131	5
		Sub Total for System	**1**	**items**	**$170,131**	
		Sub Total for Building -	**1**	**items**	**$170,131**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings		3,380	SF	$14,311	5
Wall Painting and Coating	Painting/Staining (Bldg SF)		64,220	SF	$429,493	5
Carpeting	Carpet		3,200	SF	$70,468	5
		Sub Total for System	**3**	**items**	**$514,273**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 75 Gallons		1	Ea.	$5,916	5
		Sub Total for System	**1**	**items**	**$5,916**	
		Sub Total for Building 01 - Main Building	**4**	**items**	**$520,189**	
		Total for: Orchard Farms Elementary School	**5**	**items**	**$690,320**	

Supporting Photos


Cracked Concrete Walkway

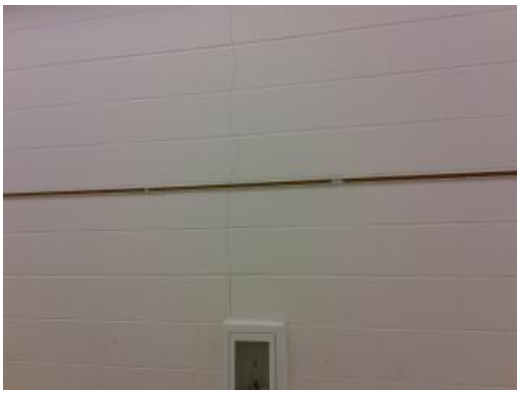

Restroom Fixtures And Finishes


Gymnasium


Chipped And Separating VCT


VCT Flooring Lifting At Seams


Elevation


Cracked CMU


Cracked Terrazzo Flooring


Entrance


Deteriorated Asphalt Curb


Art Room


Library


Spalled Column Base


Entry Elevation


Cafeteria


Typical Classroom

Damaged Window

Building Signage

Plaque

Cracked Asphalt

Site Aerial

Cracked CMU


Library


Leaking Pumps


Cracked CMU


Leaking Pump


Lifting Rubber Floor

Facility Condition Assessment

Cranston - Park View Middle School | *June 2017*

25 Park View Boulevard, Cranston, RI 02910

Introduction

Park View Middle School, located at 25 Park View Boulevard in Cranston, Rhode Island, was built in 1954. It comprises 151,200 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.

Park View Middle School serves grades 7 - 8, has 47 instructional spaces, and has an enrollment of 531. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Park View Middle School is 841 with a resulting utilization of 63%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Park View Middle School the 5-year need is $14,650,394. 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.

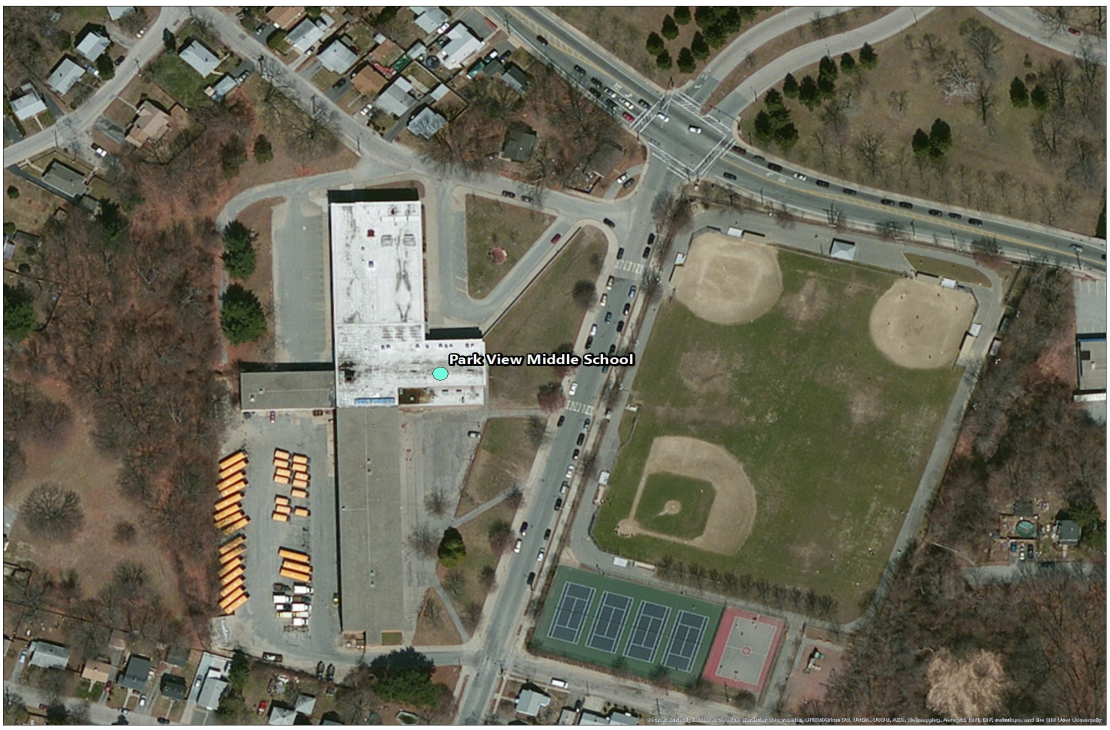


Figure 1: Aerial view of Park View Middle School

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 Park View Middle School campus, identified by discipline and building.

Site

The site level systems for this campus include:

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

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	CMU Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Stucco Exterior Wall
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors
	Overhead Exterior Utility Doors

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

01 - Main Building:	Single Ply Membrane Ballasted Roofing

Interior

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

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

01 - Main Building:	Terrazzo Flooring
	Carpet

Mechanical

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

01 - Main Building:	400 MBH Cast Iron Steam Boiler
	400 MBH Cast Iron Water Boiler
	120 GPM Steam to Water Heat Exchanger
	Steam Condensate Receiver, Tank and Pump
	36 MBH Steam Unit Heater
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent
	Radiant Steam Heater
	DDC Heating System Controls
	3 Ton Ductless Split System
	1 Ton Heat Pump
	3 Ton Heat Pump
	50,000 CFM Interior AHU
	5 Ton Package DX Unit
	5 HP VFD
	1 HP or Smaller Pump
	2-Pipe Steam Hydronic Distribution System
	Ductwork
	Kitchen Exhaust Hoods
	Roof Exhaust Fan
	Large Roof Exhaust Fan
	Small Roof Exhaust Fan
	Wall Exhaust Fan

Plumbing

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

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

01 - Main Building:	Showers
	Toilets
	Urinals
	Sump Pump
	Air Compressor (1/2 hp)
	Air Compressor (2 hp)

Electrical

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

01 - Main Building:	300 kW Emergency Generator
	2,000 Amp Switchgear
	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	400 Amp Distribution Panel
	Electrical Disconnect
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures
	Light Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$78,835	$533,006	-	$611,840	8.31 %
Roofing	-	$433,012	$5,413	-	-	$438,425	5.95 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	$1,323	-	$1,323	0.02 %
Interior	-	-	$1,373,435	$1,199,005	$29,853	$2,602,293	35.33 %
Mechanical	-	$50,049	-	-	$3,300	$53,348	0.72 %
Electrical	$8,577	$235,859	-	-	$82,379	$326,815	4.44 %
Plumbing	-	-	$173,269	$2,005	$47,369	$222,643	3.02 %
Fire and Life Safety	$69,284	-	-	-	-	$69,284	0.94 %
Technology	-	-	$2,509,546	-	-	$2,509,546	34.07 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,619	$451,610	$74,480	$530,709	7.20 %
Total	$77,861	$718,920	$4,145,117	$2,186,948	$237,381	$7,366,227	

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

The building systems with the most need include:

Interior	-	$2,602,293
Technology	-	$2,509,546
Site	-	$611,840

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

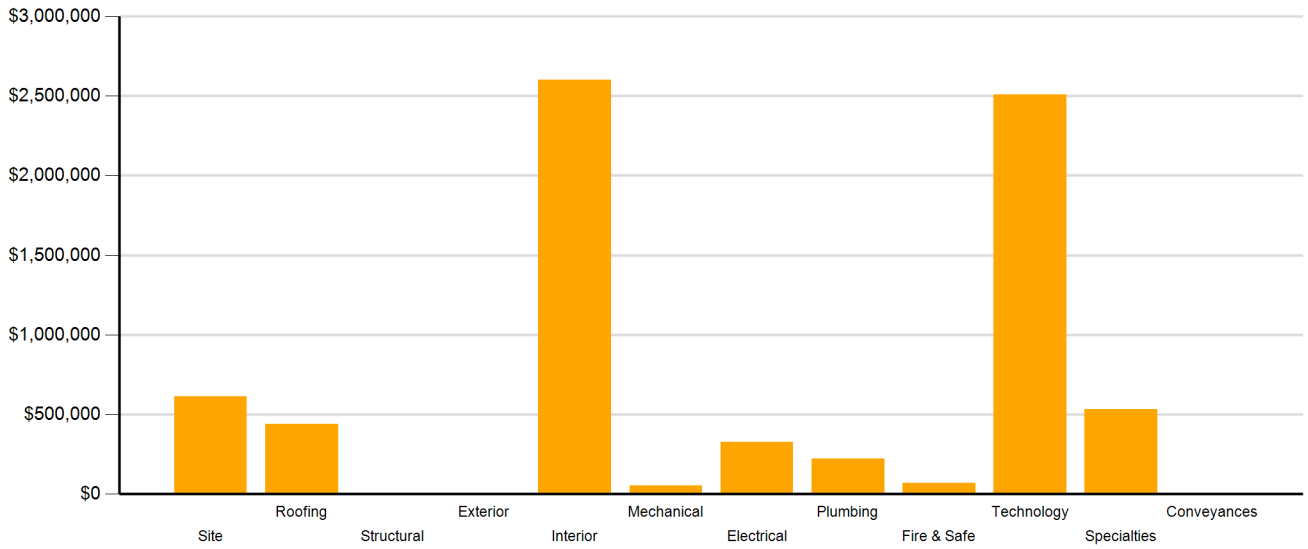


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$161,122	-	$161,122
Barrier to Accessibility	-	-	$896,424	-	-	$896,424
Capital Renewal	-	$718,920	$728,754	$951,858	$22,587	$2,422,119
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	$77,861	-	$85,450	$36,086	$214,794	$414,191
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$1,037,883	-	$1,037,883
Technology	-	-	$2,428,715	-	-	$2,428,715
Traffic	-	-	$5,774	-	-	$5,774
Total	$77,861	$718,920	$4,145,117	$2,186,948	$237,381	$7,366,227

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

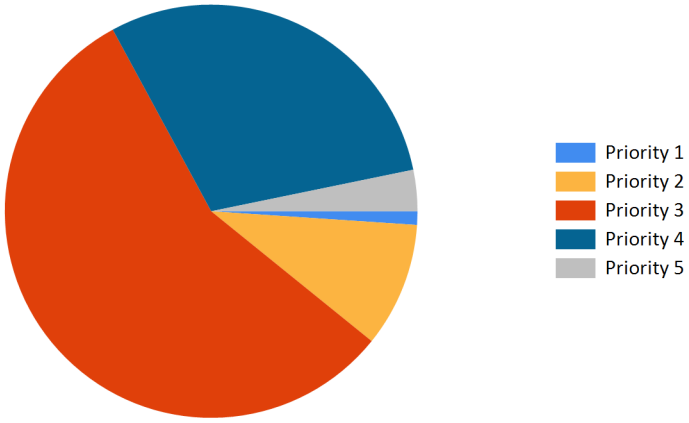


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$611,840	$0	$0	$0	$0	$9,298	$9,298	$621,138
Roofing	$438,425	$0	$0	$0	$0	$615,821	$615,821	$1,054,246
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$1,323	$0	$0	$0	$0	$0	$0	$1,323
Interior	$2,602,293	$0	$0	$595,144	$0	$136,925	$732,069	$3,334,362
Mechanical	$53,348	$0	$0	$5,509,994	$149,812	$5,421	$5,665,227	$5,718,576
Electrical	$326,815	$0	$0	$73,220	$0	$0	$73,220	$400,035
Plumbing	$222,643	$0	$25,758	$51,896	$104,417	$6,461	$188,532	$411,175
Fire and Life Safety	$69,284	$0	$0	$0	$0	$0	$0	$69,284
Technology	$2,509,546	$0	$0	$0	$0	$0	$0	$2,509,546
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$530,709	$0	$0	$0	$0	$0	$0	$530,709
Total	**$7,366,227**	**$0**	**$25,758**	**$6,230,254**	**$254,229**	**$773,926**	**$7,284,167**	**$14,650,394**

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

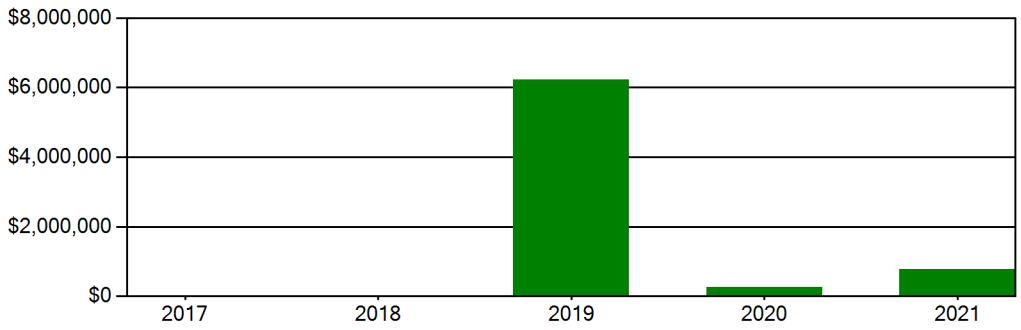
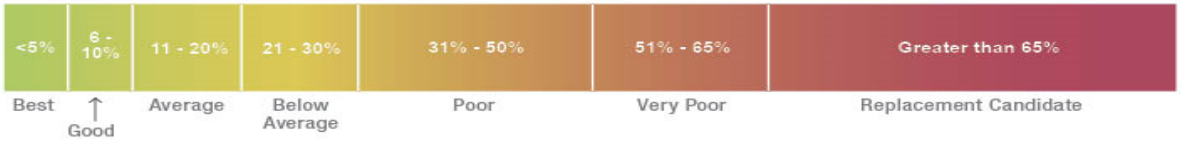


Figure 4: Life Cycle Capital Renewal Forecast

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 $49,896,000. For planning purposes, the total 5-year need at the Park View Middle School is $14,650,394 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Park View Middle School facility has a 5-year FCI of 29.36%.

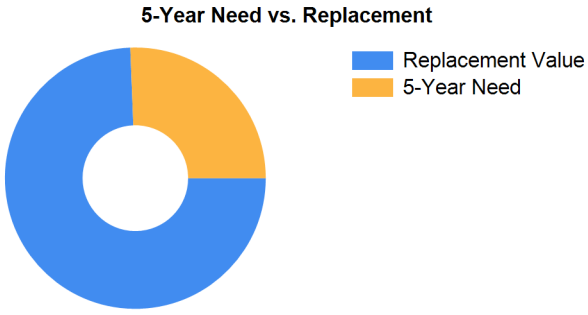


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 831 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 Park View Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $2,491,592.

Summary of Findings

The Park View Middle School comprises 151,200 square feet and was constructed in 1954. Current deficiencies at this school total $7,366,227. Five year capital renewal costs total $7,284,167. The total identified need for the Park View Middle School (current deficiencies and 5-year capital renewal costs) is $14,650,394. The 5-year FCI is 29.36%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Park View Middle School Totals	151,200	1954	$7,366,227	$7,284,167	$14,650,394	29.36%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Concrete Walks Require Replacement	Capital Renewal	200	SF	3	$5,172	11361
Location: Front entry						
Crosswalk Requires Repainting	Traffic	4	Ea.	3	$3,849	11655
Note: Repaint crosswalks at intersection of Park View Blvd and Park Ave						
Crosswalk: Needs to be added	Traffic	2	Ea.	3	$1,925	11654
Note: Add crosswalks at intersection of Park View Blvd and Eldorado St						
Retaining Wall Requires Repair	Capital Renewal	800	SF	3	$67,889	11375
Note: Bricks retaining wall is buckling. Mortar and bricks are missing in various locations.						
Asphalt Paving Requires Replacement	Capital Renewal	73	CAR	4	$305,581	11359
Note: Pavement is cracked with potholes and substantial pooling of water.						
Asphalt Paving Requires Replacement	Capital Renewal	30	CAR	4	$125,581	11360
Note: Asphalt roadway is cracked and deteriorated with potholes and curb damage.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28443
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	180	LF	4	$14,723	11358
Note: Fence is rusted and falling.						
Fencing Requires Replacement (8' Chain Link Fence)	Capital Renewal	600	LF	4	$51,035	11357
Note: Fence is rusted and falling.						
	Sub Total for System	**9**	**items**		**$611,840**	
	Sub Total for School and Site Level	**9**	**items**		**$611,840**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Single-Ply Membrane Roof Covering Requires Replacement	Capital Renewal	31,999	SF	2	$433,012	11365
Note: There is excessive ponding on roof. The membrane is aged and worn. Warranty expired 2013.						
Concrete Column Requires Repair	Capital Renewal	2	Ea.	3	$4,912	11374
Location: Exterior west side at maintenance garage entrance						
The Roof Drains Require Cleaning	Capital Renewal	12	Ea.	3	$501	11364
Note: Roof drains are full of debris. Some have vegetation growing in them.						
	Sub Total for System	**3**	**items**		**$438,425**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Handrail Requires Repainting	Capital Renewal	120	LF	4	$1,323	11372
Location: Pool area and front entry exterior						
	Sub Total for System	**1**	**items**		**$1,323**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Interior Door Hardware Requires Re-Keying	Capital Renewal	33	Ea.	3	$14,885	11373
Note: There is no master key for interior doors. Other 271 doors rekeyed with hardware replacement.						
The Interior Door Hardware Requires Replacement	Barrier to Accessibility	271	Door	3	$896,424	11370
Note: Door hardware is poorly functioning and non-compliant.						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	38,207	SF	3	$462,126	11367
Asbestos 9x9 Tile is Present. Limited Areas of Lifting or Broken Tiles Exist	Hazardous Material	25,316	SF	4	$761,284	Rollup
Caulking - significant areas of broken pieces &/or deteriorating caulk	Hazardous Material	320	LF	4	$6,415	Rollup
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	363	Ea.	4	$109,159	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	3,271	LF	4	$78,690	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	6,292	SF	4	$63,069	Rollup

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - linear feet)	Hazardous Material	80	LF	4	$1,925	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	80	SF	4	$802	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	SF	4	$10	Rollup
Paint (probable pre-1978 in base layer(s)) -large areas (> 10 sq. ft.)of peeling/damage & area in active use-adults only (measurement unit - square feet)	Hazardous Material	1,608	SF	4	$16,118	Rollup
Room Is Excessively Reverberant	Acoustics	6,840	SF	4	$161,122	19795
Note: Gym						
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	1	SF	4	$10	Rollup
Wall/ceiling materials -large areas (> 10 sq. ft.) of damage & area in active use-adults only	Hazardous Material	40	SF	4	$401	Rollup
Interior Doors Require Repainting	Capital Renewal	271	Door	5	$19,287	11366
Note: Finish on wood doors is worn. They should be sanded and refinished.						
Room lacks appropriate sound control.	Educational Adequacy	300	SF	5	$10,566	Rollup
	Sub Total for System	**17**	**items**		**$2,602,293**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Steam Heat Exchanger Requires Replacement	Capital Renewal	1	Ea.	2	$6,014	11376
Steam/HW Unit Heater Requires Replacement	Capital Renewal	4	Ea.	2	$6,944	11581
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	21	Ea.	2	$37,090	11580
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,300	11378
Note: Old boiler fuel pump should be removed.						
Location: Boiler room						
	Sub Total for System	**4**	**items**		**$53,348**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room last power shut-off valves for utilities	Educational Adequacy	6	Ea.	1	$8,577	Rollup
The Distribution Panel Requires Replacement	Capital Renewal	2	Ea.	2	$54,128	11582
The Panelboard Requires Replacement	Capital Renewal	20	Ea.	2	$102,242	11583
The Panelboard Requires Replacement	Capital Renewal	13	Ea.	2	$79,488	11584
Room Has Insufficient Electrical Outlets	Educational Adequacy	164	Ea.	5	$82,379	Rollup
	Sub Total for System	**5**	**items**		**$326,815**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Sump Pump Requires Replacement	Capital Renewal	1	Ea.	3	$1,528	11579
The Non-Refrigerated Drinking Fountain Requires Repair	Capital Renewal	2	Ea.	3	$3,342	11369
Location: Main entry and swimming pool area						
The Showers Plumbing Fixtures Require Replacement	Capital Renewal	21	Ea.	3	$168,399	11578
The Refrigerated Water Cooler Requires Repair	Capital Renewal	2	Ea.	4	$2,005	11371
Location: Second floor						
Room lacks a drinking fountain.	Educational Adequacy	3	Ea.	5	$3,349	Rollup
Room lacks a private shower area.	Educational Adequacy	1	Ea.	5	$10,360	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	22	Ea.	5	$33,661	Rollup
	Sub Total for System	**7**	**items**		**$222,643**	

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	6	Ea.	1	$69,284	Rollup
	Sub Total for System	**1**	**items**		**$69,284**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	14	Ea.	3	$80,832	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	456	Ea.	3	$228,542	23560
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	52	Ea.	3	$1,094,594	23563
Technology: Instructional spaces do not have local sound reinforcement.	Technology	52	Ea.	3	$260,618	23564
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23548
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23551
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23555
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23558
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23554
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23557
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23549
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23552
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23545
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23547
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23550
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23544
Technology: Network system inadequate and/or near end of useful life	Technology	10	Ea.	3	$80,190	23566
Technology: Network system inadequate and/or near end of useful life	Technology	26	Ea.	3	$130,309	23567
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	151,200	SF	3	$272,806	23565
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,019	23546
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23553
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23556
Technology: Telecommunications Room (small size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$5,012	23559
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	52	Ea.	3	$83,398	23562
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23561
	Sub Total for System	**25**	**items**		**$2,509,546**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,619	Rollup

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Bleachers Require Replacement	Capital Renewal	150	Seat	4	$97,732	11362
Note: Concrete risers and steel brackets have deteriorated from humidity in the pool area.						
Replace Cabinetry In Classes/Labs	Capital Renewal	30	Room	4	$353,878	11377
Note: Cabinetry is worn, chipped, and peeling.						
Room lacks an appropriate refrigerator.	Educational Adequacy	7	Ea.	5	$60,624	Rollup
The room lacks a washer and/or dryer.	Educational Adequacy	1	Ea.	5	$13,857	Rollup
	Sub Total for System	**5**	**items**		**$530,709**	
	Sub Total for Building 01 - Main Building	**68**	**items**		**$6,754,387**	
	Total for Campus	**77**	**items**		**$7,366,227**	

Park View Middle School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Pedestrian Pavement	Sidewalks - Asphalt		1,075	SF	$9,298	5
		Sub Total for System	**1**	**items**	**$9,298**	
		Sub Total for Building -	**1**	**items**	**$9,298**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Single Ply Membrane Ballasted Roof		15,999	SF	$615,821	5
		Sub Total for System	**1**	**items**	**$615,821**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Suspended Plaster and	Painted ceilings		25,925	SF	$109,767	3
Wall Painting and Coating	Painting/Staining (Bldg SF)		72,576	SF	$485,377	3
Interior Coiling Doors	Overhead		1	Door	$37,240	5
Interior Swinging Doors	Steel		23	Door	$99,685	5
		Sub Total for System	**4**	**items**	**$732,069**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Kitchen Exhaust Hoods		1	Ea.	$16,159	3
Decentralized Heating Equipment	Radiant Heater - Radiator Steam		2	Ea.	$10,458	3
Heat Generation	Boiler - Cast Iron - Steam (400 MBH)		2	Ea.	$62,644	3
Decentralized Heating Equipment	Heating Unit Vent - Steam/Hot water		112	Ea.	$1,917,539	3
Decentralized Cooling	AHU 50,000 CFM Interior		12	Ea.	$3,503,194	3
Exhaust Air	Roof Exhaust Fan		9	Ea.	$47,408	4
Decentralized Cooling	Ductless Split System (3 Ton)		13	Ea.	$102,404	4
Exhaust Air	Wall Exhaust Fan		2	Ea.	$5,421	5
Note:	Kitchen					
		Sub Total for System	**8**	**items**	**$5,665,227**	

Electrical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Electrical Service	Switchgear - Main Dist Panel (2000 Amps)		1	Ea.	$73,220	3
Note:	208/120 V					
		Sub Total for System	**1**	**items**	**$73,220**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Plumbing Fixtures	Lavatories		8	Ea.	$25,758	2
Plumbing Fixtures	Mop/Service Sinks		8	Ea.	$20,862	3
Plumbing Fixtures	Non-Refrigerated Drinking Fountain		3	Ea.	$31,034	3
Plumbing Fixtures	Restroom Lavatories		30	Ea.	$96,594	4
Plumbing Fixtures	Mop/Service Sinks		3	Ea.	$7,823	4
Note:	Kitchen					
Compressed-Air Systems	Air Compressor (2 hp)		1	Ea.	$6,461	5
		Sub Total for System	**6**	**items**	**$188,532**	
		Sub Total for Building 01 - Main Building	**20**	**items**	**$7,274,868**	
		Total for: Park View Middle School	**21**	**items**	**$7,284,166**	

Supporting Photos

Damaged Bleachers

Vegetation In Roof Drain

Conductor Box With Debris

Weathered Roof With Ponding


Ponding On Roof


Interior Wood Door


Site Aerial


Auditorium


Small Gym


Music Room


Large Gym

Lobby Finishes


Typical Classroom

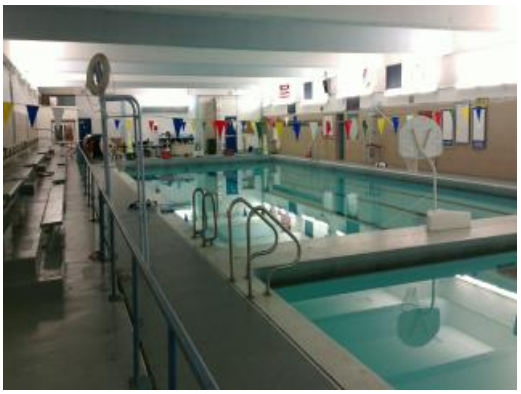

Exterior Finishes


Library


Cafeteria


Restroom Finishes


Art Room


Pool


Computer Lab

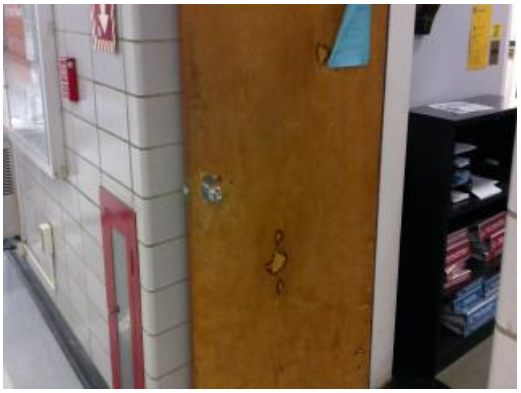

Hallway Finishes


Main Entry


Exterior Windows


Science Room


Separating VCT Flooring


Non-Compliant Door Hardware


Chipped And Worn Handrail


Damaged Column


Retaining Wall


Typical Aged And Chipped Cabinetry


Abandoned Fuel Pump


Rusted Exhaust Fan

Plaque


Asphalt Cracks And Potholes


Cracked And Spalled Concrete


Parking Lot Pavement


Deteriorated Asphalt Roadway

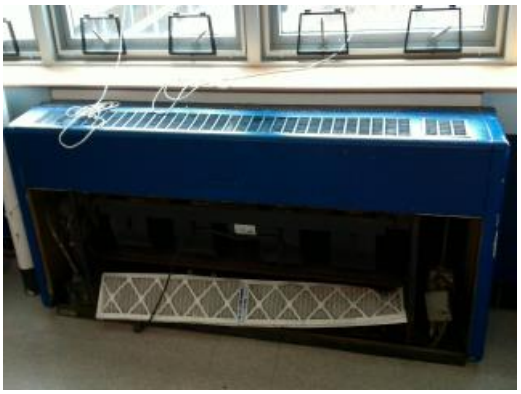

Drinking Fountain


Art Room Sink


Service Sink


Classroom Lavatory


Aged Panel


Damaged Heater


Aged Panelboard


Drinking Fountain

Facility Condition Assessment

Cranston - Stadium School | *June 2017*

100 Crescent Avenue, Cranston, RI 02910

Introduction

Stadium School, located at 100 Crescent Avenue in Cranston, Rhode Island, was built in 1955. It comprises 34,412 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.

Stadium School serves grades PK - 6, has 18 instructional spaces, and has an enrollment of 349. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Stadium School is 303 with a resulting utilization of 115%.

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 Stadium School the 5-year need is $5,055,371. 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 Stadium 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 Stadium School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot 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

Interior

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

01 - Main Building:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	Steam Condensate Receiver, Tank and Pump
	Steam/Hot Water Heating Unit Vent
	Radiant Steam Heater
	Pneumatic Heating System Controls
	Window Units
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump

01 - Main Building:	2,000 CFM Interior AHU
	Roof Exhaust Fan
	Supply Fan
	Wall Exhaust Fan

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Sump Pump
	Air Compressor (1/2 hp)

Electrical

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

01 - Main Building:	Panelboard - 120/208 100A
	Panelboard - 120/208 125A
	Panelboard - 120/208 225A
	Panelboard - 400+ Amps
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,774	$182,837	$72,198	$260,808	6.01 %
Roofing	-	-	$334	-	-	$334	0.01 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$330,439	-	-	-	$330,439	7.62 %
Interior	-	-	-	$1,237,610	$145,634	$1,383,244	31.88 %
Mechanical	-	$846,901	$101,617	$280,983	$3,300	$1,232,800	28.41 %
Electrical	-	$56,372	-	-	$34,130	$90,502	2.09 %
Plumbing	-	-	$14,140	$8,149	$4,121	$26,410	0.61 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$844,321	-	-	$844,321	19.46 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,619	$165,143	-	$169,762	3.91 %
Total	$0	$1,233,711	$970,804	$1,874,722	$259,382	$4,338,620	

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

The building systems with the most need include:

Interior	-	$1,383,244
Mechanical	-	$1,232,800
Technology	-	$844,321

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

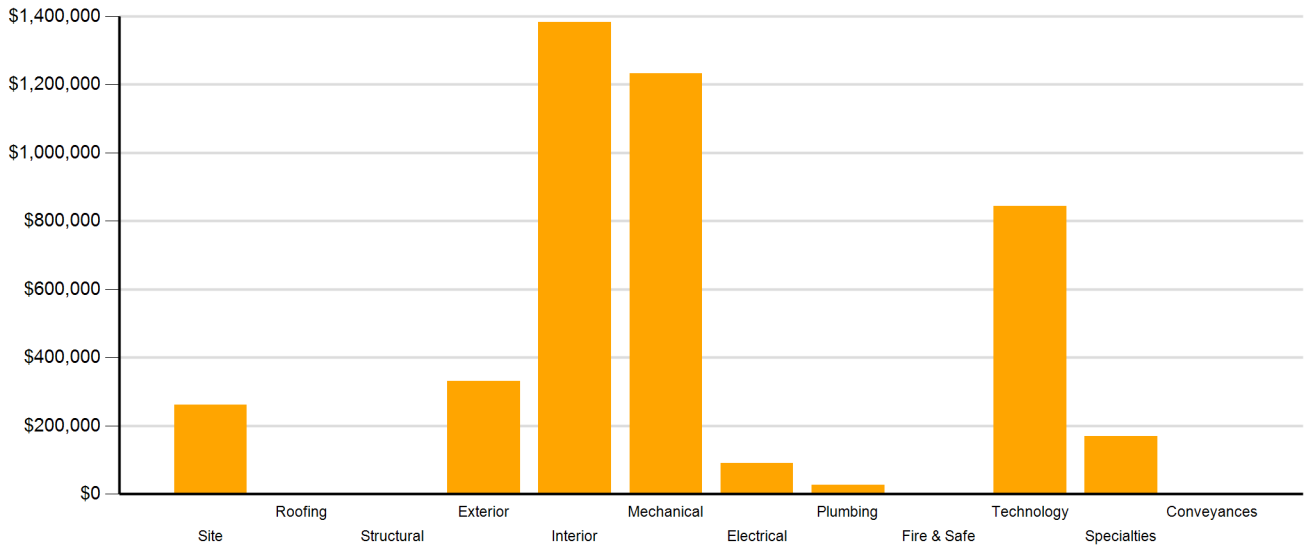


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$86,968	-	-	$86,968
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	-	$1,233,711	$29,122	$876,433	$146,639	$2,285,906
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$10,393	$36,086	$112,743	$159,221
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$962,204	-	$962,204
Technology	-	-	$838,548	-	-	$838,548
Traffic	-	-	$5,774	-	-	$5,774
Total	$0	$1,233,711	$970,804	$1,874,722	$259,382	$4,338,620

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

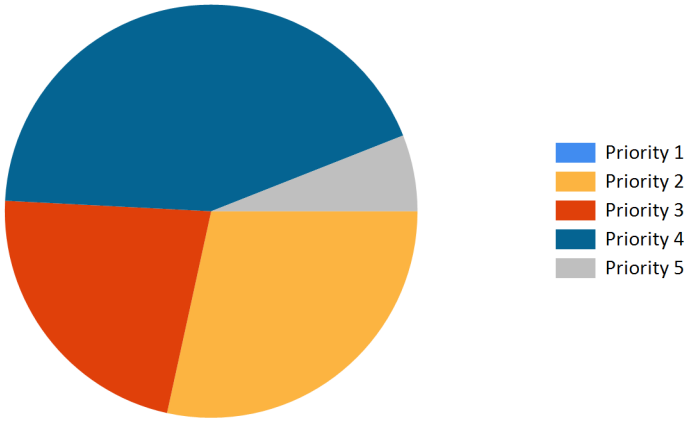


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$260,808	$0	$0	$0	$0	$139,545	$139,545	$400,353
Roofing	$334	$0	$0	$0	$0	$440,416	$440,416	$440,750
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$330,439	$0	$0	$0	$0	$0	$0	$330,439
Interior	$1,383,244	$0	$0	$0	$0	$115,071	$115,071	$1,498,315
Mechanical	$1,232,800	$0	$0	$0	$0	$15,803	$15,803	$1,248,603
Electrical	$90,502	$0	$0	$0	$0	$0	$0	$90,502
Plumbing	$26,410	$0	$0	$0	$0	$5,916	$5,916	$32,326
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$844,321	$0	$0	$0	$0	$0	$0	$844,321
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$169,762	$0	$0	$0	$0	$0	$0	$169,762
Total	**$4,338,620**	**$0**	**$0**	**$0**	**$0**	**$716,751**	**$716,751**	**$5,055,371**

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

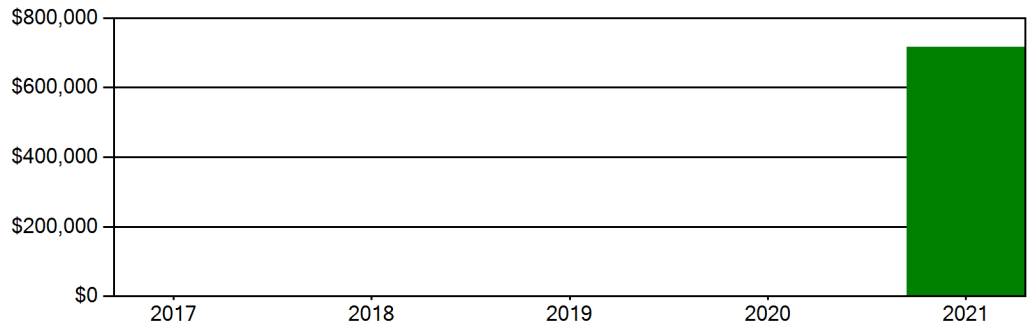
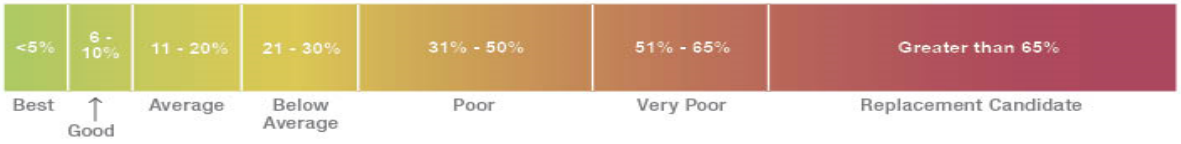


Figure 4: Life Cycle Capital Renewal Forecast

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 $12,534,200. For planning purposes, the total 5-year need at the Stadium School is $5,055,371 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Stadium School facility has a 5-year FCI of 40.33%.

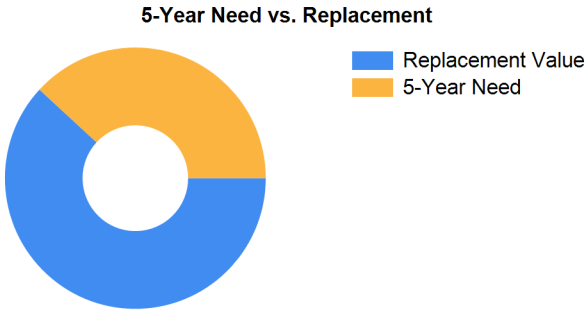


Figure 5: 5-Year FCI

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 199 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 Stadium School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $366,660.

Summary of Findings

The Stadium School comprises 34,412 square feet and was constructed in 1955. Current deficiencies at this school total $4,338,620. Five year capital renewal costs total $716,751. The total identified need for the Stadium School (current deficiencies and 5-year capital renewal costs) is $5,055,371. The 5-year FCI is 40.33%.

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
Stadium School Totals	34,412	1955	$4,338,620	$716,751	$5,055,371	40.33%

**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	Traffic	2	Ea.	3	$5,774	16942
Note: Add school zone signs on adjacent street if none were added with other recent improvements						
Asphalt Paving Requires Replacement	Capital Renewal	29	CAR	4	$121,395	13003
Note: Deteriorated parking lot pavement.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28444
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	280	LF	4	$22,902	13001
Note: Parking lot fence is deteriorating.						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	30	LF	4	$2,454	13002
Note: Rusted fence by stairs.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28715
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54882
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**7**	**items**		**$260,808**	
	Sub Total for School and Site Level	**7**	**items**		**$260,808**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Roof Drains Require Cleaning	Capital Renewal	8	Ea.	3	$334	13006
	Sub Total for System	**1**	**items**		**$334**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	1,852	SF	2	$330,439	13005
Note: Single pane glass and kalwall, poorly functioning.						
	Sub Total for System	**1**	**items**		**$330,439**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	24,088	SF	4	$275,406	13025
Note: Tiles falling from ceiling, require frequent replacement						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	30,971	SF	4	$931,337	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	32	Ea.	4	$9,623	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	406	LF	4	$9,767	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	1,145	SF	4	$11,477	Rollup
Interior Doors Require Repair	Capital Renewal	143	Door	5	$143,340	13007
Note: Wood doors need refinishing.						
	Sub Total for System	**6**	**items**		**$1,380,950**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	4	Ea.	2	$71,337	13024
Note: Unit vent is outdated and obsolete.						
The Air Handler HVAC Component Requires Replacement	Capital Renewal	1	Ea.	2	$45,482	13015
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$359,203	13016
Note: The boiler is obsolete.						
The Steam Condensate Receiver Requires Replacement	Capital Renewal	1	Ea.	2	$370,879	13020
The Large Diameter Exhausts/Hoods Require Replacement	Capital Renewal	1	Ea.	3	$14,649	13010
Note: Supply fan requires replacement.						

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Unit Ventilators Are Excessively Noisy	Acoustics	13	Ea.	3	$86,968	27973
Location: All learning spaces						
Exhaust Fan Ventilation Requires Replacement	Capital Renewal	3	Ea.	4	$8,470	13011
Note: Wall exhaust fan is obsolete.						
Existing Controls Are Inadequate And Should Be Replaced With DDC Controls	Capital Renewal	34,412	SF	4	$245,078	13021
Note: Controls are obsolete.						
The Exhaust Hood Requires Replacement	Capital Renewal	5	Ea.	4	$27,435	13023
Note: The exhaust hood is deteriorated and outdated.						
Remove Abandoned Equipment	Capital Renewal	1	Ea.	5	$3,300	16328
Note: Remove vacuum.						
	Sub Total for System	**10**	**items**		**$1,232,800**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Electrical Disconnect Requires Replacement	Capital Renewal	1	Ea.	2	$1,933	13009
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$5,112	13017
The Panelboard Requires Replacement	Capital Renewal	5	Ea.	2	$30,572	13018
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$18,754	13019
Room Has Insufficient Electrical Outlets	Educational Adequacy	60	Ea.	5	$30,139	Rollup
	Sub Total for System	**5**	**items**		**$86,510**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Sump Pump Requires Replacement	Capital Renewal	1	Ea.	3	$1,528	13014
Note: Sump pump is deteriorated.						
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	9	Ea.	3	$12,612	13013
Note: Outdated urinals require replacement.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	3	Ea.	4	$8,149	13012
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**4**	**items**		**$26,410**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	$5,774	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	96	Ea.	3	$48,114	23307
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	22	Ea.	3	$220,523	23312
Technology: Instructional spaces do not have local sound reinforcement.	Technology	22	Ea.	3	$110,261	23317
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23306
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23304
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23305
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	96	Ea.	3	$43,303	23310
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	22	Ea.	3	$9,924	23308
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23315
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$80,190	23316
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	48	Ea.	3	$24,057	23309
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	35,756	SF	3	$64,514	23314

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23311
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23313
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	22	Ea.	3	$35,284	23318
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23319
	Sub Total for System	**17**	**items**		**$844,321**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,619	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	14	Room	4	$165,143	13022
Note: Cabinets are damaged.						
	Sub Total for System	**2**	**items**		**$169,762**	
	Sub Total for Building 01 - Main Building	**46**	**items**		**$4,071,526**	

Building: 02 - Portable A

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,294	Rollup
	Sub Total for System	**1**	**items**		**$2,294**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	8	Ea.	5	$3,991	Rollup
	Sub Total for System	**1**	**items**		**$3,991**	
	Sub Total for Building 02 - Portable A	**2**	**items**		**$6,285**	
	Total for Campus	**55**	**items**		**$4,338,620**	

Stadium 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		6,745	SF	$139,545	5
		Sub Total for System	**1**	**items**	**$139,545**	
		Sub Total for Building -	**1**	**items**	**$139,545**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	EPDM - Rubber Roofing Material		34,412	SF	$440,416	5
		Sub Total for System	**1**	**items**	**$440,416**	

Interior

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)		17,206	SF	$115,071	5
		Sub Total for System	**1**	**items**	**$115,071**	

Mechanical

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Exhaust Air	Roof Exhaust Fan		3	Ea.	$15,803	5
		Sub Total for System	**1**	**items**	**$15,803**	

Plumbing

Uniformat Description	LC Type Description		Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 75 Gallons		1	Ea.	$5,916	5
		Sub Total for System	**1**	**items**	**$5,916**	
		Sub Total for Building 01 - Main Building	**4**	**items**	**$577,206**	
		Total for: Stadium School	**5**	**items**	**$716,750**	

Supporting Photos


Boiler


Roof Drain


Obsolete Panelboard


Air Handling Unit

Electrical Disconnect

Roof Exhaust Fan

Wall Exhaust Fan

Unit Vent

Outdated Urinals

Custodial Sink


Obsolete Panelboard


Sump Pump


Site Aerial


Supply Fan


Typical Restroom

Front Entry


Northwest View


Auditorium


West View


North View


ADA Stall

Southeast View


South View

Typical Classroom


Northeast View


East View


North View


Cafeteria/Gym


Auditorium


Library


Typical Classroom


Cafeteria/Gym


Roof Drain


Roof Drain


Interior Doors Require Refinishing


Vinyl Flooring In Classrooms


Vinyl Flooring In Cafe


Classroom Cabinets


Classroom Cabinets


Acoustical Tiles Require Replacement

Pneumatic Controls

Facility Condition Assessment

Cranston - Stone Hill School | *June 2017*

21 Village Avenue, Cranston, RI 02920

Introduction

Stone Hill School, located at 21 Village Avenue in Cranston, Rhode Island, was built in 1962. It comprises 36,960 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.

Stone Hill School serves grades PK - 6, has 19 instructional spaces, and has an enrollment of 312. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Stone Hill School is 251 with a resulting utilization of 124%.

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 Stone Hill School the 5-year need is $5,184,037. 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 Stone 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 Stone Hill School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	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
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing

Interior

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

01 - Main Building:	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Ceramic Tile Wall
	Wood Wall Paneling
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Ceramic Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring

Mechanical

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

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	Finned Wall Radiator

01 - Main Building:	Steam/Hot Water Heating Unit Vent
	20 MBH Steam Unit Heater
	DDC Heating System Controls
	Window Units
	5 HP VFD
	1 HP or Smaller Pump
	5 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	Roof Exhaust Fan
	Kitchen Exhaust Hoods

Plumbing

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

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

Electrical

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

01 - Main Building:	400 Amp Distribution Panel
	Panelboard - 120/240 225A
	Panelboard - 277/480 100A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$15,396	$174,383	$72,198	$261,977	6.47 %
Roofing	-	$66,658	-	-	-	$66,658	1.65 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$586,637	-	-	-	$586,637	14.50 %
Interior	-	-	$393,629	$532,575	$8,151	$934,354	23.09 %
Mechanical	-	$715,888	-	-	-	$715,888	17.69 %
Electrical	-	-	-	-	$38,176	$38,176	0.94 %
Plumbing	-	-	-	$5,433	$9,702	$15,135	0.37 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$1,423,098	-	-	$1,423,098	35.17 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,619	-	-	$4,619	0.11 %
Total	$0	$1,369,183	$1,836,742	$712,391	$128,226	$4,046,542	

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

The building systems with the most need include:

Technology	-	$1,423,098
Interior	-	$934,354
Mechanical	-	$715,888

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

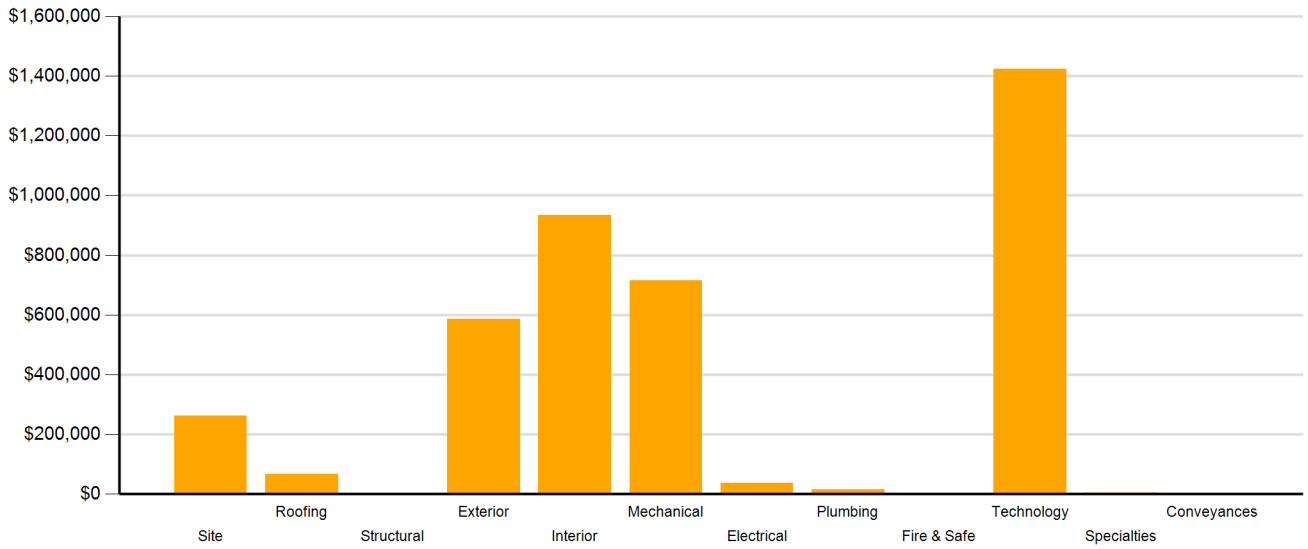


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$72,171	-	$72,171
Barrier to Accessibility	-	-	$16,936	-	-	$16,936
Capital Renewal	-	$1,369,183	$376,693	$542,252	$8,151	$2,296,278
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$16,166	$36,086	$120,076	$172,327
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$61,883	-	$61,883
Technology	-	-	$1,411,551	-	-	$1,411,551
Traffic	-	-	$15,396	-	-	$15,396
Total	$0	$1,369,183	$1,836,742	$712,391	$128,226	$4,046,542

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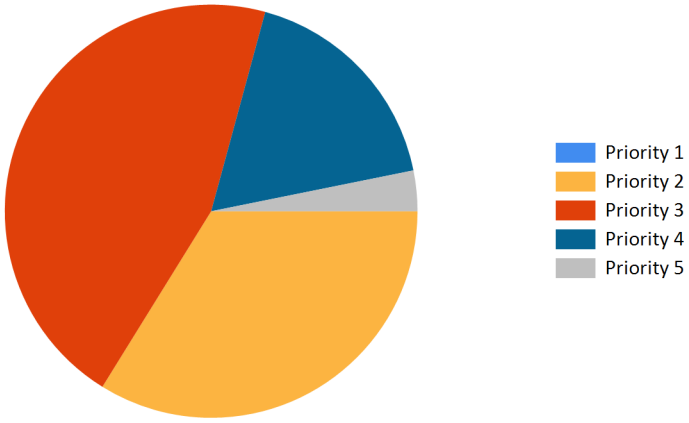

Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$261,977	$0	$0	$0	$90,418	$495,627	$586,045	$848,022
Roofing	$66,658	$0	$0	$0	$0	$0	$0	$66,658
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$586,637	$0	$0	$0	$0	$0	$0	$586,637
Interior	$934,354	$0	$0	$0	$123,591	$320,495	$444,086	$1,378,440
Mechanical	$715,888	$0	$0	$0	$17,102	$0	$17,102	$732,990
Electrical	$38,176	$0	$0	$0	$0	$90,262	$90,262	$128,438
Plumbing	$15,135	$0	$0	$0	$0	$0	$0	$15,135
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$1,423,098	$0	$0	$0	$0	$0	$0	$1,423,098
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$4,619	$0	$0	$0	$0	$0	$0	$4,619
Total	**$4,046,542**	**$0**	**$0**	**$0**	**$231,111**	**$906,384**	**$1,137,495**	**$5,184,037**

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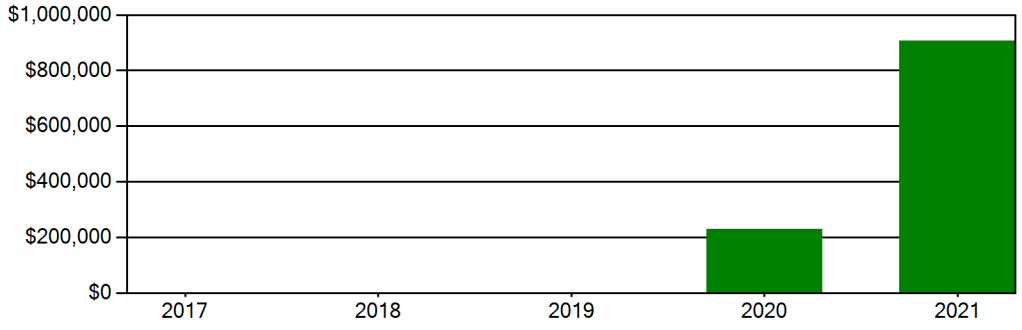
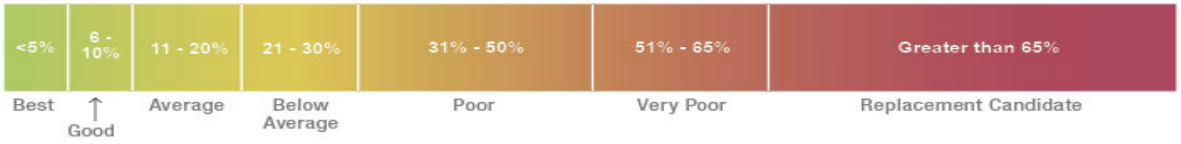


Figure 4: Life Cycle Capital Renewal Forecast

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 $12,936,000. For planning purposes, the total 5-year need at the Stone Hill School is $5,184,037 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Stone Hill School facility has a 5-year FCI of 40.07%.

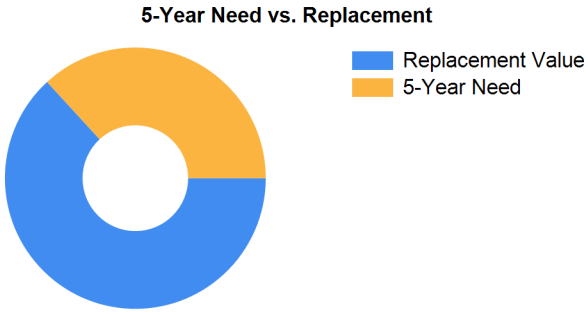


Figure 5: 5-Year FCI

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

Rhode Island Aspirational Capacity

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

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

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

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

Applying the Rhode Island Aspirational Capacity, a facility of this size could ideally support an enrollment of approximately 205 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 Stone Hill School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $388,584.

Summary of Findings

The Stone Hill School comprises 36,960 square feet and was constructed in 1962. Current deficiencies at this school total $4,046,542. Five year capital renewal costs total $1,137,495. The total identified need for the Stone Hill School (current deficiencies and 5-year capital renewal costs) is $5,184,037. The 5-year FCI is 40.07%.

Table 4: Facility Condition by Building

	Gross Sq Ft	Year Built	Current Deficiencies	LC Yr. 1-5 Total	Total 5 Yr Need (Yr 1-5 + Current Defs)	5-Year FCI
Stone Hill School Totals	36,960	1962	$4,046,542	$1,137,495	$5,184,037	40.07%

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

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

Cost Estimating

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

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

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Crosswalk: Needs to be added	Traffic	4	Ea.	3	$3,849	16956
Note: Add crosswalks in surrounding area						
Traffic Signage Is Required	Traffic	4	Ea.	3	$11,547	16955
Note: Add school zone signs and flashing beacon on adjacent street						
Asphalt Paving Requires Resurfacing	Capital Renewal	61,250	SF	4	$81,042	13027
Note: Roadway, parking and play area surfaces have many cracks.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28448
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	700	LF	4	$57,256	13026
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28718
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54883
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**7**	**items**		**$261,977**	
	Sub Total for School and Site Level	**7**	**items**		**$261,977**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	5,000	SF	2	$66,658	13035
Note: Cafe roof is deteriorating, evidence of leaks in ceiling tile. Warranty expired 2004.						
	Sub Total for System	**1**	**items**		**$66,658**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Aluminum Window Requires Replacement	Capital Renewal	3,018	SF	2	$538,480	13028
Note: Window is single pane glass. Extreme heat and air infiltration. Aluminum is corroding and glass is cloudy. Some glass has been replaced with plexiglass panels.						
The Storefront/Curtain Wall Requires Replacement	Capital Renewal	240	SF Wall	2	$48,157	13033
Note: Storefront frame is corroded at sill.						
	Sub Total for System	**2**	**items**		**$586,637**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Acoustical Ceiling Tiles Require Replacement	Capital Renewal	1,000	SF	3	$9,523	13029
Note: Cafe/gym ceiling tiles are damaged from roof leak.						
The Interior Door Hardware Requires Replacement	Capital Renewal	111	Door	3	$367,170	13030
Toilet Stall Not Compliant	Barrier to Accessibility	4	Ea.	3	$16,936	13032
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	29,568	SF	4	$338,061	13038
Interior Wood Walls Require Replacement	Capital Renewal	6,283	SF	4	$60,460	13037
Note: Panels are damaged.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	1,490	SF	4	$44,806	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	27	Ea.	4	$8,119	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	24	LF	4	$577	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	836	SF	4	$8,380	Rollup
Room Is Excessively Reverberant (Install Fiberglass Wall Panel)	Acoustics	1,200	SF	4	$72,171	19870
Note: Cafeteria						
The Gypsum Board Ceilings Require Repainting	Capital Renewal	1,848	SF	5	$8,151	Rollup
	Sub Total for System	**11**	**items**		**$934,354**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	20	Ea.	2	$356,685	13036
The Boiler HVAC Component Requires Replacement	Capital Renewal	2	Ea.	2	$359,203	13034
Note: Boilers are outdated.						
	Sub Total for System	**2**	**items**		**$715,888**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	76	Ea.	5	$38,176	Rollup
	Sub Total for System	**1**	**items**		**$38,176**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	2	Ea.	4	$5,433	13031
Note: Damaged custodial sink.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**3**	**items**		**$15,135**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	2	Ea.	3	$11,547	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	120	Ea.	3	$60,143	23381
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	69	Ea.	3	$691,639	23386
Technology: Instructional spaces do not have local sound reinforcement.	Technology	23	Ea.	3	$115,273	23391
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23378
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23377
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23379
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23376
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23374
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23375
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	99	Ea.	3	$44,656	23384
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	46	Ea.	3	$20,749	23382
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23389
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$80,190	23390
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	72	Ea.	3	$36,086	23383
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	36,920	SF	3	$66,614	23388
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23385
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23387
Technology: Telecommunications Room fiber connectivity infrastructure is outdated and/or inadequate.	Technology	1	Ea.	3	$6,616	23380

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	23	Ea.	3	$36,887	23392
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23393
	Sub Total for System	**21**	**items**		**$1,423,098**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,619	Rollup
	Sub Total for System	**1**	**items**		**$4,619**	
	Sub Total for Building 01 - Main Building	**42**	**items**		**$3,784,565**	
	Total for Campus	**49**	**items**		**$4,046,542**	

Stone Hill School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Roadway Pavement	Asphalt	27	CAR	$90,418	4
Parking Lot Pavement	Asphalt	148	CAR	$495,627	5
Note:	33,175 SF (95 CAR) Paved play area				
	Sub Total for System	**2**	**items**	**$586,045**	
	Sub Total for Building -	**2**	**items**	**$586,045**	

Building: 01 - Main Building

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	18,480	SF	$123,591	4
Resilient Flooring	Vinyl Composition Tile Flooring	24,024	SF	$278,955	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	4,544	SF	$41,540	5
	Sub Total for System	**3**	**items**	**$444,086**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Heating Equipment	Unit Heater Steam/HW (20 MBH)	6	Ea.	$17,102	4
	Sub Total for System	**1**	**items**	**$17,102**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Distribution Panels (400 Amps)	1	Ea.	$25,982	5
Power Distribution	Panelboard - 277/480 100A	7	Ea.	$54,561	5
Power Distribution	Panelboard - 120/240 225A	1	Ea.	$9,719	5
	Sub Total for System	**3**	**items**	**$90,262**	
	Sub Total for Building 01 - Main Building	**7**	**items**	**$551,450**	
	Total for: Stone Hill School	**9**	**items**	**$1,137,495**	

Supporting Photos


Play Yard


Damaged Fence


Roadway


Play Yard

Site Aerial

Parking Lot

Northwest View

Restroom

Restroom Lavatories

Cafeteria/Gym


East View


Northeast View


Library


East Entry


West Play Yard


Typical Classroom


Library


Typical Casework


Cafeteria/Gym


North Play Yard


Typical Classroom


South View


North View


Southeast View


Southeast View


West View


Southwest View


Aluminum Windows


Aluminum Windows


Cafe/Gym Ceiling Tiles


Door Hardware


Custodial Sink


Typical Toilet Stall


Corroding Storefront Window Frame


Roof View


Roof View


Unit Vent


Wood Panel Wall


Classroom Acoustical Tile Ceiling

Facility Condition Assessment

Cranston - Western Hills Middle School | *June 2017*

400 Phenix Avenue, Cranston, RI 02920

Introduction

Western Hills Middle School, located at 400 Phenix Avenue in Cranston, Rhode Island, was built in 1970. It comprises 129,245 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.

Western Hills Middle School serves grades 7 - 8, has 58 instructional spaces, and has an enrollment of 656. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Western Hills Middle School is 841 with a resulting utilization of 78%.

For master planning purposes a 5-year need was developed to provide an understanding of the current need as well as the projected needs in the near future. For Western Hills Middle School the 5-year need is $14,631,451. 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 Western Hills 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 Western Hills Middle School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Asphalt Roadway Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Stucco Exterior Wall
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	EPDM Roofing

Interior

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

01 - Main Building:	Foldable Interior Partition
	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Painted Ceilings
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Quarry Tile Flooring
	Vinyl Composition Tile Flooring
	Carpet
	Athletic/Sport Flooring

Mechanical

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

01 - Main Building:	4,488 MBH Cast Iron Water Boiler

01 - Main Building:	400 MBH Copper Tube Boiler
	Steam/Hot Water Heating Unit Vent
	Finned Wall Radiator
	Fin Tube Water Radiant Heater
	36 MBH Steam Unit Heater
	DDC Heating System Controls
	Pneumatic Heating System Controls
	2 Ton Ductless Split System
	3 Ton Outside Air Cooled Condenser
	5 Ton Package DX Unit
	20 Ton Package DX Unit
	Window Units
	1 HP or Smaller Pump
	10 HP Pump
	2-Pipe Hot Water Hydronic Distribution System
	2,000 CFM Interior AHU
	Ductwork
	Roof Exhaust Fan
	Supply Fan
	Fire Sprinkler System

Plumbing

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

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

Electrical

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

01 - Main Building:	300 kW Emergency Generator
	Automatic Transfer Switch
	1,600 Amp Switchgear
	600 Amp Distribution Panel

01 - Main Building:	Panelboard - 120/208 225A
	Panelboard - 277/480 100A
	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.

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$480,847	$753,487	$421,178	$1,655,511	13.23 %
Roofing	-	$757,234	$125	-	-	$757,359	6.05 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$2,559,761	$1,751	-	-	$2,561,512	20.47 %
Interior	-	-	$1,398,839	$2,482,113	$33,865	$3,914,817	31.28 %
Mechanical	-	$867,377	$47,801	-	-	$915,178	7.31 %
Electrical	-	-	-	-	$95,794	$95,794	0.77 %
Plumbing	-	-	$2,940	$19,502	$11,212	$33,653	0.27 %
Fire and Life Safety	-	-	-	-	-	$0	0.00 %
Technology	-	-	$2,431,177	-	-	$2,431,177	19.42 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$4,588	$133,023	$13,764	$151,375	1.21 %
Total	$0	$4,184,372	$4,368,069	$3,388,125	$575,813	$12,516,378	

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

The building systems with the most need include:

Interior	-	$3,914,817
Exterior	-	$2,561,512
Technology	-	$2,431,177

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

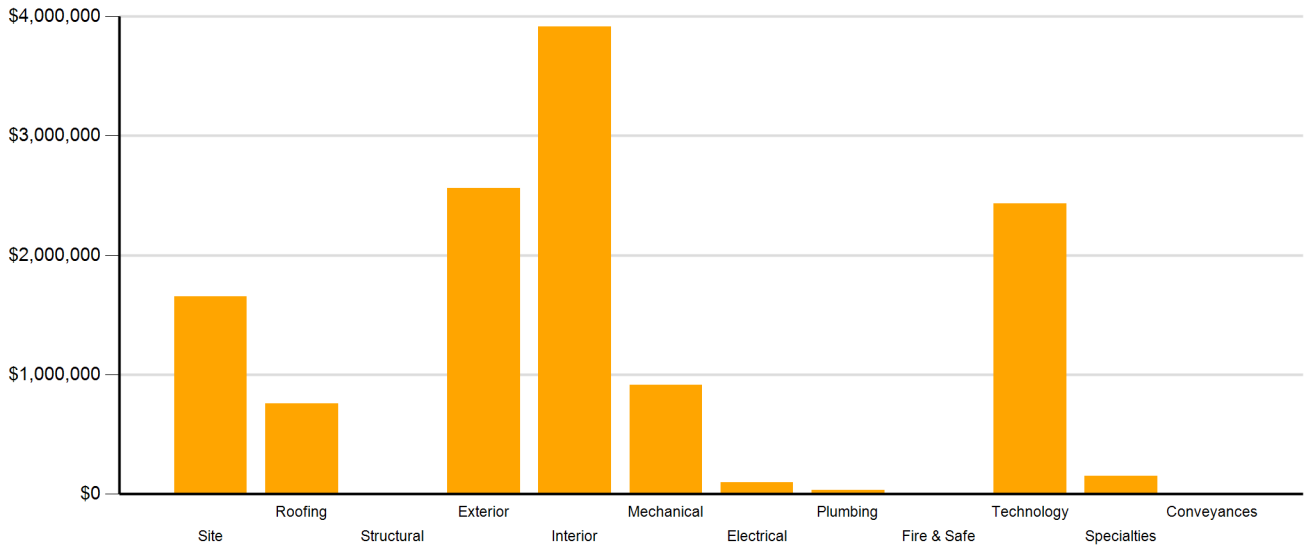


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

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

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

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

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$176,669	-	$176,669
Barrier to Accessibility	-	-	$2,940	-	-	$2,940
Capital Renewal	-	$4,184,372	$1,862,677	$2,892,106	$17,579	$8,956,734
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$79,140	$577	$558,234	$637,951
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$318,773	-	$318,773
Technology	-	-	$2,356,625	-	-	$2,356,625
Traffic	-	-	$66,686	-	-	$66,686
Total	$0	$4,184,372	$4,368,069	$3,388,125	$575,813	$12,516,378

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

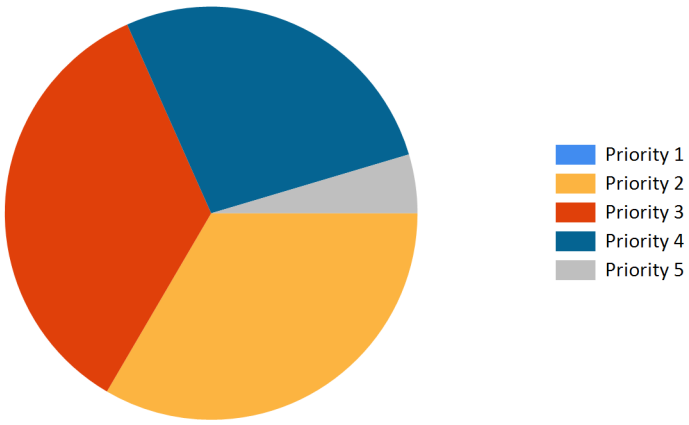


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

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

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

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

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

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$1,655,511	$0	$0	$0	$0	$0	$0	$1,655,511
Roofing	$757,359	$0	$0	$0	$0	$0	$0	$757,360
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$2,561,512	$0	$0	$0	$0	$0	$0	$2,561,512
Interior	$3,914,817	$0	$0	$0	$0	$941,805	$941,805	$4,856,623
Mechanical	$915,178	$0	$0	$0	$0	$712,884	$712,884	$1,628,063
Electrical	$95,794	$0	$0	$0	$0	$308,894	$308,894	$404,688
Plumbing	$33,653	$0	$0	$0	$12,922	$138,568	$151,490	$185,143
Fire and Life Safety	$0	$0	$0	$0	$0	$0	$0	$0
Technology	$2,431,177	$0	$0	$0	$0	$0	$0	$2,431,177
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$151,375	$0	$0	$0	$0	$0	$0	$151,375
Total	**$12,516,378**	**$0**	**$0**	**$0**	**$12,922**	**$2,102,151**	**$2,115,073**	**$14,631,451**

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

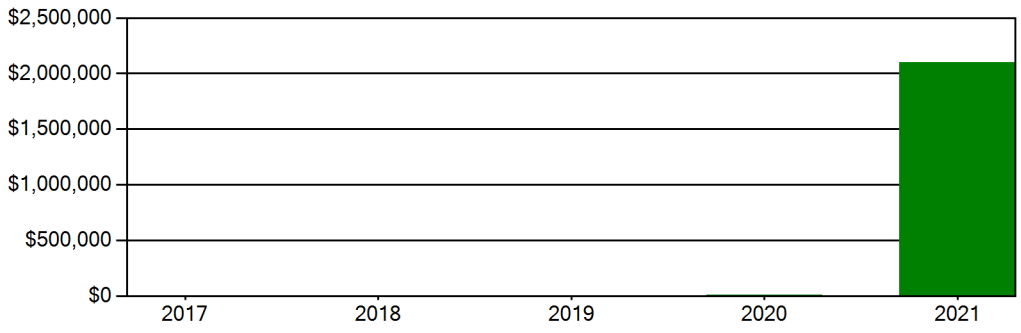
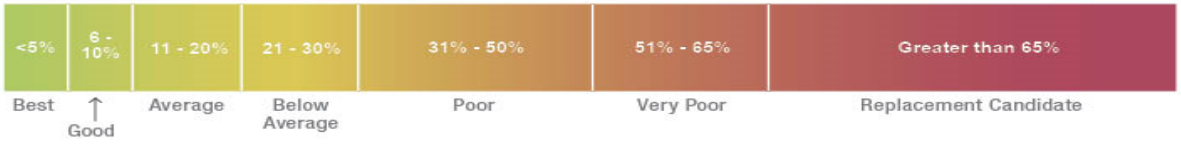


Figure 4: Life Cycle Capital Renewal Forecast

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 $44,333,848. For planning purposes, the total 5-year need at the Western Hills Middle School is $14,631,451 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Western Hills Middle School facility has a 5-year FCI of 33.00%.

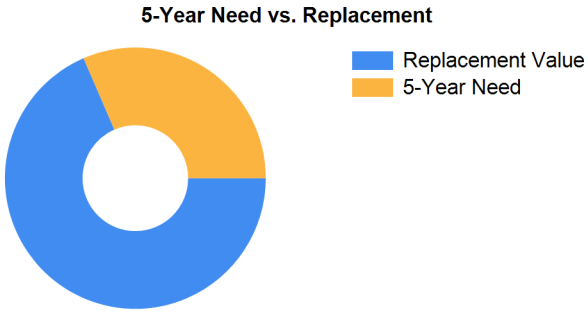


Figure 5: 5-Year FCI

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 738 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 Western Hills Middle School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $665,399.

Summary of Findings

The Western Hills Middle School comprises 129,245 square feet and was constructed in 1970. Current deficiencies at this school total $12,516,378. Five year capital renewal costs total $2,115,073. The total identified need for the Western Hills Middle School (current deficiencies and 5-year capital renewal costs) is $14,631,451. The 5-year FCI is 33.00%.

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
Western Hills Middle School Totals	129,245	1970	$12,516,378	$2,115,073	$14,631,451	33.00%

**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	16,015	SF	3	$414,161	13041
Note: Concrete walkways are cracked and uneven throughout the campus.						
New Sidewalk Is Required	Traffic	2,310	SF	3	$66,686	16946
Note: Add sidewalk along school driveway adjacent to baseball field (6' wide x 385' long)						
Asphalt Paving Requires Replacement	Capital Renewal	70	CAR	4	$293,023	13039
Note: Roadway asphalt is weathered, cracked, and alligatored.						
Asphalt Paving Requires Replacement	Capital Renewal	110	CAR	4	$460,464	16874
Note: Asphalt paving is cracked and weathered.						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28721
Note: Exterior Basketball Goals are Required						
School lacks a competition track.	Educational Adequacy	1	Ea.	5	$413,780	28235
Note: School lacks a competition track.						
	Sub Total for System	**6**	**items**		**$1,655,511**	
	Sub Total for School and Site Level	**6**	**items**		**$1,655,511**	

Building: 01 - Main Building

Roofing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	1,800	SF	2	$23,997	13051
Note: Membrane on the concrete canopy is weathered with significant ponding.						
EPDM Roofing Requires Replacement (Bldg SF)	Capital Renewal	55,000	SF	2	$733,237	13056
Note: EPDM roofing shows signs of ponding. The membrane is buckled and stained with evidence of water infiltration inside of the building.						
The Roof Drains Require Cleaning	Capital Renewal	3	Ea.	3	$125	13044
Note: Debris is collecting around the roof drain cages.						
	Sub Total for System	**3**	**items**		**$757,359**	

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	19,387	SF	2	$1,647,922	13055
Note: Single pane windows are rusted and leaking. Many are secured shut to keep water from infiltrating.						
The Stucco Exterior Wall Requires Replacement (Bldg SF)	Capital Renewal	25,849	SF	2	$911,838	13057
Note: Stucco exterior is deteriorated and stained.						
Exterior Metal Door Requires Repainting	Capital Renewal	8	Door	3	$1,751	13043
Note: Exterior door finishes are faded, peeling, or rusted. They should be repainted.						
	Sub Total for System	**3**	**items**		**$2,561,512**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Carpet Flooring Requires Replacement	Capital Renewal	6,462	SF	3	$148,231	16875
The Vinyl Composition Tile Requires Replacement	Capital Renewal	103,396	SF	3	$1,250,608	13046
Note: VCT tiles are worn and separating at the seams.						
Ceiling Grid Requires Replacement	Capital Renewal	113,990	SF	4	$1,425,469	13060
Note: Ceiling grid is rusted and discolored throughout.						
Moveable Partitions Require Replacement	Capital Renewal	4,608	SF Wall	4	$561,202	13062
Note: Partitions are aged, worn, stained, and poorly functioning.						
Location: Rooms 200, 202, 204, 205, 207, 209, 211, 213, 216, 218, 220, 222, 223, 225, 227, 229						
Paint (probable pre-1978 in base (layers(s)) - large areas (> 10 sq. ft.) of peeling/damage & area in active use - children (measurement unit - each)	Hazardous Material	497	Ea.	4	$149,454	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	3,922	LF	4	$94,352	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	6,238	SF	4	$62,528	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. AND NOT in children-accessible area (measurement unit - square feet)	Hazardous Material	1,238	SF	4	$12,409	Rollup

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Is Excessively Reverberant	Acoustics	7,500	SF	4	$176,669	27979
Location: Gym						
Wall/ceiling materials - area < 9 sq. ft. AND in children-accessible area	Hazardous Material	3	SF	4	$30	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,294	Rollup
Interior Doors Require Repainting	Capital Renewal	247	Door	5	$17,579	13045
Note: Wood doors are chipped and worn and should be refinished.						
Room lacks appropriate sound control.	Educational Adequacy	400	SF	5	$13,993	Rollup
	Sub Total for System	**13**	**items**		**$3,914,817**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Package DX Unit Requires Replacement	Capital Renewal	5	Ea.	2	$76,000	13053
Note: Rooftop units are aged, weathered, and rusted.						
Replace Unit Vent	Capital Renewal	41	Ea.	2	$731,205	13061
Note: Unit vents are aged and rusting with cases deteriorating.						
Steam/HW Unit Heater Requires Replacement	Capital Renewal	10	Ea.	2	$17,361	13054
Note: Unit heaters are rusting out with deteriorating casings.						
The Exterior Condenser Requires Replacement	Capital Renewal	5	Ea.	2	$42,811	13047
Note: Condensers are weathered and rusting out with deteriorated casing.						
Large HVAC Circulating Pump Requires Replacement	Capital Renewal	3	Ea.	3	$47,801	13052
Note: Pumps are aged and corroding with visible leaks and standing water.						
	Sub Total for System	**5**	**items**		**$915,178**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Has Insufficient Electrical Outlets	Educational Adequacy	192	Ea.	5	$95,794	Rollup
	Sub Total for System	**1**	**items**		**$95,794**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Restroom Is Not ADA Compliant	Barrier to Accessibility	10	SF	3	$2,940	13049
Floor Drains Are Required	Educational Adequacy	1	Ea.	4	$577	Rollup
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	1	Ea.	4	$10,776	13048
Note: Drinking fountain in the girl's locker room is not functioning.						
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	3	Ea.	4	$8,149	13050
Note: Service sinks are aged and deteriorating.						
Room lacks a drinking fountain.	Educational Adequacy	6	Ea.	5	$6,652	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	3	Ea.	5	$4,559	Rollup
	Sub Total for System	**6**	**items**		**$33,653**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	13	Ea.	3	$74,552	Rollup
Technology: Auditorium AV/Multimedia system is inadequate.	Technology	1	Room	3	$350,831	23601
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	196	Ea.	3	$98,233	23600
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	45	Ea.	3	$947,244	23605
Technology: Instructional spaces do not have local sound reinforcement.	Technology	45	Ea.	3	$225,534	23607
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23594

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23597
Technology: Intermediate Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$47,713	23593
Technology: Intermediate Telecommunications Room needs minor improvements.	Technology	1	Ea.	3	$17,642	23596
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23592
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23595
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23598
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23590
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$44,906	23589
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	128	Ea.	3	$57,737	23599
Technology: Network system inadequate and/or near end of useful life	Technology	14	Ea.	3	$112,266	23608
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$80,190	23609
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	129,245	SF	3	$233,194	23604
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23606
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,019	23591
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	45	Ea.	3	$72,171	23603
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23602
	Sub Total for System	**22**	**items**		**$2,431,177**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	1	Ea.	3	$4,588	Rollup
Replace Cabinetry In Classes/Labs	Capital Renewal	6	Room	4	$70,776	13059
The Metal Student Lockers Require Replacement	Capital Renewal	120	Ea.	4	$62,247	13058
Note: Original lockers are aged, worn, and should be replaced.						
The room lacks a washer and/or dryer.	Educational Adequacy	1	Ea.	5	$13,764	Rollup
	Sub Total for System	**4**	**items**		**$151,375**	
	Sub Total for Building 01 - Main Building	**57**	**items**		**$10,860,867**	
	Total for Campus	**63**	**items**		**$12,516,378**	

Buildings with no reported deficiencies

02 - Portable A

03 - Portable B

04 - Portable C

Western Hills Middle 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)	51,698	SF	$345,748	5
Suspended Plaster and	Painted ceilings	7,755	SF	$32,835	5
Acoustical Suspended Ceilings	Exposed Tectum Ceilings	7,500	SF	$563,222	5
	Sub Total for System	**3**	**items**	**$941,806**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Package DX Unit (5 Ton)	2	Ea.	$29,184	5
Heating System Supplementary Components	Controls - Pneumatic (Bldg.SF)	100,000	SF	$683,700	5
	Sub Total for System	**2**	**items**	**$712,884**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Power Distribution	Distribution Panels (600 Amps)	2	Ea.	$58,969	5
Wiring Devices	Electrical Disconnect	24	Ea.	$44,527	5
Power Distribution	Panelboard - 120/208 225A	17	Ea.	$99,788	5
Power Distribution	Panelboard - 277/480 400A	5	Ea.	$90,021	5
Power Distribution	Panelboard - 277/480 100A	2	Ea.	$15,589	5
	Sub Total for System	**5**	**items**	**$308,894**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Compressed-Air Systems	Air Compressor (2 hp)	2	Ea.	$12,922	4
Plumbing Fixtures	Toilets	48	Ea.	$138,568	5
	Sub Total for System	**2**	**items**	**$151,490**	
	Sub Total for Building 01 - Main Building	**12**	**items**	**$2,115,073**	
	Total for: Western Hills Middle School	**12**	**items**	**$2,115,073**	

Supporting Photos

Leaking Pump

Rusting Unit Heater

Cracked Concrete Walkway

Rusted Condenser


Rusting Heater


Weathered And Rusted Rooftop Unit


Deteriorated Curbs


Asphalt Parking


Weathered And Rusted Rooftop Unit


Alligatored Roadway Paving

Weathered Exterior Doors

Building Signage

Site Aerial

Band Room

Gymnasium

Exterior Brick

North Elevation

Typical Classroom

Plaque

Chipped Gym Floor Paint

Typical Restroom

Shop Classroom


Portable A


Art Room


Cafeteria


Library


Auditorium

Paint Peeling On Door


Debris At Roof Drain


Worn Interior Door Finish

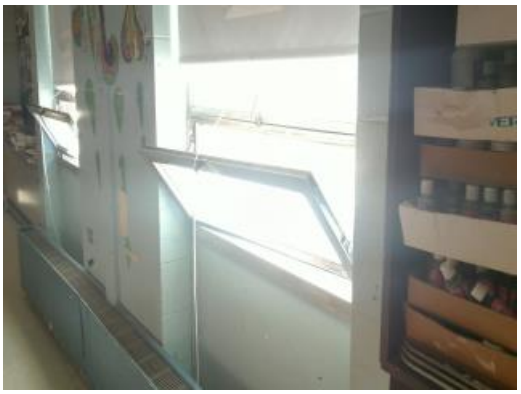

Chipped VCT


Aged Unit Vent


Aged Unit Vent


VCT Separating At Seams


Ponding On Canopy


Broken Window

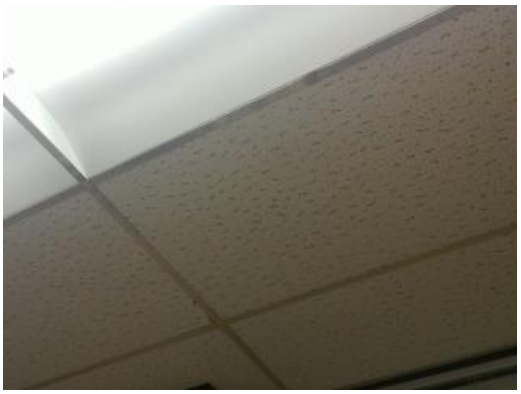

Aged Windows


Ponding And Vegetation On Roof


Buckled EPDM


Deteriorated And Stained Stucco


Original Lockers


Rusted Grid


Stained Ceiling Grid


Partition Wall


Aged Service Sink

Facility Condition Assessment

Cranston - William R. Dutemple School | *June 2017*

32 Garden Street, Cranston, RI 02910

Introduction

William R. Dutemple School, located at 32 Garden Street in Cranston, Rhode Island, was built in 1931. It comprises 34,215 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.

William R. Dutemple School serves grades 1 - 6, has 20 instructional spaces, and has an enrollment of 309. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for William R. Dutemple School is 324 with a resulting utilization of 95%.

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 William R. Dutemple School the 5-year need is $5,739,530. 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.

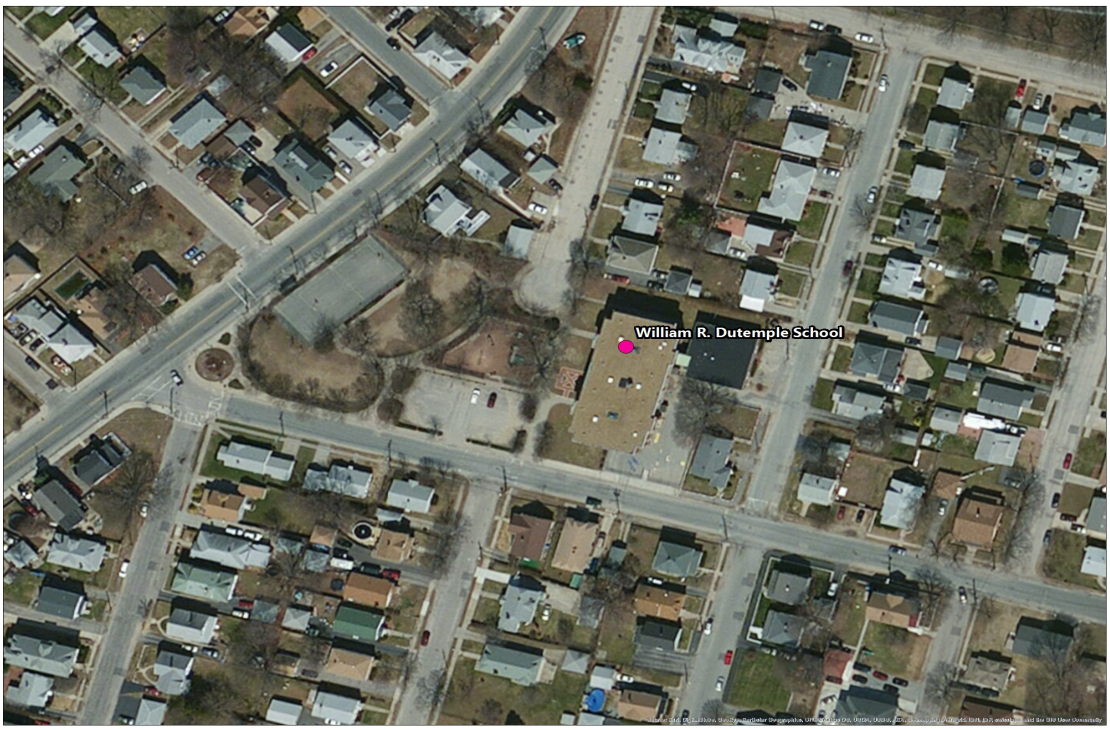


Figure 1: Aerial view of William R. Dutemple School

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 William R. Dutemple School campus, identified by discipline and building.

Site

The site level systems for this campus include:

Site	Asphalt Parking Lot Pavement
	Concrete Pedestrian Pavement

Building Envelope

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

01 - Main Building:	Brick Exterior Wall
	Pre-cast Concrete Panel Exterior Wall
	Aluminum Exterior Windows
	Storefront / Curtain Wall
	Steel Exterior Entrance Doors

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

01 - Main Building:	Single Ply Membrane Ballasted Roofing

Interior

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

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	Painted Ceilings
	Brick/Stone Veneer
	Interior Wall Painting
	Concrete Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring
	Carpet

Mechanical

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

01 - Main Building:	3,264 MBH Cast Iron Water Boiler
	Finned Wall Radiator
	Steam/Hot Water Heating Unit Vent

01 - Main Building:	20 MBH Steam Unit Heater
	Electronic Heating System Controls
	Window Units
	5 HP VFD
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	Roof Exhaust Fan
	Kitchen Exhaust Hoods
	4'x6' Ventilator/Relief Vent
	Fire Sprinkler System

Plumbing

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

01 - Main Building:	2" Backflow Preventers
	4" Backflow Preventers
	Gas Piping System
	75 Gallon Gas Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	10,000 Gallon Underground Fuel Oil Storage Tank

Electrical

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

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

Facility Deficiency Priority Levels

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

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

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

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

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

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

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

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$5,966	$79,847	$64,800	$150,613	3.51 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	$302,510	-	$138	-	$302,647	7.04 %
Interior	-	-	$692,134	$607,528	$14,611	$1,314,273	30.59 %
Mechanical	-	$1,052,079	-	$61,418	-	$1,113,497	25.92 %
Electrical	-	$60,046	-	-	$40,185	$100,231	2.33 %
Plumbing	-	-	$182,011	$87,484	$117,010	$386,505	9.00 %
Fire and Life Safety	$49,024	-	-	-	-	$49,024	1.14 %
Technology	-	-	$870,541	-	-	$870,541	20.26 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	-	-	$9,238	0.22 %
Total	$49,024	$1,414,635	$1,759,891	$836,415	$236,605	$4,296,569	

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

The building systems with the most need include:

Interior	-	$1,314,273
Mechanical	-	$1,113,497
Technology	-	$870,541

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

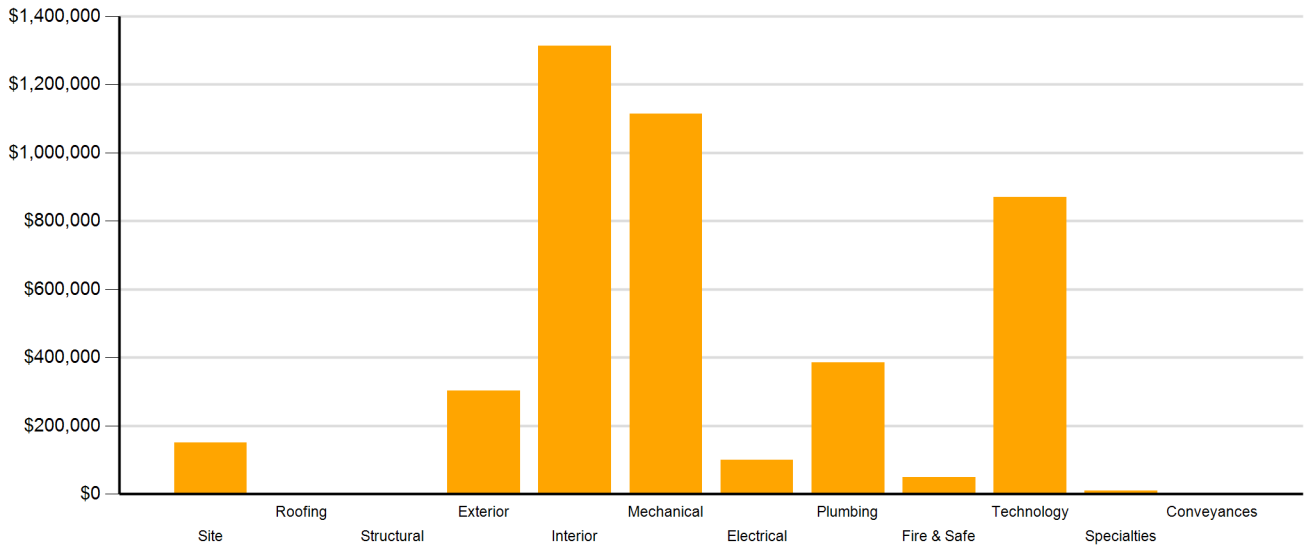


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

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

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

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

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

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

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

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

• **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

• **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	-	$66,145	-	$66,145
Barrier to Accessibility	-	-	$575,097	-	-	$575,097
Capital Renewal	$49,024	$1,414,635	$299,048	$191,598	$114,239	$2,068,544
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$15,012	$91,901	$122,366	$229,279
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$486,771	-	$486,771
Technology	-	-	$864,767	-	-	$864,767
Traffic	-	-	$5,966	-	-	$5,966
Total	$49,024	$1,414,635	$1,759,891	$836,415	$236,605	$4,296,569

**Displayed totals may not sum exactly due to mathematical rounding*

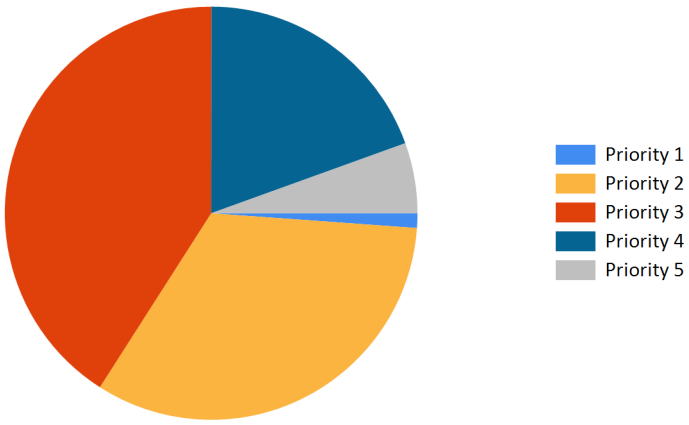


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$150,613	$0	$0	$0	$23,816	$0	$23,816	$174,429
Roofing	$0	$0	$0	$0	$0	$404,158	$404,158	$404,158
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$302,647	$0	$0	$0	$0	$0	$0	$302,647
Interior	$1,314,273	$0	$0	$0	$0	$419,715	$419,715	$1,733,988
Mechanical	$1,113,497	$0	$0	$0	$254,205	$153,965	$408,170	$1,521,667
Electrical	$100,231	$0	$0	$0	$0	$0	$0	$100,231
Plumbing	$386,505	$0	$0	$0	$0	$5,916	$5,916	$392,421
Fire and Life Safety	$49,024	$0	$0	$0	$0	$0	$0	$49,024
Technology	$870,541	$0	$0	$0	$0	$0	$0	$870,541
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$9,238	$0	$0	$0	$0	$181,186	$181,186	$190,424
Total	**$4,296,569**	**$0**	**$0**	**$0**	**$278,021**	**$1,164,940**	**$1,442,961**	**$5,739,530**

**Displayed totals may not sum exactly due to mathematical rounding*

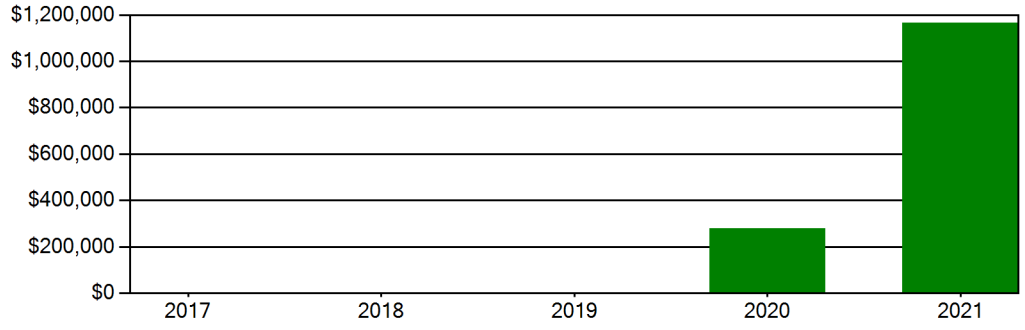
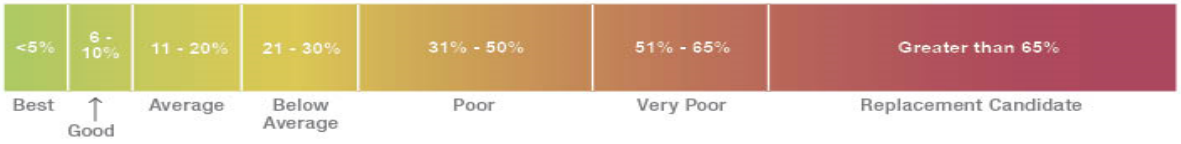


Figure 4: Life Cycle Capital Renewal Forecast

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 $11,975,250. For planning purposes, the total 5-year need at the William R. Dutemple School is $5,739,530 (Life Cycle Years 1-5 plus the FCI deficiency cost). The William R. Dutemple School facility has a 5-year FCI of 47.93%.

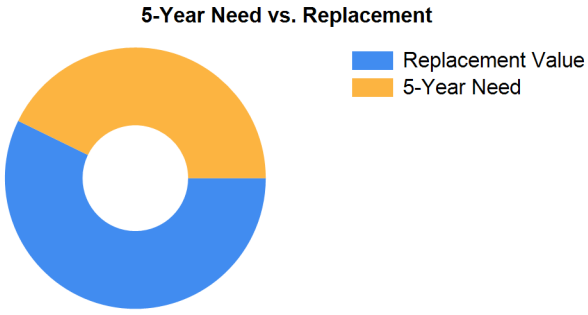


Figure 5: 5-Year FCI

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 190 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 William R. Dutemple School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $375,732.

Summary of Findings

The William R. Dutemple School comprises 34,215 square feet and was constructed in 1931. Current deficiencies at this school total $4,296,569. Five year capital renewal costs total $1,442,961. The total identified need for the William R. Dutemple School (current deficiencies and 5-year capital renewal costs) is $5,739,530. The 5-year FCI is 47.93%.

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
William R. Dutemple School Totals	34,215	1931	$4,296,569	$1,442,961	$5,739,530	47.93%

**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	Traffic	2	Ea.	3	$5,966	11642
Note: Add school zone signs						
Asphalt Paving Requires Replacement	Capital Renewal	6	CAR	4	$23,119	10017
Note: Play area asphalt is weathered with large cracks.						
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$37,288	28437
Note: Backstops Require Replacement						
Fencing Requires Replacement (4' Chain Link Fence)	Capital Renewal	230	LF	4	$19,440	10016
Note: Fence is in disrepair with much of it damaged and rusted.						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54876
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**5**	**items**		**$150,613**	
	Sub Total for School and Site Level	**5**	**items**		**$150,613**	

Building: 01 - Main Building

Exterior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Storefront/Curtain Wall Requires Replacement (Bldg SF)	Capital Renewal	3,422	SF	2	$302,510	10040
Note: Original single pane windows allow air and water in. The glass is cloudy and glazing is deteriorating.						
Handrail Requires Repainting	Capital Renewal	12	LF	4	$138	10032
Location: Outside south cafe/gym entrance.						
	Sub Total for System	**2**	**items**		**$302,647**	

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Existing Door Hardware Is Not ADA Compliant	Barrier to Accessibility	135	Door	3	$422,200	10026
The Carpet Flooring Requires Replacement	Capital Renewal	1,036	SF	3	$24,715	10022
Note: Carpet is worn and frayed.						
The Terrazzo Flooring Requires Replacement	Capital Renewal	1,711	SF	3	$139,126	10029
Note: Terrazzo is cracked and worn.						
Location: Restrooms						
The Vinyl Composition Tile Requires Replacement	Capital Renewal	8,434	SF	3	$106,092	10023
Note: Tile is worn and cracking.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	12,770	SF	4	$399,370	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	16	Ea.	4	$5,004	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	$4,003	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	7,520	SF	4	$78,394	Rollup
Room Is Excessively Reverberant	Acoustics	2,700	SF	4	$66,145	19808
Note: Gym						
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	1,416	SF	4	$54,613	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	2	Ea.	5	$4,619	Rollup
Interior Doors Require Repainting	Capital Renewal	135	Door	5	$9,992	10021
Note: Interior wood door finishes are worn.						
	Sub Total for System	**12**	**items**		**$1,314,273**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	5	Ea.	2	$92,738	10042
Steam/HW Unit Heater Requires Replacement	Capital Renewal	4	Ea.	2	$12,351	11687
The Cast Iron Water Boiler Requires Replacement	Capital Renewal	2	Ea.	2	$396,964	10034

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	142	Ea.	2	$260,830	10036
Note: Radiant heater casing is deteriorating.						
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	34,215	SF	2	$289,195	10037
Note: Piping is deteriorating. There were leaks observed in boiler room and teachers report leaks throughout the building.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	1	Ea.	4	$10,450	10031
Note: Pump is deteriorating and has bad seals and rust.						
Small HVAC Circulating Pump Requires Replacement	Capital Renewal	2	Ea.	4	$16,730	10043
The Exhaust Hood Requires Replacement	Capital Renewal	6	Ea.	4	$34,239	10041
	Sub Total for System	**8**	**items**		**$1,113,497**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Distribution Panel Requires Replacement	Capital Renewal	1	Ea.	2	$28,147	10038
The Panelboard Requires Replacement	Capital Renewal	6	Ea.	2	$31,900	10033
Room Has Insufficient Electrical Outlets	Educational Adequacy	80	Ea.	5	$40,185	Rollup
	Sub Total for System	**3**	**items**		**$100,231**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Plumbing / Domestic Water Piping System Is Beyond Its Useful Life	Capital Renewal	3,300	SF	3	$29,114	10030
Note: Original water piping should be replaced.						
The Restroom Is Not ADA Compliant	Barrier to Accessibility	500	SF	3	$152,897	10027
Note: Staff, boy's, and girl's rooms are not ADA compliant.						
Non-Refrigerated Drinking Fountain Requires Replacement	Capital Renewal	6	Ea.	4	$67,239	10025
The Classroom Lavatories Plumbing Fixtures Require Replacement	Capital Renewal	3	Ea.	4	$8,944	10020
The Custodial Mop Or Service Sink Requires Replacement	Capital Renewal	4	Ea.	4	$11,300	10019
Note: Mop sinks are deteriorating.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	6	Ea.	5	$7,181	Rollup
Underground Fuel/Oil Storage Tank Requires Replacement	Capital Renewal	1	Ea.	5	$104,247	10039
	Sub Total for System	**8**	**items**		**$386,505**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Emergency Lighting System Requires Replacement	Capital Renewal	34,215	SF	1	$31,519	10018
Replace Kitchen Exhaust Hood	Capital Renewal	1	Ea.	1	$17,505	10035
	Sub Total for System	**2**	**items**		**$49,024**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	1	Ea.	3	$5,774	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	120	Ea.	3	$62,548	23693
Technology: Classroom AV/Multimedia systems are inadequate and/or near end of useful life.	Technology	16	Ea.	3	$350,270	23698
Technology: Instructional spaces do not have local sound reinforcement.	Technology	16	Ea.	3	$83,398	23700
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,297	23689
Technology: Main Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$46,703	23688
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,903	23691

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	1	Ea.	3	$469	23692
Technology: Network system inadequate and/or near end of useful life	Technology	4	Ea.	3	$33,359	23701
Technology: Network system inadequate and/or near end of useful life	Technology	16	Ea.	3	$83,398	23702
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	34,215	SF	3	$64,203	23697
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$59,421	23694
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,849	23699
Technology: Telecommunications Room (large size room) needs dedicated cooling system improvements.	Technology	1	Ea.	3	$8,340	23690
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	16	Ea.	3	$26,687	23696
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,923	23695
	Sub Total for System	**16**	**items**		**$870,541**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
	Sub Total for System	**1**	**items**		**$9,238**	
	Sub Total for Building 01 - Main Building	**52**	**items**		**$4,145,956**	
	Total for Campus	**57**	**items**		**$4,296,569**	

William R. Dutemple 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)	350	LF	$23,816	4
	Sub Total for System	**1**	**items**	**$23,816**	
	Sub Total for Building -	**1**	**items**	**$23,816**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	Single Ply Membrane Ballasted Roof	10,500	SF	$404,158	5
	Sub Total for System	**1**	**items**	**$404,158**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Interior Swinging Doors	Steel	16	Door	$69,346	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Grid System	4,000	SF	$48,020	5
Acoustical Suspended Ceilings	Ceilings - Adhered acoustical tiles	10,264	SF	$112,658	5
Suspended Plaster and	Painted ceilings	19,951	SF	$84,473	5
Wall Painting and Coating	Painting/Staining (Bldg SF)	10,265	SF	$68,651	5
Acoustical Suspended Ceilings	Ceilings - Acoustical Tiles	4,000	SF	$36,567	5
	Sub Total for System	**6**	**items**	**$419,714**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Heating System Supplementary Components	Controls - Electronic (Bldg.SF)	34,215	SF	$233,928	4
Decentralized Cooling	Window Units	6	Ea.	$20,277	4
Exhaust Air	Ventilator/Relief Vent (4'x6')	8	Ea.	$153,965	5
Note:	12"				
	Sub Total for System	**3**	**items**	**$408,170**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Gas - 75 Gallons	1	Ea.	$5,916	5
	Sub Total for System	**1**	**items**	**$5,916**	

Specialties

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry	16	Room	$181,186	5
	Sub Total for System	**1**	**items**	**$181,186**	
	Sub Total for Building 01 - Main Building	**12**	**items**	**$1,419,143**	
	Total for: William R. Dutemple School	**13**	**items**	**$1,442,960**	

Supporting Photos


Fin Tube Radiant Heater


Heating And Ventilating Unit


Typical Exhaust Hood


Distribution Panel


Typical Rusted Fence


Classroom Lavatory


South Elevation


Typical Interior Doors


West Elevation


Art Room


East Elevation


Restroom Finishes


Worn Finish On Interior Door


Frayed Carpet


Site Aerial


Cracked And Weathered Play Area


Library


North Elvation


Typical Classroom


Library


Northwest Elevation


Cafe/Gym


Hallway Finishes


Cafe/Gym


Chipped VCT


Non-Compliant Door Hardware


Peeling Ceiling Paint


Stained And Peeling Paint


Cracking Terrazzo

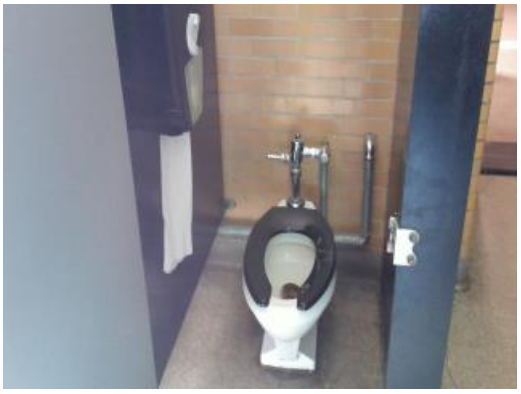

Circulating Pump


Chipped Handrail Painting


Typical Boiler


HVAC Piping


Typical Window



Typical Toilet

Facility Condition Assessment

Cranston - Woodridge School | *June 2017*

401 Budlong Road, Cranston, RI 02920

Introduction

Woodridge School, located at 401 Budlong Road in Cranston, Rhode Island, was built in 1953. It comprises 22,487 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.

Woodridge School serves grades 1 - 6, has 21 instructional spaces, and has an enrollment of 344. Instructional spaces are defined as rooms in which a student receives education. The LEA reported capacity for Woodridge School is 285 with a resulting utilization of 121%.

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 Woodridge School the 5-year need is $6,234,499. 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 Woodridge 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 Woodridge 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
	Steel Exterior Entrance Doors

The roofing for the building(s) at this campus consists of:

01 - Main Building:	EPDM Roofing

Interior

The interior systems for the building(s) at this campus include:

01 - Main Building:	Steel Interior Doors
	Wood Interior Doors
	Overhead Interior Coiling Doors
	Interior Door Hardware
	Suspended Acoustical Grid System
	Suspended Acoustical Ceiling Tile
	Adhered Acoustical Ceiling Tiles
	CMU Wall
	Interior Wall Painting
	Concrete Flooring
	Quarry Tile Flooring
	Vinyl Composition Tile Flooring
	Terrazzo Flooring

Mechanical

The mechanical systems for the building(s) at this campus include:

01 - Main Building:	3,060 MBH Cast Iron Steam Boiler
	Steam to Water Heat Exchanger
	Steam Condensate Receiver, Tank and Pump

01 - Main Building:	36 MBH Steam Unit Heater
	Steam/Hot Water Heating Unit Vent
	Finned Wall Radiator
	Pneumatic Heating System Controls
	Window Units
	2-Pipe Steam Hydronic Distribution System
	1 HP or Smaller Pump
	5 HP Pump
	Small Roof Exhaust Fan
	Kitchen Exhaust Hoods
	4'x8' Ventilator/Relief Vent
	Supply Fan

Plumbing

The plumbing systems for the building(s) at this campus include:

01 - Main Building:	2" Backflow Preventers
	Gas Piping System
	80 Gallon Electric Water Heater
	Domestic Water Piping System
	Classroom Lavatories
	Mop/Service Sinks
	Non-Refrigerated Drinking Fountain
	Refrigerated Drinking Fountain
	Restroom Lavatories
	Toilets
	Urinals
	Air Compressor (1/2 hp)

Electrical

The electrical systems for the building(s) at this campus include:

01 - Main Building:	400 Amp Distribution Panel
	Panelboard - 120/240 100A
	Panelboard - 120/240 225A
	Electrical Disconnect
	Light Fixtures
	Building Mounted Lighting Fixtures
	Canopy Mounted Lighting Fixtures

Facility Deficiency Priority Levels

Deficiencies were ranked according to five priority levels, with Priority 1 items being the most critical to address:

Priority 1 – Mission Critical Concerns: Deficiencies or conditions that may directly affect the school's ability to remain open or deliver the educational curriculum. These deficiencies typically relate to building safety, code compliance, severely damaged or failing building components, and other items that require near-term correction. An example of a Priority 1 deficiency is a fire alarm system replacement.

Priority 2 – Indirect Impact to Educational Mission: Items that may progress to a Priority 1 item if not addressed in the near term. Examples of Priority 2 deficiencies include inadequate roofing that could cause deterioration of integral building systems, and conditions affecting building envelopes, such as roof and window replacements.

Priority 3 – Short-Term Conditions: Deficiencies that are necessary to the school's mission but may not require immediate attention. These items should be considered necessary improvements required to maximize facility efficiency and usefulness. Examples of Priority 3 items include site improvements and plumbing deficiencies.

Priority 4 – Long-Term Requirements: Items or systems that may be considered improvements to the instructional environment. The improvements may be aesthetic or provide greater functionality. Examples include cabinets, finishes, paving, removal of abandoned equipment, and educational accommodations associated with special programs.

Priority 5 – Enhancements: Deficiencies aesthetic in nature or considered enhancements. Typical deficiencies in this priority include repainting, replacing carpet, improved signage, or other improvements to the facility environment.

The following chart summarizes this site's current deficiencies by building system and priority. The listing details current deficiencies including deferred maintenance, functional deficiencies, code compliance, capital renewal, hazardous materials and technology categories.

Table 1: System by Priority

	Priority						
System	1	2	3	4	5	Total	% of Total
Site	-	-	$38,828	$747,712	$72,198	$858,738	20.35 %
Roofing	-	-	-	-	-	$0	0.00 %
Structural	-	-	-	-	-	$0	0.00 %
Exterior	-	-	-	-	-	$0	0.00 %
Interior	-	-	$7,819	$745,853	$2,309	$755,981	17.92 %
Mechanical	-	$601,000	$214,075	-	-	$815,075	19.32 %
Electrical	-	$28,912	-	-	$30,139	$59,050	1.40 %
Plumbing	-	-	$2,803	$7,778	$9,702	$20,284	0.48 %
Fire and Life Safety	$16,832	-	-	-	-	$16,832	0.40 %
Technology	-	-	$1,684,227	-	-	$1,684,227	39.92 %
Conveyances	-	-	-	-	-	$0	0.00 %
Specialties	-	-	$9,238	-	-	$9,238	0.22 %
Total	$16,832	$629,912	$1,956,989	$1,501,343	$114,348	$4,219,424	

**Displayed totals may not sum exactly due to mathematical rounding*

The building systems with the most need include:

Technology	-	$1,684,227
Site	-	$858,738
Mechanical	-	$815,075

The chart below represents the building systems and associated deficiency costs.

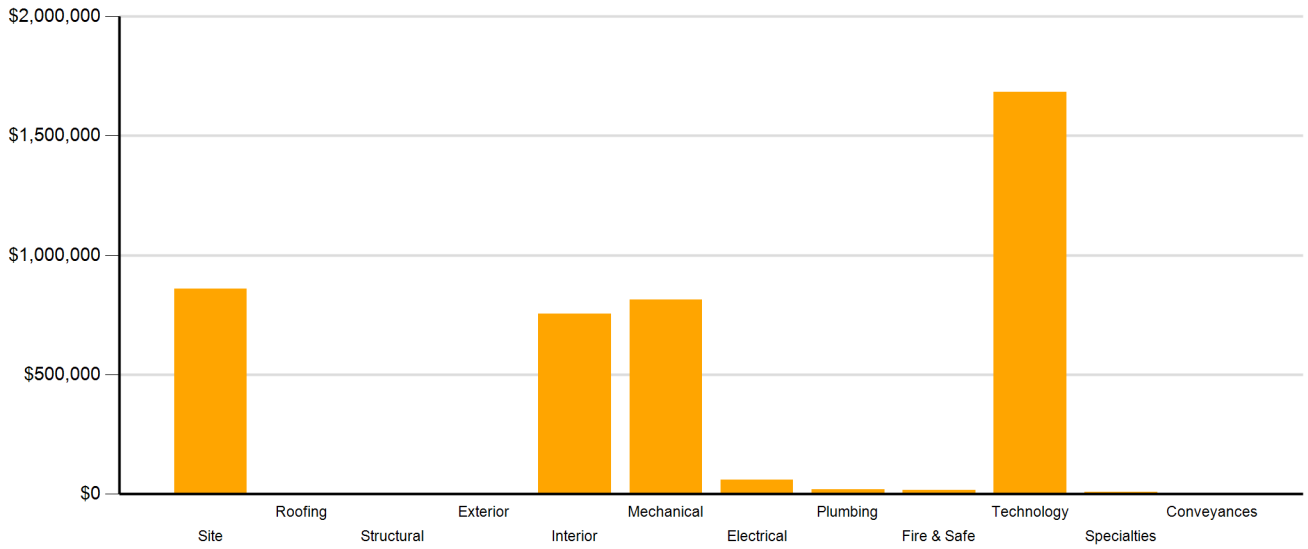


Figure 2: System Deficiencies

Current Deficiencies by Category

Deficiencies have been further grouped according to the observed category.

- **Acoustics** deficiencies relate to room acoustics, sound insolation, and mechanical systems and vibration control modeled after ANSI/ASA Standard S12.60-2010 and ASHRAE Handbook, Chapter 47 on Sound and Vibration Control.

- **Barrier to Accessibility** deficiencies relate to the Americans with Disabilities Act and the Rhode Island Governors Commission on Disability. Additional items related to accessibility may be included other categories.

- **Capital Renewal** items have reached or exceeded serviceable life and require replacement. These are current and do not include life cycle capital renewal forecasts. Also included are deficiencies correcting planned work postponed beyond its regular life expectancy.

- **Code Compliance** deficiencies related to current codes. Many may fall under grandfather clauses, which allow buildings to continue operating under codes effective at the time of construction. However, there are instances where the level of renovation requires full compliance which are reflected in the master plan.

- **Educational Adequacy** deficiencies identify where facilities do not align with the Basic Education Program and the RIDE School Construction Regulations.

- **Functional Deficiencies** are deficiencies for components or systems that have failed before the end of expected life or are not the right application, size, or design.

- **Hazardous Materials** include deficiencies for building systems or components containing potentially hazardous material. The team focused on identifying asbestos containing building materials (ACBMs), lead based painted (LBP) areas, polychlorinated biphenyls (PCBs), and chlorofluorocarbons (CFCs). As part of an indoor air and exterior air quality assessment, the team noted evidence of mold, water intrusion, mercury, and oil and hazardous materials (OHMs) exposure. With other scopes of work there may be other costs associated with hazardous materials.

- **Technology** deficiencies relate to network architecture, technology infrastructure, classroom systems, and support. Examples of technology deficiencies include: security cameras, secure electronic access, telephone handsets, and dedicated air conditioning for telecommunication rooms.

- **Traffic** deficiencies relate to vehicle or pedestrian traffic, such as bus loops, crosswalks, and pavement markings.

The following chart and table represent the deficiency category by priority. This listing includes current deficiencies for all building systems.

Table 2: Deficiency Category by Priority

	Priority					
Category	**1**	**2**	**3**	**4**	**5**	**Total**
Acoustics	-	-	$214,075	-	-	$214,075
Barrier to Accessibility	-	-	-	-	-	$0
Capital Renewal	$16,832	$629,912	$45,263	$912,228	-	$1,604,235
Code Compliance	-	-	-	-	-	$0
Educational Adequacy	-	-	$43,880	$86,083	$114,348	$244,311
Functional Deficiency	-	-	-	-	-	$0
Hazardous Material	-	-	-	$503,032	-	$503,032
Technology	-	-	$1,649,585	-	-	$1,649,585
Traffic	-	-	$4,186	-	-	$4,186
Total	$16,832	$629,912	$1,956,989	$1,501,343	$114,348	$4,219,424

**Displayed totals may not sum exactly due to mathematical rounding*

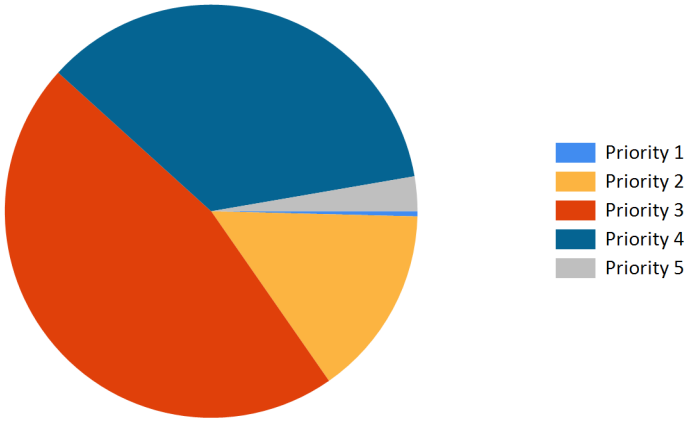


Figure 3: Current deficiencies by priority

Life Cycle Capital Renewal Forecast

During the facility condition assessment, assessors inspected all major building systems. If a need for immediate replacement was identified, a deficiency was created with the estimated repair costs. The identified deficiency contributes to the facility's total current repair costs.

Capital planning scenarios span multiple years, as opposed to being constrained to immediate repairs. Construction projects may begin several years after the initial facility condition assessment. Therefore, in addition to the current year repair costs, it is necessary to forecast the facility's future costs using a 5-year life cycle renewal forecast model.

Life cycle renewal is the projection of future building system costs based upon each individual system's expected serviceable life. Building systems and components age over time, eventually break down, reach the end of their useful lives, and may require replacement. While an item may be in good condition now, it might reach the end of its life before a planned construction project occurs.

The following chart shows all current deficiencies and the subsequent 5-year life cycle capital renewal projections. The projections outline costs for major building systems in which a component is expected to reach the end of its useful life and require capital funding for replacement.

Table 3: Capital Renewal Forecast

		Life Cycle Capital Renewal Projections						
System	Current Deficiencies	Year 1 2017	Year 2 2018	Year 3 2019	Year 4 2020	Year 5 2021	LC Yr. 1-5 Total	Total 5-Year Need
Site	$858,738	$0	$0	$0	$78,522	$150,717	$229,239	$1,087,977
Roofing	$0	$0	$0	$0	$0	$287,796	$287,796	$287,796
Structural	$0	$0	$0	$0	$0	$0	$0	$0
Exterior	$0	$0	$0	$0	$0	$77,945	$77,945	$77,945
Interior	$755,981	$0	$0	$0	$0	$324,076	$324,076	$1,080,057
Mechanical	$815,075	$0	$0	$0	$402,818	$416,346	$819,164	$1,634,239
Electrical	$59,050	$0	$0	$0	$0	$135,242	$135,242	$194,292
Plumbing	$20,284	$0	$0	$0	$0	$5,724	$5,724	$26,008
Fire and Life Safety	$16,832	$0	$0	$0	$0	$0	$0	$16,832
Technology	$1,684,227	$0	$0	$0	$0	$0	$0	$1,684,227
Conveyances	$0	$0	$0	$0	$0	$0	$0	$0
Specialties	$9,238	$0	$0	$0	$0	$135,889	$135,889	$145,127
Total	**$4,219,424**	**$0**	**$0**	**$0**	**$481,340**	**$1,533,735**	**$2,015,075**	**$6,234,499**

**Displayed totals may not sum exactly due to mathematical rounding*

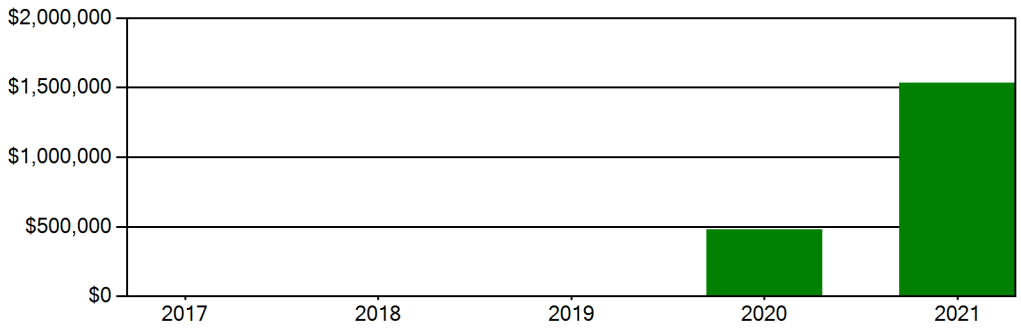
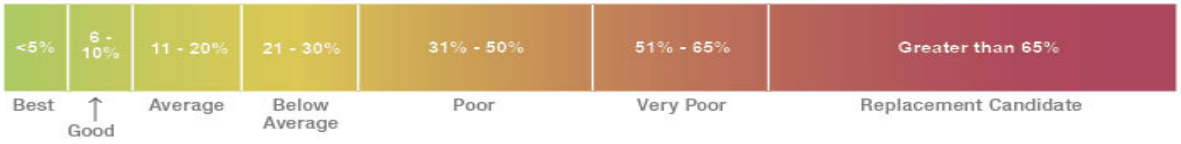


Figure 4: Life Cycle Capital Renewal Forecast

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 $9,550,450. For planning purposes, the total 5-year need at the Woodridge School is $6,234,499 (Life Cycle Years 1-5 plus the FCI deficiency cost). The Woodridge School facility has a 5-year FCI of 65.28%.

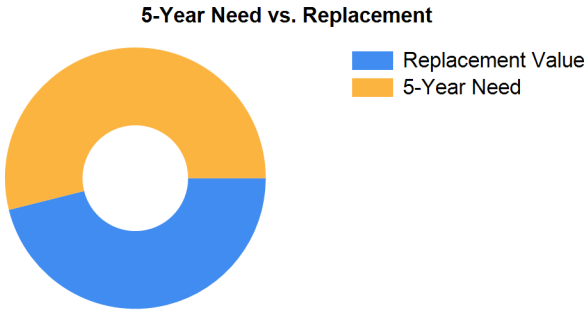


Figure 5: 5-Year FCI

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 152 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 Woodridge School cafeteria and/or library/media center to the size prescribed by the SCRs is estimated to be $459,270.

Summary of Findings

The Woodridge School comprises 22,487 square feet and was constructed in 1953. Current deficiencies at this school total $4,219,424. Five year capital renewal costs total $2,015,075. The total identified need for the Woodridge School (current deficiencies and 5-year capital renewal costs) is $6,234,499. The 5-year FCI is 65.28%.

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
Woodridge School Totals	22,487	1953	$4,219,424	$2,015,075	$6,234,499	65.28%

**Displayed totals may not sum exactly due to mathematical rounding*

The following pages provide a listing of all current deficiencies and 5-year life cycle need and the associated costs, followed by photos taken during the assessment.

Cost Estimating

Cost estimates are derived from local cost estimating expertise and enhanced by industry best practices, historical cost data, and relevance to the Rhode Island region. Costs have been developed from current market rates as of the 2nd quarter in 2016. All costs are based on a replace-in-kind approach, unless the item was not in compliance with national or state regulations or standards.

For planning and budgeting purposes, facility assessments customarily add a soft cost multiplier onto deficiency repair cost estimates. This soft cost multiplier accounts for costs that are typically incurred when contracting for renovation and construction services. Soft costs typically include construction cost factors, such as contractor overhead and profit, as well as labor and material inflation, professional fees, and administrative costs. Based on the Rhode Island School Construction Regulations, a soft cost multiplier of 20% is included on all cost estimates. Other project allowances are included in the cost estimates based on school attributes such as age, location, and historic designation. All stated costs in the assessment report will include soft costs for planning and budgeting purposes. These are estimates, and costs will vary at the time of construction.

Site Level Deficiencies

Site

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Crosswalk Requires Repainting	Traffic	2	Ea.	3	$1,925	16916
Note: Repaint crosswalks at intersection of Harwich Rd and Budlong Rd						
Crosswalk: Needs to be added	Traffic	1	Ea.	3	$962	16919
Note: Add crosswalk on Budlong Rd at the north end of school property						
Parking Or Roadway Curbs Require Replacement	Capital Renewal	360	LF	3	$34,642	16917
Note: Replace curb along Harwich Rd						
Sidewalk Requires Replacement	Traffic	45	SF	3	$1,299	16918
Note: Replace badly cracked section of sidewalk on Harwich Rd (6' long x 7.5' wide)						
Asphalt Paving Requires Replacement	Capital Renewal	91	CAR	4	$380,929	12409
Asphalt Paving Requires Replacement	Capital Renewal	79	CAR	4	$330,697	13482
Backstops Require Replacement	Educational Adequacy	1	Ea.	4	$36,086	28442
Note: Backstops Require Replacement						
Exterior Basketball Goals are Required	Educational Adequacy	1	Ea.	5	$7,398	28714
Note: Exterior Basketball Goals are Required						
PE / Recess Playfield is Missing and is Needed	Educational Adequacy	1	Ea.	5	$64,800	54881
Note: PE / Recess Playfield is Missing and is Needed						
	Sub Total for System	**9**	**items**		**$858,738**	
	Sub Total for School and Site Level	**9**	**items**		**$858,738**	

Building: 01 - Main Building

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Terrazzo Flooring Requires Replacement	Capital Renewal	100	SF	3	$7,819	12411
Note: Substantial cracking in terrazzo in the girl's restroom.						
Adhered Acoustical Ceiling Tile Requires Replacement	Capital Renewal	16,865	SF	4	$192,823	12422
Note: Adhered tiles are aged and stained and should be replaced.						
Light Deterioration or Damage of 9x9 Asbestos Floor Tile is Present	Hazardous Material	16,476	SF	4	$495,454	Rollup
Paint (probable pre-1978 in base layer(s)) - damaged area < 9 sq. ft. OR overall worn AND in children-accessible area (measurement unit - each)	Hazardous Material	17	Ea.	4	$5,112	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	40	LF	4	$962	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	150	SF	4	$1,504	Rollup
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	462	SF	4	$17,819	Rollup
Classroom Door Requires Vision Panel	Educational Adequacy	1	Ea.	5	$2,309	Rollup
	Sub Total for System	**8**	**items**		**$723,802**	

Mechanical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Unit Vent	Capital Renewal	9	Ea.	2	$160,508	12420
Note: Unit vents are aged and showing signs of potential failure.						
Steam Heat Exchanger Requires Replacement	Capital Renewal	1	Ea.	2	$50,119	12419
Note: Heat exchanger is original to the building and should be replaced.						
The Boiler HVAC Component Requires Replacement	Capital Renewal	1	Ea.	2	$179,602	12414
Note: Boiler is aged and obsolete.						
The Fin Tube Water Radiant Heater Requires Replacement	Capital Renewal	16	Ea.	2	$28,259	13483
The Mechanical / HVAC Piping / System Is Beyond Its Useful Life	Capital Renewal	22,457	SF	2	$182,512	12418
Note: Visible piping observed deteriorating.						
Unit Ventilators Are Excessively Noisy	Acoustics	32	Ea.	3	$214,075	27980
Location: Classrooms						
	Sub Total for System	**6**	**items**		**$815,075**	

Electrical

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Push Button Switch Requires Replacement	Capital Renewal	2	Ea.	2	$444	12421
Note: Push button controllers are aged and should be replaced.						
The Panelboard Requires Replacement	Capital Renewal	1	Ea.	2	$10,124	12415
Note: Obsolete panelboard should be replaced.						
The Panelboard Requires Replacement	Capital Renewal	3	Ea.	2	$18,343	12416
Note: Obsolete panelboards should be replaced.						
Room Has Insufficient Electrical Outlets	Educational Adequacy	60	Ea.	5	$30,139	Rollup
	Sub Total for System	**4**	**items**		**$59,050**	

Plumbing

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
The Urinal Plumbing Fixtures Require Replacement	Capital Renewal	2	Ea.	3	$2,803	12412
The Refrigerated Water Cooler Requires Replacement	Capital Renewal	1	Ea.	4	$7,778	12413
Note: Drinking fountain in the north wing is not functional.						
Room lacks a drinking fountain.	Educational Adequacy	5	Ea.	5	$5,581	Rollup
The Class Room Lavatories Plumbing Fixtures Are Missing And Should Be Installed	Educational Adequacy	4	Ea.	5	$4,121	Rollup
	Sub Total for System	**4**	**items**		**$20,284**	

Fire and Life Safety

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Replace Kitchen Exhaust Hood	Capital Renewal	1	Ea.	1	$16,832	12417
	Sub Total for System	**1**	**items**		**$16,832**	

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room lacks Interactive White Board	Educational Adequacy	6	Ea.	3	$34,642	Rollup
Technology: Campus network switching electronics are antiquated and/or do not meet standards.	Technology	72	Ea.	3	$36,086	23400
Technology: Classroom AV/Multimedia systems are in need of improvements.	Technology	69	Ea.	3	$691,639	23405
Technology: Instructional spaces do not have local sound reinforcement.	Technology	69	Ea.	3	$345,819	23410
Technology: Intermediate Telecommunications Room grounding system is inadequate or non-existent.	Technology	1	Ea.	3	$5,613	23398
Technology: Intermediate Telecommunications Room is not dedicated. Room requires partial walls and/or major improvements.	Technology	1	Ea.	3	$39,694	23397
Technology: Intermediate Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$5,012	23399
Technology: Main Telecommunications Room ground system is inadequate or non-existent.	Technology	1	Ea.	3	$7,017	23396
Technology: Main Telecommunications Room is not dedicated and/or inadequate.	Technology	1	Ea.	3	$52,925	23394
Technology: Main Telecommunications Room UPS does not meet standards, is inadequate, or non-existent.	Technology	1	Ea.	3	$9,523	23395
Technology: Network cabling infrastructure is outdated (Cat 5 or less) and/or does not meet standards.	Technology	95	Ea.	3	$42,852	23403
Technology: Network cabling infrastructure is partially outdated and/or needs expansion.	Technology	51	Ea.	3	$23,005	23401
Technology: Network system inadequate and/or near end of useful life	Technology	6	Ea.	3	$48,114	23408
Technology: Network system inadequate and/or near end of useful life	Technology	14	Ea.	3	$70,166	23409
Technology: Number of current, up to date, network switch ports are insufficient to support campus technology.	Technology	72	Ea.	3	$36,086	23402
Technology: PA/Bell/Clock system is inadequate and/or near end of useful life.	Technology	22,487	SF	3	$40,573	23407

Technology

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Technology: Special Space AV/Multimedia system is inadequate.	Technology	1	Ea.	3	$57,135	23404
Technology: Special Space AV/Multimedia systems are in need of minor improvements.	Technology	1	Room	3	$20,048	23406
Technology: Telephone handsets are inadequate and sparsely deployed throughout the campus.	Technology	69	Ea.	3	$110,662	23411
Technology: Telephone system is inadequate and/or non-existent.	Technology	1	Ea.	3	$7,618	23412
	Sub Total for System	**20**	**items**		**$1,684,227**	

Specialties

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room has insufficient writing area.	Educational Adequacy	2	Ea.	3	$9,238	Rollup
	Sub Total for System	**1**	**items**		**$9,238**	
	Sub Total for Building 01 - Main Building	**44**	**items**		**$3,328,508**	

Building: 02 - Portable A

Interior

Deficiency	Category	Qty	UoM	Priority	Repair Cost	ID
Room Lighting Is Inadequate Or In Poor Condition.	Educational Adequacy	840	SF	4	$32,179	Rollup
	Sub Total for System	**1**	**items**		**$32,179**	
	Sub Total for Building 02 - Portable A	**1**	**items**		**$32,179**	
	Total for Campus	**54**	**items**		**$4,219,424**	

Buildings with no reported deficiencies

03 - Portable B

04 - Portable C

Woodridge School - Life Cycle Summary Yrs 1-5

Site Level Life Cycle Items

Site

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Fences and Gates	Fencing - Chain Link (4 Ft)	1,200	LF	$78,522	4
Pedestrian Pavement	Sidewalks - Concrete	7,285	SF	$150,717	5
	Sub Total for System	**2**	**items**	**$229,239**	
	Sub Total for Building -	**2**	**items**	**$229,239**	

Building: 01 - Main Building

Roofing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Low-Slope Roofing	EPDM - Rubber Roofing Material	22,487	SF	$287,796	5
Note:	Some staining, but no leaks. Warranty expires in 2017.				
	Sub Total for System	**1**	**items**	**$287,796**	

Exterior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Exterior Entrance Doors	Steel - Insulated and Painted	12	Door	$77,945	5
	Sub Total for System	**1**	**items**	**$77,945**	

Interior

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Wall Painting and Coating	Painting/Staining (Bldg SF)	13,492	SF	$90,232	5
Resilient Flooring	Vinyl Composition Tile Flooring	20,139	SF	$233,844	5
	Sub Total for System	**2**	**items**	**$324,077**	

Mechanical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Decentralized Cooling	Window Units	6	Ea.	$20,277	4
Decentralized Heating Equipment	Unit Heater Steam/HW (36 MBH)	2	Ea.	$3,333	4
Facility Hydronic Distribution	Pump - 1HP or Less (Ea.)	3	Ea.	$23,164	4
Heat Generation	Steam Condensate Reciever, Tank and Pump	1	Ea.	$356,044	4
Decentralized Heating Equipment	Finned Wall Radiator - (Ea.)	52	Ea.	$88,168	5
Heating System Supplementary Components	Controls - Pneumatic (Bldg.SF)	22,487	SF	$153,744	5
Exhaust Air	Ventilator/Relief Vent (4'x8')	13	Ea.	$174,434	5
	Sub Total for System	**7**	**items**	**$819,164**	

Electrical

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Lighting Fixtures	Light Fixtures (Bldg SF)	22,487	SF	$135,242	5
	Sub Total for System	**1**	**items**	**$135,242**	

Plumbing

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Domestic Water Equipment	Water Heater - Electric - 80 gallon	1	Ea.	$5,724	5
	Sub Total for System	**1**	**items**	**$5,724**	

Specialties

Uniformat Description	LC Type Description	Qty	UoM	Repair Cost	Remaining Life
Casework	Fixed Cabinetry	12	Room	$135,889	5
	Sub Total for System	**1**	**items**	**$135,889**	
	Sub Total for Building 01 - Main Building	**14**	**items**	**$1,785,837**	
	Total for: Woodridge School	**16**	**items**	**$2,015,075**	

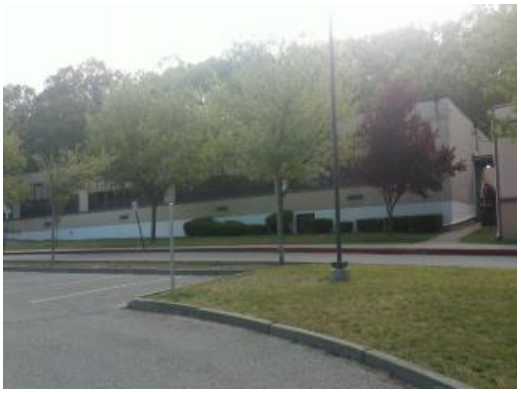
Supporting Photos

Weathered Parking

Aged Panelboard

Site Aerial

Cracked Play Area


Northeast Elevation


Cracked Asphalt Play Area


Exterior Finishes


Typical Cabinetry

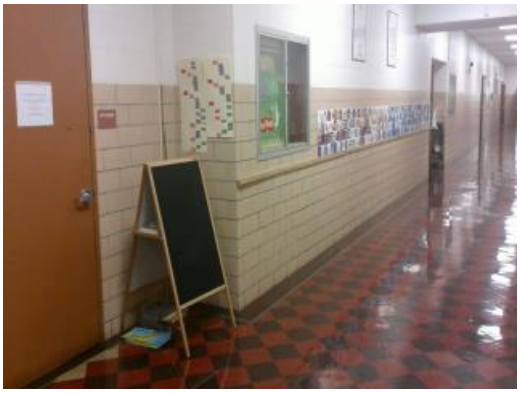

Library


East Elevation


Plaque


Typical Classroom


Exterior Finishes


Hallway Finishes


Aged Unit Vent


Gym/Cafe

Cracked Terrazzo

Stained Adhered Tiles

Non-Functional Drinking Fountain

Aged Boiler