Facility Condition Assessment Summary Report

This report provides a summary of the Facility Condition Index (FCI) value of a school facility and select major building systems. The FCI calculation represents the cost of needed repairs divided by the replacement value. The FCI is a numerical value of condition and helps to identify the need for renewal or replacement of specific parts of the facility. The FCI is particularly useful when comparing similar facilities within the same portfolio.

Pennypacker School

Governance	DISTRICT	Report Type	Elementary
Address	1858 E. Washington Ln.	Enrollment	403
	Philadelphia, Pa 19138	Grade Range	'00-06'
Phone/Fax	215-276-5271 / 215-276-5843	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Pennypacker	Turnaround Model	N/A

Building/System FCI Tiers

Facility Condition Index (FCI) = Cost of Assessed Deficiencies / Replacement Value

< 15%	15 to 25%	25 to 45%	45 to 60%	> 60%
Buildings				
Minimal Current Capital Funding Required	Refurbish Systems in building	Replace Systems in building.	Building should be considered for major renovation.	Building should be considered for closing/replacement.
Systems				
Perform routine maintenance on system	System requires minor repairs	System should be studied to determine repair vs. replacement.	System is nearing end of its life expectancy and should be considered for replacement	System should be replaced as part of the Capital Program

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**55.29%**	**$18,400,573**	**$33,278,802**
Building	54.25 %	$17,107,141	$31,534,408
Grounds	74.15 %	$1,293,432	$1,744,394

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	53.03 %	$406,584	$766,716
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$2,310,566
Windows (Shows functionality of exterior windows)	121.95 %	$1,374,852	$1,127,426
Exterior Doors (Shows condition of exterior doors)	200.67 %	$182,146	$90,770
Interior Doors (Classroom doors)	325.67 %	$715,588	$219,726
Interior Walls (Paint and Finishes)	00.00 %	$0	$991,584
Plumbing Fixtures	00.00 %	$0	$846,352
Boilers	00.00 %	$0	$1,168,742
Chillers/Cooling Towers	65.60 %	$1,005,332	$1,532,448
Radiators/Unit Ventilators/HVAC	168.93 %	$4,546,135	$2,691,174
Heating/Cooling Controls	158.90 %	$1,342,903	$845,100
Electrical Service and Distribution	151.88 %	$922,227	$607,220
Lighting	35.08 %	$761,564	$2,170,968
Communications and Security (Cameras, Pa System and Fire Alarm)	48.00 %	$390,350	$813,174

Please note that some FCIs may be over 100% because there are times when replacing a building system requires that other building systems be upgraded to complete the installation. A FCI of 0.0% represents that there are no current deficiencies with the associated system.

School District of Philadelphia

S635001;Pennypacker

Final

Site Assessment Report

January 31, 2017

PARSONS

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Site Executive Summary

The organization of this report, as displayed in the Table of Contents, follows the structure of the associated eCOMET database. The overall node for each school campus begins with the letter "S", which indicates the "Site" label. Each Site is comprised of separate "Building" and "Grounds" nodes; their asset names begin with the letters "B" and "G" respectively. Information rolls up to the Site node from the Building and Grounds nodes. This Site report combines facility information with subsections for the Buildings And Grounds nodes.

The basis for the evaluation of condition is the functional systems and elements of a building and grounds organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are typically developed for similar building types and functions. Evaluation of systems and their elements takes into account their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) is an industry-standard measurement calculated as the ratio of the repair costs to correct a facility's deficiencies to the facility's Current Replacement Value. Condition Index (CI) for a system is calculated as the sum of a the deficiencies divided by the sum of a system's Replacement Value (both values include soft-cost) expressed as a percentage ranging from 0% 100%.

Gross Area (SF):	62,600
Year Built:	1930
Last Renovation:	
Replacement Value:	$33,278,802
Repair Cost:	$18,400,573.23
Total FCI:	55.29 %
Total RSLI:	56.29 %

Description:

Facility Assessment
November 2015

School District of Philadelphia
Samuel W. Pennypacker Public School
1858 E Washington Ln.
Philadelphia, PA 19138

62,600 SF / 636 Students / LN 06

GENERAL

The Pennypacker School is one of the older schools in service to the Philadelphia communities and is currently being used as an elementary school. The school is identified as B635001 and was originally designated as the Samuel W. Pennypacker Public School. This facility is located at 1858 E Washington Ln., Philadelphia, PA. The late Gothic Revival design of the U-shaped, concrete and steel-framed building includes brick facades with a concrete foundation. Construction started in 1929 and was completed in 1930 with no additions.

The main entrance faces the Northern exterior facing the drop off area on Thouron Avenue. There is no dedicated general parking however a section of the playground is used for parking. This School serves students in grades K to 5 and has a basement with three stories consisting of a total gross square footage of 62,600 GSF.

This school has several classrooms, a library, kitchen and student commons, Gym, Auditorium and cafeteria, with supporting administrative spaces.

The information for this report was collected during a site visit on November 3, 2015.

Mr. Frederic Miller, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history.

Architectural / Structural Systems

The structure reportedly rests on a modified slab-on-grade foundation with interior columns resting on spread footings. The main structure is steel beams and columns with precast concrete. The basement walls are a combination of masonry and concrete and appear to be in good condition. Floor structure appears to be reinforced, cast-in-place concrete also in good condition.

Exterior wall finish is mainly a brick façade. The brick exterior was reported to have had recent point and tuck work completed. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

The exterior windows have been upgraded from the original applications. The window system is estimated to have been installed in the 1980's. Several of the windows are no longer functional and will require attention prior to an overall effort. Overall, the windows are in fair condition based on the year of installation or last renovation. The entire exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in poor condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

Special consideration for those that may be physically challenged was not a main factor in the design of this school. The path of travel is not very clear from the entrance of the school. The interior path of travel is not supported.

This school has two roof applications, an asphalt shingle application over the auditorium and a built up roof over the main section of the school. The asphalt shingle roof application was reported to have been recently installed and there were no issues that surfaced therefore no recommendations are required at this time.

The built up application was reported to have been installed in the early 1980'S. Although the roof has been re-coated several times to extend the life any additional repairs or coatings are not expected to improve the condition. This roof has several areas of open cracks in the membrane and more than 50% of the roof is bubbling. Considering the age and condition of the roofing systems, universal upgrades are recommended.

Interior partitions include Marble, glazed block, plaster, moveable partitions, and glazed openings.

There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

Interior doors are typically wood in wood frames with transom lites, sidelights, wired glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, metal in hollow metal frames at stairwells and exit ways. Doors are generally in fair condition considering the age of the application. Universal upgrades are required for the interior door systems it is recommended that the interior doors system be removed and replaced with a new modern metal framed wood door system with consideration for ADA compliance.

Fittings include: chalkboards; marker boards; tack boards; interior signage; toilet accessories and wood, metal and marble toilet partitions. Fixed storage shelving is located throughout the school in each classroom and in general storage areas.

There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for

this application. Remove and replace tack boards is recommended.

The classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade chalk boards to new marker board systems.

There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

Stair construction is concrete with concrete stair treads and landings.

Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

Interior wall finishes are typically painted plaster. Other wall finishes include: ceramic tile at restrooms and marble wall covering in the hallways and lobby. Wall finishes are generally in good condition considering the age of the facility. There were no issues with the interior wall finishes that surfaced during the time of the inspection. Therefore no recommendations are required at this time.

Interior floor finishes are typically wood in classrooms and concrete in the corridors. Other floor finishes include: ceramic tile and vinyl tile in the gym and parent classroom.

Interior ceilings are typically 2 x 4 acoustical tile in metal grid. Other ceiling finishes include: exposed and painted structure.

The Acoustical ceilings have been repaired in several areas and is in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school. No work should be considered until after the recommended exterior efforts are complete.

There is no elevator that services this school. Goods, services, and amenities offered in public buildings are generally required to be available to all persons. To assist those that may be physically challenged and to meet current accessibility legislation to provide wheelchair access to the upper floors of this facility, the installation of a new hydraulic elevator has been recommended on the exterior elevation of the building or at another suitable location. The new installation should blend as much as possible with the overall appearance of this historic structure and include all required ADA features, such as audible jewels and gongs, an accessible control panel, etc.

Institutional equipment includes: library equipment; stage equipment; instrumental equipment and gym equipment. The school stage has a stage curtain assembly that appears to be from the original construction. Modern applications are typically fire-proof applications with adjustable tracks and electric support for operation. The curtains are torn in a few section and the track is not functioning properly, overall the system is in poor condition. It is recommended that the curtain and track system be upgraded to a new system. Special care should be considered in regards to modern fire proofing for the new installation.

Furnishings include: fixed casework; window shades/blinds; and fixed auditorium seating.

The fixed seating for this school is from the original construction. The systems are in fair condition considering the age and usage. This project provides a budgetary consideration for universal upgrades for the fixed seating and furnishing of this school. Ensure that ADA requirements are followed with the new seating layout.

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets.

Lavatories have dual wheel handle faucets and urinals and water closets have recessed manual flush valves with pushbutton operators. Custodial areas have cast iron service sinks. There are single level stainless steel water coolers with integral refrigeration in corridors and some counter top stainless steel sinks in break areas. Domestic water is heated by a one hundred gallon Bradford White Laars gas water heater in the basement mechanical room with a small inline circulating pump, installed in 2013. The heater has direct vent and combustion with PVC piping. There is a B&G duplex domestic water booster pump system installed in 2013.

Water piping has been replaced since the original installation with copper. Sanitary, waste, vent and rainwater piping is original installation hub and spigot cast iron. Water service is a four inch line and meter from Lindley Ave. into the mechanical room. The line includes a dual parallel backflow preventer assembly and a water softener. Gas service is from E. Washington Ln. and is outside the building in a fenced enclosure.

The water heater should be serviceable for twenty two years. The cast iron piping has exceeded the anticipated service life. Rainwater and vent piping should continue functioning, but the sanitary and waste piping should be inspected to determine condition and replace damaged portions. Plumbing fixtures and most of the domestic water supply piping were replaced in 2013 and should be serviceable thirty three more years for fixtures and twenty three years for distribution.

HVAC-Heating is generated by two Weil Mclain one hundred fifteen hp sectional cast iron low pressure steam gas/ oil fired boilers in the basement mechanical room. The boilers have Webster burners with separate oil pumps. There is a B&G triplex boiler feed pump and a duplex sump condensate receiver. Both units are operable and there is a chemical feed system. There is a combustion air louver and damper partially ducted to floor level and a factory fabricated stainless steel boiler vent into a brick chimney. Oil is stored in an underground oil storage tank, capacity and condition unknown. A duplex fuel oil pump system in an adjacent room provides circulation.

Classrooms and other areas requiring heat are served by exposed steam radiators with manual control valves and new traps. There is a house fan system in the basement that provides heat and ventilation through a central duct system and vertical shafts to the auditorium and most of the building. This system has been decontaminated and is functional.

There is no central air conditioning or separate system for any area, except there are a few window air conditioners and a ductless split system for the IT room. The condensing unit is mounted on the exterior wall. There is no cooking or exhaust hood in the small warming kitchen. Three classrooms have been converted to small cafeteria spaces. Originally the cafeteria was combined with the gymnasium. Mechanical toilet exhaust is provided by two centrifugal roof ventilators and exposed duct systems. There are older pneumatic controls that are inoperable and a new Heat Tracker Multi Mod boiler control system.

The steam distribution piping and radiators are from original construction and should be replaced based on age and condition. The boilers, condensate receiver, boiler feed pump, boiler vent and mechanical room piping were installed in 2013. The boilers should be serviceable thirty three more years. Piping and other components in the mechanical room should have remaining service life of twenty three more years.

FIRE PROTECTION - There are no sprinklers in this building. The fire stair has a standpipe with fire hose connections.

ELECTRICAL SYSTEMS

Electrical Service-- The building is served by PECO Energy Company with underground 120/240V, 2 phase, 5 wire service routed to a knife blade fusible switchboard located in Mechanical Room 012A. The switchboard was not accessible and there was no manufacture’s nameplate rating or identification of the service Ampacity, but was estimated to be 400A. A 200A knife blade fusible panelboard is located adjacent to the switchboard. Both the switchboard and panelboard are obsolete equipment and beyond their service life. Replacement is recommended within the next 2 to 3 years. The 400A, 120/240V, 2 phase, 5 wire service should be replaced with a 208/120V, 3 phase, 4 wire service, with a 750 kVA package unit substation, consisting of a load interrupter switch, transformer and 2500A Main Switchboard to serve existing loads, added central air conditioning equipment, an elevator addition, and a fire pump (if required).

The switchboard feeds 208/120V, 3 phase Panelboard BR1 via a 75 kVA phase change transformer, both of which were installed in 2012 and are in very good condition. The switchboard also feeds 15 panelboards throughout the building. All but a few have served their useful life. Replacement of panelboards and feeders is included in this report.

Receptacles—Most of the classrooms are provided with very few duplex receptacles. Many of the duplex receptacles are 2-wire non-grounding type. An additional 6 to 8 duplex receptacles should be provided in 33 classrooms using surface metal raceway. Due to the age of the wiring devices, all duplex receptacles should be replaced with new devices and branch circuit wiring. An estimated 140 duplex receptacles are included for replacement. Replace all receptacles located within 6 feet of a sink with ground-fault circuit-

interrupting (GFCI) type devices.

Lighting-- Several areas of the building have fluorescent lighting fixtures that have been upgraded with T8 lamps, including the Basement, corridors, offices and faculty rooms. Except for a few fixtures in corridors that need maintenance or lens replacement, fixtures are in good condition with an estimated remaining life of more than 10 years. The lighting fixtures in classrooms and IMC are typically 2x4 recessed fluorescent grid troffers with obsolete T12 lamps and need to be replaced. Classroom lighting fixtures are controlled by two light switches.

The gymnasium/cafeteria has (34) surface mounted fluorescent wraparound fixtures that are nearing end of their useful life and should be replaced within the next 4 to 5 years.

The auditorium is illuminated with (10) suspended incandescent chandeliers. The glass globes are missing on three (3) of the fixtures. Replacement of all fixture globes and re-lamping with LED lamps is included in this report. There is one row of theatrical batten lighting and no worklights above the platform. There is no dimming system for the auditorium or platform. Lighting is controlled by panelboard branch circuit breakers. Except for the four exterior doors from the auditorium, exterior wall mounted lighting fixtures are located above the exit discharges. Wall mounted floodlighting fixtures provide illumination or the site, play and parking areas.

Fire Alarm System-- The fire alarm system is an obsolete 120V wired system that includes only manual pull stations and bell notification appliances. The fire alarm control panel (FACP) is by S.H. Couch Company, and is located in the Basement. Pull station mounting heights exceed ADA requirements. There are no visual notification appliances in the building. The entire fire alarm system needs to be replaced with an addressable type to meet current NFPA codes and ADA requirements. A General Electric EST fire alarm control panel was added for the boilers when they were replaced.

Telephone/LAN--The telephone service demarcation point is located in Basement Room 8. The Main Distribution Frame (MDF) and telephone distribution system is located in Room 215. A telephone and hard wired data outlet is provided in each classroom. Wireless access points are located to provide Wi-Fi service throughout the entire school.

Intercom/Paging/Sound Systems-- The paging system is accessed through the telephone system. Paging amplifiers are located in MDF Room 212 to provide paging interface with the telephone system. Each classroom has a ceiling or wall mounted speaker. Wall mounted speakers are located in the corridors, auditorium and gymnasium/cafeteria. This system is estimated to have a remaining useful life of 8 to10 years.

There is a General Sound, Inc. sound cabinet on the platform in the auditorium. The Visitor Entrance has an Aiphone intercom station with communication to the Main Office.

Clock and Program System--The Standard Electric Time Master Time Programmer 1400 panel is located in the Main Office. The program system was reported to be in good working condition. There are clock/speaker assemblies and separate wall speakers in classrooms. Ceiling or wall mounted speakers are provided throughout the building for paging and program. Clocks are operational, but near end of their useful life. It is recommended that all clocks be replaced with battery operated synchronized clocks controlled by a wireless GPS master clock system in the next 4 to 5 years.

Television System-- There is no television system in this school.

Video Surveillance and Security Systems-- The video surveillance equipment is located in Room 215. There are not many cameras in this system. Cameras are located mainly in stairwells and in the gymnasium/cafeteria. The cameras were reported to be fairly old and need to be replaced. A budgetary allowance for replacement of 10 interior cameras, one (1) 16 channel digital video recorder (DVR) and one (1) monitor is included in this report.

Some exterior and stairwell doors are provided with magnetic door contacts. A security keypad is located at one of the doors to arm/disarm the system.

Emergency Power System-- There is no standby generator in this building. A budget is included in this report to add a standby generator to supply emergency egress and exit lighting fixtures, the addition of a hydraulic elevator and, if required, fire pump.

Emergency Lighting System / Exit Lighting—**Except for a few wall mounted, battery operated emergency lighting units (ELUs) that are located in Basement mechanical rooms and Building Engineer's Office, there is no emergency egress lighting system in this building, and does not comply with NFPA 101, Life Safety Code. Correction of this deficiency is categorized as severe, and needs to be addressed immediately.**

Exit signs are not supplied by an independent power supply and do not comply with code. Furthermore, exit signs are incandescent type and generally in poor condition. Recommend replacement with LED exit signs that are either provided with integral battery backup or connected to the standby generator.

Lightning Protection System-- Except for lightning protection on the portions of the building that extend above the roof, there is no lightning protection system for the entire building. It was observed that a section of the roof conductor was missing, thereby compromising the integrity of the protection system. Replacement of roof conductor and testing the system is recommended.

Conveying Systems-- The building does not have an elevator. Refer to Architectural / Structural Systems narrative for elevator recommendations.

GROUNDS

The school grounds have an added extra value to the students with a dedicated outdoor classroom fenced in on the northeastern exterior of the school. There were no issues with this area and no recommendations required at this time.

The parking play area has no assigned parking and limited markers for approved activity areas. No curb cuts for access to the sidewalks that lead to the ADA main entrance. The parking play lot is in fair condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a play, parking lot renewal program that includes all aspects of the current ADA legislation. Asphalt removal and replacement is recommended.

The trash dumpster is located in the parking lot open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area is necessary for the safety of the students and the general public. Construction of a secure lockable dumpster area is recommended.

The sidewalk system that surrounds this school was reported to be property of the city and not considered to be a part of this evaluation.

The school site is a multi-level site that extends from the residential drive on the southwest section of the site from East Washington Lane to East Mohican Street. The retaining wall that separates the residential site from the school that align the elevation changes are in very poor condition. There are several areas of damage including cracked concrete supports, concrete walls that are leaning indicating potential failure. This deficiency provides a consideration for the overall site work repairs to the existing concrete and brick walls as well as the concrete retaining walls.

This school has a perimeter fence surrounding the parking / playground area. The fence consist of either a chain link or metal picket fence and has several areas in need of repairs. This deficiency address the chain link fence. Overall the fence is in fair condition considering the age of the application however, the retaining wall that the fence is mounted to is failing. This fence system is recommended to be removed and replaced with a new system. This work is expected to be coordinated with the recommended retaining wall recommendation included in this report.

This school has a perimeter fence surrounding the parking / playground area. The fence consist of either a chain link or metal picket fence and has several areas in need of repairs. This deficiency address the picket fence. Several sections of the fence are in need of repairs and trees have grown into the fence in some locations. Overall the fence is in fair condition considering the age of the application. This fence system is recommended to be selectively removed and replaced with a new system. This effort is expected to be coordinated with other site projects included in this report.

Landscaping includes open lawn areas, with shrubbery and trees. Several of the trees are dead and limbs are hanging from the trees. The trees are recommended to be removed and replaced with a marginal number of trees. New landscaping techniques should incorporate deciduous trees to the south and evergreens to the north. This effort is expected to be coordinated with the landscaping recommendations included in this report.

The site slopes gently to the northeast. There are pedestrian walkways around the school with the exception of the driveway south west of the school. There is turf, mature trees, and tired shrubs around the building and few trees and some patchy turf on the south side. The center courtyard is paved and used for parking and play area. This entire site is recommended or new landscaping care and irrigation upgrades to support needed reconstruction. This effort is expected to be coordinated with the landscaping recommendations included in this report.

The exterior stair system for this school provides access to all but the southern entrances. The elevation changes are extreme for the

northern most stairs and the original hand and guard rails are damaged. New steel handrails and guard rails are required at all exterior stairs. This deficiency is expected to be coordinated with other site issues identified in this report.

Site Lighting-- Site lighting is provided by wall mounted floodlighting fixtures around the perimeter of the building that are aimed to illuminate the site and paved play areas. Fixtures appear to be in fair to good condition with no recommendations at this time. There are no site lighting poles on the site.

Site video surveillance system-- Only one (1) exterior camera was observed on building on the south side of the auditorium. This report includes an allowance to provide (2) additional exterior cameras for increased surveillance coverage of the site.

RECOMMENDATIONS

- Upgrade auditorium seating
- Upgrade curtain for stage
- Remove and replace acoustical tile ceiling finish
- Elevator addition
- Remove and replace wood floors
- Hand and guard rail upgrade for stairs
- Signage upgrade
- Remove and replace chalk boards
- Remove and replace talk boards.
- Upgrade interior door system
- Install fire rated doors.
- Install fire rated walls
- Remove folding wood partitions; replace with metal studs and gypsum board painted
- Upgrade built up roof
- Remove and replace exterior windows
- Remove and replace exterior doors.
- Resurface asphalt
- Build secure trash dumpster
- Retaining wall repair
- Upgrade chain link fence
- Upgrade picket fence
- Tree removal and replacement
- Landscaping and irrigation upgrade
- Exterior stair handrail upgrades
- Provide a four pipe fan coil system with roof mounted outside air system ducted to each fan coil unit. Provide a fan coil unit for each classroom and separate area. Include new heat exchanger, pumps for hot water, piping, control valves and controls, to replace steam heating system.
- Provide a one hundred eighty ton air cooled package chiller on the roof with pumps, piping and controls. Connect to new fan coil units and air handling units.
- Install NFPA wet pipe automatic sprinkler system in entire building, including fire service, piping sprinkler heads, standpipes and fire pump if required.
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Provide a new central station air handling unit for the auditorium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.
- Install new direct digital control system and building automation system with remote computer control capability and graphics package.
- Provide a new central station air handling unit for the gymnasium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.
- Remove the 400A, 120/240V, 2 phase, 5 wire service main switchboard and provide a 750 kVA package unit substation with 2500A, 208/120V, 3 phase, 4 wire main switchboard with main circuit breaker and feeder circuit breakers to serve the existing building loads and added central air conditioning equipment, an elevator addition, and a fire pump (if required). Replace obsolete 200A knife blade panelboard adjacent to switchboard and 75 kVA phase change transformer. Re-feed Panelboard BR1 from the 2500A switchboard.
- Replace a total of (13) 120/240V, 1 phase panelboards in the building, including their feeders.
- Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 34 classrooms. Replace all existing duplex receptacles throughout the building with new devices due to their age and condition (estimate 140 duplex receptacles to be replaced).
- Replace fluorescent lighting systems and branch circuit wiring in classrooms, IMC and Gymnasium/Cafeteria (classrooms and

IMC 29,740 SF; Gymnasium/Cafeteria 3,520 SF, 34 fixtures).

- Replace glass bowls on 10 suspended chandeliers in the auditorium and replace incandescent lamps with LED lamps.
- Provide exterior LED lighting fixtures at the exit discharges above the four exterior doors from the auditorium do not have lighting fixtures at the exit discharges.
- Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.
- Remove all clocks and provide wireless GPS clock system with battery operated synchronized clocks.
- A budgetary allowance for replacement of ten (10) interior cameras, one (1) 16 channel digital video recorder (DVR) and one (1) monitor is included in this report.
- Provide standby generator system. Size generator system to power all emergency egress and exit lighting, elevator addition and, if required, fire pump (estimated size is 150 kW).
- Replace all existing exit signs with LED type.
- Replace missing roof conductor for the lightning protection system protecting the building structures that extend above the roof. Verify system continuity after repair to insure the integrity of the system is maintained.
- Replace one (1) exterior video surveillance camera and provide allowance for adding (2) exterior cameras for increased surveillance coverage of the site.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 4 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S635001		

Site Condition Summary

The Table below shows the CI and FCI for each major system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	15.00 %	0.00 %	$0.00
A20 - Basement Construction	15.00 %	0.00 %	$0.00
B10 - Superstructure	15.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	20.64 %	44.12 %	$1,556,998.48
B30 - Roofing	74.72 %	53.03 %	$406,584.13
C10 - Interior Construction	19.05 %	65.64 %	$1,008,382.74
C20 - Stairs	15.00 %	229.57 %	$202,635.36
C30 - Interior Finishes	60.19 %	50.77 %	$1,920,204.35
D10 - Conveying	91.43 %	288.85 %	$1,012,601.25
D20 - Plumbing	89.12 %	24.02 %	$307,099.99
D30 - HVAC	94.39 %	99.01 %	$6,894,370.56
D40 - Fire Protection	92.47 %	177.49 %	$895,519.51
D50 - Electrical	107.15 %	64.40 %	$2,437,960.37
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	348.58 %	$464,784.31
G20 - Site Improvements	39.97 %	95.60 %	$1,262,558.64
G40 - Site Electrical Utilities	50.00 %	7.29 %	$30,873.54
Totals:	**56.29 %**	**55.29 %**	**$18,400,573.23**

Condition Deficiency Priority

Facility Name	Gross Area (S.F.)	FCI %	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)
B635001;Pennypacker	62,600	54.25	$726,852.12	$1,224,751.10	$2,942,948.48	$8,836,100.47	$3,376,488.88
G635001;Grounds	97,400	74.15	$735,531.70	$0.00	$366,765.35	$49,726.06	$141,409.06
Total:		**55.29**	**$1,462,383.82**	**$1,224,751.10**	**$3,309,713.83**	**$8,885,826.53**	**$3,517,897.94**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $1,462,383.82
- 2 - Response Time (2-3 yrs) - $1,224,751.10
- 3 - Response Time (3-4 yrs) - $3,309,713.83
- 4 - Response Time (4-5 yrs) - $8,885,826.53
- 5 - Response Time (> 5 yrs) - $3,517,897.94

Budget Estimate Total: $18,400,573.23

Executive Summary

Building condition is evaluated based on the functional systems and elements of a building and organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are developed for similar building types and functions. Systems and their elements are evaluated based on their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) FCI is an industry-standard measurement of facility condition calculated as the ratio of the costs to correct a facility's deficiencies to the facility's Current Replacement Value. It ranges from 0% (new) to 100% (very poor). Condition Index (CI) is calculated as the sum of a renewable system's Remaining Service Life (RSL) divided by the sum of a system's Replacement Value (both values exclude soft-cost to simplify calculation updates) expressed as a percentage ranging from 100% (new) to 0% (expired).

Function:	Elementary School
Gross Area (SF):	62,600
Year Built:	1930
Last Renovation:	
Replacement Value:	$31,534,408
Repair Cost:	$17,107,141.05
Total FCI:	54.25 %
Total RSLI:	57.06 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B635001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S635001		

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	15.00 %	0.00 %	$0.00
A20 - Basement Construction	15.00 %	0.00 %	$0.00
B10 - Superstructure	15.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	20.64 %	44.12 %	$1,556,998.48
B30 - Roofing	74.72 %	53.03 %	$406,584.13
C10 - Interior Construction	19.05 %	65.64 %	$1,008,382.74
C20 - Stairs	15.00 %	229.57 %	$202,635.36
C30 - Interior Finishes	60.19 %	50.77 %	$1,920,204.35
D10 - Conveying	91.43 %	288.85 %	$1,012,601.25
D20 - Plumbing	89.12 %	24.02 %	$307,099.99
D30 - HVAC	94.39 %	99.01 %	$6,894,370.56
D40 - Fire Protection	92.47 %	177.49 %	$895,519.51
D50 - Electrical	107.15 %	64.40 %	$2,437,960.37
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	348.58 %	$464,784.31
Totals:	**57.06 %**	**54.25 %**	**$17,107,141.05**

Condition Detail

This section of the report contains results of the Facility Condition Assessment. The building is separated into system components based on UNIFORMAT II classification. The columns in the System Listing table below represent the following:

1. System Code: A code that identifies the system.
2. System Description: A brief description of a system present in the building.
3. Unit Price $: The unit price of the system.
4. UoM: The unit of measure for of the system.
5. Qty: The quantity for the system
6. Life: anticipated service life for thesystem based on Building Owners and Managers Association (BOMA) recommendations.
7. Year Installed: The date of system installation.
8. Calc Next Renewal Year: The date of system expiration based on the life, NR stands for non renewable.
9. Next Renewal Year: The suggested system expiration date by the assessor based on visual inspection.
10. CI: The Condition Index of the system.
11. FCI: The Facility Condition Index of the system.
12. RSL: Remaining Service Life.
13. eCR: eCOMET Condition Rating (not used).
14. Deficiency $: The financial investment to repair/replace system.

System Listing

The System Listing table below lists each of the systems organized by their UNIFORMAT II classification. The assessment team was tasked with recording the most recent replacement year of each system, determining the remaining service life based on the theoretical life, and evaluating the condition to confirm the forecast next replacement year. The system listing is the basis for all data contained in the Building Assessment Report.

Additionally, a condition rating (eCR) based on the following guidelines is provided as observed at the time of the assessment.

- Excellent (E) - No noticeable distress or damage. The entire system is free from observable defect.
- Very Good (VG) - Overall no serviceability reduction for the entire system. No degradation of critical components and minor distress and defect noticeable for some but not non critical components within the system.
- Good (G) - Slight or no serviceability reduction for the entire system. There may be noticeable defects for some non critical components and slight noticeable degradation of the critical components.
- Fair (F) - Overall serviceability is degraded but adequate. There may be moderate deterioration for very few of the critical components and few of the non critical components may have severe degradation.
- Marginal (MA) - Overall serviceability and reliability loss. Most if not all of the non critical components suffer from severe degradation and a few of the critical component may have severe degradation.
- Moderate (MO) - Overall a significant serviceability loss. Most if not all the components have severe degradation with the reminder of the component showing visible distress.
- Very Poor (VP) - Overall the system is barely functional. All of the components are severely degraded.
- Non-Functional (NF) - Overall the system does not function with all the components having no serviceability and suffer from severe degradation.

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$1,151,840
A1030	Slab on Grade	$7.73	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$483,898
A2010	Basement Excavation	$6.55	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$410,030
A2020	Basement Walls	$12.70	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$795,020
B1010	Floor Construction	$75.10	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$4,701,260
B1020	Roof Construction	$13.88	S.F.	20,000	100	1930	2030		15.00 %	0.00 %	15			$277,600
B2010	Exterior Walls	$36.91	S.F.	62,600	100	1930	2030		15.00 %	0.00 %	15			$2,310,566
B2020	Exterior Windows	$18.01	S.F.	62,600	40	1980	2020	2027	30.00 %	121.95 %	12		$1,374,852.06	$1,127,426
B2030	Exterior Doors	$1.45	S.F.	62,600	25	1980	2005	2027	48.00 %	200.67 %	12		$182,146.42	$90,770
B3010105	Built-Up	$37.76	S.F.	12,000	20	1980	2000	2027	60.00 %	89.73 %	12		$406,584.13	$453,120
B3010140	Shingle & Tile	$38.73	S.F.	8,000	25	2014	2039		96.00 %	0.00 %	24			$309,840
B3020	Roof Openings	$0.06	S.F.	62,600	20	2014	2034		95.00 %	0.00 %	19			$3,756
C1010	Partitions	$17.91	S.F.	62,600	100	1930	2030		15.00 %	20.70 %	15		$232,114.25	$1,121,166
C1020	Interior Doors	$3.51	S.F.	62,600	40	1930	1970	2027	30.00 %	325.67 %	12		$715,588.07	$219,726
C1030	Fittings	$3.12	S.F.	62,600	40	1930	1970	2027	30.00 %	31.07 %	12		$60,680.42	$195,312
C2010	Stair Construction	$1.41	S.F.	62,600	100	1930	2030		15.00 %	229.57 %	15		$202,635.36	$88,266
C3010230	Paint & Covering	$13.21	S.F.	62,600	10	2000	2010	2027	120.00 %	0.00 %	12			$826,946
C3010232	Wall Tile	$2.63	S.F.	62,600	30	1930	1960	2027	40.00 %	0.00 %	12			$164,638

Site Assessment Report - B635001;Pennypacker

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3020412	Terrazzo & Tile	$75.52	S.F.	7,000	50	1930	1980	2027	24.00 %	0.00 %	12			$528,640
C3020413	Vinyl Flooring	$9.68	S.F.	5,000	20	2008	2028		65.00 %	0.00 %	13			$48,400
C3020414	Wood Flooring	$22.27	S.F.	40,000	25	1930	1955	2027	48.00 %	130.90 %	12		$1,166,082.84	$890,800
C3020415	Concrete Floor Finishes	$0.97	S.F.	10,600	50	1930	1980	2027	24.00 %	0.00 %	12			$10,282
C3030	Ceiling Finishes	$20.97	S.F.	62,600	25	1995	2020	2027	48.00 %	57.45 %	12		$754,121.51	$1,312,722
D1010	Elevators and Lifts	$5.60	S.F.	62,600	35	1930	1965	2047	91.43 %	288.85 %	32		$1,012,601.25	$350,560
D2010	Plumbing Fixtures	$13.52	S.F.	62,600	35	2013	2048		94.29 %	0.00 %	33			$846,352
D2020	Domestic Water Distribution	$1.68	S.F.	62,600	25	2013	2038		92.00 %	0.00 %	23			$105,168
D2030	Sanitary Waste	$2.90	S.F.	62,600	25	1930	1955	2042	108.00 %	169.16 %	27		$307,099.99	$181,540
D2040	Rain Water Drainage	$2.32	S.F.	62,600	30	1930	1960	2025	33.33 %	0.00 %	10			$145,232
D3020	Heat Generating Systems	$18.67	S.F.	62,600	35	2013	2048		94.29 %	0.00 %	33			$1,168,742
D3030	Cooling Generating Systems	$24.48	S.F.	62,600	30			2047	106.67 %	65.60 %	32		$1,005,331.77	$1,532,448
D3040	Distribution Systems	$42.99	S.F.	62,600	25	1930	1955	2042	108.00 %	168.93 %	27		$4,546,135.35	$2,691,174
D3050	Terminal & Package Units	$11.60	S.F.	62,600	20				0.00 %	0.00 %				$726,160
D3060	Controls & Instrumentation	$13.50	S.F.	62,600	20	1930	1950	2037	110.00 %	158.90 %	22		$1,342,903.44	$845,100
D4010	Sprinklers	$7.05	S.F.	62,600	35			2052	105.71 %	202.91 %	37		$895,519.51	$441,330
D4020	Standpipes	$1.01	S.F.	62,600	35				0.00 %	0.00 %				$63,226
D5010	Electrical Service/Distribution	$9.70	S.F.	62,600	30	1930	1960	2047	106.67 %	151.88 %	32		$922,226.68	$607,220
D5020	Lighting and Branch Wiring	$34.68	S.F.	62,600	20	1930	1950	2037	110.00 %	35.08 %	22		$761,563.77	$2,170,968
D5030	Communications and Security	$12.99	S.F.	62,600	15	1930	1945	2030	100.00 %	48.00 %	15		$390,349.54	$813,174
D5090	Other Electrical Systems	$3.10	S.F.	62,600	30	1930	1960	2047	106.67 %	187.48 %	32		$363,820.38	$194,060
E1020	Institutional Equipment	$4.82	S.F.	62,600	35	1930	1965	2027	34.29 %	0.00 %	12			$301,732
E1090	Other Equipment	$11.10	S.F.	62,600	35	1930	1965	2027	34.29 %	0.00 %	12			$694,860
E2010	Fixed Furnishings	$2.13	S.F.	62,600	40	1930	1970	2027	30.00 %	348.58 %	12		$464,784.31	$133,338
								Total	**57.06 %**	**54.25 %**			**$17,107,141.05**	**$31,534,408**

System Notes

The facility description in the site executive summary contains an overview of each system. The notes listed below provide additional information on select systems found within the facility.

System: C3010 - Wall Finishes — This system contains no images

Note: Marble 30%
Painted finish 50%
Brick 20%

System: C3020 - Floor Finishes — This system contains no images

Note: Tile 7%
Vinyl 7%
Wood 67%
Concrete 19%

System: D1010 - Elevators and Lifts — This system contains no images

Note: There is no existing elevator in this school.

System: D5010 - Electrical Service/Distribution — This system contains no images

Note: There is one (1) secondary transformer rated 75 kVA, 240V, 2 phase primary, 208/120V, 3 phase, 4 wire secondary.

Renewal Schedule

eCOMET forecasts future Capital Renewal funding needed to address expiring systems based on the Next Renewal year found in the Cost Models. A 3% annual inflation factor is applied to the costs for systems expiring in future years. The table below reflects recommended Capital Renewal funding needs over the next 10 years. Note: Cells with a zero value indicate systems for which renewal is not scheduled in that year.

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$17,107,141**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$214,697**	**$17,321,838**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$1,374,852	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,374,852**
B2030 - Exterior Doors	$182,146	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$182,146**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$406,584	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$406,584**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$232,114	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$232,114**
C1020 - Interior Doors	$715,588	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$715,588**
C1030 - Fittings	$60,680	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$60,680**

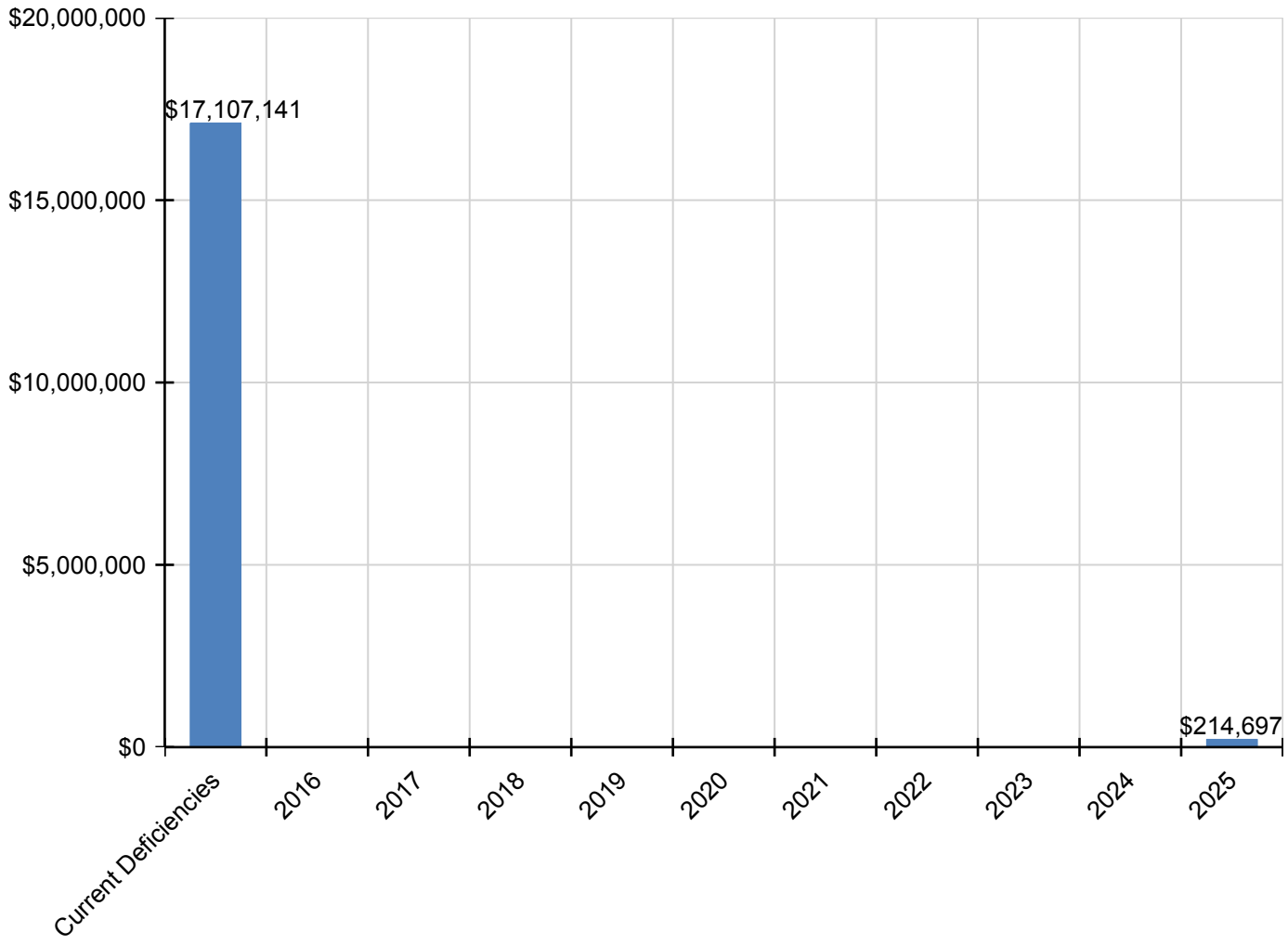
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$202,635	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$202,635**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020414 - Wood Flooring	$1,166,083	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,166,083**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$754,122	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$754,122**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$1,012,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,601**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$307,100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$307,100**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$214,697	**$214,697**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$1,005,332	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,005,332**
D3040 - Distribution Systems	$4,546,135	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,546,135**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,342,903	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,342,903**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$895,520	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$895,520**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$922,227	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$922,227**
D5020 - Lighting and Branch Wiring	$761,564	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$761,564**
D5030 - Communications and Security	$390,350	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$390,350**

D5090 - Other Electrical Systems	$363,820	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$363,820**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$464,784	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$464,784**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

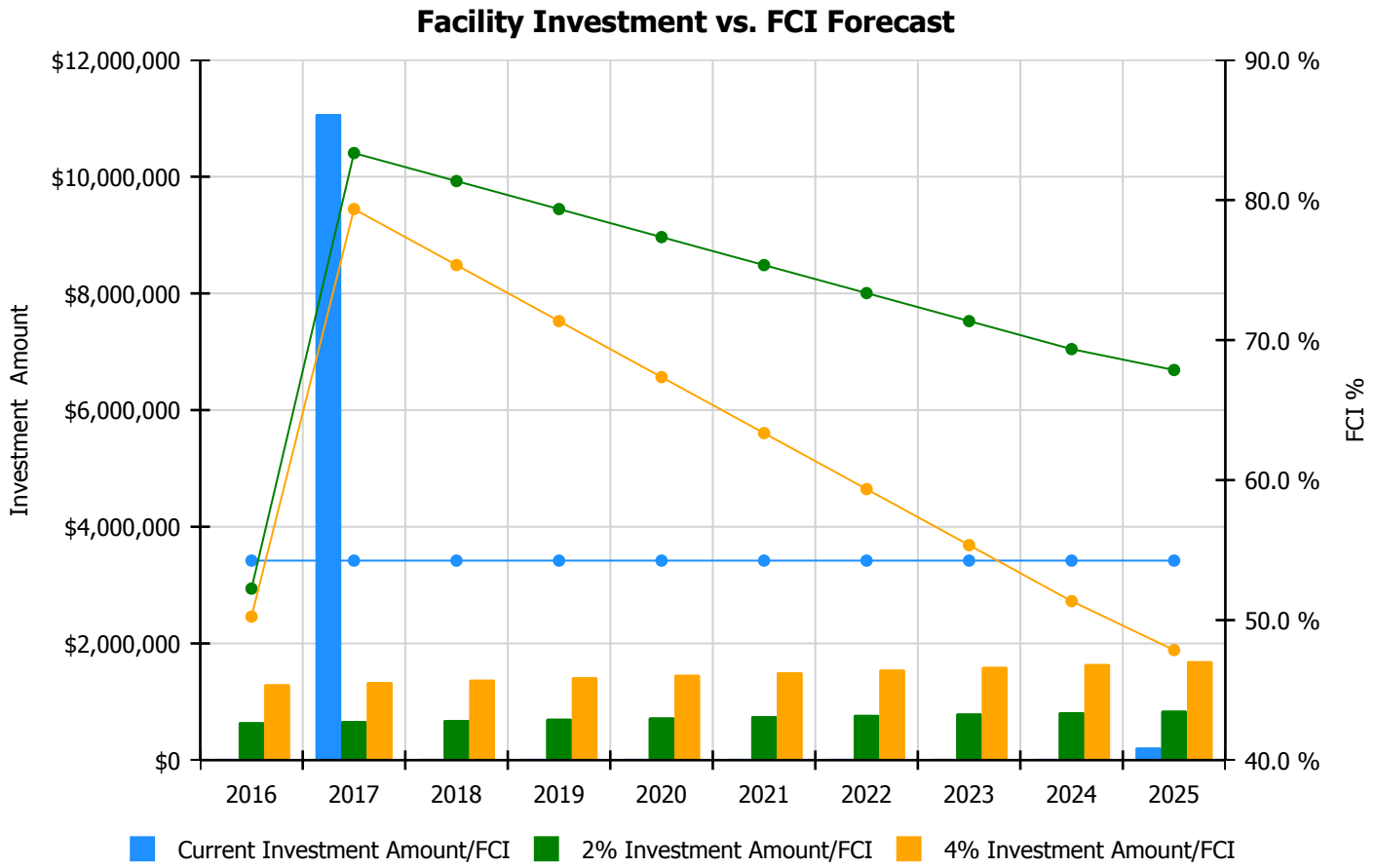
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

The chart below illustrates the effect of various investment levels on the building FCI for the next 10 years. The levels of investment shown below include:

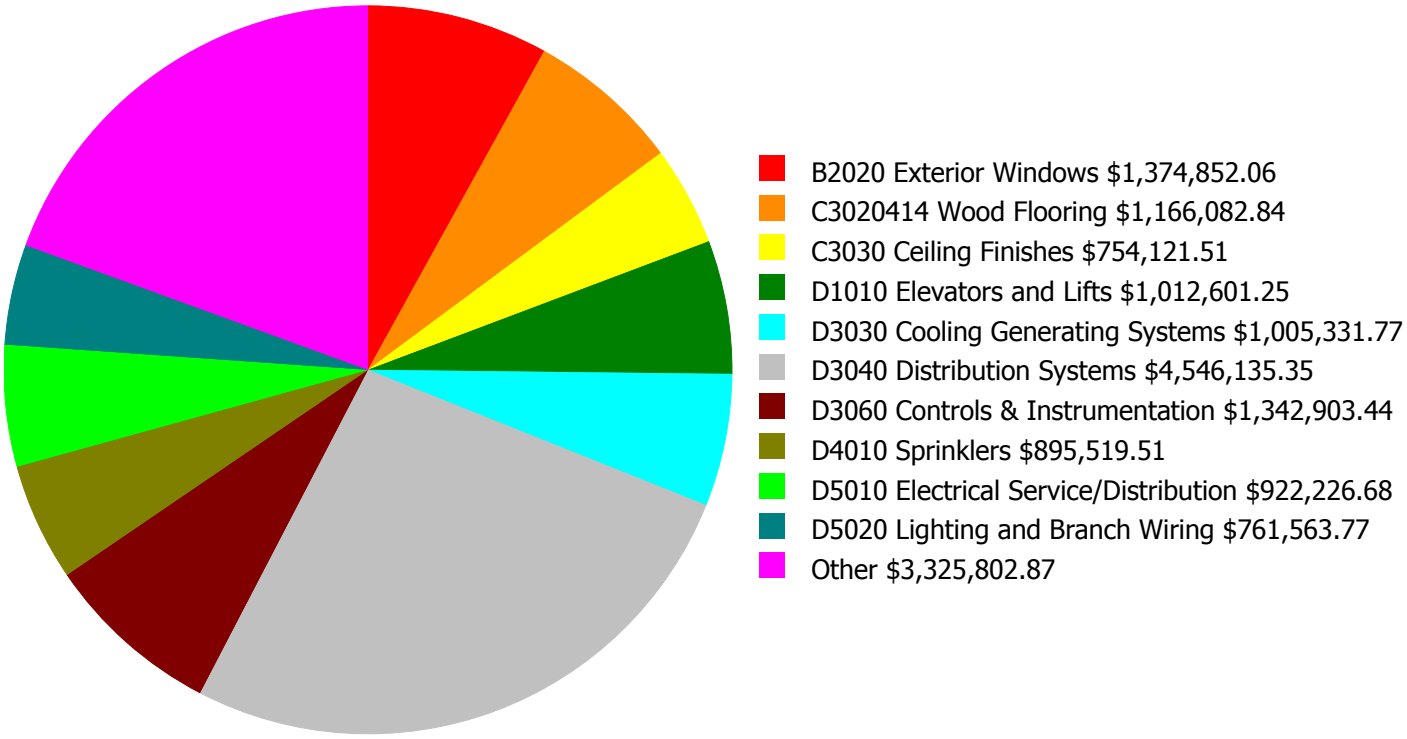
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value of the building, escalated for inflation



Year	Investment Amount Current FCI - 54.25%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$649,609.00	52.25 %	$1,299,218.00	50.25 %
2017	$11,075,653	$669,097.00	83.36 %	$1,338,194.00	79.36 %
2018	$0	$689,170.00	81.36 %	$1,378,340.00	75.36 %
2019	$0	$709,845.00	79.36 %	$1,419,690.00	71.36 %
2020	$0	$731,140.00	77.36 %	$1,462,281.00	67.36 %
2021	$0	$753,075.00	75.36 %	$1,506,149.00	63.36 %
2022	$0	$775,667.00	73.36 %	$1,551,334.00	59.36 %
2023	$0	$798,937.00	71.36 %	$1,597,874.00	55.36 %
2024	$0	$822,905.00	69.36 %	$1,645,810.00	51.36 %
2025	$214,697	$847,592.00	67.86 %	$1,695,184.00	47.86 %
Total:	**$11,290,350**	**$7,447,037.00**		**$14,894,074.00**	

Deficiency Summary by System

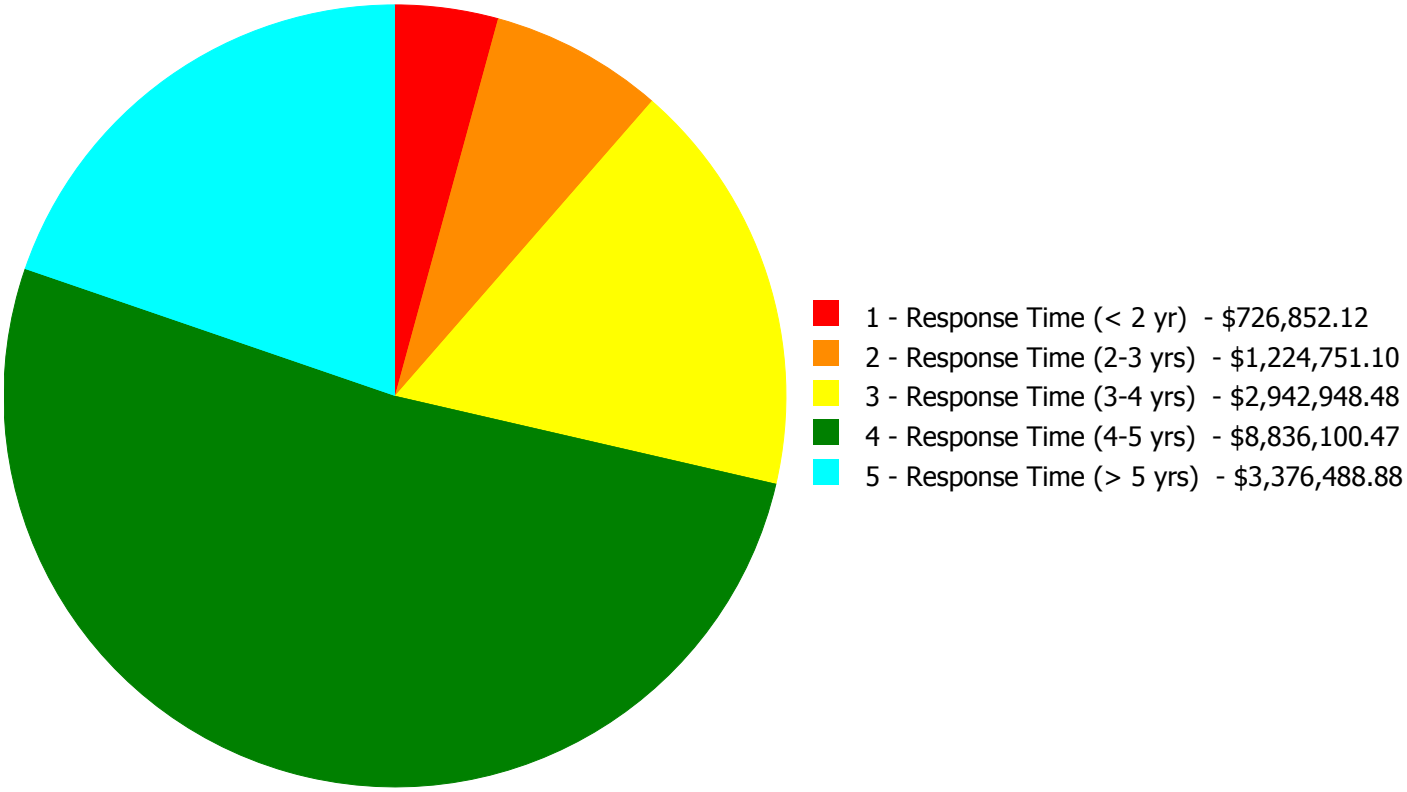
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart lists all current deficiencies associated with this facility.



Budget Estimate Total: $17,107,141.05

Deficiency Summary by Priority

The following chart shows the total repair costs broken down by priority. Assessors assigned deficiencies within eCOMET to one of the following priority categories:



Budget Estimate Total: $17,107,141.05

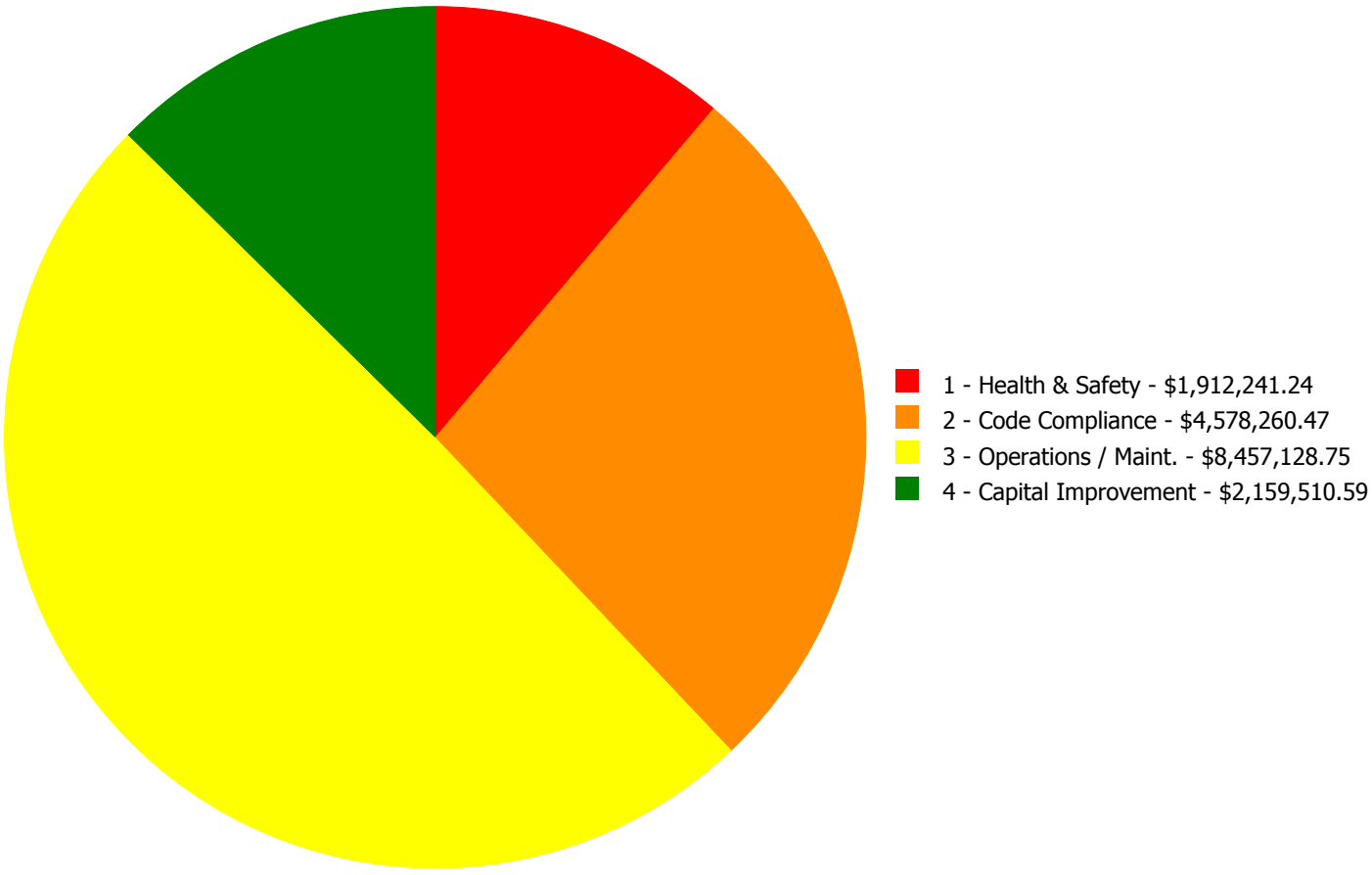
Deficiency By Priority Investment Table

The table below shows the current investment cost grouped by deficiency priority and building system.

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
B2020	Exterior Windows	$0.00	$0.00	$0.00	$1,374,852.06	$0.00	$1,374,852.06
B2030	Exterior Doors	$0.00	$0.00	$182,146.42	$0.00	$0.00	$182,146.42
B3010105	Built-Up	$406,584.13	$0.00	$0.00	$0.00	$0.00	$406,584.13
C1010	Partitions	$0.00	$142,996.25	$0.00	$89,118.00	$0.00	$232,114.25
C1020	Interior Doors	$0.00	$0.00	$715,588.07	$0.00	$0.00	$715,588.07
C1030	Fittings	$0.00	$0.00	$0.00	$60,680.42	$0.00	$60,680.42
C2010	Stair Construction	$0.00	$0.00	$202,635.36	$0.00	$0.00	$202,635.36
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$0.00	$1,166,082.84	$1,166,082.84
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$0.00	$754,121.51	$754,121.51
D1010	Elevators and Lifts	$0.00	$1,012,601.25	$0.00	$0.00	$0.00	$1,012,601.25
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$307,099.99	$0.00	$307,099.99
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,005,331.77	$1,005,331.77
D3040	Distribution Systems	$0.00	$0.00	$0.00	$4,546,135.35	$0.00	$4,546,135.35
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,342,903.44	$0.00	$1,342,903.44
D4010	Sprinklers	$0.00	$0.00	$0.00	$895,519.51	$0.00	$895,519.51
D5010	Electrical Service/Distribution	$0.00	$0.00	$922,226.68	$0.00	$0.00	$922,226.68
D5020	Lighting and Branch Wiring	$0.00	$11,769.66	$595,131.03	$154,663.08	$0.00	$761,563.77
D5030	Communications and Security	$0.00	$0.00	$325,220.92	$65,128.62	$0.00	$390,349.54
D5090	Other Electrical Systems	$320,267.99	$43,552.39	$0.00	$0.00	$0.00	$363,820.38
E2010	Fixed Furnishings	$0.00	$13,831.55	$0.00	$0.00	$450,952.76	$464,784.31
	Total:	$726,852.12	$1,224,751.10	$2,942,948.48	$8,836,100.47	$3,376,488.88	$17,107,141.05

Deficiency Summary by Category

The following chart shows the total repair costs broken down by deficiency categories. Assessors assigned deficiencies to one of the following categories:



Budget Estimate Total: $17,107,141.05

Deficiency Details by Priority

The deficiency detail notes listed below provide additional information on identified deficiencies found within the facility.

Priority 1 - Response Time (< 2 yr):

System: B3010105 - Built-Up

Location: Roof
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 12,000.00
Unit of Measure: S.F.
Estimate: $406,584.13
Assessor Name: System
Date Created: 01/29/2016

Notes: The built up application was reported to have been installed in the early 1980'S. Although the roof has been re-coated several times to extend the life any additional repairs or coatings are not expected to improve the condition. This roof has several areas of open cracks in the membrane and more than 50% of the roof is bubbling. Considering the age and condition of the roofing systems, universal upgrades are recommended.

System: D5090 - Other Electrical Systems

This deficiency has no image.

Location: Basement Mechanical Room
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Add Standby Generator System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $320,267.99
Assessor Name: System
Date Created: 01/13/2016

Notes: Provide standby generator system. Size generator system to power all emergency egress and exit lighting, elevator addition and, if required, fire pump (estimated size is 150 kW). NO PHOTO

Priority 2 - Response Time (2-3 yrs):

System: C1010 - Partitions

Location: Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Install fire rated walls and door where required - insert number of doors

Qty: 1.00

Unit of Measure: S.F.

Estimate: $84,147.74

Assessor Name: System

Date Created: 01/29/2016

Notes: This building has adequate exit pathways and no egress obstructions were noted during our building walk through. However the corridor doors on all floors are not fire rated and should be upgraded. Install new fire rated flush wood doors on all floor corridors. If the recommended lever hardware and room signage has not been implemented then these features should be incorporated into the work scope.

System: C1010 - Partitions

Location: Hallways

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove non-rated interior glass panels and replace with studs, gypsum board, paint (E) wall

Qty: 2,200.00

Unit of Measure: S.F.

Estimate: $58,848.51

Assessor Name: System

Date Created: 01/29/2016

Notes: There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

System: D1010 - Elevators and Lifts

Location: Building Wide

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 2 - Response Time (2-3 yrs)

Correction: Add external 4 stop elevator - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,012,601.25

Assessor Name: System

Date Created: 01/29/2016

Notes: There is no elevator that services this school. Goods, services, and amenities offered in public buildings are generally required to be available to all persons. To assist those that may be physically challenged and to meet current accessibility legislation to provide wheelchair access to the upper floors of this facility, the installation of a new hydraulic elevator has been recommended on the exterior elevation of the building or at another suitable location. The new installation should blend as much as possible with the overall appearance of this historic structure and include all required ADA features, such as audible jewels and gongs, an accessible control panel, etc.

System: D5020 - Lighting and Branch Wiring

Location: Auditorium exit discharges

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Add Exterior Lighting

Qty: 4.00

Unit of Measure: Ea.

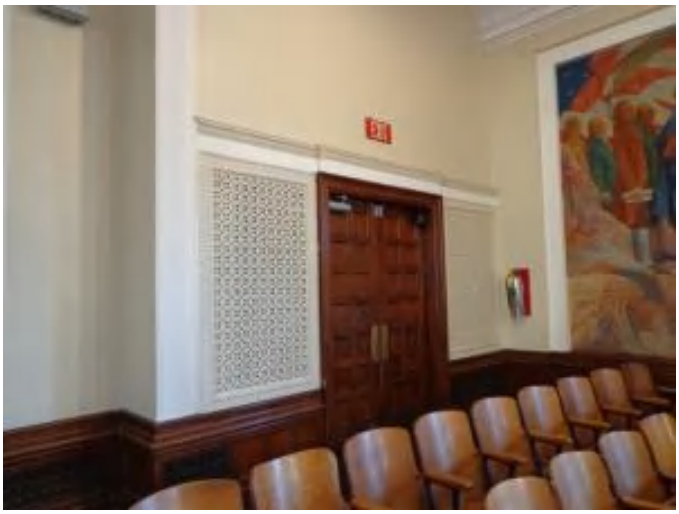
Estimate: $11,769.66

Assessor Name: System

Date Created: 01/13/2016

Notes: Provide exterior LED lighting fixtures at the exit discharges above the four exterior doors from the auditorium do not have lighting fixtures at the exit discharges.

System: D5090 - Other Electrical Systems



Location: Building wide
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 2 - Response Time (2-3 yrs)
Correction: Replace Emergency/Exit Lighting
Qty: 33.00
Unit of Measure: Ea.
Estimate: $32,125.12
Assessor Name: System
Date Created: 01/13/2016

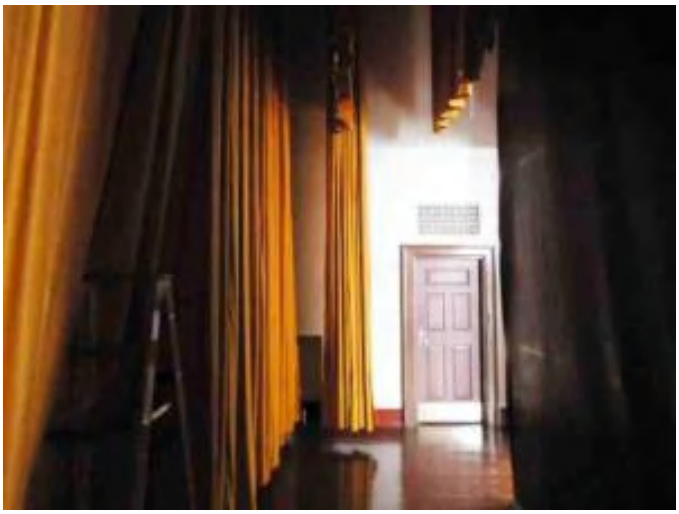
Notes: Replace all existing exit signs with LED type.

System: D5090 - Other Electrical Systems

Location: Roof
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Repair Lightning Protection System
Qty: 1.00
Unit of Measure: Job
Estimate: $11,427.27
Assessor Name: System
Date Created: 01/29/2016

Notes: Replace missing roof conductor for the lightning protection system protecting the building structures that extend above the roof. Verify system continuity after repair to insure the integrity of the system is maintained.

System: E2010 - Fixed Furnishings



Location: Stage

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove and replace stage curtain - insert the LF of track and SF of curtain

Qty: 1.00

Unit of Measure: Ea.

Estimate: $13,831.55

Assessor Name: System

Date Created: 01/29/2016

Notes: The school stage has a stage curtain assembly that appears to be from the original construction. Modern applications are typically fire-proof applications with adjustable tracks and electric support for operation. The curtains are torn in a few section and the track is not functioning properly, overall the system is in poor condition. It is recommended that the curtain and track system be upgraded to a new system. Special care should be considered in regards to modern fire proofing for the new installation.

Priority 3 - Response Time (3-4 yrs):

System: B2030 - Exterior Doors

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Remove and replace exterior doors - per leaf

Qty: 20.00

Unit of Measure: Ea.

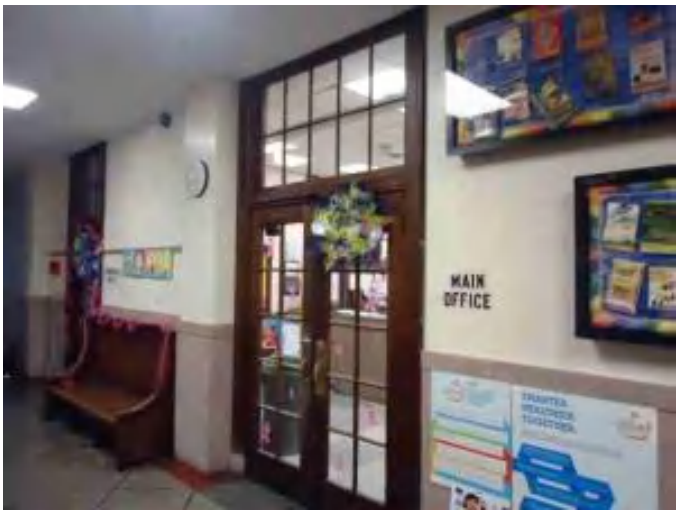
Estimate: $182,146.42

Assessor Name: System

Date Created: 01/29/2016

Notes: The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in poor condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: C1020 - Interior Doors



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Remove and replace interior doors - wood doors with hollow metal frames - per leaf

Qty: 150.00

Unit of Measure: Ea.

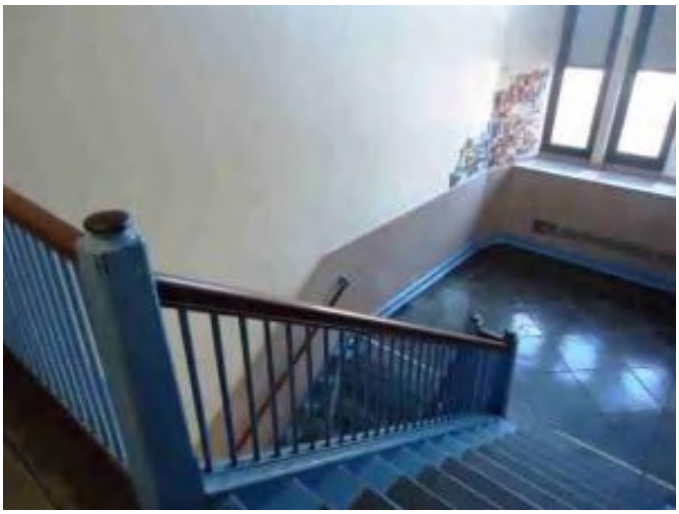
Estimate: $715,588.07

Assessor Name: System

Date Created: 01/29/2016

Notes: Interior doors are typically wood in wood frames with transom lites, sidelights, wired glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, metal in hollow metal frames at stairwells and exit ways. Doors are generally in fair condition considering the age of the application. Universal upgrades are required for the interior door systems it is recommended that the interior doors system be removed and replaced with a new modern metal framed wood door system with consideration for ADA compliance.

System: C2010 - Stair Construction



Location: Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace inadequate or install proper stair railing - select appropriate material

Qty: 1,200.00

Unit of Measure: L.F.

Estimate: $202,635.36

Assessor Name: System

Date Created: 01/29/2016

Notes: Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

System: D5010 - Electrical Service/Distribution

Location: Mechanical Room 012A

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $557,440.06

Assessor Name: System

Date Created: 01/13/2016

Notes: Remove the 400A, 120/240V, 2 phase, 5 wire service main switchboard and provide a 750 kVA package unit substation with 2500A, 208/120V, 3 phase, 4 wire main switchboard with main circuit breaker and feeder circuit breakers to serve the existing building loads and added central air conditioning equipment, an elevator addition, and a fire pump (if required). Replace obsolete 200A knife blade panelboard adjacent to switchboard and 75 kVA phase change transformer. Re-feed Panelboard BR1 from the 2500A switchboard.

System: D5010 - Electrical Service/Distribution

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace Panelboard

Qty: 13.00

Unit of Measure: Ea.

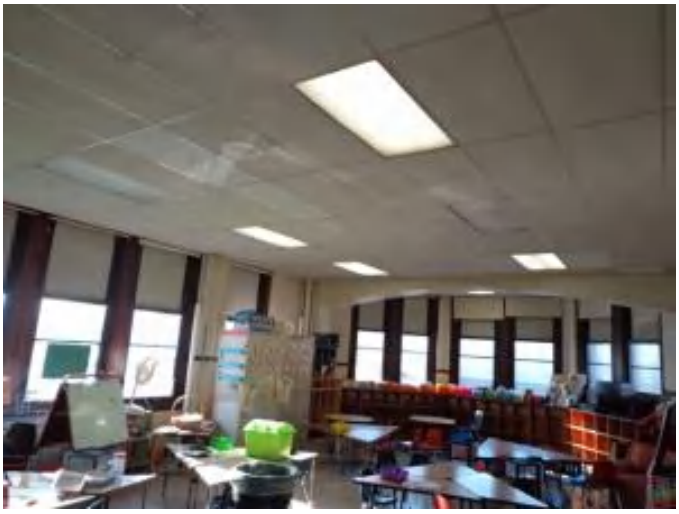
Estimate: $364,786.62

Assessor Name: System

Date Created: 01/13/2016

Notes: Replace a total of (13) 120/240V, 1 phase panelboards in the building, including their feeders.

System: D5020 - Lighting and Branch Wiring



Location: Classrooms, IMC and Gym/Cafeteria

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace Lighting Fixtures (SF)

Qty: 33,260.00

Unit of Measure: S.F.

Estimate: $595,131.03

Assessor Name: System

Date Created: 01/13/2016

Notes: Replace fluorescent lighting systems and branch circuit wiring in classrooms, IMC and Gymnasium/Cafeteria (classrooms and IMC 29,740 SF; Gymnasium/Cafeteria 3,520 SF, 34 fixtures).

System: D5030 - Communications and Security

Location:	Building wide
Distress:	Life Safety / NFPA / PFD
Category:	1 - Health & Safety
Priority:	3 - Response Time (3-4 yrs)
Correction:	Replace fire alarm system
Qty:	62,600.00
Unit of Measure:	S.F.
Estimate:	$325,220.92
Assessor Name:	System
Date Created:	01/13/2016

Notes: Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.

Priority 4 - Response Time (4-5 yrs):

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove and replace aluminum windows - pick the appropriate size and style and insert the number of units

Qty: 250.00

Unit of Measure: Ea.

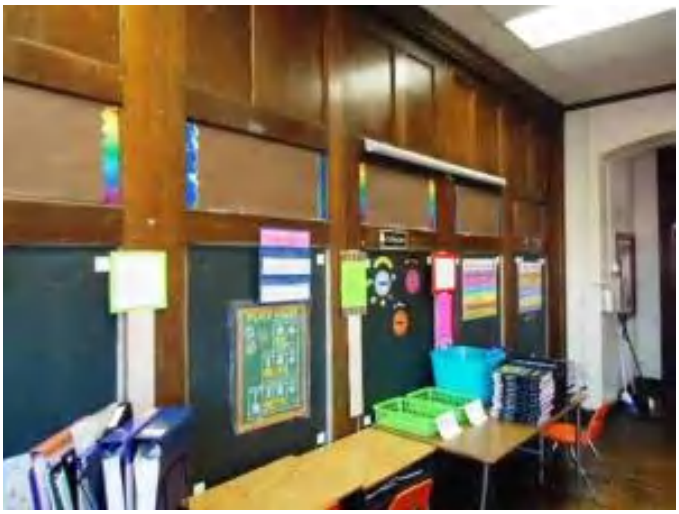
Estimate: $1,374,852.06

Assessor Name: System

Date Created: 01/29/2016

Notes: The exterior windows have been upgraded from the original applications. The window system is estimated to have been installed in the 1980's. Several of the windows are no longer functional and will require attention prior to an overall effort. Overall, the windows are in fair condition based on the year of installation or last renovation. The entire exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: C1010 - Partitions



Location: Classroom

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove folding wood partitions; replace with metal studs and gypsum board painted

Qty: 4,000.00

Unit of Measure: S.F.

Estimate: $89,118.00

Assessor Name: System

Date Created: 01/29/2016

Notes: There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace missing or damaged signage - insert the number of rooms

Qty: 150.00

Unit of Measure: Ea.

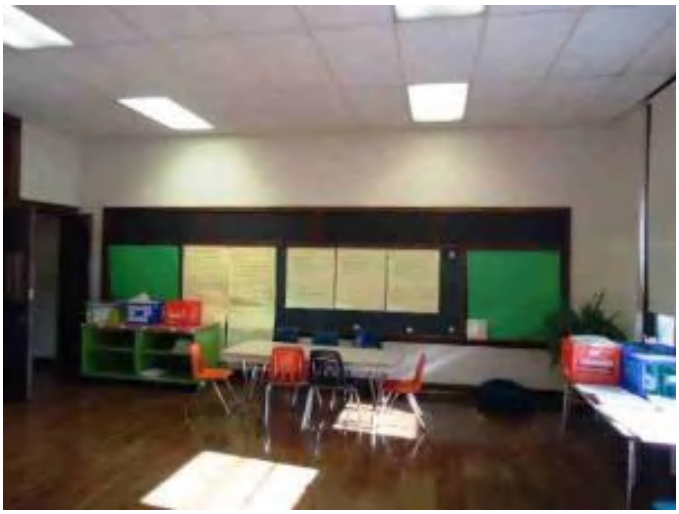
Estimate: $40,636.87

Assessor Name: System

Date Created: 01/29/2016

Notes: There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

System: C1030 - Fittings



Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace blackboards with marker boards - pick the appropriate size and insert the quantities

Qty: 60.00

Unit of Measure: Ea.

Estimate: $12,116.29

Assessor Name: System

Date Created: 01/29/2016

Notes: The classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade chalk boards to new marker board systems.

System: C1030 - Fittings

Location: Hallways

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove and replace tackboards - select size

Qty: 10.00

Unit of Measure: Ea.

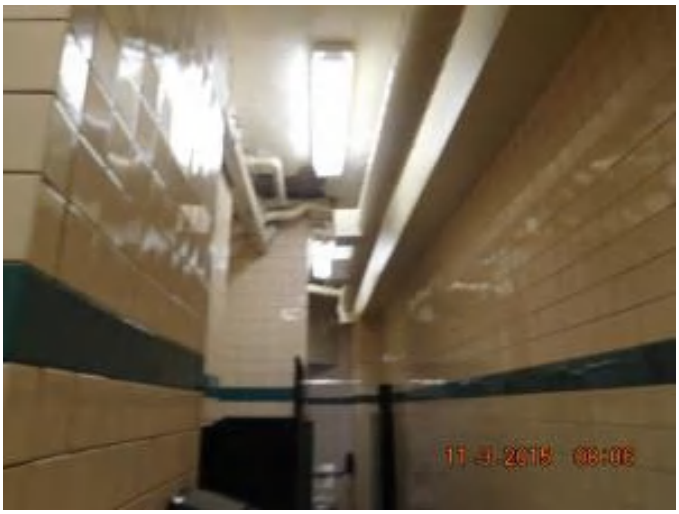
Estimate: $7,927.26

Assessor Name: System

Date Created: 01/29/2016

Notes: There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for this application. Remove and replace tack boards is recommended.

System: D2030 - Sanitary Waste



Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Inspect sanitary waste piping and replace damaged sections. (+50KSF)

Qty: 62,600.00

Unit of Measure: S.F.

Estimate: $307,099.99

Assessor Name: System

Date Created: 01/29/2016

Notes: Inspect old cast iron sanitary piping including camera observation and replace damaged sections.

System: D3040 - Distribution Systems

Location: classrooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide classroom FC units and dedicated OA ventilation system. (20 clsrms)

Qty: 42.00

Unit of Measure: C

Estimate: $3,488,561.51

Assessor Name: System

Date Created: 01/29/2016

Notes: Provide a four pipe fan coil system with roof mounted outside air system ducted to each fan coil unit. Provide a fan coil unit for each classroom and separate area. Include new heat exchanger, pumps for hot water, piping, control valves and controls, to replace steam heating system.

System: D3040 - Distribution Systems

Location: auditorium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Install HVAC unit for Auditorium (200 seat).

Qty: 500.00

Unit of Measure: Seat

Estimate: $712,713.57

Assessor Name: System

Date Created: 01/29/2016

Notes: Provide a new central station air handling unit for the auditorium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.

System: D3040 - Distribution Systems

Location: gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Install HVAC unit for Gymnasium (single station).

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $344,860.27

Assessor Name: System

Date Created: 01/29/2016

Notes: Provide a new central station air handling unit for the gymnasium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems.

System: D3060 - Controls & Instrumentation

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 62,600.00

Unit of Measure: S.F.

Estimate: $1,342,903.44

Assessor Name: System

Date Created: 01/29/2016

Notes: Install new direct digital control system and building automation system with remote computer control capability and graphics package.

System: D4010 - Sprinklers

Location: entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 4 - Response Time (4-5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 62,600.00

Unit of Measure: S.F.

Estimate: $895,519.51

Assessor Name: System

Date Created: 01/29/2016

Notes: Install NFPA wet pipe automatic sprinkler system in entire building, including fire service, piping sprinkler heads, standpipes and fire pump if required.

System: D5020 - Lighting and Branch Wiring

Location: Classrooms and Building wide

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide surface raceway system and wiring devices

Qty: 1,020.00

Unit of Measure: L.F.

Estimate: $141,577.57

Assessor Name: System

Date Created: 01/13/2016

Notes: Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 34 classrooms. Replace all existing duplex receptacles throughout the building with new devices due to their age and condition (estimate 140 duplex receptacles to be replaced).

System: D5020 - Lighting and Branch Wiring

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Maintain Lighting Fixtures

Qty: 10.00

Unit of Measure: Ea.

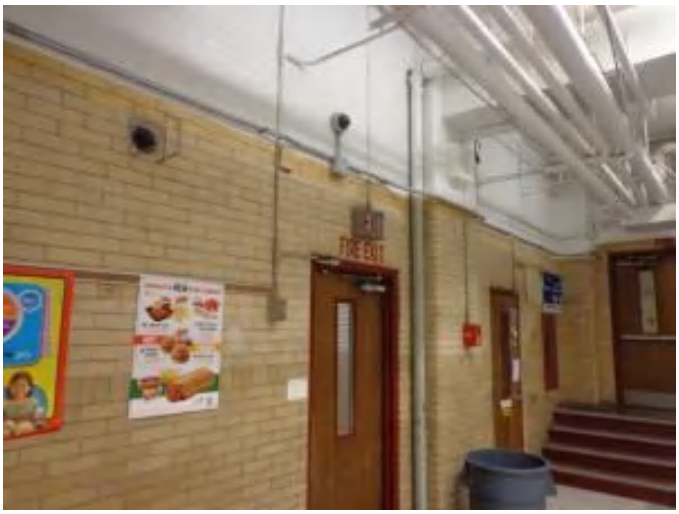
Estimate: $13,085.51

Assessor Name: System

Date Created: 01/13/2016

Notes: Replace glass bowls on 10 suspended chandeliers in the auditorium and replace incandescent lamps with LED lamps.

System: D5030 - Communications and Security



Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Add/Replace Video Surveillance System

Qty: 11.00

Unit of Measure: Ea.

Estimate: $40,576.90

Assessor Name: System

Date Created: 01/13/2016

Notes: A budgetary allowance for replacement of ten (10) interior cameras, one (1) 16 channel digital video recorder (DVR) and one (1) monitor is included in this report.

System: D5030 - Communications and Security

Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide wireless GPS clock system

Qty: 41.00

Unit of Measure: LS

Estimate: $24,551.72

Assessor Name: System

Date Created: 01/13/2016

Notes: Remove all clocks and provide wireless GPS clock system with battery operated synchronized clocks.

Priority 5 - Response Time (> 5 yrs):

System: C3020414 - Wood Flooring

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace wood flooring

Qty: 40,000.00

Unit of Measure: S.F.

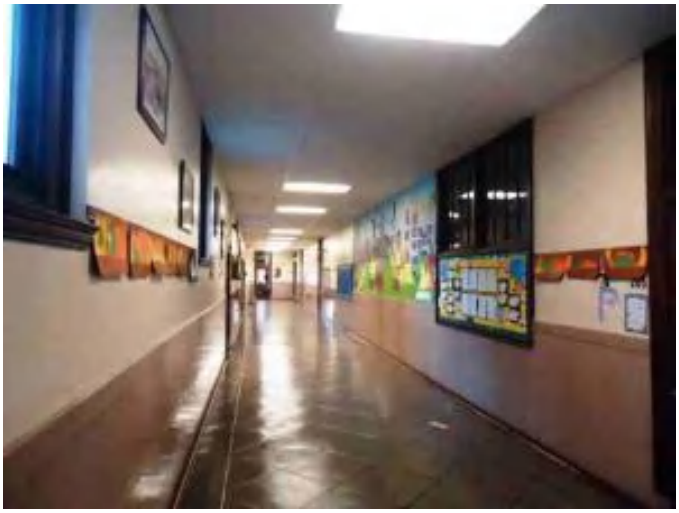
Estimate: $1,166,082.84

Assessor Name: System

Date Created: 01/29/2016

Notes: The wooden floor finish in the classrooms has served this school from the first day of school. The systems maintenance has been a priority each year as part of a cyclical program to either, sand, clean and resurface or wax as needed. Considering the age and current condition of the classroom wooden floor finish, removal and replacement is recommended.

System: C3030 - Ceiling Finishes



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace suspended acoustic ceilings - lighting not included

Qty: 50,000.00

Unit of Measure: S.F.

Estimate: $754,121.51

Assessor Name: System

Date Created: 01/29/2016

Notes: The Acoustical ceilings have been repaired in several areas and is in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school. No work should be considered until after the recommended exterior efforts are complete.

System: D3030 - Cooling Generating Systems

Location: roof, mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Install chilled water system with distribution piping and pumps. (+75KSF)

Qty: 62,600.00

Unit of Measure: S.F.

Estimate: $1,005,331.77

Assessor Name: System

Date Created: 01/29/2016

Notes: Provide a one hundred eighty ton air cooled package chiller on the roof with pumps, piping and controls. Connect to new fan coil units and air handling units.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace auditorium seating - add tablet arms if required. Veneer seating is an option.

Qty: 500.00

Unit of Measure: Ea.

Estimate: $450,952.76

Assessor Name: System

Date Created: 01/29/2016

Notes: The fixed seating for this school is from the original construction. The systems are in fair condition considering the age and usage. This project provides a budgetary consideration for universal upgrades for the fixed seating and furnishing of this school. Ensure that ADA requirements are followed with the new seating layout.

Equipment Inventory

The following table represents the inventory details of the inventory found in the building, which fall under the following subsystems:

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D2020 Domestic Water Distribution	Pump, pressure booster system, 5 HP pump, includes diaphragm tank, control and pressure switch	1.00	Ea.	mechanical room	b&g				25	2013	2038	$10,972.50	$12,069.75
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 3770 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	mechanical room	weil mclain	1494			35	2013	2048	$101,088.50	$222,394.70
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 120/208 V, 1 phase, 400 A	1.00	Ea.	Basement Mechanical Room	No Nameplate	NA	NA		30			$13,848.30	$15,233.13
												Total:	**$249,697.58**

Executive Summary

Building condition is evaluated based on the functional systems and elements of a building and organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are developed for similar building types and functions. Systems and their elements are evaluated based on their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) FCI is an industry-standard measurement of facility condition calculated as the ratio of the costs to correct a facility's deficiencies to the facility's Current Replacement Value. It ranges from 0% (new) to 100% (very poor). Condition Index (CI) is calculated as the sum of a renewable system's Remaining Service Life (RSL) divided by the sum of a system's Replacement Value (both values exclude soft-cost to simplify calculation updates) expressed as a percentage ranging from 100% (new) to 0% (expired).

Function:	
Gross Area (SF):	97,400
Year Built:	1930
Last Renovation:	
Replacement Value:	$1,744,394
Repair Cost:	$1,293,432.18
Total FCI:	74.15 %
Total RSLI:	42.40 %

Description:

Attributes:

General Attributes:

Bldg ID:	S635001	Site ID:	S635001

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
G20 - Site Improvements	39.97 %	95.60 %	$1,262,558.64
G40 - Site Electrical Utilities	50.00 %	7.29 %	$30,873.54
Totals:	**42.40 %**	**74.15 %**	**$1,293,432.18**

Condition Detail

This section of the report contains results of the Facility Condition Assessment. The building is separated into system components based on UNIFORMAT II classification. The columns in the System Listing table below represent the following:

1. System Code: A code that identifies the system.
2. System Description: A brief description of a system present in the building.
3. Unit Price $: The unit price of the system.
4. UoM: The unit of measure for of the system.
5. Qty: The quantity for the system
6. Life: anticipated service life for thesystem based on Building Owners and Managers Association (BOMA) recommendations.
7. Year Installed: The date of system installation.
8. Calc Next Renewal Year: The date of system expiration based on the life, NR stands for non renewable.
9. Next Renewal Year: The suggested system expiration date by the assessor based on visual inspection.
10. CI: The Condition Index of the system.
11. FCI: The Facility Condition Index of the system.
12. RSL: Remaining Service Life.
13. eCR: eCOMET Condition Rating (not used).
14. Deficiency $: The financial investment to repair/replace system.

System Listing

The System Listing table below lists each of the systems organized by their UNIFORMAT II classification. The assessment team was tasked with recording the most recent replacement year of each system, determining the remaining service life based on the theoretical life, and evaluating the condition to confirm the forecast next replacement year. The system listing is the basis for all data contained in the Building Assessment Report.

Additionally, a condition rating (eCR) based on the following guidelines is provided as observed at the time of the assessment.

- Excellent (E) - No noticeable distress or damage. The entire system is free from observable defect.
- Very Good (VG) - Overall no serviceability reduction for the entire system. No degradation of critical components and minor distress and defect noticeable for some but not non critical components within the system.
- Good (G) - Slight or no serviceability reduction for the entire system. There may be noticeable defects for some non critical components and slight noticeable degradation of the critical components.
- Fair (F) - Overall serviceability is degraded but adequate. There may be moderate deterioration for very few of the critical components and few of the non critical components may have severe degradation.
- Marginal (MA) - Overall serviceability and reliability loss. Most if not all of the non critical components suffer from severe degradation and a few of the critical component may have severe degradation.
- Moderate (MO) - Overall a significant serviceability loss. Most if not all the components have severe degradation with the reminder of the component showing visible distress.
- Very Poor (VP) - Overall the system is barely functional. All of the components are severely degraded.
- Non-Functional (NF) - Overall the system does not function with all the components having no serviceability and suffer from severe degradation.

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2030	Pedestrian Paving	$11.52	S.F.	68,200	40	1980	2020	2027	30.00 %	18.00 %	12		$141,409.06	$785,664
G2040	Site Development	$4.36	S.F.	97,400	25	1930	1955	2027	48.00 %	252.25 %	12		$1,071,195.04	$424,664
G2050	Landscaping & Irrigation	$3.78	S.F.	29,200	15	1930	1945	2027	80.00 %	45.26 %	12		$49,954.53	$110,376
G4020	Site Lighting	$3.58	S.F.	97,400	30	1930	1960	2030	50.00 %	0.00 %	15			$348,692
G4030	Site Communications & Security	$0.77	S.F.	97,400	30	1930	1960	2030	50.00 %	41.17 %	15		$30,873.54	$74,998
								Total	**42.40 %**	**74.15 %**			**$1,293,432.18**	**$1,744,394**

System Notes

The facility description in the site executive summary contains an overview of each system. The notes listed below provide additional information on select systems found within the facility.

No data found for this asset

Renewal Schedule

eCOMET forecasts future Capital Renewal funding needed to address expiring systems based on the Next Renewal year found in the Cost Models. A 3% annual inflation factor is applied to the costs for systems expiring in future years. The table below reflects recommended Capital Renewal funding needs over the next 10 years. Note: Cells with a zero value indicate systems for which renewal is not scheduled in that year.

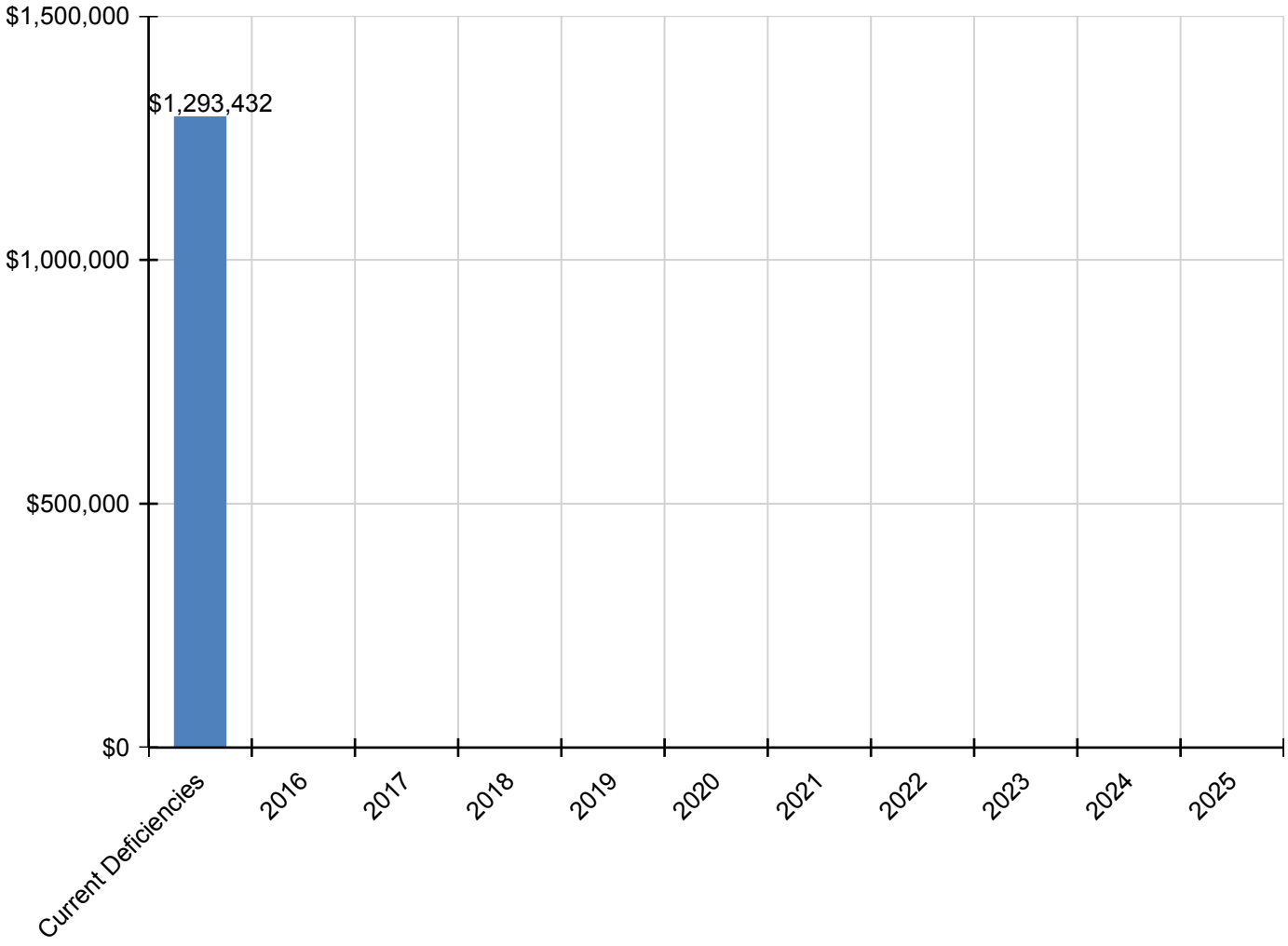
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$1,293,432**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,293,432**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$141,409	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$141,409**
G2040 - Site Development	$1,071,195	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,071,195**
G2050 - Landscaping & Irrigation	$49,955	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$49,955**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$30,874	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$30,874**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

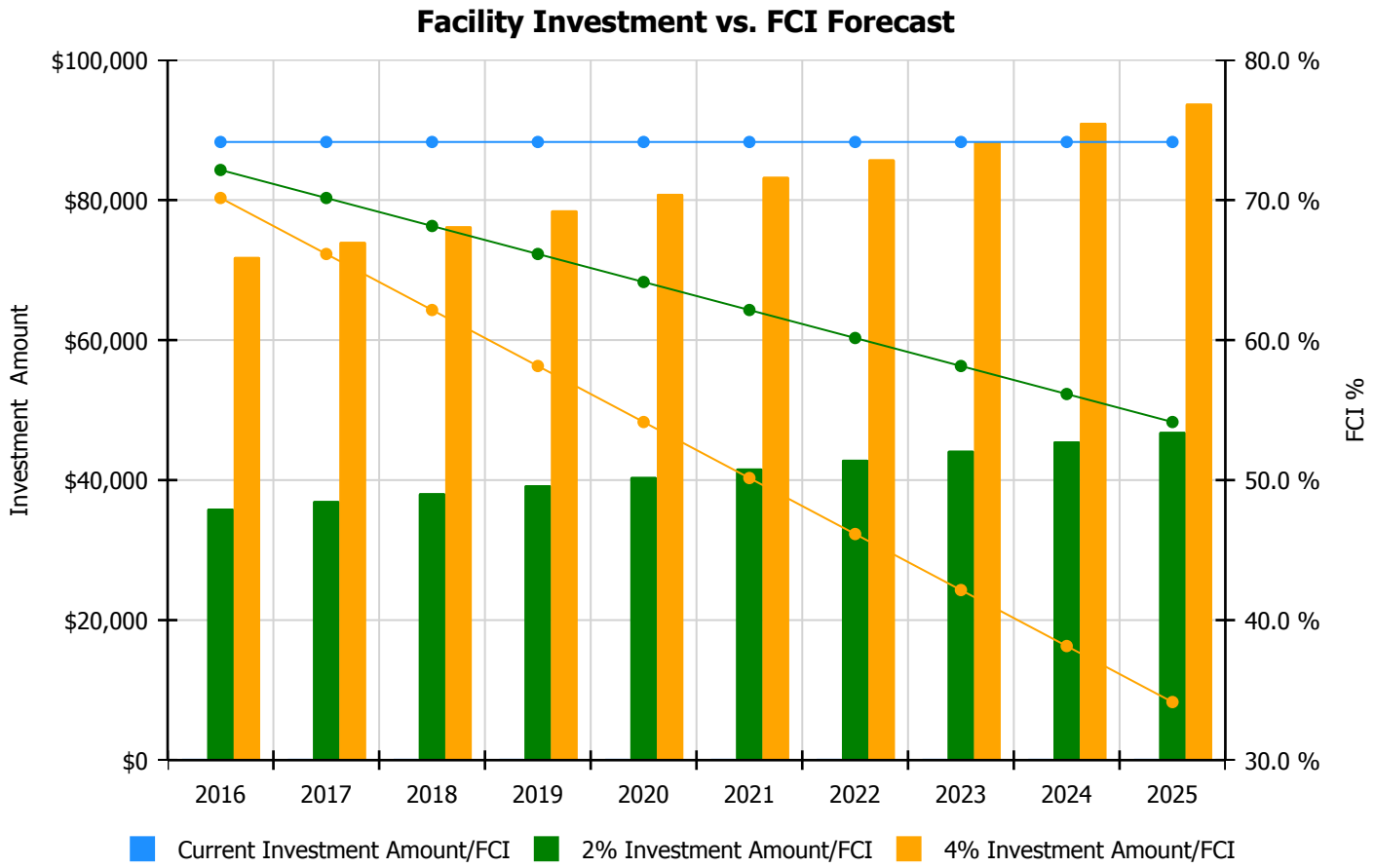
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

The chart below illustrates the effect of various investment levels on the building FCI for the next 10 years. The levels of investment shown below include:

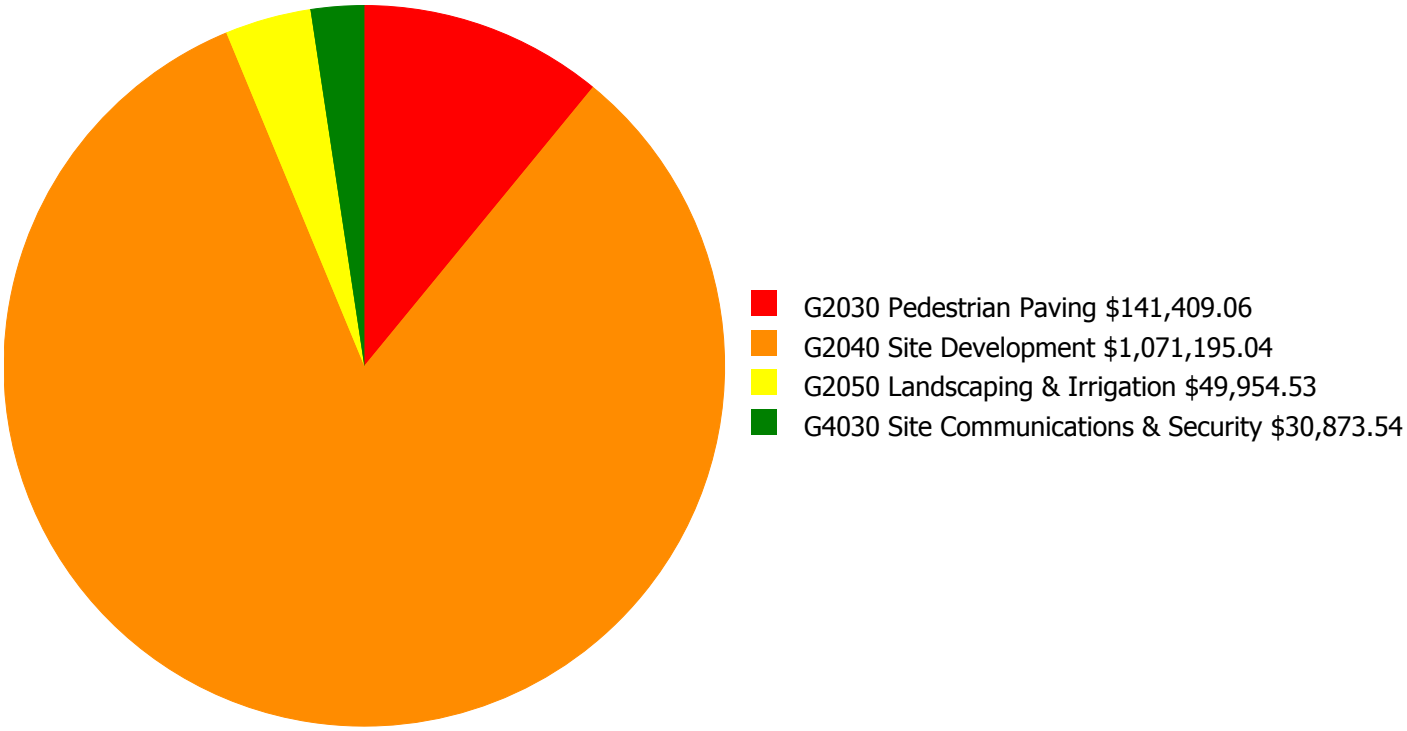
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value of the building, escalated for inflation



Year	Investment Amount Current FCI - 74.15%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$35,935.00	72.15 %	$71,869.00	70.15 %
2017	$0	$37,013.00	70.15 %	$74,025.00	66.15 %
2018	$0	$38,123.00	68.15 %	$76,246.00	62.15 %
2019	$0	$39,267.00	66.15 %	$78,533.00	58.15 %
2020	$0	$40,445.00	64.15 %	$80,889.00	54.15 %
2021	$0	$41,658.00	62.15 %	$83,316.00	50.15 %
2022	$0	$42,908.00	60.15 %	$85,815.00	46.15 %
2023	$0	$44,195.00	58.15 %	$88,390.00	42.15 %
2024	$0	$45,521.00	56.15 %	$91,042.00	38.15 %
2025	$0	$46,886.00	54.15 %	$93,773.00	34.15 %
Total:	**$0**	**$411,951.00**		**$823,898.00**	

Deficiency Summary by System

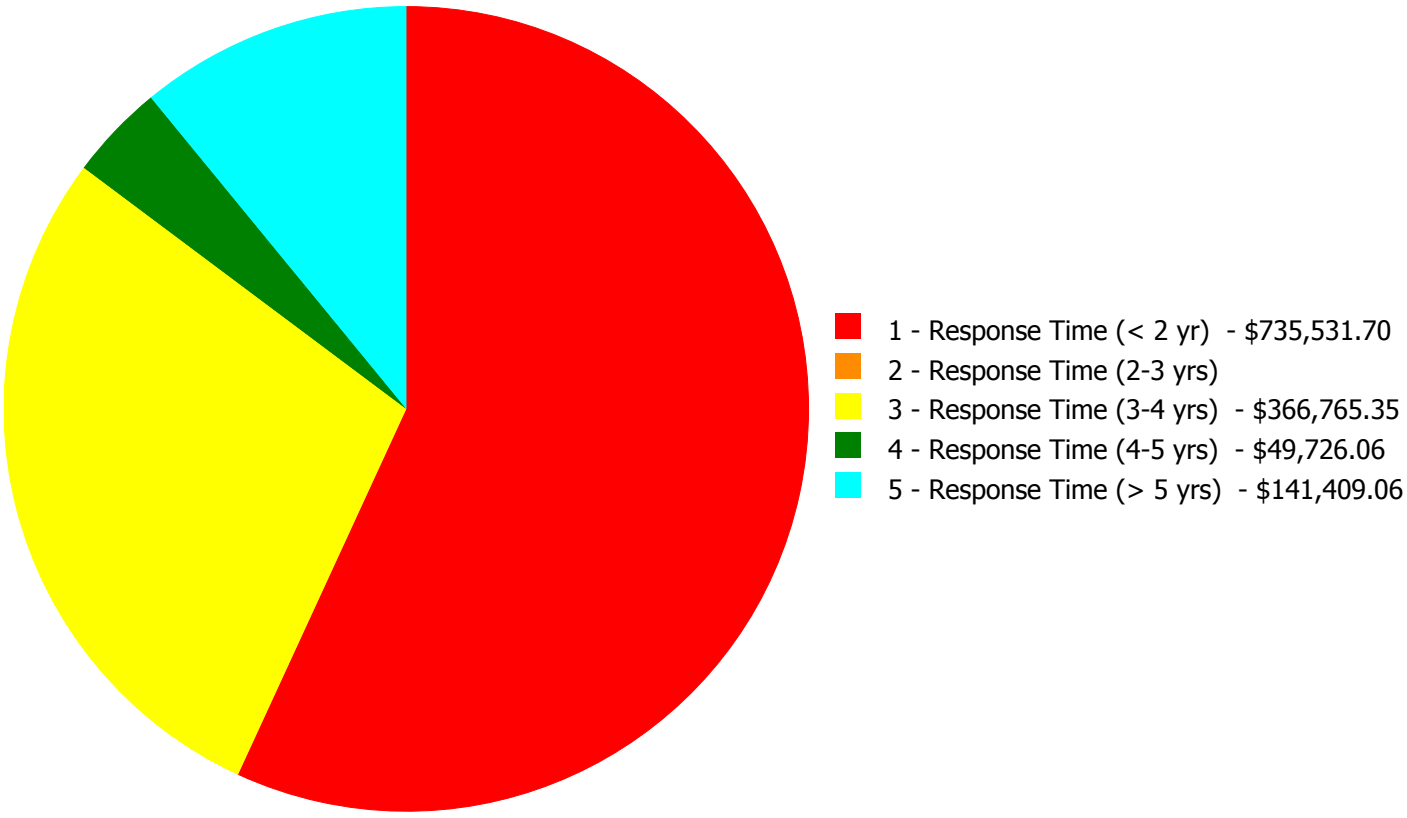
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart lists all current deficiencies associated with this facility.



Budget Estimate Total: $1,293,432.18

Deficiency Summary by Priority

The following chart shows the total repair costs broken down by priority. Assessors assigned deficiencies within eCOMET to one of the following priority categories:



Budget Estimate Total: $1,293,432.18

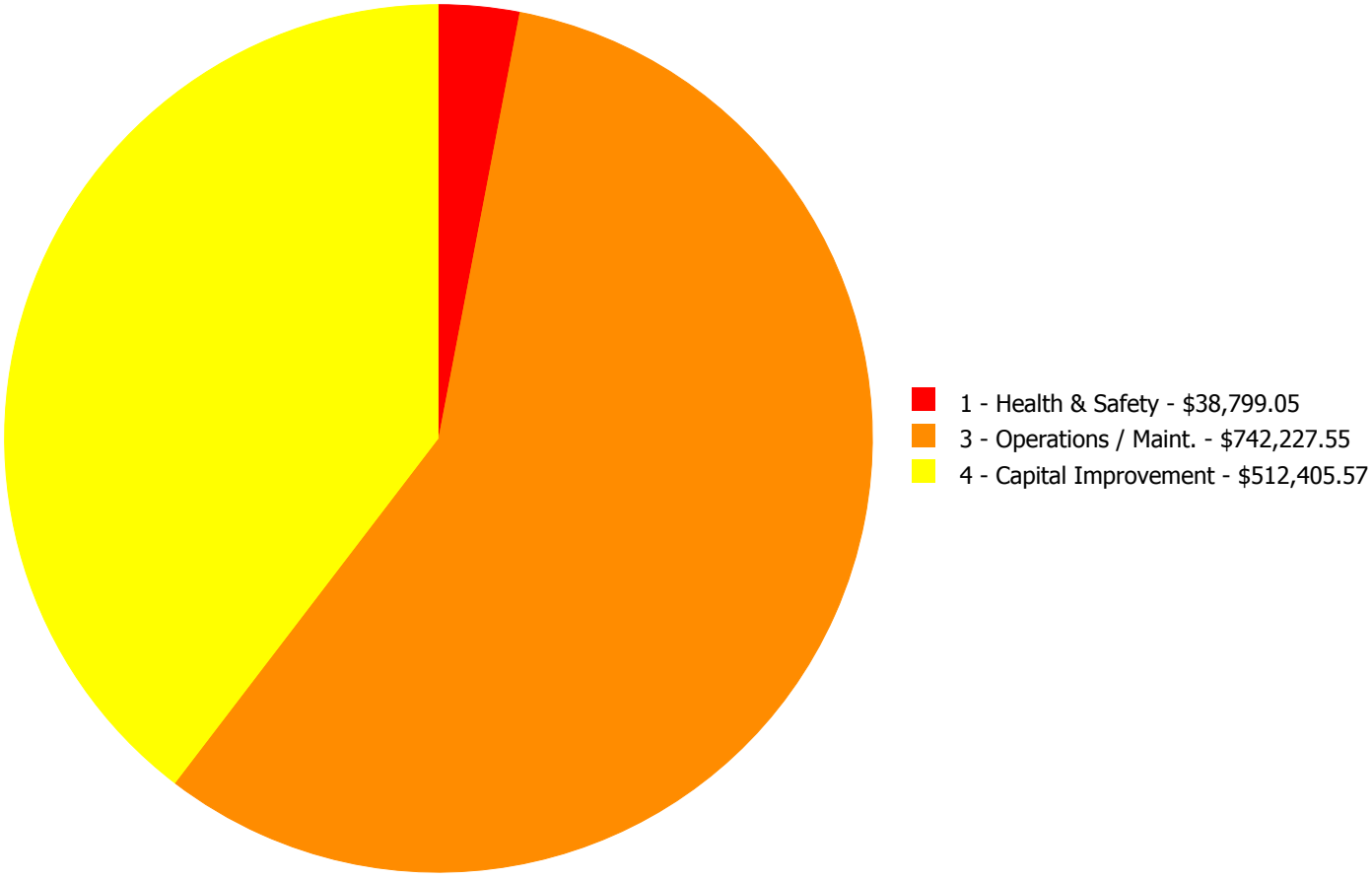
Deficiency By Priority Investment Table

The table below shows the current investment cost grouped by deficiency priority and building system.

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2030	Pedestrian Paving	$0.00	$0.00	$0.00	$0.00	$141,409.06	$141,409.06
G2040	Site Development	$715,585.17	$0.00	$336,757.35	$18,852.52	$0.00	$1,071,195.04
G2050	Landscaping & Irrigation	$19,946.53	$0.00	$30,008.00	$0.00	$0.00	$49,954.53
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$30,873.54	$0.00	$30,873.54
	Total:	$735,531.70	$0.00	$366,765.35	$49,726.06	$141,409.06	$1,293,432.18

Deficiency Summary by Category

The following chart shows the total repair costs broken down by deficiency categories. Assessors assigned deficiencies to one of the following categories:



Budget Estimate Total: $1,293,432.18

Deficiency Details by Priority

The deficiency detail notes listed below provide additional information on identified deficiencies found within the facility.

Priority 1 - Response Time (< 2 yr):

System: G2040 - Site Development

Location: Site

Distress: Failing

Category: 4 - Capital Improvement

Priority: 1 - Response Time (< 2 yr)

Correction: Remove and replace chain link gate - 8' high

Qty: 600.00

Unit of Measure: Ea.

Estimate: $481,532.03

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: This school has a perimeter fence surrounding the parking / playground area. The fence consist of either a chain link or metal picket fence and has several areas in need of repairs. This deficiency address the chain link fence. Overall the fence is in fair condition considering the age of the application however, the retaining wall that the fence is mounted to is failing. This fence system is recommended to be removed and replaced with a new system. This work is expected to be coordinated with the recommended retaining wall recommendation included in this report.

System: G2040 - Site Development

Location: Site

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Repair concrete retaining wall in poor condition including rebar doweling - insert the SF of wall area

Qty: 400.00

Unit of Measure: S.F.

Estimate: $118,641.61

Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: The school site is a multi-level site that extends from the residential drive on the southwest section of the site from East Washington Lane to East Mohican Street. The retaining wall that separates the residential site from the school that align the elevation changes are in very poor condition. There are several areas of damage including cracked concrete supports, concrete walls that are leaning indicating potential failure. This deficiency provides a consideration for the overall site work repairs to the existing concrete and brick walls as well as the concrete retaining walls.

System: G2040 - Site Development

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace or install exterior guardrails

Qty: 600.00

Unit of Measure: L.F.

Estimate: $115,411.53

Assessor Name: Hayden Collins

Date Created: 01/29/2016

Notes: The exterior stair system for this school provides access to all but the southern entrances. The elevation changes are extreme for the northern most stairs and the original hand and guard rails are damaged. New steel handrails and guard rails are required at all exterior stairs. This deficiency is expected to be coordinated with other site issues identified in this report.

System: G2050 - Landscaping & Irrigation

Location: Site

Distress: Security Issue

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Remove and replace tree

Qty: 10.00

Unit of Measure: Ea.

Estimate: $19,946.53

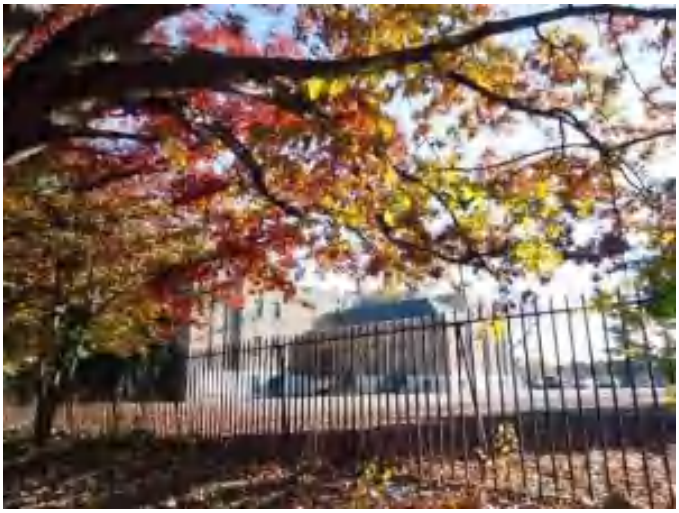
Assessor Name: Craig Anding

Date Created: 01/29/2016

Notes: Landscaping includes open lawn areas, with shrubbery and trees. Several of the trees are dead and limbs are hanging from the trees. The trees are recommended to be removed and replaced with a marginal number of trees. New landscaping techniques should incorporate deciduous trees to the south and evergreens to the north. This effort is expected to be coordinated with the landscaping recommendations included in this report.

Priority 3 - Response Time (3-4 yrs):

System: G2040 - Site Development



Location: SIte

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Remove and replace metal picket fence - input number of gates

Qty: 2,000.00

Unit of Measure: L.F.

Estimate: $336,757.35

Assessor Name: Hayden Collins

Date Created: 01/29/2016

Notes: This school has a perimeter fence surrounding the parking / playground area. The fence consist of either a chain link or metal picket fence and has several areas in need of repairs. This deficiency address the picket fence. Several sections of the fence are in need of repairs and trees have grown into the fence in some locations. Overall the fence is in fair condition considering the age of the application. This fence system is recommended to be selectively removed and replaced with a new system. This effort is expected to be coordinated with other site projects included in this report.

System: G2050 - Landscaping & Irrigation

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Add landscape irrigation system to small area - insert SF of area and LF of pipe run to get to the area for pavement removal and restoration

Qty: 4,000.00

Unit of Measure: S.F.

Estimate: $30,008.00

Assessor Name: Hayden Collins

Date Created: 01/29/2016

Notes: The site slopes gently to the northeast. There are pedestrian walkways around the school with the exception of the driveway south west of the school. There is turf, mature trees, and tired shrubs around the building and few trees and some patchy turf on the south side. The center courtyard is paved and used for parking and play area. This entire site is recommended or new landscaping care and irrigation upgrades to support needed reconstruction. This effort is expected to be coordinated with the landscaping recommendations included in this report.

Priority 4 - Response Time (4-5 yrs):

System: G2040 - Site Development

Location: Site

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 4 - Response Time (4-5 yrs)

Correction: Build secure trash dumpster enclosure

Qty: 1.00

Unit of Measure: Ea.

Estimate: $18,852.52

Assessor Name: Hayden Collins

Date Created: 01/29/2016

Notes: The trash dumpster is located in the parking lot open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area is necessary for the safety of the students and the general public. Construction of a secure lockable dumpster area is recommended.

System: G4030 - Site Communications & Security

Location: Site

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 4 - Response Time (4-5 yrs)

Correction: Add Video Surveillance System

Qty: 3.00

Unit of Measure: Ea.

Estimate: $30,873.54

Assessor Name: Hayden Collins

Date Created: 01/13/2016

Notes: Replace one (1) exterior video surveillance camera and provide allowance for adding (2) exterior cameras for increased surveillance coverage of the site.

Priority 5 - Response Time (> 5 yrs):

System: G2030 - Pedestrian Paving

Location: Asphalt Play Parking Area

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace AC paving

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $141,409.06

Assessor Name: Hayden Collins

Date Created: 01/29/2016

Notes: The parking play area has no assigned parking and limited markers for approved activity areas. No curb cuts for access to the sidewalks that lead to the ADA main entrance. The parking play lot is in fair condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a play, parking lot renewal program that includes all aspects of the current ADA legislation. Asphalt removal and replacement is recommended.

Equipment Inventory

The following table represents the inventory details of the inventory found in the building, which fall under the following subsystems:

No data found for this asset

Glossary

ABMA	American Boiler Manufacturers Association http://www.abma.com/
ACEEE	American Council for an Energy-Efficient Economy
ACGIH	American Council of Governmental and Industrial Hygienists
AEE	Association of Energy Engineers
AFD	Adjustable Frequency Drive
AFTC	After Tax Cash Flow
AGA	American Gas Association
AHU	Air Handling Unit
Amp	Ampere
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASD	Adjustable Speed Drive
ASHRAE	American Society of Heating Refrigerating and Air-Conditioning Engineers Inc.
ASME	American Society of Mechanical Engineers
Assessment	Visual survey of a facility to determine its condition. It involves looking at the age of systems reviewing information from local sources and visual evidence of potential problems to assign a condition rating. It does not include destructive testing of materials or testing of systems or equipment for functionality.
ATS	After Tax Savings
AW	Annual worth
BACNET	Building Automation Control Network
BAS	Building Automation System
BCR	Benefit Cost Ratio
BEP	Business Energy Professional (AEE)
BF	Ballast Factor
BHP	Boiler Horsepower (boilers)
BHP	Brake Horsepower (motors)
BLCC	Building Life Cycle Cost analysis program (FEMP)
BOCA	Building Officials and Code Administrators
BTCF	Before Tax Cash Flow

BTS	Before Tax Savings
Btu	British thermal unit
Building Addition	An area space or component of a building added to a building after the original building's year built date.
CAA	Clean Air Act
CAAA-90	Clean Air Act Amendments of 1990
CABO	Council of American Building Officials
CAC	Conventional Air Conditioning
CADDET	Center for the Analysis and Dissemination of Demonstrated Energy Technologies
Calculated Next Renewal	The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system.
Capital Renewal	Capital renewal is condition work (excluding suitability and energy audit work) that includes the replacement of building systems or elements (as they become obsolete or beyond their useful life) not normally included in an annual operating budget. Calculated next renewal The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system. Next renewal The assessor adjusted expected useful life of a system or element based on on-site inspection.
CDD	Cooling Degree Days
CDGP	Certified Distributed Generation Professional
CEC	California Energy Commission
CEM	Certified Energy Manager
CEP	Certified Energy Procurement Professional
CFC	Chlorofluorocarbon
CFD	Cash Flow Diagram
CFL	Compact Fluorescent Light
CFM cfm	Cubic Feet per Minute
CHP	Combined Heat and Power (a.k.a. cogeneration)
CHW	Chilled Water
Condition	Condition refers to the state of physical fitness or readiness of a facility system or system element for its intended use.
COP	Coefficient of Performance
Cp	Heat Capacity of Material
CPUC	California Public Utility Commission
CRI	Color Rendering Index
CRT	Cathode Ray Tube VDT HMI

CTC	Competitive Transition Charge
Cu	Coefficient of Utilization
Current Replacement Value (CRV)	CRV represents the hypothetical total cost of rebuilding or replacing an existing facility in current dollars to its optimal condition (excluding auxiliary facilities) under current codes and construction standards.
Cv	Value Coefficient
CWS	Chilled Water System
D d	Distance (usually feet)
DB	Dry Bulb
DCV	Demand Control Ventilation
DD	Degree Day
DDB	Double Declining Balance
DDC	Direct Digital Controls
Deferred maintenance	Deferred maintenance is condition work (excluding suitability and energy audit needs) deferred on a planned or unplanned basis to a future budget cycle or postponed until funds are available.
Deficiency	A deficiency is a repair item that is damaged missing inadequate or insufficient for an intended purpose.
Delta	Difference
Delta P	Pressure Difference
Delta T	Temperature Difference
DG	Distributed Generation
DOE	Department of Energy
DP	Dew Point
DR	Demand Response
DX	Direct Expansion Air Conditioner
EA	Energy Audit
EBITDA	Earnings before Interest Taxes Depreciation and Amortization
ECI	Energy Cost Index
ECM	Energy Conservation Measure
ECO	Energy Conservation Opportunity
ECPA	Energy Conservation and Production Act
ECR	Energy Conservation Recommendation
ECS	Energy Control System

EER	Energy Efficiency Ratio
EERE	Energy Efficiency and Renewable Energy division of US DOE
EIA	Energy Information Agency
EIS	Energy Information System
EMCS	Energy Management Computer System
EMO	Energy Management Opportunity
EMP	Energy Management Project
EMR	Energy Management Recommendation
EMS	Energy Management System
Energy Utilization Index (EUI)	EUI is the measure of total energy consumed in the cooling or heating of a building in a period expressed as British thermal unit (BTU) per (cooled or heated) gross square foot.
EO	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 1992
EPCA	Energy Production and Conservation Act of 1975
EPRI	Electric Power Research Institute
EREN	Efficiency and Renewable Energy (Division of USDOE)
ERV	Energy Recovery Ventilator
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
EUI	Energy Use Index
EWG	Exempt Wholesale Generators
Extended Facility Condition Index (EFCI)	EFCI is calculated as the condition needs for the current year plus facility system renewal needs going out to a set time in the future divided by Current Replacement Value.
f	Frequency
F	Fahrenheit
Facility	A facility refers to site(s) building(s) or building addition(s) or combinations thereof that provide a particular service.
Facility Condition Assessment (FCA)	FCA is a process for evaluating the condition of buildings and facilities for programming and budgetary purposes through an on site inspection and evaluation process.
Facility Condition Index (FCI)	FCI is an industry-standard measurement of a facility's condition that is the ratio of the cost to correct a facility's deficiencies to the Current Replacement Value of the facilities. The higher the FCI the poorer the condition of a facility. After an FCI is established for all buildings within a portfolio a building's condition can be ranked relative to other buildings. The FCI may also represent the condition of a portfolio based on the cumulative FCIs of the portfolio's facilities.

FC	Footcandle
FCA	Fuel Cost Adjustment
FEMIA	Federal Energy Management Improvement Act of 1988
FEMP	Federal Energy Management Program
FERC	Federal Energy Regulatory Commission
FESR	Fuel Energy Savings Ratio
FLA	Full Load Amps
FLF	Facility Load Factor (usually monthly)
FLRPM	Full Load Revolutions per Minute
FMS	Facility Management System
FPM fpm	Feet per Minute (velocity)
FSEC	Florida Solar Energy Center
Ft	Foot
GPM gpm	Gallons per Minute
GRI	Gas Research Institute
Gross Square Feet (GSF)	The size of the enclosed floor space of a building in square feet measured to the outside face of the enclosing wall.
GUI	Graphical User Interface
H h	Enthalpy Btu/lb
HCFC	Hydrochlorofluorocarbons
HDD	Heating Degree days
HFC	Hydrofluorocarbons
HHV	Higher Heating Value
HID	High Intensity Discharge (lamp)
HMI	Human Machine Interface
HMMI	Human Man Machine Interface
HO	High Output (lamp)
HP Hp hp	Horsepower
HPS	High Pressure Sodium (lamp)
HR	Humidity Ratio
Hr hr	Hour

HRU	Heat Recovery Unit
HVAC	Heating Ventilation and Air-Conditioning
Hz	Hertz
I	Intensity (lumen output of lamp)
I i	Interest rate or Discount rate
IAQ	Indoor Air Quality
ICA	International Cogeneration Alliance
ICBO	International Conference of Buildings Officials
ICC	International Code Council
ICP	Institutional Conservation Program
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronic Engineers
IESNA	Illuminating Engineering Society of North America
Install year	The year a building or system was built or the most recent major renovation date (where a minimum of 70 of the system?s Current Replacement Value (CRV) was replaced).
IRP	Integrated Resource Planning
IRR	Internal Rate of Return
ISO	Independent System Operator
ITA	Independent Tariff Administrator
k	Kilo multiple of thousands in SI system
K	Kelvins (color temperature of lamp)
K k	Thermal Conductivity of Material
KVA	Kilovolt Ampere
KVAR	Kilovolt Ampere Reactive
kW	kiloWatt
kWh	kiloWatt hour
L	Length (usually feet)
LCC	Life Cycle Costing
LDC	Local Distribution Company
LEED	Leadership in Energy and Environmental Design
LEED EB	LEED for Existing Buildings

LEED NC	LEED for new construction
LF	Load Factor
LHV	Lower Heating Value
Life cycle	The period of time that a building or site system or element can be expected to adequately serve its intended function.
LPS	Low Pressure Sodium (lamp)
Lu	Lumen Output of a Lamp or Fixture
M	Mega multiple of millions in SI system
M&V	Measurement and Verification
MACRS	Modified Accelerated Cost Recovery System
MARR	Minimum Attractive Rate of Return
Mbtu	Thousand Btu
MCF	Thousand Cubic Feet (usually of gas)
MEC	Model Energy Code
Mm	Multiple of Thousands in I/P System
MMBtu	Million Btu
MMCS	Maintenance Management Computer System
MMI	Man Machine Interface
MMS	Maintenance Management System
MSE 2000	Management System for Energy 2000 (ANSI Georgia Tech Univ)
MW	MegaWatt
MWH MWh	MegaWatt hour
NAAQS	National Ambient Air Quality Standards
NAESCO	National Association of Energy Service Companies
NAIMA	North American Insulation Manufacturers Association
NEA	National Energy Act of 1978
NECPA	National Energy Conservation Policy Act
NEMA	National Electrical Manufacturer's Association
NERC	North American Electric Reliability Council
Next Renewal	The Next Renewal date is an override of the 'Calculated Next Renewal' date and is based upon the assessor?s visual inspection.

NFPA	National Fire Protection Association
NGPA	National Gas Policy Act of 1978
NLRPM	No Load Revolutions per Minute (speed)
Nn	Equipment or Project lifetime in economic analysis
NOPR	Notice of Proposed Rule Making from FERC
NOx	Nitrogen Oxide Compounds
NPV	Net present value in economic analysis
NREL	National Renewable Energy Laboratory
NUG	Non-Utility Generator
O&M	Operation and Maintenance
OA	Outside Air
ODP	Ozone Depletion Potential
OPAC	Off-Peak Air Conditioning
P	Present value in economic analysis
PBR	Performance Based Rates
PEA	Preliminary Energy Audit
PF	Power Factor
PID	Proportional plus integral plus derivative (control system)
PM	Portfolio Manager in Energy Star rating system
PM	Preventive Maintenance
PoolCo	Power Pool Company or Organization
POU	Point of Use
PQ	Power Quality
PSC	Public Service Commission
PSIA psia	Pounds per square inch absolute (pressure)
PSIG psig	Pounds per square inch gauge (pressure)
PUC	Public Utility Commission
PUHCA	Public Utilities Holding Company Act of 1935
PURPA	Public Utilities Regulatory Policies of 1978
PV	Photovotaic system

PV	Present Value
PW	Present Worth
PX	Power Exchange
q	Rate of heat flow in Btu per hour
Q	Heat load due to conduction using degree days
QF	Qualifying Facility
R	Electrical resistance
R	Thermal Resistance
RC	Remote controller
RCR	Room Cavity Ratio
RCRA	Resource Conservation and Recovery Act
Remaining Service Life (RSL)	RSL is the number of years service remaining for a system or equipment item. It is automatically calculated based on the difference between the current year and the 'Calculated Next Renewal' date or the 'Next Renewal' date whichever one is the later date.
Remaining Service Life Index (RSLI)	RSLI is defined as a percentage ratio of the remaining service life of a system. It usually ranges from 0 to 100
REMR	Repair Evaluation Maintenance Rehabilitation (REMR) is a scale used to objectively rank systems based on their condition
Renewal Schedule	A timeline that provides the items that need repair the year in which the repair is needed and the estimated price of the renewal.
RH	Relative Humidity
RLA	Running Load Amps
RMS	Root Mean Square
RO	Reverse Osmosis
ROI	Return on Investment
RPM	Revolutions Per Minute
RTG	Regional Transmission Group
RTO	Regional Transmission Organization
RTP	Real Time Pricing
SBCCI	Southern Building Code Congress International
SC	Scheduling Coordinator
SC	Shading Coefficient
SCADA	Supervisory Control and Data Acquisition Systems

SEER	Seasonal Energy Efficiency Ratio
SHR	Sensible Heat Ratio
Site	The grounds and utilities roadways landscaping fencing and other typical land improvements needed to support the facility.
Soft Cost	An expense item that is not considered direct construction cost. Soft cost includes architectural engineering financing legal fees and other pre-and-post construction expenses.
SOx	Sulfur Oxide Compounds
SP	Static Pressure
SP SPB	Simple Payback
SPP	Simple Payback Period
SPP	Small Power Producers
STR	Stack Temperature Rise
SV	Specific Volume
System	System refers to building and related site work elements as described by ASTM Uniformat II Classification for Building Elements (E1557-97) a format for classifying major facility elements common to most buildings. Elements usually perform a given function regardless of the design specification construction method or materials used. See also Uniformat II.
T	Temperature
T	Tubular (lamps)
TAA	Technical Assistance Audit
TCP/IP	Transmission Control Protocol/Internet Protocol
TES	Thermal Energy Storage
THD	Total Harmonic Distortion
TOD	Time of Day
TOU	Time of Use
TQM	Total Quality Management
TransCo	Transmission Company
U	Thermal Conductance
UDC	Utility Distribution Company
UL	Underwriters Laboratories
UNIFORMAT II	The ASTM UNIFORMAT II Classification for Building Elements (E1557-97) a format for classifying major facility components common to most buildings.
USGBC	US Green Building Council
v	Specific Volume

V	Volts Voltage
V	Volume
VAV	Variable Air Volume
VDT	Video Display Terminal
VFD	Variable Frequency Drive
VHO	Very High Output
VSD	Variable Speed Drive
W	Watts
W	Width
WB	Wet bulb
WH Wh	Watt Hours
Year built	The year that a building or addition was originally built based on substantial completion or occupancy.
Z	Electrical Impedance