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.

Mifflin School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	3624 Conrad St.	Enrollment	299
	Philadelphia, Pa 19129	Grade Range	'00-08'
Phone/Fax	215-951-4007 / 215-951-4510	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Mifflin	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	**38.82%**	**$12,846,318**	**$33,090,200**
Building	37.46 %	$11,874,874	$31,695,993
Grounds	69.68 %	$971,443	$1,394,207

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	14.58 %	$135,528	$929,366
Exterior Walls (Shows condition of the structural condition of the exterior facade)	21.13 %	$484,342	$2,292,111
Windows (Shows functionality of exterior windows)	98.34 %	$1,099,882	$1,118,421
Exterior Doors (Shows condition of exterior doors)	06.63 %	$5,973	$90,045
Interior Doors (Classroom doors)	00.00 %	$0	$217,971
Interior Walls (Paint and Finishes)	33.38 %	$203,216	$608,741
Plumbing Fixtures	03.61 %	$30,317	$839,592
Boilers	00.00 %	$0	$1,159,407
Chillers/Cooling Towers	65.60 %	$997,288	$1,520,208
Radiators/Unit Ventilators/HVAC	172.07 %	$4,593,656	$2,669,679
Heating/Cooling Controls	158.90 %	$1,332,175	$838,350
Electrical Service and Distribution	00.00 %	$0	$602,370
Lighting	08.42 %	$181,402	$2,153,628
Communications and Security (Cameras, Pa System and Fire Alarm)	00.00 %	$0	$806,679

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

S632001;Mifflin

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):	62,100
Year Built:	1937
Last Renovation:	2006
Replacement Value:	$33,090,200
Repair Cost:	$12,846,317.77
Total FCI:	38.82 %
Total RSLI:	51.89 %

Description:

Facility Assessment

December 2015

School District of Philadelphia

Thomas Mifflin Elementary School

3624 Conrad St.

Philadelphia, PA 19129

62,100 SF / 1,113 Students / LN 06

GENERAL

The Thomas Mifflin Elementary is one of the older schools in service to the Philadelphia communities and has a dedication plaque to

the name sake Thomas Mifflin in the main lobby. This school is identified as B632001 and was originally designated as the Thomas Mifflin High School. This facility is located at 3624 Conrad St., Philadelphia, PA.

Thomas Mifflin School is a historic school building located in the East Falls neighborhood of Philadelphia, Pennsylvania. It was designed by Irwin T. Catharine and built in 1936. It is a 2 1/2-story, "L"-shaped, brick building on a raised basement in the Colonial Revival-style. Additions were built in 1966 and 1968. It features a large brick and wood clock tower, gable roof, and rounded gables. It was named for American merchant and politician Thomas Mifflin (1744 –1800).

It was added to the National Register of Historic Places in 1988.

The building includes brick facades with a concrete foundation. Constructed in 1935 the school has had two major additions, a classroom and a Gym. A single minor addition constructed in 2004 now serves as the Pre K room.

The main entrance faces the Northern exterior facing Conrad Street. There is no general parking. This School serves students in grades K to 6 and has a basement with three stories consisting of a total gross square footage of 62,100 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 December 8, 2015.

Mr. Brian Smith, Building Engineer, and Mr. Durelle Holmes, Facilities Area Coordinator, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history. Ms. Leslie Mason, Principal, also participated in the interview and shared information about the school with the assessment team.

Architectural / Structural Systems

The exterior brick surfaces are generally in fair to good condition for their age. In some locations, bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry facade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

This schools historic presentation to the community reflects upon the exterior window system that was reported to have been upgraded in the late 1980s. Several of the windows no longer work 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. Most of the doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The service doors on the roof have expired and failed compromising access to elevator rooms and tower rooms. The exterior door system, store front and service doors are recommended for upgrade.

The pitched asphalt roofing system was reported to have been replaced within the past few years. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

This building was constructed prior to any consideration for those that may be physically challenged. However, the construction of the additions of this school provides access once you enter the grounds. Please note that the grounds are only accessed via stairs and no alternate routes exist. Currently there are two compliant entrances at grade the main entrance and the entrance to the gym forum. The path of travel is clear from this access points as the interior path of travel is supported by elevator, some compliant signage, restrooms amities, some compliant door hardware, partially compliant hand rails and guard rails to meet the needs of the physically challenged.

The original lobby has a special design that has been modified to support access to the main lobby and addition. The finish is marble walls, stirs, and custom designed ceilings with open stairs on either side leading to the second floor while the main level leads to the auditorium. Care should be taken to ensure that this historic lobby remains as clean and well maintained in the feature as it was the day of the inspection.

The stair fire door system was reported to have been upgraded in 2004. This system is expected to have a normal life cycle that

extends beyond the outlook of this report. No recommendations are warranted at this time.

Interior doors are typically wood in metal or wood frames. The interior door system was reported to have been upgraded in 2004. No recommendations are warranted at this time.

The tack boards were recently replaced and are in good condition. The school has modified classrooms with smart boards in place of the chalk boards. With this in mind there are no recommendations for the tack boards or chalk boards at this time.

Interior signage packages for this school are a mix of compliant and partially compliant signs. The low cost solution to this minor issue is to rehang the signs in a manner that provides consistency throughout the school. No recommendations are warranted at this time.

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.

There are painted walls, trim, and some painted ceilings in this building. The interior finishes are in good to fair condition depending on the location of the finish. For example due to recent roof leaks over the auditorium several areas will require repair and repainting. This school will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Minor repairs should be completed before work begins. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

The tile wall finishes appear to have been replaced in the early 1990's and are in fair condition.

The hallways and stair landings consist of marble or terrazzo finish and mechanical spaces have a sealed concrete finish. The interior carpet finish was installed approximately in 2000 and is in fair condition considering the age and high traffic conditions. This finish will exceed its expected life within the next five years and is recommended for removal and replacement.

The vinyl tile finish is a 9 x 9 application and is suspect to contain asbestos. This finish is recommended for upgrade to a new 12 x 12 vinyl tile application. Suspected asbestos containing materials (ACM) are believed to be limited to the original vinyl floor tile and mastic. While currently sound and manageable in place, future renovation efforts should include provision to test and abate any and all ACM.

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.

The ceiling finish is a mix of 12 x 12 ceiling grid, painted and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and are 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 mechanical electrical efforts in this report. 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.

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 sections 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.

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.

The renovations for this school have included a new library business center, science labs and chemistry labs. In each case the like new condition of the finishes does not warrant a recommendation. These areas are expected to have a normal life cycle that extends beyond the outlook of this report.

MECHANICAL SYSEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets. Most lavatories have dual wheel handle faucets and urinals and water closets have lever operator recessed flush valves. There are cast iron service sinks and some stainless steel sinks in classrooms. The china drinking fountains in corridors have no refrigeration. Fixtures in toilet rooms were replaced in 2006. Hot water is provided by two Paloma instantaneous gas heaters in the mechanical room installed in 2006. The heaters have individual circulating pumps and there is a system circulating pump.

Water piping may contain lead solder based on age. Sanitary, waste, vent and rainwater piping is original 1954 installation hub and spigot cast iron, with some hubless cast iron where additions or damage has occurred. A three inch water line with backflow preventer and meter and a six inch gas line and meter are in a room adjacent to the mechanical room. A gas pressure boost unit is in the mechanical room. Both of the services are from Onrad St.

The plumbing fixtures have been replaced and should have twenty five more serviceable years. The water heaters should have remaining service life of fifteen years. The domestic water supply piping has exceeded the service life and should be replaced. The cast iron sanitary and waste piping should be inspected and repaired or replaced as required.

HVAC-The building heat source is two Burnham low pressure steam cast iron sectional boilers. The boilers are gas/ oil fired one hundred thirty five hp each installed as part of a 2006 renovation. Each unit has a Power Flame burner and control panel, separate oil pump, and code compliant gas train, connected to a common factory fabricated flue routed to a chimney. There is ten thousand gallon underground oil storage tank with a tank monitoring system in the mechanical room. An Alyan duplex oil pump system in the mechanical room provides circulation. A triplex boiler feed pump and a duplex condensate return sump pump serve the boilers. Both units are B&G. There is also a remote cast iron condensate receiver is in a storage room near the cafeteria. A small shell and tube heat exchanger and two Armstrong inline circulating pumps in the mechanical room supply hot water to portions of the building. The heating system includes chemical treatment and a solids filtration unit.

Classrooms and some other areas have older unit ventilators with steam coil, outside air damper, filter, blower and motor, control valve and controls. Some newer unit ventilators with hot water coils are part of the 2006 renovation. Heating radiation units are located at corridors, toilets and other areas requiring heat.

A mechanical room in the basement contains an inoperable central house fan system and a control air compressor. A second mechanical room near the gymnasium contains a unit that serves that area through exposed ductwork and the cafeteria is served by a unit in an adjacent space. The kitchen has warming equipment only and no exhaust hood. There are two roof exhaust fans to provide toilet and building exhaust. The boiler room has combustion air louvers with motorized dampers.

There is no central air conditioning. The building has some window air conditioners and a ductless split system with roof mounted condensing unit cools the IT room. The IMC and computer lab are each served by DX split systems with roof mounted five ton condensing units. Air handling sections are mounted above ceilings in each space. These units were installed in 2006.

Steam, condensate and hot water piping is welded black steel. Fuel oil piping is black steel with screwed fittings.

There are older pneumatic controls but no central control system.

The boilers should be serviceable up to twenty five more years. The older unit ventilators, heating and ventilating units, control system and steam distribution system including piping and condensate return unit have exceeded the service life and should be replaced. The hot water system, newer unit ventilators and two DX split systems should be serviceable sixteen more years. The 2006 unit ventilators do not have a separate water coil for cooling.

FIRE PROTECTION-The building has a fire protection system with fire and jockey pumps in the building engineer’s office. The fire pump is an Aurora five hundred gpm twenty hp unit. The fire service is a six inch line.

ELECTRICAL SYSTEMS

Electrical Service--The building is served at 480/277V, 3 phase, 4 wire from a PECO Energy Company pad mounted transformer located on the northeast side of the site, just south of Conrad Street. Service is routed underground to an 800A, 480/277V, 3 phase, 4 wire General Electric service entrance Panelboard MDP, located in Electrical Room 009 on the north side of the Boiler Room. Panelboard MDP feeds 480/277V, 225A Panelboard PPHG1 and 400A Panelboard PPHG2 and 208/120V, 400A Panelboard PPLG and 800A Distribution Panelboard SDP via step-down transformers. Distribution Panelboard SDP feeds the elevator, mechanical equipment and panelboards throughout the building via five phase change transformers. All of the electrical service and distribution system equipment, including all panelboards, were replaced in a major additions and alterations project that was completed in 2006. The equipment is in very good condition with an estimated remaining useful life of 21 years. There are no recommendations at this time.

Receptacles-- The 2006 additions and alterations project added wiring devices in most areas. A surface raceway system was installed for receptacles added in classrooms. Except for approximately eight (8) classrooms in the south wing on the Second Floor, all rooms were upgraded with additional receptacles. An additional 6 to 8 duplex receptacles should be provided in each of these 8 classrooms using a surface metal raceway system

Computer Rooms 210 and 211 are provided with tele-power poles for routing power and data to computer work stations. Surface floor mounted duplex receptacles are located under work benches in Science Center 215. Receptacles located in the kitchen, or within 6 feet of a wet location, were observed to be ground-fault circuit-interrupting (GFCI) type, as required by code. No deficiencies were identified.

Lighting--Most of the lighting fixtures in the building has been updated in the 2006 additions and renovation project. Renovated rooms included the kitchen, faculty dining, classrooms in the Basement and First Floor, Auditorium, Gymnasium, IMC, Computer Rooms and Science Center. Lighting fixtures were upgraded with T8 lamps. Fixtures included 2x4 recessed fluorescent grid troffers and surface mounted fluorescent wraparounds with acrylic prismatic lenses and pendant mounted direct/indirect fluorescent fixtures with parabolic blade louvers. Lighting fixtures in the gymnasium are industrial style 400W metal halide fixtures, some provided with quartz lamps instant re-strike. The auditorium has four (4) incandescent chandeliers and recessed downlights. There is one (1) chandelier that is damaged. This report includes repair/replacement of the damaged chandelier and replacement of the incandescent lamps with LED lamps for improved energy efficiency and reduced maintenance costs. The platform has two rows of theatrical batten lighting fixtures and no worklights. There is no dimming system. Lighting fixtures are switched by branch circuit breakers in the stage panelboard. Lighting fixtures in the Boiler Room and Main Electrical Room are 4 foot industrial with T8 lamps.

The areas that still have fluorescent lighting fixtures with obsolete T12 lamps include stairwells, most restrooms, and eight (8) classrooms on the Second Floor. These areas are included for fixture replacement in this report. Classroom lighting is controlled by two all switches.

Wall mounted exterior lighting consists of wall packs, decorative vandal-resistant round fixtures with compact fluorescent lamps and HID floodlighting fixtures. Fixtures are located at each exit discharge and to illuminate the play areas. Exterior lighting is in good condition with a remaining useful life that extends beyond this report. For safety considerations, an additional floodlighting fixture is recommended to illuminate the exterior stairs at the northwest corner of the building.

Fire Alarm System-- The fire alarm system was replaced in 2006 with a Siemens addressable system. The Siemens FS-250 fire alarm control panel (FACP) is located in Electrical Room 009. The system includes manual pull stations, audible/visual notification appliances, smoke and heat detectors for elevator recall, and remote annunciator panels. The system is expected to have a remaining life of 11 years. There are no recommendations at this time.

Telephone/LAN-- The Telephone Distribution system equipment and Main Distribution Frame (MDF) is located in Room 114. Each classroom is provided with a telephone. Data outlets are also provided in each classroom. Wireless access points are located to provide Wi-Fi service throughout the entire school.

Public Address/Paging/Sound Systems-- The paging system is accessed through the telephone system. The paging system amplifier and telephone system interface is located in Main Distribution Frame (MDF) Room 114. Most classrooms have a recessed ceiling speaker in addition to wall mounted speaker. Recessed ceiling speakers are located in corridors, wall mounted speakers in the auditorium. There are no recommendations at this time.

The auditorium has a separate sound system cabinet with speakers on each side of the platform and at the back of the auditorium. The system is reported to be in good working order. No recommendations at this time.

Clock and Program System-- There is a Standard Electric Time 1400 Master Time Programmer panel in the Main Office. The program system was reported to be in good working order. There is a wireless GPS clock system with Primex battery operated synchronized clocks. The ceiling speakers are used for announcements and program system.

Television Distribution System-- The original television system is obsolete and no longer used. A few of the classrooms still have wall mounted television sets left abandoned in place. Removal of these sets is considered a maintenance item and not included in this report as a capital cost.

Video Surveillance and Security System--The video surveillance system cabinet is located in the security office opposite Main Office 116. There are a total of 31 cameras, two digital video recorders (DVRs) and one monitor. Cameras are located in the kitchen, corridors, gymnasium and stairwells. There are no exterior cameras. There are no recommendations at this time for interior cameras.

The addition of exterior cameras is included under the Grounds narrative.

Security motion sensors are located in some corridors. The corridor doors between the gymnasium wing and the original building have magnetic door contacts. There is an Aiphone intercom system at the Visitor Entrance.

Emergency Power System-- A Generac 15 kW/15 kVA, 120/240V, 1 phase, natural gas fueled standby generator is located in Boiler Room 008. The generator supplies 100A Emergency Panelboard EL via a Generac GTS 105A automatic transfer switch (ATS). The generator, ATS and Panelboard EL have served their useful life. Replacement of the standby power system is recommended; the replacement generator should have capacity to supply the electric traction elevator.

Emergency Lighting System / Exit Lighting-- Emergency egress lighting fixtures and exit signs are connected to emergency panelboards. Some of the exit signs were replaced in the 2006 alterations and renovation project. The remaining exit signs have incandescent lamps and are in fair to poor condition and should be replaced within 3 to 4 years. An allowance for replacement of exit signs is included in this report.

Lightning Protection System-- The building is not provided with a lightning protection system.

Conveying Systems-- There is one electric traction passenger elevator that is DC motor-generator type. It appears that the elevator machinery and controller are original to the building construction. The equipment is beyond its service life and needs to be replaced. The elevator cab, call buttons and lobby lanterns are in good condition and do not need to be upgraded at this time.

A Porch-Lift vertical platform lift is provided on stage right in the auditorium for access by the physically disabled.

GROUNDS

The sidewalk system is not original to the buildings construction. There are a several new area and upgraded section around the school. However the historical plaza and the sidewalks near the pre K area are in need of repair. The sidewalk system is expected to expire in the near future. Removal of the entire system is recommended.

There is no trash dumpster for this school and trash materials are stored in the school for pick up. Upgrades to protect the 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.

This school has a perimeter retaining wall and fence that secures the play area only. The outside classroom and grounds that include the trees and nature area is not enclosed. The fence system is in good condition and no recommendations are warranted at this time.

The site is a multi-level site that extends from the overpass through the nature area, outside classroom to the main entrance. The large retaining walls that align the elevation changes on this site are in poor condition. There are several areas of damage including cracked concrete stairs, concrete and brick 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 limited maintained landscaping with a few mature trees and small sections of turf. The natural areas such as the nature walk trail and the outside classroom is not maintained. The landscaping is in good condition and is on a program of renewal. There were no issues that surfaced during the time of the inspection therefore no projects or recommendations are required at this time.

There is a small retaining wall that is made of stone that surrounds the older section of the school. This wall also provides limited access to the exterior stairs leading to the secondary entrance exit system for this school. This retaining wall is in good condition. However, care should be taken to clean the areas from debris from the natural landscaped areas. There are no recommendations required at this time.

Site Lighting-- Other than building mounted lighting fixtures, there is one light pole with two luminaires that illuminate the basketball court on the south side of the gymnasium. There are no recommendations at this time.

Site video surveillance-- there are no exterior cameras that provide video surveillance of the site and play areas. This report includes the addition of four (4) exterior cameras; one on the west side of the building, one at the north side at the Visitor Entrance, one at the Gymnasium entrance and one on the east side of the Gymnasium.

RECOMMENDATIONS

- Replace auditorium seating
- Remove and replace stage curtain
- Remove and replace suspended acoustic ceilings
- Remove and replace wood flooring
- Remove VAT and replace with VCT
- Remove and replace carpet
- Repair and repaint all interior walls
- Remove and Replace Built Up Roof
- Remove and replace exterior doors
- Remove and replace aluminum windows
- Repair cracks in masonry
- Repair retaining wall
- Build secure trash dumpster enclosure
- Remove and replace concrete sidewalk or paving
- Replace the existing unit ventilators with new units designed for quiet operation and equipped with hot water and chilled water coils, hydronic control valves with digital controls and integral heat exchangers to provide code required fresh air quantities. Connect to new chilled and hot water piping systems and building automation control system.
- Remove the existing window air conditioning units and install a one hundred eighty ton air-cooled chiller on the roof with chilled water distribution piping, two pumps, chemical treatment and controls located in a mechanical room.
- Replace existing unit and install 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.
- Replace existing unit and 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.
- Install new direct digital control system and building automation system with remote computer control capability and graphics package.
- Inspect cast iron plumbing piping including camera survey. Repair or replace as required.
- Replace china drinking fountains with stainless steel water coolers with integral refrigeration.
- Replace existing unit and provide a new central station air handling unit for the cafeteria 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.
- Replace domestic water supply piping with insulated rigid copper tubing. Include fittings, valves, hangers and supports.
- Provide surface metal raceway system with 6 to 8 duplex receptacles in each of eight (8) classrooms on the Second Floor.
- Repair/replace one (1) chandelier in the Auditorium that is damaged. Replace incandescent lamps in all four (4) chandeliers with LED lamps for improved energy efficiency and reduced maintenance costs.
- Replace fluorescent lighting fixtures that have obsolete T12 lamps with fixtures having T8 or T5 lamps. Areas include stairwells, most restrooms and eight (8) classrooms on the Second Floor. (stairwells - 18 fixtures; restrooms 930 SF; classrooms 5,474 SF).
- For safety considerations, add a floodlighting fixture at the northwest corner of the building to illuminate the exterior stairs down to the public way.
- Replace standby power system, including generator, automatic transfer switch, and emergency lighting Panelboard EL. Generator size should be increased to supply the electric traction elevator with standby power (estimate 60 kW generator).
- Provide allowance to replace 20 exit signs with LED type.
- Replace elevator machine and controller.
- Add four (4) exterior video surveillance cameras; one on the west side of the building, one at the north side at the Visitor Entrance, one at the Gymnasium entrance and one on the east side of the Gymnasium. Add one digital video recorder (DVR).

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S632001		

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.

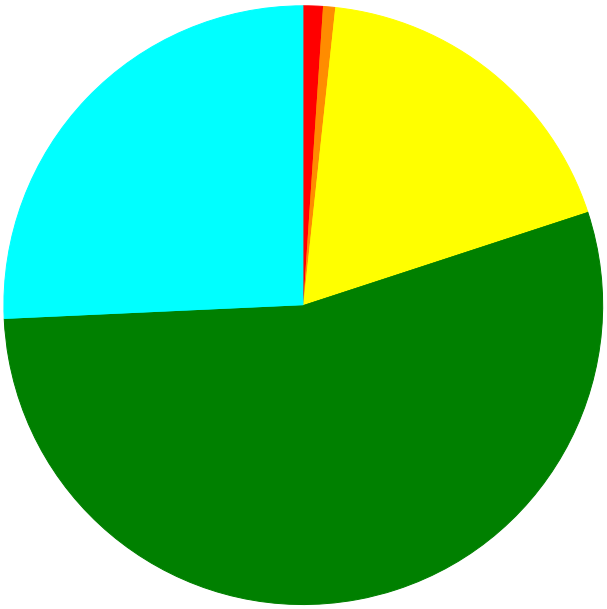
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	22.00 %	0.00 %	$0.00
A20 - Basement Construction	22.00 %	0.00 %	$0.00
B10 - Superstructure	22.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	25.22 %	45.43 %	$1,590,196.28
B30 - Roofing	80.08 %	14.58 %	$135,528.04
C10 - Interior Construction	24.16 %	5.85 %	$89,118.00
C20 - Stairs	22.00 %	0.00 %	$0.00
C30 - Interior Finishes	55.75 %	46.08 %	$1,703,236.68
D10 - Conveying	85.71 %	58.88 %	$98,351.06
D20 - Plumbing	77.19 %	51.23 %	$649,646.87
D30 - HVAC	96.76 %	100.22 %	$6,923,119.38
D40 - Fire Protection	64.98 %	0.00 %	$0.00
D50 - Electrical	55.40 %	8.52 %	$311,084.21
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	283.20 %	$374,593.75
G20 - Site Improvements	45.45 %	90.55 %	$920,170.89
G40 - Site Electrical Utilities	70.00 %	13.56 %	$51,272.61
Totals:	**51.89 %**	**38.82 %**	**$12,846,317.77**

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)
B632001;Mifflin	62,100	37.46	$135,528.04	$13,831.55	$1,444,428.99	$6,975,577.49	$3,305,508.20
G632001;Grounds	86,900	69.68	$0.00	$70,125.13	$901,318.37	$0.00	$0.00
Total:		**38.82**	**$135,528.04**	**$83,956.68**	**$2,345,747.36**	**$6,975,577.49**	**$3,305,508.20**

Deficiencies By Priority



1 - Response Time (< 2 yr) - $135,528.04
2 - Response Time (2-3 yrs) - $83,956.68
3 - Response Time (3-4 yrs) - $2,345,747.36
4 - Response Time (4-5 yrs) - $6,975,577.49
5 - Response Time (> 5 yrs) - $3,305,508.20

Budget Estimate Total: $12,846,317.77

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):	62,100
Year Built:	1937
Last Renovation:	2006
Replacement Value:	$31,695,993
Repair Cost:	$11,874,874.27
Total FCI:	37.46 %
Total RSLI:	51.88 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B632001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S632001		

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	22.00 %	0.00 %	$0.00
A20 - Basement Construction	22.00 %	0.00 %	$0.00
B10 - Superstructure	22.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	25.22 %	45.43 %	$1,590,196.28
B30 - Roofing	80.08 %	14.58 %	$135,528.04
C10 - Interior Construction	24.16 %	5.85 %	$89,118.00
C20 - Stairs	22.00 %	0.00 %	$0.00
C30 - Interior Finishes	55.75 %	46.08 %	$1,703,236.68
D10 - Conveying	85.71 %	58.88 %	$98,351.06
D20 - Plumbing	77.19 %	51.23 %	$649,646.87
D30 - HVAC	96.76 %	100.22 %	$6,923,119.38
D40 - Fire Protection	64.98 %	0.00 %	$0.00
D50 - Electrical	55.40 %	8.52 %	$311,084.21
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	283.20 %	$374,593.75
Totals:	**51.88 %**	**37.46 %**	**$11,874,874.27**

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.	62,100	100	1937	2037		22.00 %	0.00 %	22			$1,142,640
A1030	Slab on Grade	$7.73	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$480,033
A2010	Basement Excavation	$6.55	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$406,755
A2020	Basement Walls	$12.70	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$788,670
B1010	Floor Construction	$75.10	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$4,663,710
B1020	Roof Construction	$13.88	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$861,948
B2010	Exterior Walls	$36.91	S.F.	62,100	100	1937	2037		22.00 %	21.13 %	22		$484,342.08	$2,292,111
B2020	Exterior Windows	$18.01	S.F.	62,100	40	1937	1977	2027	30.00 %	98.34 %	12		$1,099,881.65	$1,118,421
B2030	Exterior Doors	$1.45	S.F.	62,100	25	1937	1962	2027	48.00 %	6.63 %	12		$5,972.55	$90,045
B3010105	Built-Up	$37.76	S.F.	4,000	20	1980	2000	2027	60.00 %	89.73 %	12		$135,528.04	$151,040
B3010140	Shingle & Tile	$38.73	S.F.	20,000	25	2011	2036		84.00 %	0.00 %	21			$774,600
B3020	Roof Openings	$0.06	S.F.	62,100	20	2011	2031		80.00 %	0.00 %	16			$3,726
C1010	Partitions	$17.91	S.F.	62,100	100	1937	2037		22.00 %	8.01 %	22		$89,118.00	$1,112,211
C1020	Interior Doors	$3.51	S.F.	62,100	40	1937	1977	2027	30.00 %	0.00 %	12			$217,971
C1030	Fittings	$3.12	S.F.	62,100	40	1937	1977	2027	30.00 %	0.00 %	12			$193,752
C2010	Stair Construction	$1.41	S.F.	62,100	100	1937	2037		22.00 %	0.00 %	22			$87,561
C3010230	Paint & Covering	$13.21	S.F.	42,100	10	2011	2021		60.00 %	36.54 %	6		$203,216.31	$556,141
C3010232	Wall Tile	$2.63	S.F.	20,000	30	1937	1967	2027	40.00 %	0.00 %	12			$52,600

Site Assessment Report - B632001;Mifflin

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 $
C3020411	Carpet	$7.30	S.F.	1,000	10	1937	1947	2027	120.00 %	153.30 %	12		$11,190.76	$7,300
C3020412	Terrazzo & Tile	$75.52	S.F.	15,000	50	1937	1987	2027	24.00 %	0.00 %	12			$1,132,800
C3020413	Vinyl Flooring	$9.68	S.F.	20,000	20	1937	1957	2027	60.00 %	78.34 %	12		$151,666.68	$193,600
C3020414	Wood Flooring	$22.27	S.F.	20,000	25	1937	1962	2027	48.00 %	130.90 %	12		$583,041.42	$445,400
C3020415	Concrete Floor Finishes	$0.97	S.F.	6,100	50	1937	1987	2027	24.00 %	0.00 %	12			$5,917
C3030	Ceiling Finishes	$20.97	S.F.	62,100	25	2011	2036		84.00 %	57.91 %	21		$754,121.51	$1,302,237
D1010	Elevators and Lifts	$2.69	S.F.	62,100	35	1937	1972	2045	85.71 %	58.88 %	30		$98,351.06	$167,049
D2010	Plumbing Fixtures	$13.52	S.F.	62,100	35	2006	2041		74.29 %	3.61 %	26		$30,316.76	$839,592
D2020	Domestic Water Distribution	$1.68	S.F.	62,100	25	1937	1962	2042	108.00 %	301.63 %	27		$314,683.09	$104,328
D2030	Sanitary Waste	$2.90	S.F.	62,100	25	1937	1962	2042	108.00 %	169.16 %	27		$304,647.02	$180,090
D2040	Rain Water Drainage	$2.32	S.F.	62,100	30	1937	1967	2025	33.33 %	0.00 %	10			$144,072
D3020	Heat Generating Systems	$18.67	S.F.	62,100	35	2006	2041		74.29 %	0.00 %	26			$1,159,407
D3030	Cooling Generating Systems	$24.48	S.F.	62,100	30			2047	106.67 %	65.60 %	32		$997,288.34	$1,520,208
D3040	Distribution Systems	$42.99	S.F.	62,100	25	1937	1962	2042	108.00 %	172.07 %	27		$4,593,656.14	$2,669,679
D3050	Terminal & Package Units	$11.60	S.F.	62,100	20	2006	2026		55.00 %	0.00 %	11			$720,360
D3060	Controls & Instrumentation	$13.50	S.F.	62,100	20	1937	1957	2037	110.00 %	158.90 %	22		$1,332,174.90	$838,350
D4010	Sprinklers	$7.05	S.F.	62,100	35	2006	2041		74.29 %	0.00 %	26			$437,805
D4020	Standpipes	$1.01	S.F.	62,100	35				0.00 %	0.00 %				$62,721
D5010	Electrical Service/Distribution	$9.70	S.F.	62,100	30	2006	2036		70.00 %	0.00 %	21			$602,370
D5020	Lighting and Branch Wiring	$34.68	S.F.	62,100	20	2006	2026		55.00 %	8.42 %	11		$181,402.23	$2,153,628
D5030	Communications and Security	$12.99	S.F.	62,100	15	2006	2021		40.00 %	0.00 %	6			$806,679
D5090	Other Electrical Systems	$1.41	S.F.	62,100	30	1937	1967	2047	106.67 %	148.10 %	32		$129,681.98	$87,561
E1020	Institutional Equipment	$4.82	S.F.	62,100	35	1937	1972	2027	34.29 %	0.00 %	12			$299,322
E1090	Other Equipment	$11.10	S.F.	62,100	35	1937	1972	2027	34.29 %	0.00 %	12			$689,310
E2010	Fixed Furnishings	$2.13	S.F.	62,100	40	1937	1977	2027	30.00 %	283.20 %	12		$374,593.75	$132,273
								Total	**51.88 %**	**37.46 %**			**$11,874,874.27**	**$31,695,993**

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: Painted Walls, 75%
Marble, Wall Tile 25%

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

Note: Carpet 3%
Terrazzo Tile 24%
Vinyl 32%
Wood 32%
Concrete 9%

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

Note: There are eight (8) secondary transformers, including one (1) 225 kVA and one (1) 112.5 kVA, both rated 480V-208/120V, 3 phase, 4 wire, and six (6) phase changer transformers as follows:
(3) 37.5 kVA, 208/120V, 3 phase - 120/240V, 2 phase, phase changer
(3) 15 kVA, 208/120V, 3 phase - 120/240V, 2 phase, phase changer

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:	**$11,874,874**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,790,006**	**$0**	**$0**	**$0**	**$212,983**	**$13,877,863**
*** 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	$484,342	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$484,342**
B2020 - Exterior Windows	$1,099,882	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,099,882**
B2030 - Exterior Doors	$5,973	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$5,973**
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	$135,528	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$135,528**
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	$89,118	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$89,118**
C1020 - Interior Doors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

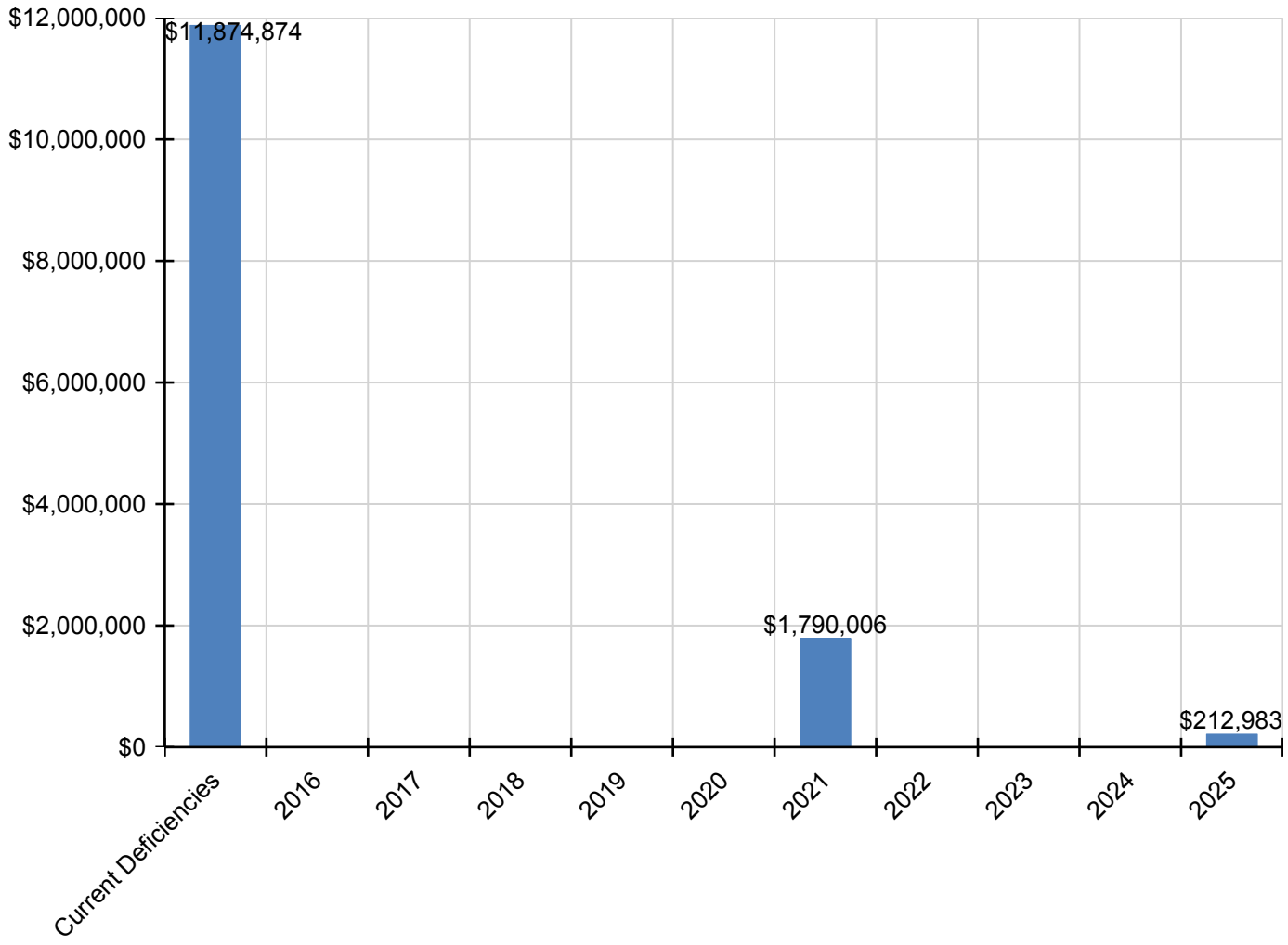
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$203,216	$0	$0	$0	$0	$0	$730,467	$0	$0	$0	$0	**$933,684**
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**
C3020411 - Carpet	$11,191	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,191**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$151,667	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$151,667**
C3020414 - Wood Flooring	$583,041	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$583,041**
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	$98,351	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$98,351**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$30,317	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$30,317**
D2020 - Domestic Water Distribution	$314,683	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$314,683**
D2030 - Sanitary Waste	$304,647	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$304,647**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$212,983	**$212,983**
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	$997,288	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$997,288**
D3040 - Distribution Systems	$4,593,656	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,593,656**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,332,175	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,332,175**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5020 - Lighting and Branch Wiring	$181,402	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$181,402**

D5030 - Communications and Security	$0	$0	$0	$0	$0	$0	$1,059,539	$0	$0	$0	$0	**$1,059,539**
D5090 - Other Electrical Systems	$129,682	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$129,682**
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	$374,594	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$374,594**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

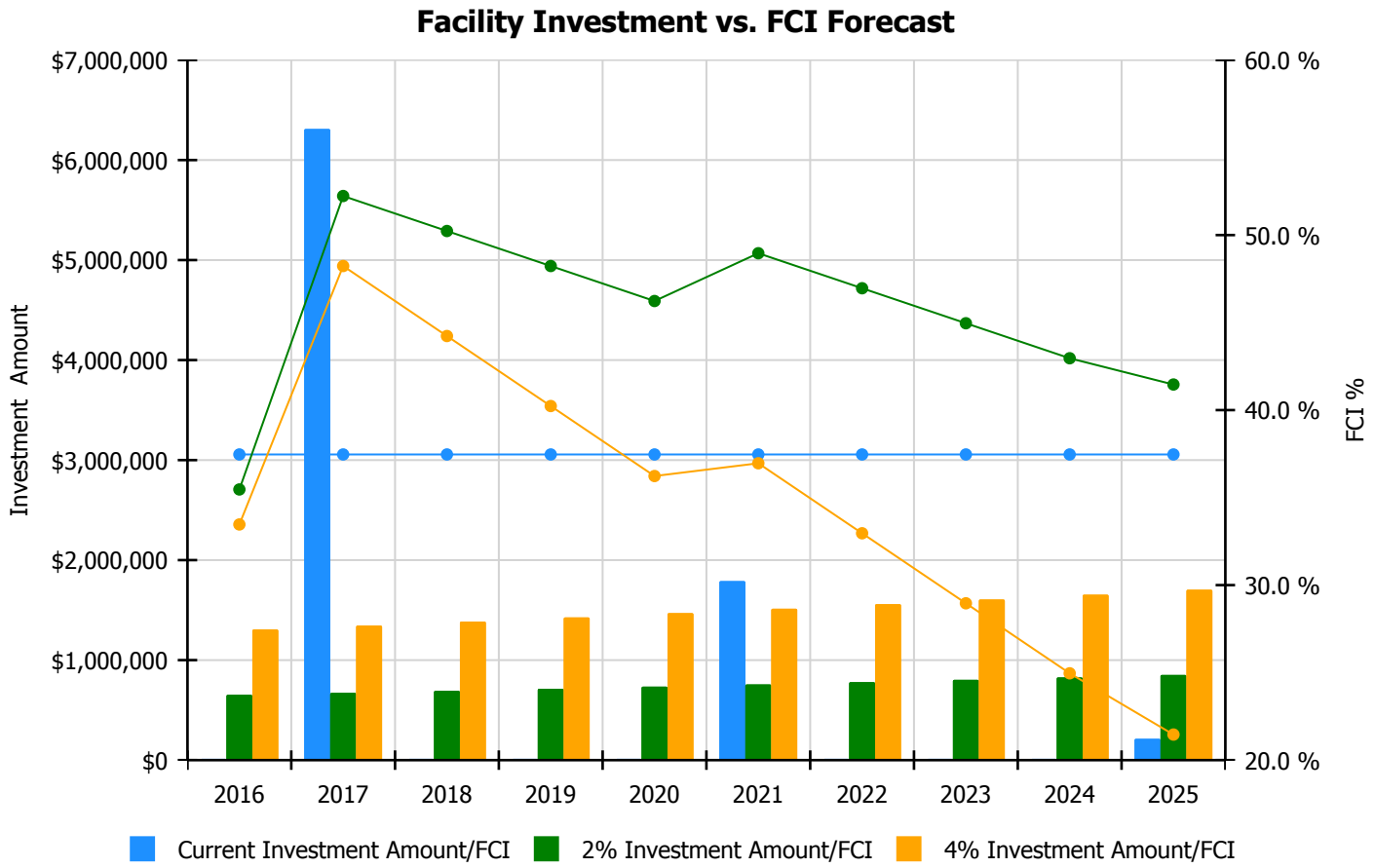
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

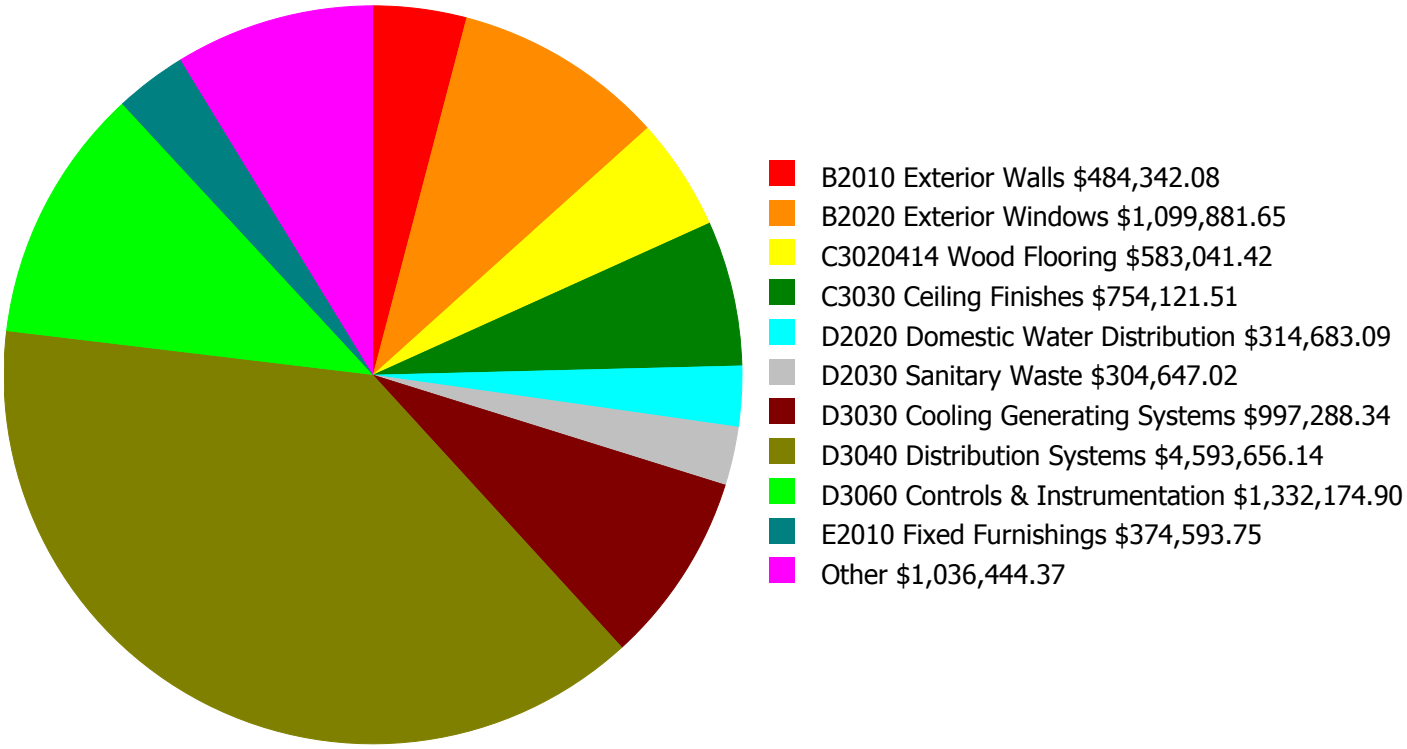
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 37.46%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$652,937.00	35.46 %	$1,305,875.00	33.46 %
2017	$6,310,518	$672,526.00	52.23 %	$1,345,051.00	48.23 %
2018	$0	$692,701.00	50.23 %	$1,385,403.00	44.23 %
2019	$0	$713,482.00	48.23 %	$1,426,965.00	40.23 %
2020	$0	$734,887.00	46.23 %	$1,469,774.00	36.23 %
2021	$1,790,006	$756,933.00	48.96 %	$1,513,867.00	36.96 %
2022	$0	$779,641.00	46.96 %	$1,559,283.00	32.96 %
2023	$0	$803,031.00	44.96 %	$1,606,061.00	28.96 %
2024	$0	$827,122.00	42.96 %	$1,654,243.00	24.96 %
2025	$212,983	$851,935.00	41.46 %	$1,703,871.00	21.46 %
Total:	**$8,313,506**	**$7,485,195.00**		**$14,970,393.00**	

Deficiency Summary by System

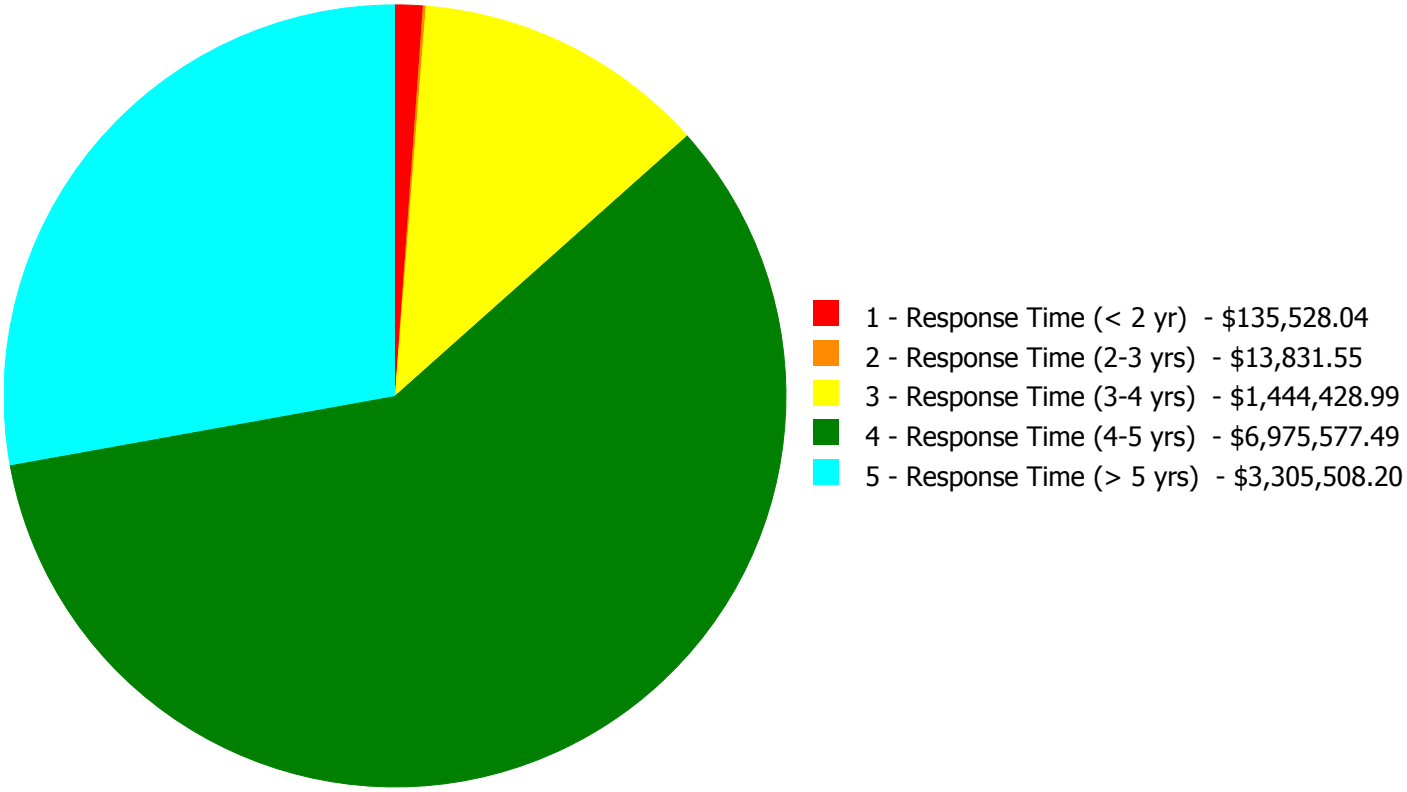
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $11,874,874.27

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: $11,874,874.27

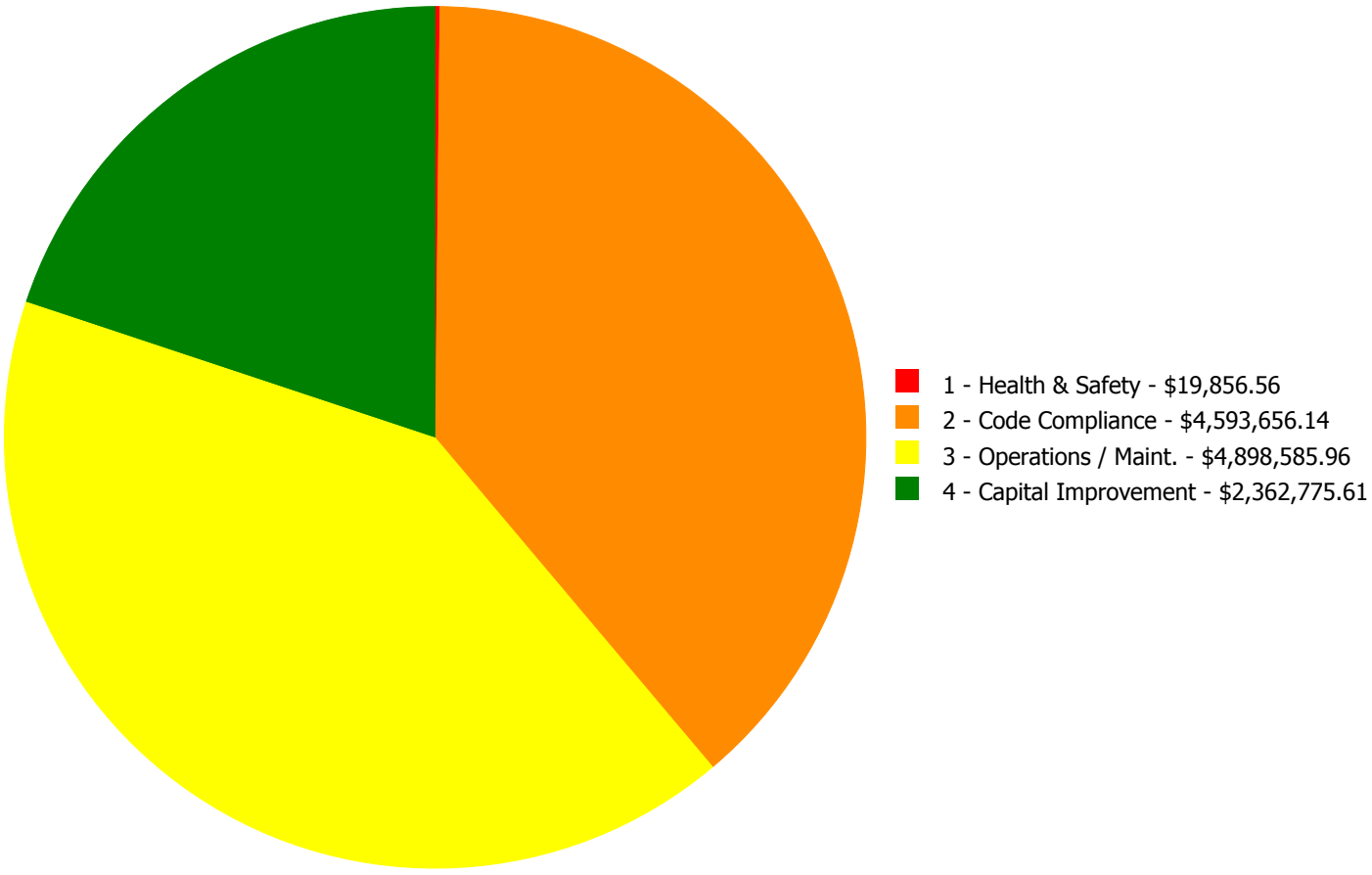
Deficiency By Priority Investment Table

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
B2010	Exterior Walls	$0.00	$0.00	$484,342.08	$0.00	$0.00	$484,342.08
B2020	Exterior Windows	$0.00	$0.00	$0.00	$0.00	$1,099,881.65	$1,099,881.65
B2030	Exterior Doors	$0.00	$0.00	$0.00	$0.00	$5,972.55	$5,972.55
B3010105	Built-Up	$135,528.04	$0.00	$0.00	$0.00	$0.00	$135,528.04
C1010	Partitions	$0.00	$0.00	$0.00	$0.00	$89,118.00	$89,118.00
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$0.00	$203,216.31	$203,216.31
C3020411	Carpet	$0.00	$0.00	$11,190.76	$0.00	$0.00	$11,190.76
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$0.00	$151,666.68	$151,666.68
C3020414	Wood Flooring	$0.00	$0.00	$583,041.42	$0.00	$0.00	$583,041.42
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$0.00	$754,121.51	$754,121.51
D1010	Elevators and Lifts	$0.00	$0.00	$98,351.06	$0.00	$0.00	$98,351.06
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$30,316.76	$0.00	$30,316.76
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$314,683.09	$0.00	$314,683.09
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$304,647.02	$0.00	$304,647.02
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$997,288.34	$997,288.34
D3040	Distribution Systems	$0.00	$0.00	$0.00	$4,593,656.14	$0.00	$4,593,656.14
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,332,174.90	$0.00	$1,332,174.90
D5020	Lighting and Branch Wiring	$0.00	$0.00	$137,821.69	$39,337.38	$4,243.16	$181,402.23
D5090	Other Electrical Systems	$0.00	$0.00	$129,681.98	$0.00	$0.00	$129,681.98
E2010	Fixed Furnishings	$0.00	$13,831.55	$0.00	$360,762.20	$0.00	$374,593.75
	Total:	$135,528.04	$13,831.55	$1,444,428.99	$6,975,577.49	$3,305,508.20	$11,874,874.27

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: $11,874,874.27

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: 4,000.00

Unit of Measure: S.F.

Estimate: $135,528.04

Assessor Name: System

Date Created: 02/17/2016

Notes: There are a number of roof sections and different roof elevations ranging from the main roof to the mechanical roof. The built up application was reported to have been installed in the early 1990'S. Considering the age and condition of the roofing systems, universal upgrades are recommended.

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

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: 02/18/2016

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: B2010 - Exterior Walls

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Repair cracks in masonry - replace missing mortar and repoint - SF of wall area

Qty: 15,000.00

Unit of Measure: S.F.

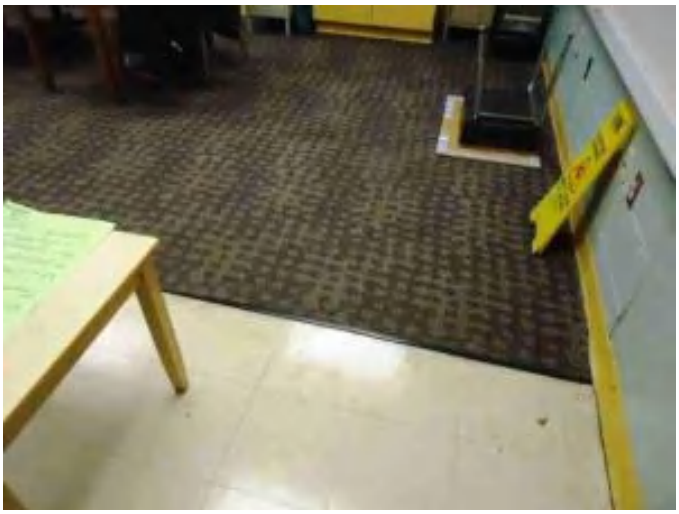
Estimate: $484,342.08

Assessor Name: System

Date Created: 02/17/2016

Notes: The exterior brick surfaces are generally in fair to good condition for their age. In some locations, bricks have cracked or spalled and should be replaced. The repointing of deteriorated mortar joints is also recommended, using mortar of a similar color and consistency as the original. Following the detailed examination of the brick and repair of mortar construction joints, the entire building should be pressure washed to remove stains and embedded pollutants. If moisture is found to be penetrating the masonry façade, the application of a spray sealant to the suspected exterior masonry surface is recommended.

System: C3020411 - Carpet



Location: Administrative Office

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace carpet

Qty: 1,000.00

Unit of Measure: S.F.

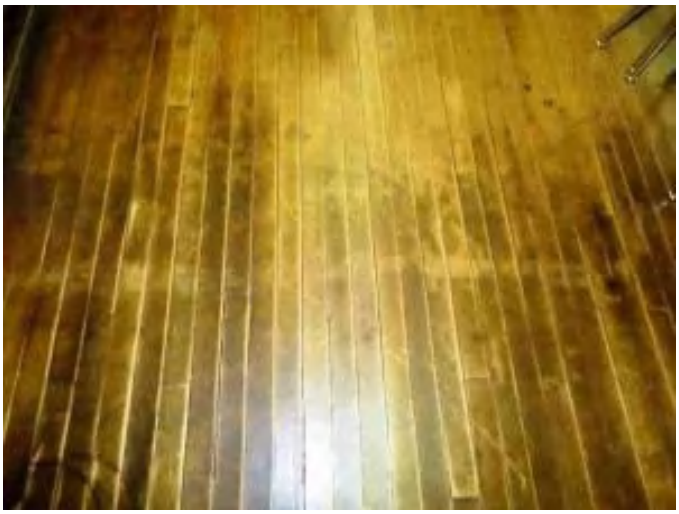
Estimate: $11,190.76

Assessor Name: System

Date Created: 02/17/2016

Notes: The hallways and stair landings consist of marble or terrazzo finish and mechanical spaces have a sealed concrete finish. The interior carpet finish was installed approximately in 2000 and is in fair condition considering the age and high traffic conditions. This finish will exceeded its expected life within the next five years and is recommended for removal and replacement.

System: C3020414 - Wood Flooring



Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace wood flooring

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $583,041.42

Assessor Name: System

Date Created: 02/18/2016

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: D1010 - Elevators and Lifts

Location: Elevator machine room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace elevator motor and controller

Qty: 1.00

Unit of Measure: Ea.

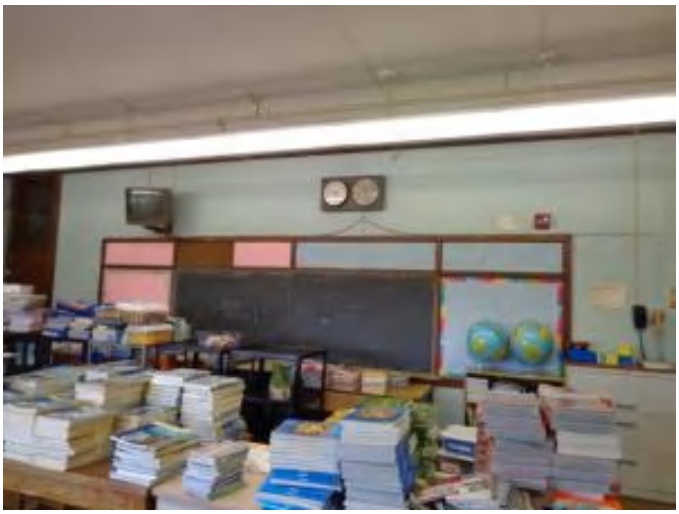
Estimate: $98,351.06

Assessor Name: System

Date Created: 01/31/2016

Notes: Replace elevator machine and controller.

System: D5020 - Lighting and Branch Wiring



Location: Stairwells, restrooms, classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 5,474.00

Unit of Measure: S.F.

Estimate: $137,821.69

Assessor Name: System

Date Created: 01/31/2016

Notes: Replace fluorescent lighting fixtures that have obsolete T12 lamps with fixtures having T8 or T5 lamps. Areas include stairwells, most restrooms and eight (8) classrooms on the Second Floor. (stairwells - 18 fixtures; restrooms 930 SF; classrooms 5,474 SF).

System: D5090 - Other Electrical Systems

Location: Boiler Room 008

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

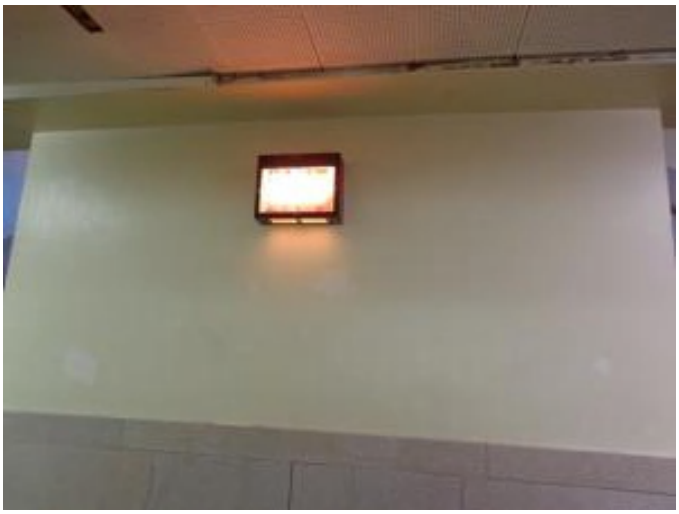
Estimate: $112,725.60

Assessor Name: System

Date Created: 01/31/2016

Notes: Replace standby power system, including generator, automatic transfer switch, and emergency lighting Panelboard EL. Generator size should be increased to supply the electric traction elevator with standby power (estimate 60 kW generator).

System: D5090 - Other Electrical Systems



Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Emergency/Exit Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $16,956.38

Assessor Name: System

Date Created: 01/31/2016

Notes: Provide allowance to replace 20 exit signs with LED type.

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

System: D2010 - Plumbing Fixtures

Location: corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Water Fountains - without ADA new recessed alcove

Qty: 4.00

Unit of Measure: Ea.

Estimate: $30,316.76

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace china drinking fountains with stainless steel water coolers with integral refrigeration.

System: D2020 - Domestic Water Distribution

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (75 KSF)

Qty: 62,100.00

Unit of Measure: S.F.

Estimate: $314,683.09

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace domestic water supply piping with insulated rigid copper tubing. Include fittings, valves, hangers and supports.

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: 62,100.00

Unit of Measure: S.F.

Estimate: $304,647.02

Assessor Name: System

Date Created: 02/10/2016

Notes: Inspect cast iron plumbing piping including camera survey. Repair or replace as required.

System: D3040 - Distribution Systems

Location: classrooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Replace the existing unit ventilators with new units designed to provide adequate ventilation per ASHRAE Std 62 - insert the SF of bldg. in the qty.

Qty: 62,100.00

Unit of Measure: S.F.

Estimate: $2,995,653.42

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace the existing unit ventilators with new units designed for quiet operation and equipped with hot water and chilled water coils, hydronic control valves with digital controls and integral heat exchangers to provide code required fresh air quantities. Connect to new chilled and hot water piping systems and building automation control 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: 532.00

Unit of Measure: Seat

Estimate: $758,327.18

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace existing unit and install 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: cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Install HVAC unit for Cafeteria (850 students).

Qty: 1,113.00

Unit of Measure: Student

Estimate: $569,537.57

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace existing unit and provide a new central station air handling unit for the cafeteria 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: 4,700.00

Unit of Measure: S.F.

Estimate: $270,137.97

Assessor Name: System

Date Created: 02/10/2016

Notes: Replace existing unit and 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: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 62,100.00

Unit of Measure: S.F.

Estimate: $1,332,174.90

Assessor Name: System

Date Created: 02/10/2016

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

System: D5020 - Lighting and Branch Wiring

Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide surface raceway system and wiring devices

Qty: 240.00

Unit of Measure: L.F.

Estimate: $33,312.37

Assessor Name: System

Date Created: 01/31/2016

Notes: Provide surface metal raceway system with 6 to 8 duplex receptacles in each of eight (8) classrooms on the Second Floor.

System: D5020 - Lighting and Branch Wiring

Location: Building exterior

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Exterior Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $6,025.01

Assessor Name: System

Date Created: 01/31/2016

Notes: For safety considerations, add a floodlighting fixture at the northwest corner of the building to illuminate the exterior stairs down to the public way.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 400.00

Unit of Measure: Ea.

Estimate: $360,762.20

Assessor Name: System

Date Created: 02/18/2016

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.

Priority 5 - Response Time (> 5 yrs):

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 200.00

Unit of Measure: Ea.

Estimate: $1,099,881.65

Assessor Name: System

Date Created: 02/17/2016

Notes: This schools historic presentation to the community reflects upon the exterior window system that was reported to have been upgraded in the late 1980s. Several of the windows no longer work 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: B2030 - Exterior Doors

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Refinish and repaint exterior doors - per leaf

Qty: 10.00

Unit of Measure: Ea.

Estimate: $5,972.55

Assessor Name: System

Date Created: 02/17/2016

Notes: The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. Most of the doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The service doors on the roof have expired and failed compromising access to elevator rooms and tower rooms. The exterior door system, store front and service doors are recommended for upgrade.

System: C1010 - Partitions

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 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: 02/18/2016

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: C3010230 - Paint & Covering

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Repair and repaint all interior walls - SF of wall surface

Qty: 30,000.00

Unit of Measure: S.F.

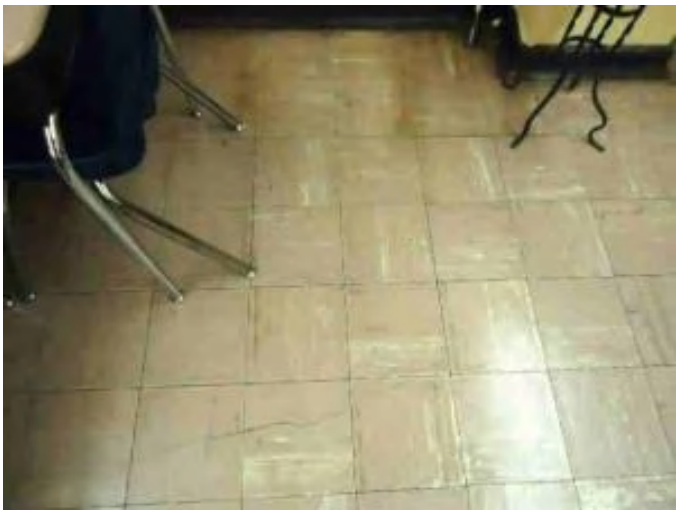
Estimate: $203,216.31

Assessor Name: System

Date Created: 02/17/2016

Notes: There are painted walls, trim, and some painted ceilings in this building. The interior finishes are in good to fair condition depending on the location of the finish. For example due to recent roof leaks over the auditorium several areas will require repair and repainting. This school will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Minor repairs should be completed before work begins. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

System: C3020413 - Vinyl Flooring



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove VAT and replace with VCT - SF of area

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $151,666.68

Assessor Name: System

Date Created: 02/17/2016

Notes: The vinyl tile finish is a 9 x 9 application and is suspect to contain asbestos. This finish is recommended for upgrade to a new 12 x 12 vinyl tile application. Suspected asbestos containing materials (ACM) are believed to be limited to the original vinyl floor tile and mastic. While currently sound and manageable in place, future renovation efforts should include provision to test and abate any and all ACM.

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: 02/18/2016

Notes: The ceiling finish is a mix of 12 x 12 ceiling grid, painted and 2 x 4 Acoustical tile finish. 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 mechanical electrical efforts in this report. 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: 62,100.00

Unit of Measure: S.F.

Estimate: $997,288.34

Assessor Name: System

Date Created: 02/10/2016

Notes: Remove the existing window air conditioning units and install a one hundred eighty ton air-cooled chiller on the roof with chilled water distribution piping, two pumps, chemical treatment and controls located in a mechanical room.

System: D5020 - Lighting and Branch Wiring

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Maintain Lighting Fixtures

Qty: 1.00

Unit of Measure: Ea.

Estimate: $4,243.16

Assessor Name: System

Date Created: 01/31/2016

Notes: Repair/replace one (1) chandelier in the Auditorium that is damaged. Replace incandescent lamps in all four (4) chandeliers with LED lamps for improved energy efficiency and reduced maintenance costs.

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
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 4500 lb, 5 floors, 100 FPM	1.00	Ea.	Elevator Machine Room on roof	Not recorded	NA	NA		30			$151,620.00	$166,782.00
D3020 Heat Generating Systems	Boiler, cast iron, gas & oil, steam, 4650 MBH	1.00	Ea.	mechanical room	burnham	v1123	64812220		35	2006	2041	$168,672.60	$185,539.86
D3020 Heat Generating Systems	Boiler, cast iron, gas & oil, steam, 4650 MBH	1.00	Ea.	mechanical room	burnham	v1123	64812221		35	2006	2041	$168,672.60	$185,539.86
D4010 Sprinklers	Fire pumps, electric, 500 GPM, 50 psi, 27 HP, 1,770 RPM, 4" pump, including controller, fittings and relief valve	1.00	Ea.	fire pump room	aurora	61436226			35	2006	2041	$22,805.80	$25,086.38
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NEHB, 277/480 V, 400 A, 1 stories, 25' horizontal	1.00	Ea.	Main Electrical Room 009	General Electric	A Series II	NA		30	2006	2036	$17,698.50	$19,468.35
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 1 stories, 25' horizontal	2.00	Ea.	Main Electrical Room 009	General Electric	A Series II	NA		30	2006	2036	$12,109.50	$26,640.90
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 120/208 V, 600 A	2.00	Ea.	Mechanical Room 010	General Electric	Spectra Series	NA		30	2006	2036	$16,891.20	$37,160.64
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 800 A	1.00	Ea.	Main Electrical Room 009	General Electric	Spectra Series	NA		30	2006	2036	$31,205.25	$34,325.78
												Total:	**$680,543.77**

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):	86,900
Year Built:	1937
Last Renovation:	
Replacement Value:	$1,394,207
Repair Cost:	$971,443.50
Total FCI:	69.68 %
Total RSLI:	52.11 %

Description:

Attributes:

General Attributes:

Bldg ID:	S632001	Site ID:	S632001

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	45.45 %	90.55 %	$920,170.89
G40 - Site Electrical Utilities	70.00 %	13.56 %	$51,272.61
Totals:	**52.11 %**	**69.68 %**	**$971,443.50**

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.	39,900	40	1937	1977	2027	30.00 %	2.50 %	12		$11,506.28	$459,648
G2040	Site Development	$4.36	S.F.	86,900	25	1937	1962	2027	48.00 %	239.83 %	12		$908,664.61	$378,884
G2050	Landscaping & Irrigation	$3.78	S.F.	47,000	15	1937	1952	2027	80.00 %	0.00 %	12			$177,660
G4020	Site Lighting	$3.58	S.F.	86,900	30	2006	2036		70.00 %	0.00 %	21			$311,102
G4030	Site Communications & Security	$0.77	S.F.	86,900	30	2006	2036		70.00 %	76.63 %	21		$51,272.61	$66,913
								Total	**52.11 %**	**69.68 %**			**$971,443.50**	**$1,394,207**

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.

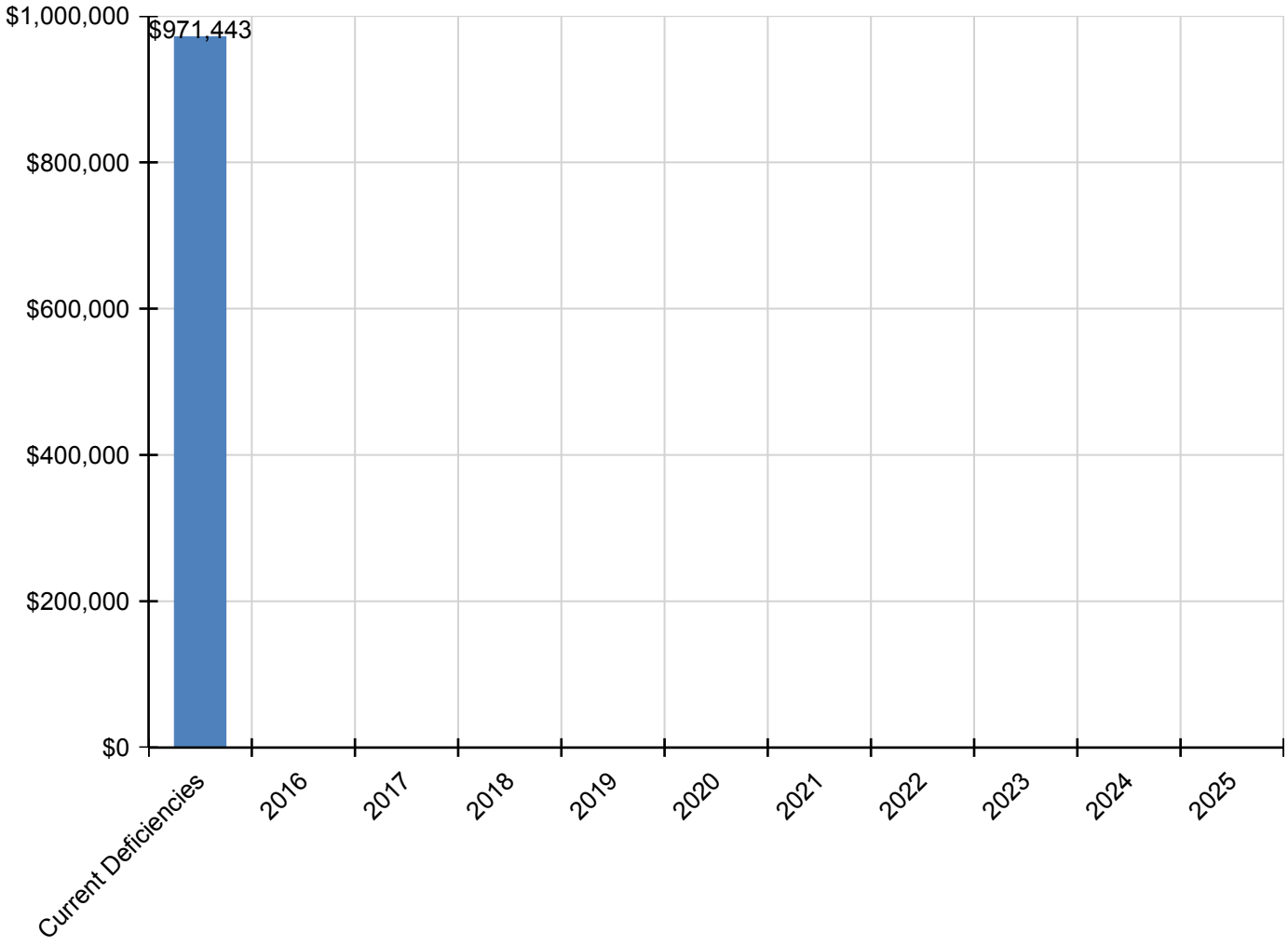
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$971,443**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$971,443**
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	$11,506	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$11,506**
G2040 - Site Development	$908,665	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$908,665**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$51,273	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$51,273**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

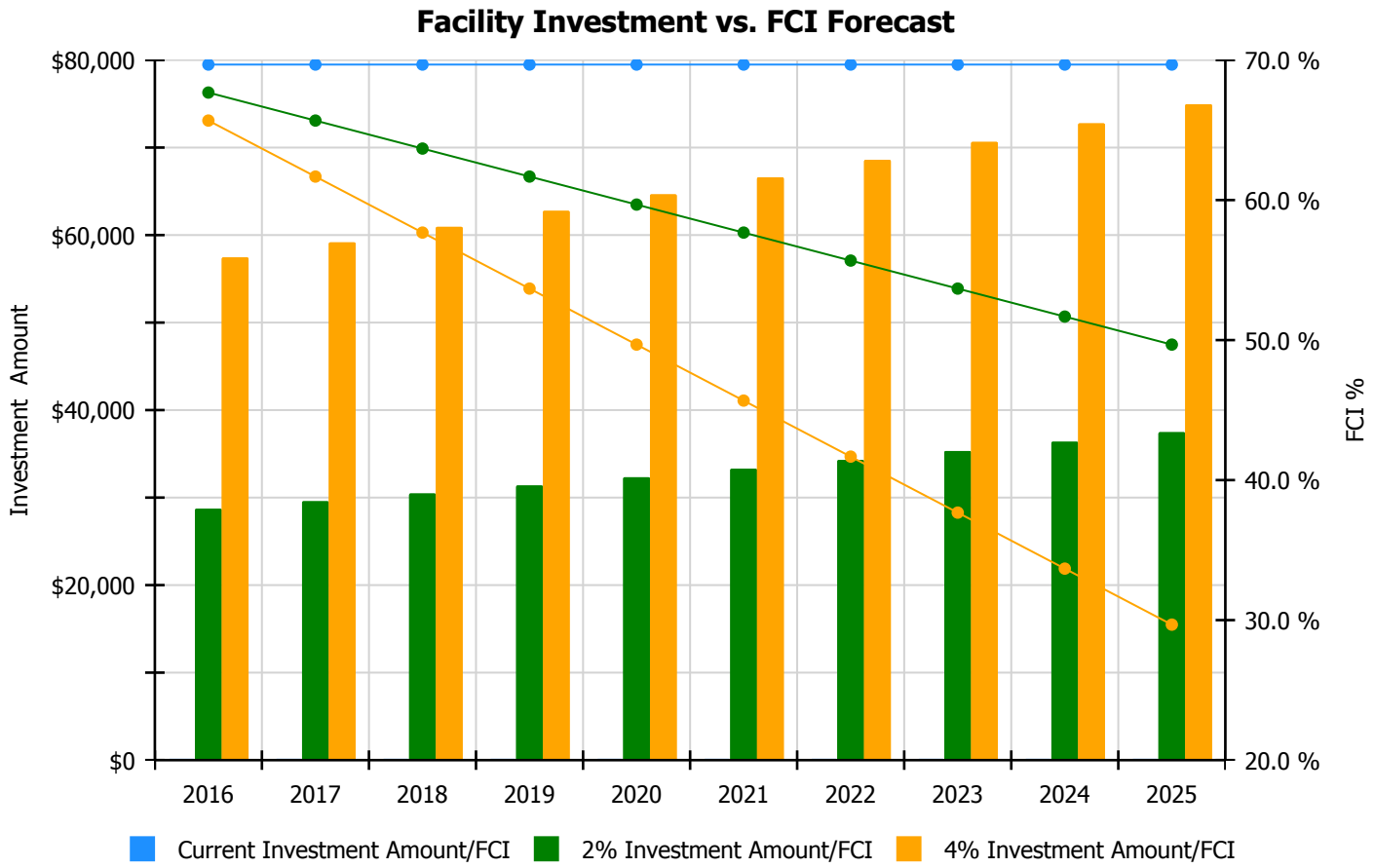
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

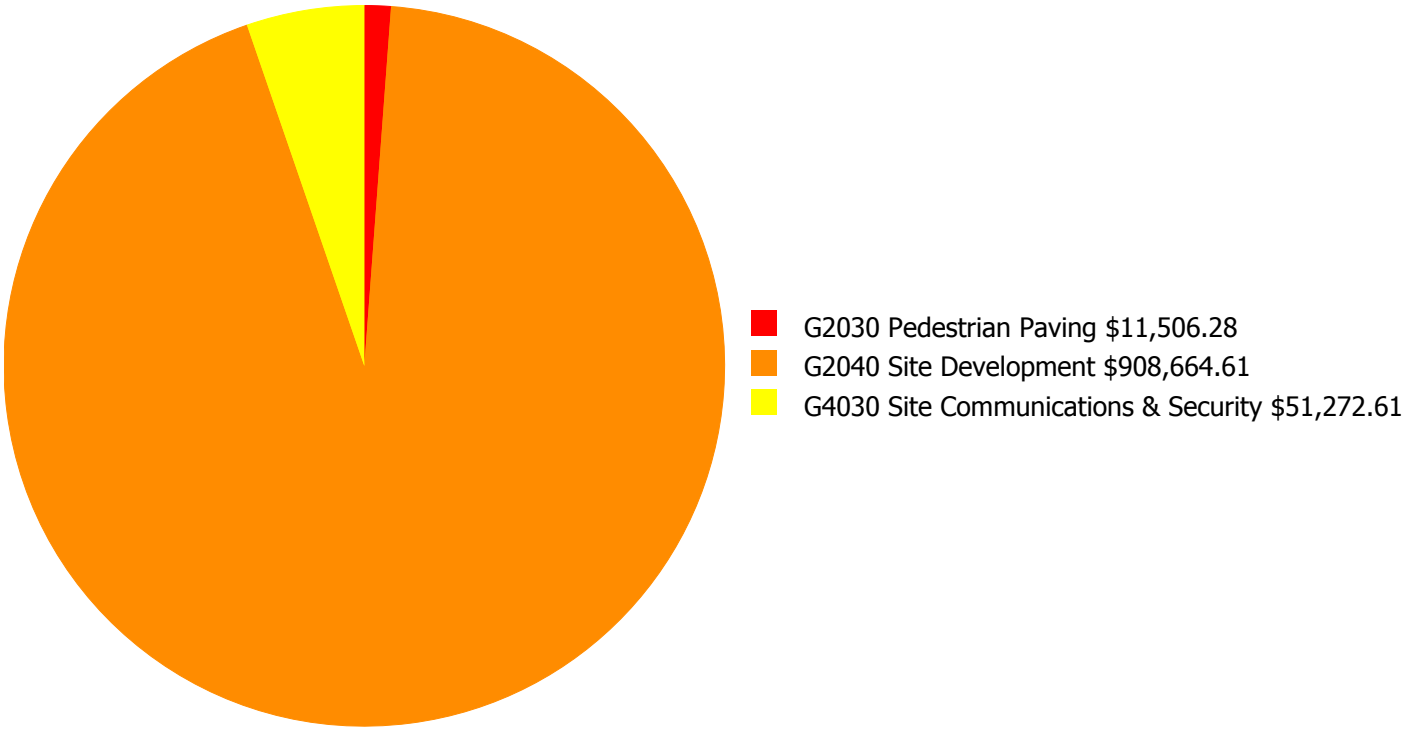
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 69.68%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$28,721.00	67.68 %	$57,441.00	65.68 %
2017	$0	$29,582.00	65.68 %	$59,165.00	61.68 %
2018	$0	$30,470.00	63.68 %	$60,940.00	57.68 %
2019	$0	$31,384.00	61.68 %	$62,768.00	53.68 %
2020	$0	$32,325.00	59.68 %	$64,651.00	49.68 %
2021	$0	$33,295.00	57.68 %	$66,590.00	45.68 %
2022	$0	$34,294.00	55.68 %	$68,588.00	41.68 %
2023	$0	$35,323.00	53.68 %	$70,646.00	37.68 %
2024	$0	$36,382.00	51.68 %	$72,765.00	33.68 %
2025	$0	$37,474.00	49.68 %	$74,948.00	29.68 %
Total:	**$0**	**$329,250.00**		**$658,502.00**	

Deficiency Summary by System

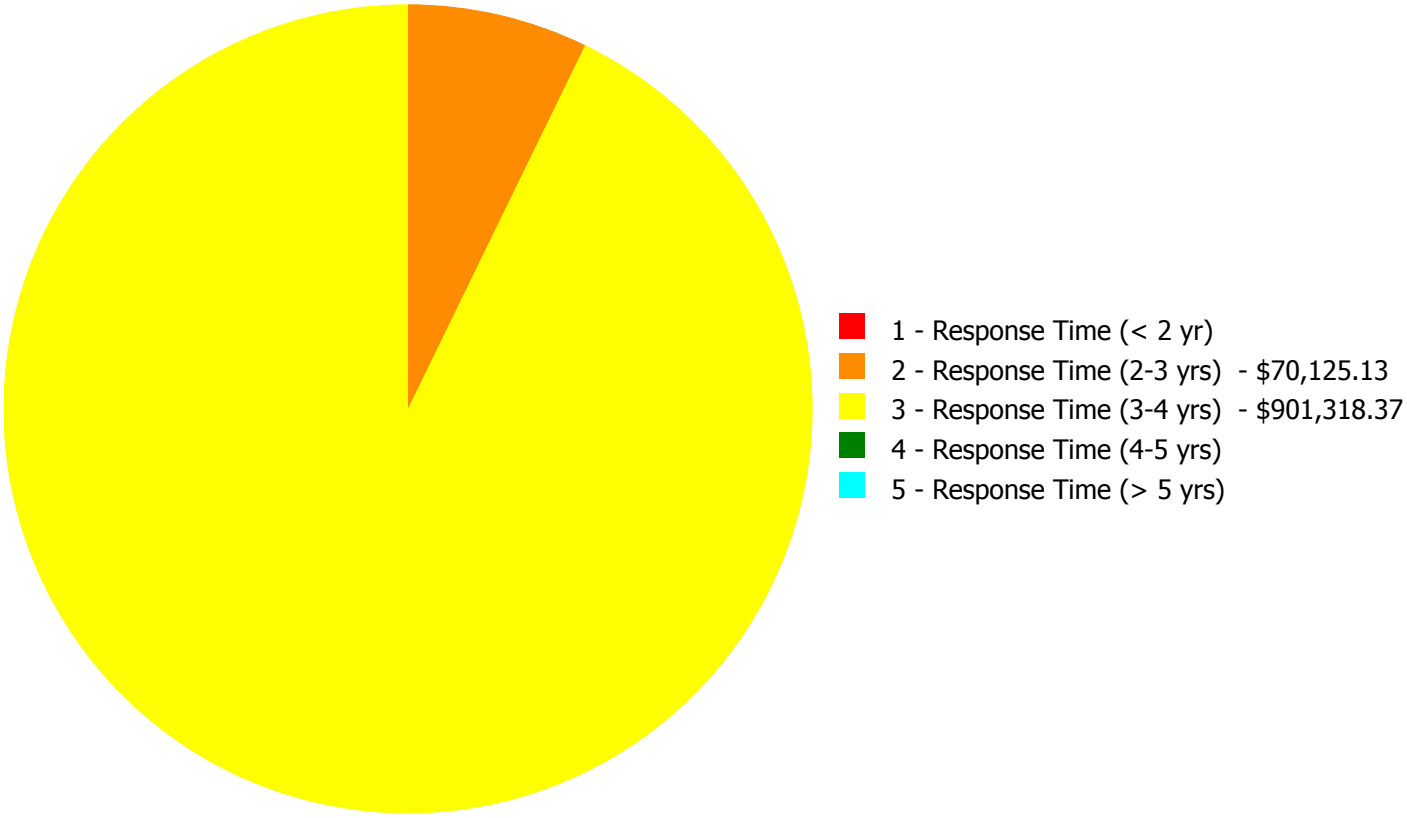
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $971,443.50

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: $971,443.50

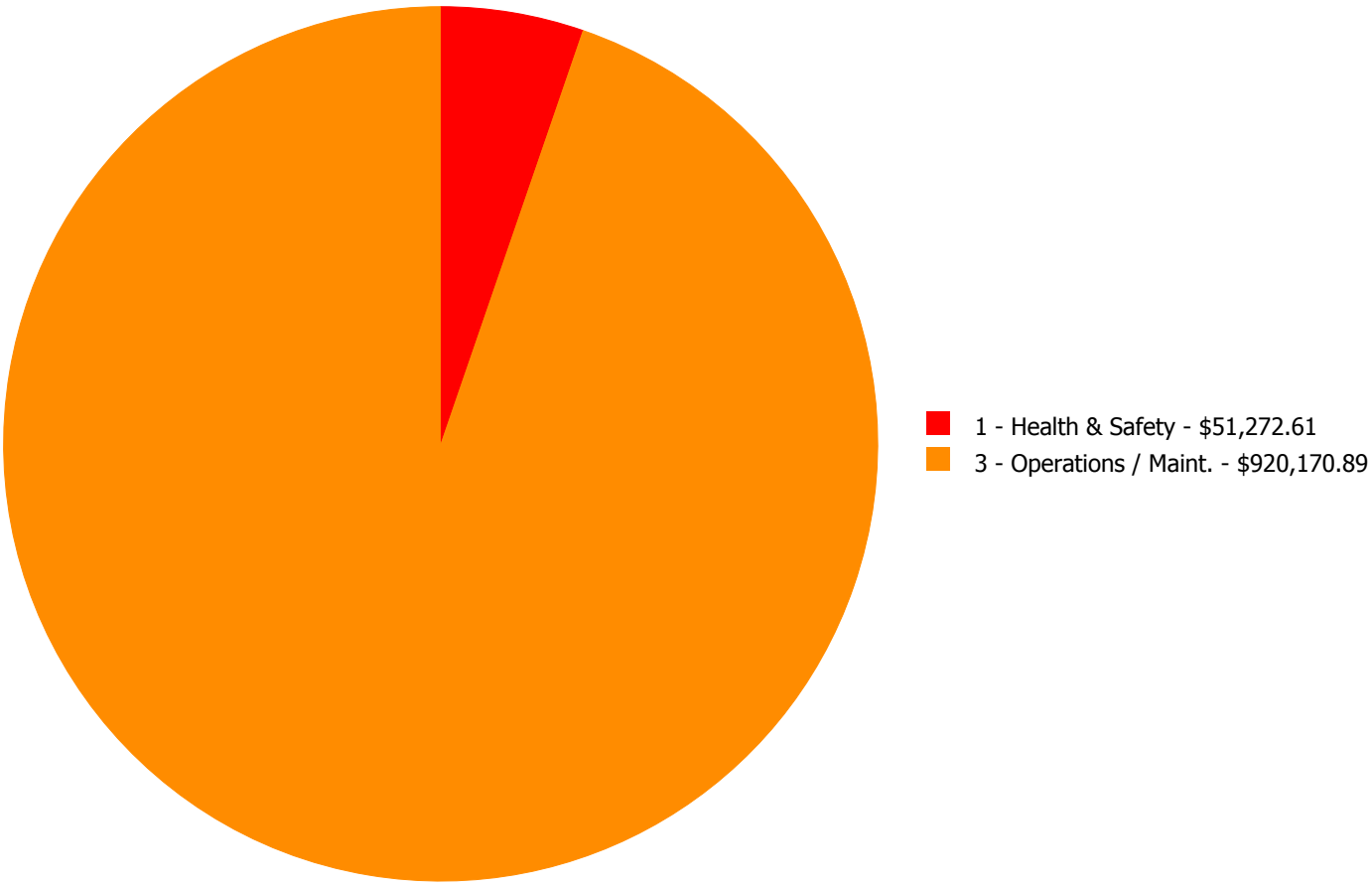
Deficiency By Priority Investment Table

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	$11,506.28	$0.00	$0.00	$11,506.28
G2040	Site Development	$0.00	$18,852.52	$889,812.09	$0.00	$0.00	$908,664.61
G4030	Site Communications & Security	$0.00	$51,272.61	$0.00	$0.00	$0.00	$51,272.61
	Total:	$0.00	$70,125.13	$901,318.37	$0.00	$0.00	$971,443.50

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: $971,443.50

Deficiency Details by Priority

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

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

System: G2040 - Site Development

Location: Site
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Build secure trash dumpster enclosure
Qty: 1.00
Unit of Measure: Ea.
Estimate: $18,852.52
Assessor Name: Hayden Collins
Date Created: 02/18/2016

Notes: There is no trash dumpster for this school and trash materials are stored in the school for pick up. Upgrades to protect the 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: Security Issue
Category: 1 - Health & Safety
Priority: 2 - Response Time (2-3 yrs)
Correction: Add Video Surveillance System
Qty: 4.00
Unit of Measure: Ea.
Estimate: $51,272.61
Assessor Name: Hayden Collins
Date Created: 01/31/2016

Notes: Add four (4) exterior video surveillance cameras; one on the west side of the building, one at the north side at the Visitor Entrance, one at the Gymnasium entrance and one on the east side of the Gymnasium. Add one digital video recorder (DVR).

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

System: G2030 - Pedestrian Paving

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete sidewalk or concrete paving - 4" concrete thickness

Qty: 800.00

Unit of Measure: S.F.

Estimate: $11,506.28

Assessor Name: Hayden Collins

Date Created: 02/18/2016

Notes: The sidewalk system is not original to the buildings construction. There are a several new area and upgraded section around the school. However the historical plaza and the sidewalks near the pre K area are in need of repair. The sidewalk system is expected to expire in the near future. Removal of the entire system is recommended.

System: G2040 - Site Development

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $889,812.09

Assessor Name: Hayden Collins

Date Created: 02/18/2016

Notes: The site is a multi-level site that extends from the overpass through the nature area, outside classroom to the main entrance. The large retaining walls that align the elevation changes on this site are in poor condition. There are several areas of damage including cracked concrete stairs, concrete and brick 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.

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