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.

Dick School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	2498 W. Diamond St.	Enrollment	549
	Philadelphia, Pa 19121	Grade Range	'00-08'
Phone/Fax	215-684-5081 / 215-684-8995	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Dick	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	**41.75%**	**$15,331,262**	**$36,723,772**
Building	42.60 %	$14,786,271	$34,707,030
Grounds	27.02 %	$544,991	$2,016,742

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	00.00 %	$0	$869,860
Exterior Walls (Shows condition of the structural condition of the exterior facade)	01.85 %	$48,434	$2,620,610
Windows (Shows functionality of exterior windows)	86.01 %	$1,099,882	$1,278,710
Exterior Doors (Shows condition of exterior doors)	08.12 %	$8,362	$102,950
Interior Doors (Classroom doors)	57.43 %	$143,118	$249,210
Interior Walls (Paint and Finishes)	00.00 %	$0	$726,310
Plumbing Fixtures	00.00 %	$0	$959,920
Boilers	00.00 %	$0	$1,325,570
Chillers/Cooling Towers	65.60 %	$1,140,231	$1,738,080
Radiators/Unit Ventilators/HVAC	153.36 %	$4,681,061	$3,052,290
Heating/Cooling Controls	158.90 %	$1,523,101	$958,500
Electrical Service and Distribution	226.41 %	$1,559,273	$688,700
Lighting	48.95 %	$1,205,287	$2,462,280
Communications and Security (Cameras, Pa System and Fire Alarm)	60.37 %	$556,817	$922,290

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

S427001;Dick

Final

Site Assessment Report

January 30, 2017

PARSONS

Table of Contents

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):	71,000
Year Built:	1954
Last Renovation:	
Replacement Value:	$36,723,772
Repair Cost:	$15,331,261.68
Total FCI:	41.75 %
Total RSLI:	62.98 %

Description:

Facility Assessment
December 2015

School District of Philadelphia
William Dick Elementary School
2498 W Diamond St.
Philadelphia, PA 19121

71,000 SF / 596 Students / LN 04

GENERAL

The William Dick School is identified as B427001 and was originally designated as the William Dick Elementary School. This facility is located at 2498 W Diamond St., PA. The design of the L-shaped, concrete and steel-framed building includes brick facades with a concrete foundation. Constructed in 1954 the school has had no additions.

The main entrance faces the Eastern exterior facing W Diamond St. General parking is street side or on the parking lot on the southern exterior of the building. K to 6 and has a basement with three stories consisting of a total gross square footage of 71,000

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 4, 2015.

Mr. Cedric Speights, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history. Ms. Amy Williams, Principal, also shared information about the school with the assessment team.

Architectural / Structural Systems

Foundations are concrete and appear to be in good condition. The superstructure is concrete and steel framed with masonry support and likewise in good condition.

The structure reportedly rests on a modified slab-on-grade foundation with interior columns resting on spread footings. The main structure is steel beams and columns.

Floor structure appears to be reinforced, cast-in-place concrete.

The exterior brick surfaces are generally in fair to good condition for their age. Recently a few exterior walls were completely renovated as part of the Philadelphia Mural Project. In other locations for this school, 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.

Exterior windows are a single pane industrial grade aluminum framed single pane windows. Windows are in good condition with few exceptions. The exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features. This universal upgrade is expected to be completed as part of an overall renovation effort to eliminate dual efforts.

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

Special consideration for those that may be physically challenged was not a main factor in the construction of this school. Currently there are no compliant entrances at grade. The path of travel is clear from this access points as the interior path of travel is limited in support by the lack of interior ramps, compliant signage, restrooms amities, compliant door hardware, hand rails and guard rails to meet the needs of the physically challenged. The main building will require several upgrades to meet the needs of the physically challenged.

The roof is a built up roof system reported to have been installed within the past ten years. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

Interior partitions include CMU, glazed block, gypsum wallboard and glazed openings. There were no issues that surfaced during the time of the inspection therefore no recommendations are required at this time.

Interior doors are typically wood in wood frames with wooden transom and wired glass glazing. Other interior doors include hollow metal in hollow metal frames at the stairwells and exit ways and access doors. Doors are generally in fair condition and is a mix of ADA compliant and non-complaint doors with both non-rated and fire rated. Several of the classroom doors are aging at a faster than normal rate for this application. Numerous repairs to locksets and door hardware have advanced the deterioration of the doors. This deficiency provides a budgetary consideration to replace a portion of the interior doors and frames with consideration for the physically challenged.

Fittings include: chalkboards; marker boards; tack boards; interior signage; metal lockers; toilet accessories and wood/metal/marble toilet partitions; fixed storage shelving.

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

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

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

Interior wall finishes are typically painted CMU. Other wall finishes include: ceramic tile at restrooms; ceramic tile wall finishes in the hallways and stairwells. Wall finishes are generally in good condition. No recommendations are required at this time.

The floor finish for this school is a combination of terrazzo, concrete, ceramic tile in the kitchen and service line areas, wooden gym with 12 x 12 vinyl and 9 x 9 vinyl tile finishes. 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.

Interior ceilings are typically 2 x 4 acoustical tile in metal grid. Other ceiling finishes include: exposed/painted structure; 12" glued-on acoustical tile. The ceiling finish was renovated in 2015 and is in like new condition. No recommendations are required at this time.

Elevators are present at this school.

Institutional equipment includes: library equipment, stage equipment; instrumental equipment; A/V equipment; and laboratory equipment; gym equipment – basketball backstops, scoreboards, etc. Other equipment includes kitchen equipment; loading dock bumpers.

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

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

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets. Lavatories have dual wheel handle faucets and urinals and water closets have recessed manual flush valves with lever operators. Custodial areas have cast iron service sinks or mop basins. There are stainless steel water coolers with integral refrigeration and some china drinking fountains with no refrigeration in corridors and some counter top stainless steel sinks in break areas. Water is heated by one Bradford White fifty gallon gas water heater in the basement mechanical room with a small inline circulating pump, installed in 2015. A duplex sump pump in the mechanical room removes ground water. The mechanical room contains a steam generated domestic water heating system and a pressure booster system with two pumps and a storage tank, all of which are abandoned. A water softener is part of the domestic water system.

Water piping is copper from the original installation. Sanitary, waste, vent and rainwater piping is original installation hub and spigot cast iron. The building water service is a three inch line into the mechanical room, with no backflow preventer. Gas service is a two inch line and meter located in the mechanical room.

The cast iron piping has exceeded the anticipated service life. Rainwater and vent piping should continue functioning, but the sanitary

and waste piping should be inspected to determine condition and replace damaged portions. Plumbing fixtures appear to have been replaced within the past ten years and should be serviceable twenty five more years. The domestic water supply piping should be replaced based on age.

HVAC-Heating is generated by two Weil Mclain fifty five hp sectional cast iron low pressure steam oil fired boilers in the basement mechanical room. The boilers have Power Flame burners with separate oil pumps. The current boilers replaced the original 1954 units but no installation date could be confirmed. They are estimated to be about twenty five years old. There is a Shipco boiler feed pump/ condensate receiver with two 1 hp pumps. A chemical feed system treats make up water. There are combustion air louvers with dampers and a field fabricated boiler vent into a brick chimney. Oil is stored in an underground tank, capacity and condition unknown. A duplex fuel oil pump system in an adjacent room provides circulation.

The building is heated by steam and piping is insulated welded black steel. A substantial amount of steam is present in the mechanical room indicating leaks and/ or trap failure. Classrooms, IMC and some other areas have older Nesbitt unit ventilators with steam coils. The units appear to be from the original construction of 1954. Other areas requiring heat are served by steam radiators. The auditorium is served by a heating and ventilating unit located in a mechanical room on the stage and a roof mounted unit supplies air to the cafeteria. The gymnasium has radiators and no ventilation system.

There is no central air conditioning. Some areas have window air conditioners and the IT room has a ductless split system. Mechanical toilet exhaust is provided by two centrifugal roof ventilators. The kitchen has a heat removal hood over warming equipment.

There are older pneumatic controls with two control air compressors in the mechanical room but no digital controls or building automation system.

The steam system including piping and radiators is from the original construction of 1954 and has exceeded the service life. Similarly the unit ventilators and two heating and ventilating units are older and should be replaced. The boilers have signs of age but should remain serviceable ten more years.

FIRE PROTECTION - There are no sprinklers in this building.

ELECTRICAL SYSTEMS

Electrical Service-- The building is served by PECO Energy Company with underground service routed to a 600A, 120/240V, 2 phase, 5 wire main service disconnecting means, via a current transformer cabinet, located in the electrical supply room in the Basement. The 600A service disconnect feeds several knife blade fusible panelboards located in Mechanical Room 005, including (1) 600A, (4) 200A and (2) 100A. There is a safety switch and phase change transformer adjacent to the 600A service disconnect in the electrical supply room and in the Boiler Room for Panelboards BR1 and BR2. All of this distribution equipment is in very poor condition. Replacement is recommended within 1 to 2 years. There are also (8) safety switches in Mechanical Room 005 and (10) safety switches for mechanical equipment at the access to the roof that need to be replaced due to age and condition.

Since the electrical distribution system does not have adequate capacity to supply central air conditioning equipment if the system was added to the building, a 1000 kVA, 13.2 kV-208/120V, 3 phase, 4 wire pad mounted transformer and 3000A main switchboard, should be considered because of space limitations within the Basement. This report includes feeding all of the loads served by the knife blade panelboards in Mechanical Room 005 from the main switchboard.

There are 12 panelboards throughout the building that are in fair to poor condition; the panelboards do not have adequate branch circuit breakers for additional receptacle branch circuits that are needed for classroom receptacles.

Receptacles—Most of the classrooms are provided with only 2 or 3 duplex receptacles, which is not adequate for today's classroom environment. An additional 6 to 8 duplex receptacles should be provided in each of the 30 classrooms using a surface metal raceway system. Some of the receptacles were observed to be 2 wire, non-grounding type receptacles and need to be replaced with 3 wire grounding type receptacles to comply with code. Replacement of all duplex receptacles in the building is included in this report due to their age and condition.

Lighting—Most of the fluorescent lighting fixtures in the building are 4 foot fluorescent wraparound fixtures with acrylic lenses and obsolete T12 lamps, including classrooms, corridors, restrooms, stairwells, kitchen, cafeteria and offices. Lighting fixtures in Classrooms 302, 305, 307 and 313 and the IMC have been updated with 2x4 recessed fluorescent grid troffers with T8 lamps. Classrooms 305 and 307 have occupancy sensors for lighting control, in addition to wall light switches. All other classrooms have two wall light switches.

The gymnasium is illuminated with (24) 4 lamp, surface mounted fluorescent wraparound fixtures. Fixtures are nearing end of their useful life and should be replaced within 3 to 4 years.

The auditorium has 20 pendant mounted metal halide cylinder fixtures and nine (9) wall mounted cylinders with up/down lighting. Lighting in the auditorium has served its useful life. Replacement with LED lighting fixtures is included in this report. The platform has (9) 4 foot industrial fluorescent worklights and two rows of theatrical batten lighting.

The Boiler Room and Mechanical rooms have 4 foot industrial fluorescent fixtures with (2) T12 lamps. There are also some high intensity discharge (HID) lighting fixtures in the Basement mechanical rooms.

Exterior wall mounted lighting fixtures are located above doors at exit discharges. There are also surface mounted prismatic lens fixtures in the canopies at the Visitor Entrance. These fixtures appear to be in very good condition with an estimated remaining life of 10 years.

Fire Alarm System-- The fire alarm system is an obsolete 120V wired system that includes only manual pull stations and bell notification appliances. The fire alarm control panel (FACP) is by S.H. Couch Company, and is located in the Basement. Pull station mounting heights exceed ADA requirements. There are no visual notification appliances in the building. The entire fire alarm system needs to be replaced with an addressable type to meet current NFPA codes and ADA requirements. An FCI FACP is located in the elevator machine room to provide elevator recall initiated by smoke detectors located in the elevator lobbies.

Telephone/LAN--The demarcation point is located in the electrical supply room in the Basement. The Main Distribution Frame (MDF) and telephone distribution system is located in Room 206A. This room was not accessible at the time of this assessment. A telephone and data outlet is provided in each classroom. Several of the classrooms still have obsolete wall phones remaining in the room. Wireless access points are provided in classrooms, offices, auditorium, IMC, cafeteria and gymnasium for Wi-Fi service throughout the entire school.

Intercom/Paging/Sound Systems-- The paging system is accessed through the telephone system. Each classroom has a wall mounted paging speaker. There are also wall mounted paging speakers in the corridors, auditorium and IMC. The obsolete wall mounted speakers in corridors have been abandoned in place. The cafeteria, gymnasium and building exterior have trumpet horns for paging. An Aiphone intercom station is located at the Visitor Entrance.

There is a wall mounted sound system cabinet on the platform in the auditorium with Electro-Voice and Bogen sound system equipment. Speakers are mounted on each side of the stage. The sound system was reported to be beyond its useful life.

Clock and Program System-- There is a Sapling wireless GPS clock system in the school. The Master Clock is located in the Main Office. Battery-operated synchronized clocks are located throughout the building. Wall mounted speakers are provided for paging and program system announcements. The system is in good condition with estimated remaining useful life of more than 10 years.

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

Video Surveillance and Security Systems-- There are video surveillance cameras that provide limited coverage of some corridors, stairwells, cafeteria and site. There are only a few cameras above the First Floor and none in the gymnasium or auditorium. Additional interior cameras are recommended in corridors and gymnasium. The video monitor and digital video recorder (DVR) are located in Room 206A. There is also a video monitor in the Main Office. The video surveillance cameras were reported to be approximately 10 years old. An allowance for replacement of approximately 11 interior cameras and addition of 8 interior cameras, one monitor and one DVR is included in this report.

Emergency Power System-- The standby power system is served by an MTU Onsite Energy 50 kW, 208/120V, 3 phase, 4 wire generator in weatherproof enclosure located on the exterior just south of the auditorium. The generator has a 240 gallon sub-base fuel oil storage tank. The emergency and standby power distribution panelboards, two phase change transformers and two 150A ASCO automatic transfer switches (ATSs) are located in the Basement mechanical rooms. All of this equipment was installed in 2013 and has an estimated remaining useful life of more than 18 years. The two phase change transformers would no longer be needed when the service is upgraded to 208/120V, 3 phase.

Emergency Lighting System / Exit Lighting-- Emergency egress and exit lighting is served from Emergency Lighting Panelboard ELP located in Mechanical Room 005. Exit signs are beyond their useful life. Replacement of all exit signs is included in this report.

Lightning Protection System-- Other than for four (4) air terminals providing lightning protection for the roof stack, there is no lightning protection system for this building.

Conveying Systems-- The building has one Amtech 10 HP, 240V, 2 phase electric traction elevator rated at 1200 pound capacity that is served from the standby power system. The elevator machine is original from the 1954 construction. Replacement is recommended. The Motion Control Engineering, Inc. elevator controller was replaced in 2000 and is in good condition. The interior of the cab is in good condition. Replacement of lobby call buttons and lanterns is recommended.

Grounds

The parking area has ADA parking with approved curb cuts for access to the sidewalks that lead to the main entrance. However, the parking lots are in poor condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a parking lot renewal program that includes all aspects of the current ADA legislation. Universal upgrades are recommended.

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

There is a neighborhood garden located on the school grounds and maintained by grants. There is no other landscaping on this site.

The sidewalk system for this school is in good condition with a few minor maintenance issues such as sections of chipped stairs and a few cracks. This minor issue does not warrant a recommendations at this time.

Site Lighting-- Site lighting is provided by exterior LED and HID floodlighting lighting fixtures on the building that are aimed to illuminate the site and paved play and parking areas. The Building Engineer reported that additional site lighting is needed. Replacement of two (2) HID floodlights with LED floodlights and the addition of three (3) LED floodlights on the south and east sides of the building is included in this report.

Site video surveillance system--There are five (5) exterior cameras that provide limited surveillance of the parking and play areas. Additional cameras are recommended for improved surveillance coverage. Cameras are approximately 10 years old and have served their useful life.

RECOMMENDATIONS

- Brick point and tuck
- Exterior Window Upgrades
- Upgrade Exterior Doors
- Select Interior Door Upgrade
- Signage Upgrade
- Upgrade Stair Railing
- Vinyl tile upgrade
- Replace chalk boards
- Replace auditorium seating
- Upgrade Stage Curtain
- Asphalt paving parking area upgrade
- Build Dumpster Enclosure
- Provide a two hundred ton chilled water system with air cooled package chiller on the roof with pumps, piping and controls. Connect to new air handling units and unit ventilators.
- Install NFPA wet pipe automatic sprinkler system in entire building, including fire service, piping sprinkler heads, standpipes and fire pump if required.
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Remove existing and provide a new central station air handling unit for the auditorium with hot and chilled water coils, filters, outside and return air dampers, hydronic valves and controls, blower and motor. Connect to hot and chilled water systems and control system.
- 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 and control system.
- Replace domestic water supply piping with new insulated rigid copper tubing with valves, fittings and hangers.
- 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.
- Install new direct digital control system and building automation system with remote computer control capability and graphics

package.
- Provide a new central station air handling unit for the 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 and control system.
- Update electrical distribution system as follows:

- Remove 600A, 120/240V, 2 phase, 5 wire service disconnecting means, current transformer cabinet, meter, one (1) 200A safety switch and one (1) phase change transformer in the electrical supply room.

- Remove (1) 600A, (4) 200A and (2) 100A knife blade fusible panelboards in Mechanical Room 005.

- Remove one (1) phase change transformer in Mechanical Room 005.

- Replace Panelboards BR1 and BR2 in Boiler Room 004.

- Replace a total of ten (10) safety switches in the electrical supply, Mechanical Room 005 and Boiler Room 004. Also, replace ten (10) safety switches for mechanical equipment at the access to the roof.

- Provide a 1000 kVA, 13.2 kV-208/120V, 3 phase, 4 wire pad mounted transformer and 3000A switchboard with capacity to serve central air conditioning equipment and to replace existing obsolete knife blade panelboards.

- Replace (12) 120/240V, 1 phase panelboards in the building, including their feeder conductors.
- Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 30 classrooms.
- Replace all existing duplex receptacles in the building with new devices due to their age and condition. Several receptacles are not 3 wire grounding type (estimate 80 duplex receptacles to be replaced).
- Replace fluorescent lighting fixtures and branch circuit wiring throughout the building, except in those few rooms that have been previous upgraded (classrooms 25,300 SF; cafeteria, offices, restrooms, administration support, and miscellaneous 26,026 SF, mechanical and storage 6,342 SF).
- Replace (24) 4 lamp, surface mounted fluorescent wraparound fixtures in the gymnasium with vandal resistant fixtures.
- Replace (20) metal halide cylinder style downlights and (9) wall mounted cylinder up/down fixtures in the auditorium with LED downlight fixtures.
- Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.
- Replace sound system cabinet and speakers in the auditorium.
- Provide allowance for replacement of 11 interior video surveillance cameras and addition of 8 cameras, one monitor and one DVR.
- Replace all exit signs with LED type.
- Replace elevator machine and upgrade call buttons and lanterns.
- Replace two (2) exterior building mounted HID floodlighting fixtures with LED type and add three (3) LED floodlights for the south and east sides of the building.
- Replace five (5) exterior video surveillance cameras and add two (2) cameras for improved surveillance of the site.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S427001		

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.

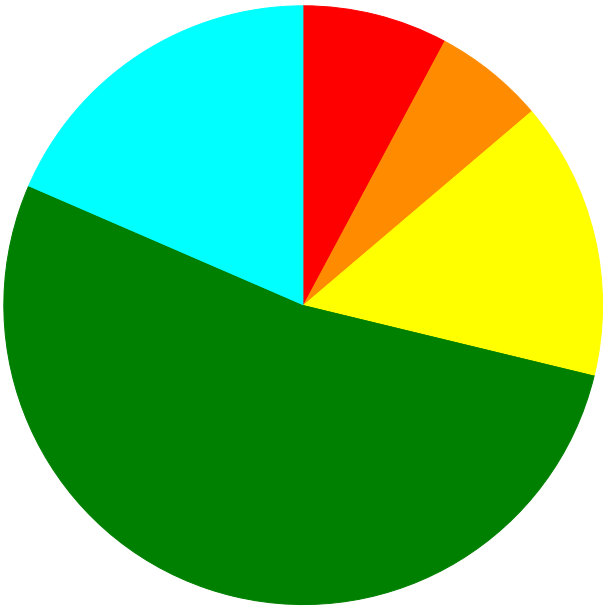
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	39.00 %	0.00 %	$0.00
A20 - Basement Construction	39.00 %	0.00 %	$0.00
B10 - Superstructure	39.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	36.36 %	28.90 %	$1,156,677.43
B30 - Roofing	60.00 %	0.00 %	$0.00
C10 - Interior Construction	36.57 %	11.79 %	$205,377.64
C20 - Stairs	39.00 %	12.44 %	$12,455.57
C30 - Interior Finishes	73.56 %	8.34 %	$303,333.36
D10 - Conveying	106.67 %	267.94 %	$291,060.77
D20 - Plumbing	75.30 %	48.84 %	$708,091.08
D30 - HVAC	83.36 %	92.99 %	$7,344,393.02
D40 - Fire Protection	92.47 %	177.49 %	$1,015,685.26
D50 - Electrical	107.16 %	80.46 %	$3,357,833.70
E10 - Equipment	34.29 %	1.48 %	$16,769.59
E20 - Furnishings	30.00 %	247.70 %	$374,593.75
G20 - Site Improvements	38.37 %	31.53 %	$485,502.43
G40 - Site Electrical Utilities	110.00 %	12.48 %	$59,488.08
Totals:	**62.98 %**	**41.75 %**	**$15,331,261.68**

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)
B427001;Dick	71,000	42.60	$1,199,229.48	$896,312.30	$1,794,030.42	$8,061,221.68	$2,835,477.29
G427001;Grounds	109,600	27.02	$0.00	$18,852.52	$504,683.87	$21,454.12	$0.00
Total:		**41.75**	**$1,199,229.48**	**$915,164.82**	**$2,298,714.29**	**$8,082,675.80**	**$2,835,477.29**

Deficiencies By Priority



- 1 - Response Time (< 2 yr) - $1,199,229.48
- 2 - Response Time (2-3 yrs) - $915,164.82
- 3 - Response Time (3-4 yrs) - $2,298,714.29
- 4 - Response Time (4-5 yrs) - $8,082,675.80
- 5 - Response Time (> 5 yrs) - $2,835,477.29

Budget Estimate Total: $15,331,261.68

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):	71,000
Year Built:	1954
Last Renovation:	
Replacement Value:	$34,707,030
Repair Cost:	$14,786,271.17
Total FCI:	42.60 %
Total RSLI:	63.43 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B427001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S427001		

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	39.00 %	0.00 %	$0.00
A20 - Basement Construction	39.00 %	0.00 %	$0.00
B10 - Superstructure	39.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	36.36 %	28.90 %	$1,156,677.43
B30 - Roofing	60.00 %	0.00 %	$0.00
C10 - Interior Construction	36.57 %	11.79 %	$205,377.64
C20 - Stairs	39.00 %	12.44 %	$12,455.57
C30 - Interior Finishes	73.56 %	8.34 %	$303,333.36
D10 - Conveying	106.67 %	267.94 %	$291,060.77
D20 - Plumbing	75.30 %	48.84 %	$708,091.08
D30 - HVAC	83.36 %	92.99 %	$7,344,393.02
D40 - Fire Protection	92.47 %	177.49 %	$1,015,685.26
D50 - Electrical	107.16 %	80.46 %	$3,357,833.70
E10 - Equipment	34.29 %	1.48 %	$16,769.59
E20 - Furnishings	30.00 %	247.70 %	$374,593.75
Totals:	**63.43 %**	**42.60 %**	**$14,786,271.17**

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.	71,000	100	1954	2054		39.00 %	0.00 %	39			$1,306,400
A1030	Slab on Grade	$7.73	S.F.	71,000	100	1954	2054		39.00 %	0.00 %	39			$548,830
A2010	Basement Excavation	$6.55	S.F.	71,000	100	1954	2054		39.00 %	0.00 %	39			$465,050
A2020	Basement Walls	$12.70	S.F.	71,000	100	1954	2054		39.00 %	0.00 %	39			$901,700
B1010	Floor Construction	$75.10	S.F.	71,000	100	1954	2054		39.00 %	0.00 %	39			$5,332,100
B1020	Roof Construction	$13.88	S.F.	23,000	100	1954	2054		39.00 %	0.00 %	39			$319,240
B2010	Exterior Walls	$36.91	S.F.	71,000	100	1954	2054		39.00 %	1.85 %	39		$48,434.21	$2,620,610
B2020	Exterior Windows	$18.01	S.F.	71,000	40	1954	1994	2027	30.00 %	86.01 %	12		$1,099,881.65	$1,278,710
B2030	Exterior Doors	$1.45	S.F.	71,000	25	1954	1979	2027	48.00 %	8.12 %	12		$8,361.57	$102,950
B3010105	Built-Up	$37.76	S.F.	23,000	20	1954	1974	2027	60.00 %	0.00 %	12			$868,480
B3020	Roof Openings	$0.06	S.F.	23,000	20	1954	1974	2027	60.00 %	0.00 %	12			$1,380
C1010	Partitions	$17.91	S.F.	71,000	100	1954	2054		39.00 %	0.00 %	39			$1,271,610
C1020	Interior Doors	$3.51	S.F.	71,000	40	1954	1994	2027	30.00 %	57.43 %	12		$143,117.61	$249,210
C1030	Fittings	$3.12	S.F.	71,000	40	1954	1994	2027	30.00 %	28.11 %	12		$62,260.03	$221,520
C2010	Stair Construction	$1.41	S.F.	71,000	100	1954	2054		39.00 %	12.44 %	39		$12,455.57	$100,110
C3010230	Paint & Covering	$13.21	S.F.	51,000	10	2014	2024		90.00 %	0.00 %	9			$673,710
C3010232	Wall Tile	$2.63	S.F.	20,000	30	1954	1984	2027	40.00 %	0.00 %	12			$52,600
C3020412	Terrazzo & Tile	$75.52	S.F.	10,000	50	1954	2004	2027	24.00 %	0.00 %	12			$755,200

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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 $
C3020413	Vinyl Flooring	$9.68	S.F.	50,000	20	1954	1974	2027	60.00 %	62.67 %	12		$303,333.36	$484,000
C3020414	Wood Flooring	$22.27	S.F.	8,000	25	1954	1979	2027	48.00 %	0.00 %	12			$178,160
C3020415	Concrete Floor Finishes	$0.97	S.F.	3,000	50	1954	2004	2027	24.00 %	0.00 %	12			$2,910
C3030	Ceiling Finishes	$20.97	S.F.	71,000	25	2015	2040		100.00 %	0.00 %	25			$1,488,870
D1010	Elevators and Lifts	$1.53	S.F.	71,000	30	1954	1984	2047	106.67 %	267.94 %	32		$291,060.77	$108,630
D2010	Plumbing Fixtures	$13.52	S.F.	71,000	35	2005	2040		71.43 %	0.00 %	25			$959,920
D2020	Domestic Water Distribution	$1.68	S.F.	71,000	25	1954	1979	2042	108.00 %	301.63 %	27		$359,782.82	$119,280
D2030	Sanitary Waste	$2.90	S.F.	71,000	25	1954	1979	2042	108.00 %	169.16 %	27		$348,308.26	$205,900
D2040	Rain Water Drainage	$2.32	S.F.	71,000	30	1954	1984	2025	33.33 %	0.00 %	10			$164,720
D3020	Heat Generating Systems	$18.67	S.F.	71,000	35	1990	2025		28.57 %	0.00 %	10			$1,325,570
D3030	Cooling Generating Systems	$24.48	S.F.	71,000	30			2047	106.67 %	65.60 %	32		$1,140,230.64	$1,738,080
D3040	Distribution Systems	$42.99	S.F.	71,000	25	1954	1979	2042	108.00 %	153.36 %	27		$4,681,061.40	$3,052,290
D3050	Terminal & Package Units	$11.60	S.F.	71,000	20				0.00 %	0.00 %				$823,600
D3060	Controls & Instrumentation	$13.50	S.F.	71,000	20	1954	1974	2037	110.00 %	158.90 %	22		$1,523,100.98	$958,500
D4010	Sprinklers	$7.05	S.F.	71,000	35			2052	105.71 %	202.91 %	37		$1,015,685.26	$500,550
D4020	Standpipes	$1.01	S.F.	71,000	35				0.00 %	0.00 %				$71,710
D5010	Electrical Service/Distribution	$9.70	S.F.	71,000	30	1954	1984	2047	106.67 %	226.41 %	32		$1,559,273.01	$688,700
D5020	Lighting and Branch Wiring	$34.68	S.F.	71,000	20	1954	1974	2037	110.00 %	48.95 %	22		$1,205,287.15	$2,462,280
D5030	Communications and Security	$12.99	S.F.	71,000	15	1954	1969	2030	100.00 %	60.37 %	15		$556,817.32	$922,290
D5090	Other Electrical Systems	$1.41	S.F.	71,000	30	1954	1984	2047	106.67 %	36.42 %	32		$36,456.22	$100,110
E1020	Institutional Equipment	$4.82	S.F.	71,000	35	1954	1989	2027	34.29 %	4.90 %	12		$16,769.59	$342,220
E1090	Other Equipment	$11.10	S.F.	71,000	35	1954	1989	2027	34.29 %	0.00 %	12			$788,100
E2010	Fixed Furnishings	$2.13	S.F.	71,000	40	1954	1994	2027	30.00 %	247.70 %	12		$374,593.75	$151,230
								Total	**63.43 %**	**42.60 %**			**$14,786,271.17**	**$34,707,030**

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 CMU 80%
Wall tile 20%

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

Note: Terrazzo Tile 15%
Vinyl 70%
Wood 11%
Concrete 4%

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

Note: There are four (4) secondary phase change transformers, all rated 240V -208/120V, 3 phase, 4 wire, as follows:
(1) 37.5 kVA
(1) 50 kVA
(1) 75 kVA
(1) Rating Unknown (transformer was blocked by storage material and not accessible)

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:	**$14,786,271**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$966,943**	**$2,203,108**	**$17,956,321**
*** 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	$48,434	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$48,434**
B2020 - Exterior Windows	$1,099,882	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,099,882**
B2030 - Exterior Doors	$8,362	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$8,362**
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	$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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1020 - Interior Doors	$143,118	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$143,118**
C1030 - Fittings	$62,260	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$62,260**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

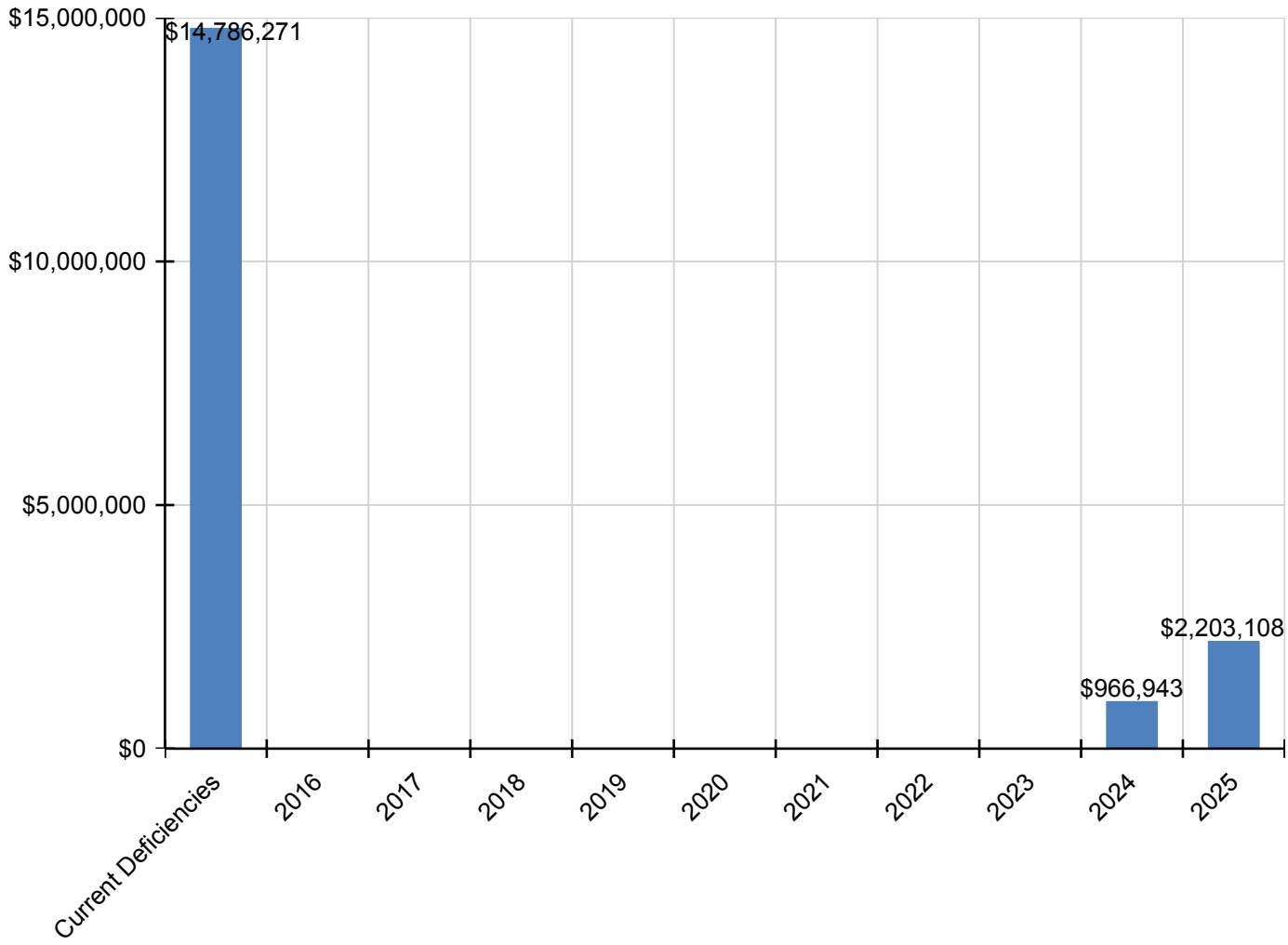
C2010 - Stair Construction	$12,456	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$12,456**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$966,943	$0	**$966,943**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$303,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$303,333**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$291,061	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$291,061**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$359,783	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$359,783**
D2030 - Sanitary Waste	$348,308	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$348,308**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$243,507	**$243,507**
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	$1,959,601	**$1,959,601**
D3030 - Cooling Generating Systems	$1,140,231	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,140,231**
D3040 - Distribution Systems	$4,681,061	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,681,061**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,523,101	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,523,101**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,015,685	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,015,685**
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	$1,559,273	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,559,273**
D5020 - Lighting and Branch Wiring	$1,205,287	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,205,287**
D5030 - Communications and Security	$556,817	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$556,817**
D5090 - Other Electrical Systems	$36,456	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$36,456**

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	$16,770	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$16,770**
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

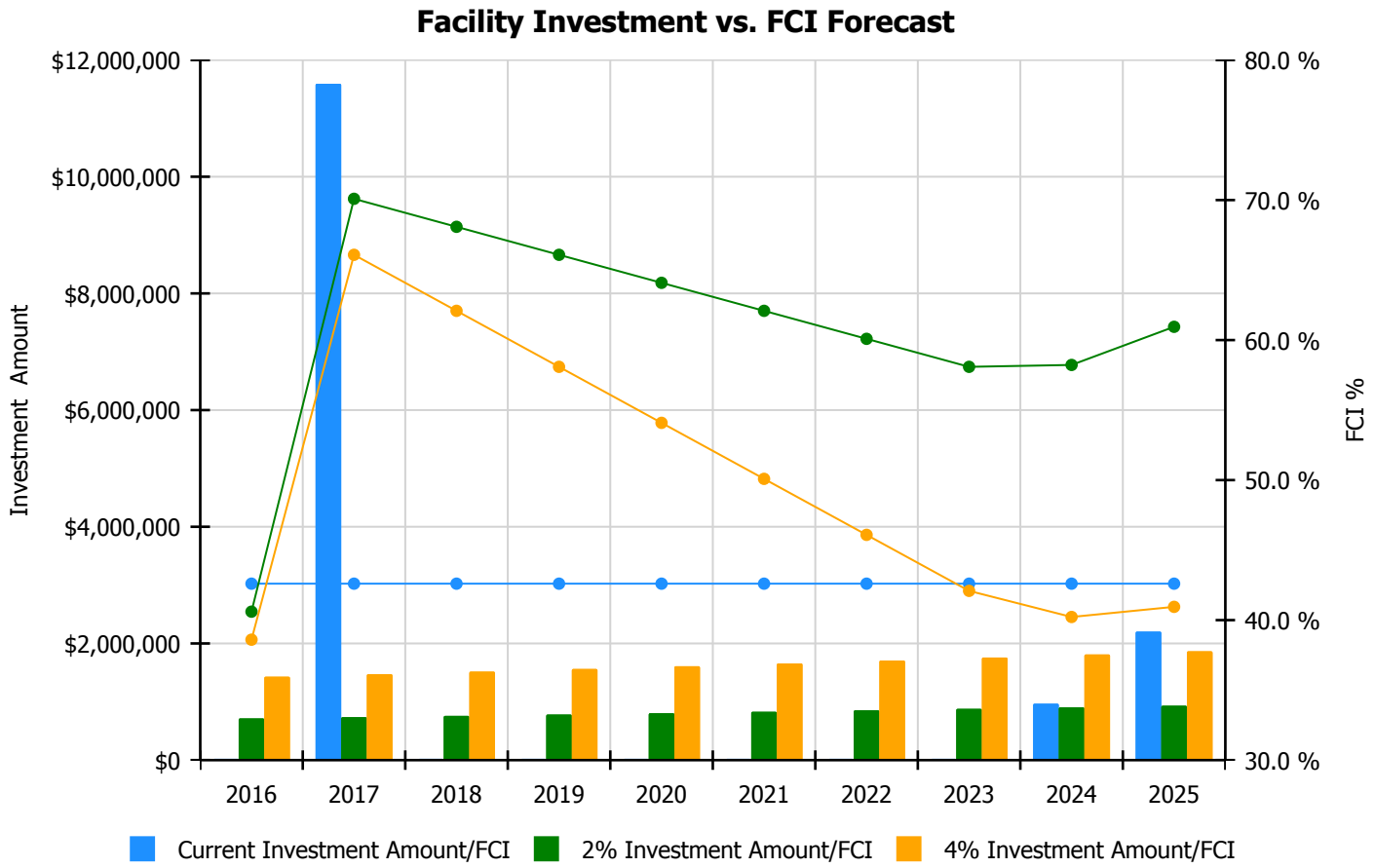
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

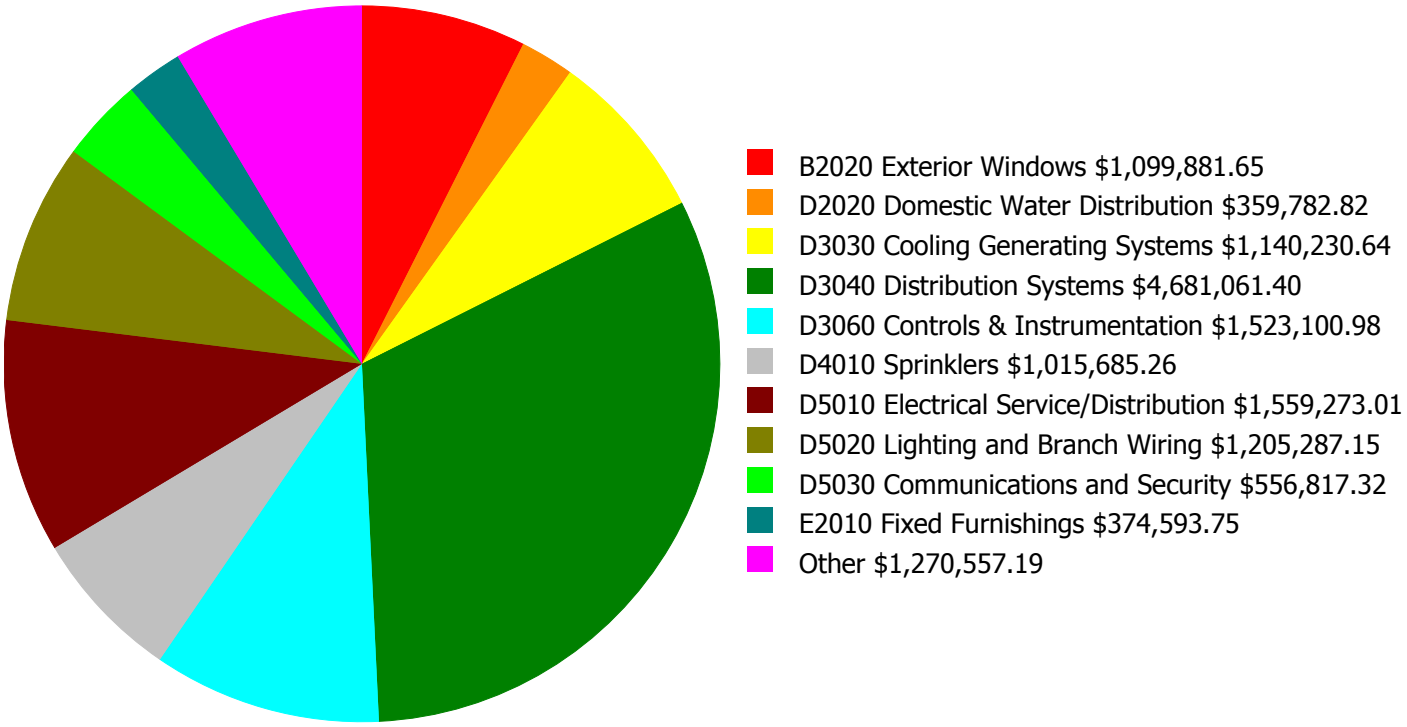
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 42.6%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$714,965.00	40.60 %	$1,429,930.00	38.60 %
2017	$11,593,252	$736,414.00	70.09 %	$1,472,828.00	66.09 %
2018	$0	$758,506.00	68.09 %	$1,517,012.00	62.09 %
2019	$0	$781,261.00	66.09 %	$1,562,523.00	58.09 %
2020	$0	$804,699.00	64.09 %	$1,609,398.00	54.09 %
2021	$0	$828,840.00	62.09 %	$1,657,680.00	50.09 %
2022	$0	$853,705.00	60.09 %	$1,707,411.00	46.09 %
2023	$0	$879,317.00	58.09 %	$1,758,633.00	42.09 %
2024	$966,943	$905,696.00	58.22 %	$1,811,392.00	40.22 %
2025	$2,203,108	$932,867.00	60.95 %	$1,865,734.00	40.95 %
Total:	**$14,763,302**	**$8,196,270.00**		**$16,392,541.00**	

Deficiency Summary by System

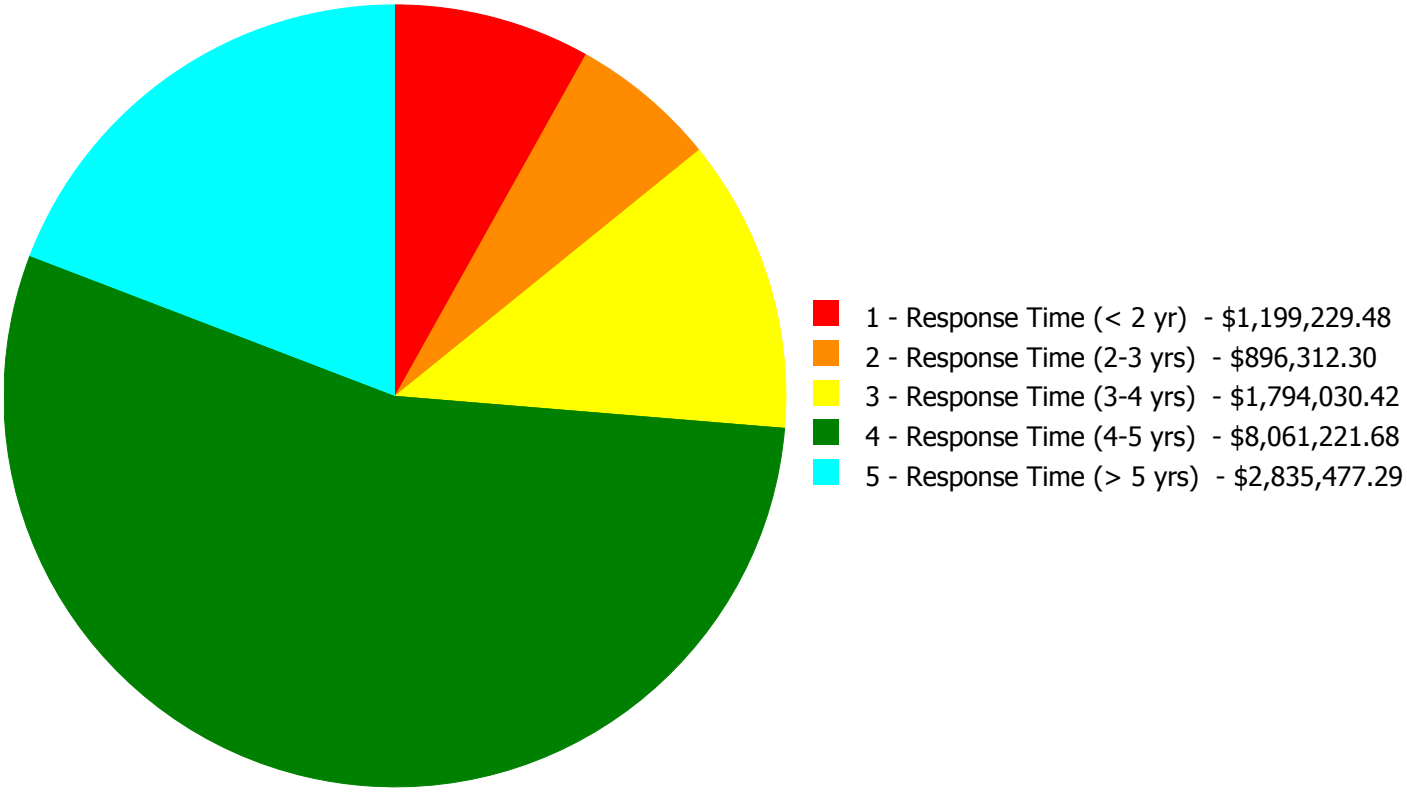
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $14,786,271.17

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: $14,786,271.17

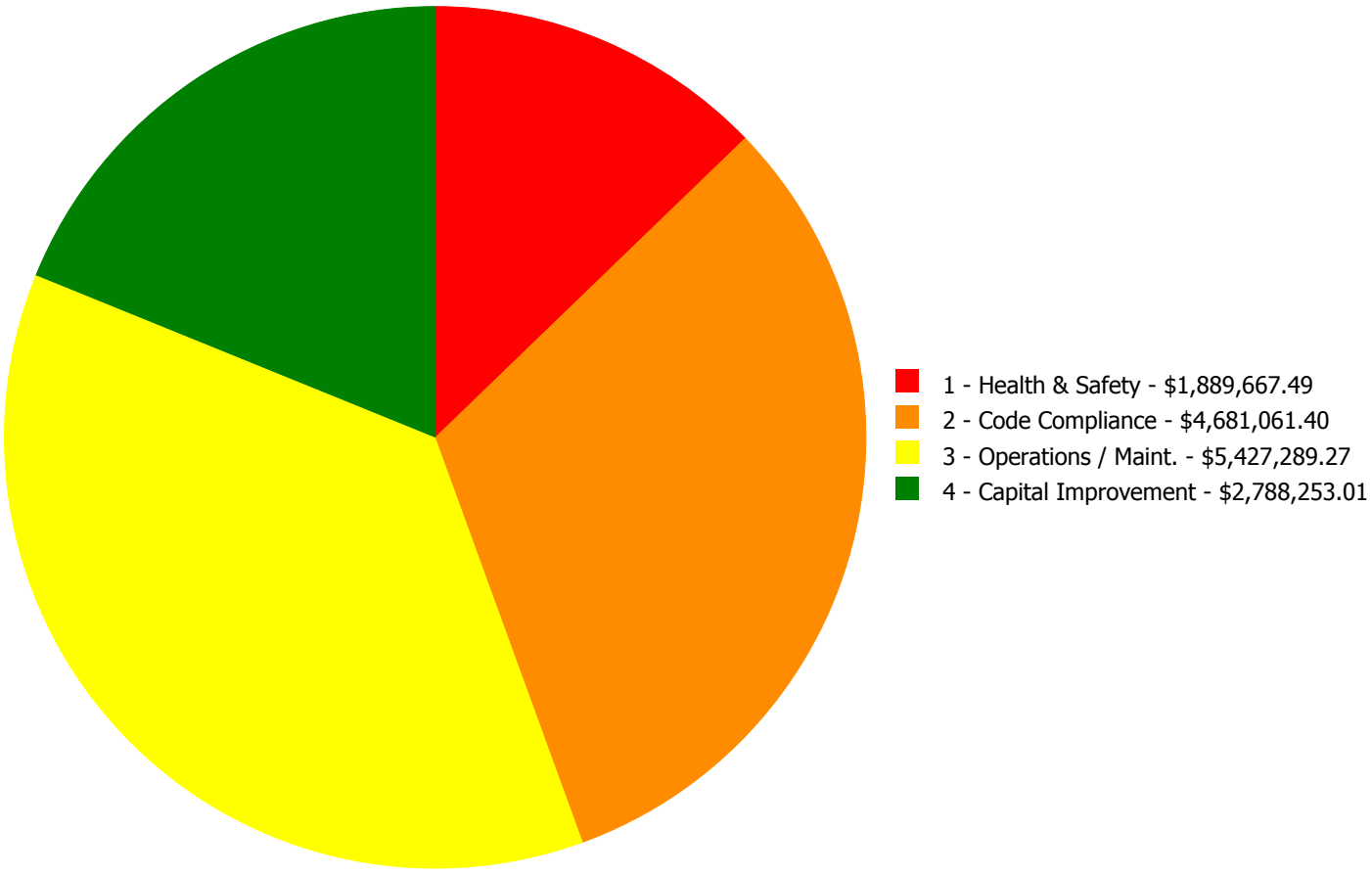
Deficiency By Priority Investment Table

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	$48,434.21	$0.00	$0.00	$0.00	$48,434.21
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	$8,361.57	$0.00	$8,361.57
C1020	Interior Doors	$0.00	$0.00	$0.00	$0.00	$143,117.61	$143,117.61
C1030	Fittings	$0.00	$0.00	$0.00	$0.00	$62,260.03	$62,260.03
C2010	Stair Construction	$0.00	$0.00	$0.00	$0.00	$12,455.57	$12,455.57
C3020413	Vinyl Flooring	$0.00	$0.00	$303,333.36	$0.00	$0.00	$303,333.36
D1010	Elevators and Lifts	$0.00	$291,060.77	$0.00	$0.00	$0.00	$291,060.77
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$359,782.82	$0.00	$359,782.82
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$348,308.26	$0.00	$348,308.26
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,140,230.64	$1,140,230.64
D3040	Distribution Systems	$0.00	$0.00	$0.00	$4,681,061.40	$0.00	$4,681,061.40
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,523,100.98	$0.00	$1,523,100.98
D4010	Sprinklers	$0.00	$0.00	$0.00	$1,015,685.26	$0.00	$1,015,685.26
D5010	Electrical Service/Distribution	$1,199,229.48	$0.00	$360,043.53	$0.00	$0.00	$1,559,273.01
D5020	Lighting and Branch Wiring	$0.00	$0.00	$1,080,365.76	$124,921.39	$0.00	$1,205,287.15
D5030	Communications and Security	$0.00	$556,817.32	$0.00	$0.00	$0.00	$556,817.32
D5090	Other Electrical Systems	$0.00	$0.00	$36,456.22	$0.00	$0.00	$36,456.22
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$0.00	$16,769.59	$16,769.59
E2010	Fixed Furnishings	$0.00	$0.00	$13,831.55	$0.00	$360,762.20	$374,593.75
	Total:	$1,199,229.48	$896,312.30	$1,794,030.42	$8,061,221.68	$2,835,477.29	$14,786,271.17

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:



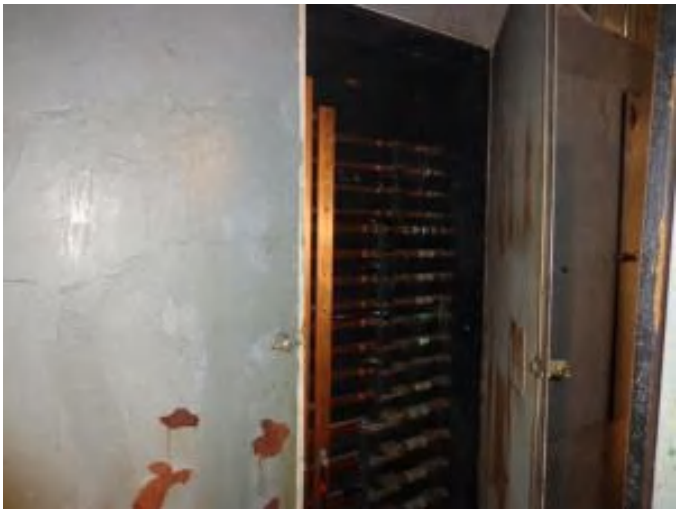
Budget Estimate Total: $14,786,271.17

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: D5010 - Electrical Service/Distribution



Location: Electrical Supply Room, Mech. Rm. 005 and Boiler Rm. 004

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,199,229.48

Assessor Name: System

Date Created: 01/26/2016

Notes: Update electrical distribution system as follows:
- Remove 600A, 120/240V, 2 phase, 5 wire service disconnecting means, current transformer cabinet, meter, one (1) 200A safety switch and one (1) phase change transformer in the electrical supply room.
- Remove (1) 600A, (4) 200A and (2) 100A knife blade fusible panelboards in Mechanical Room 005.
- Remove one (1) phase change transformer in Mechanical Room 005.
- Replace Panelboards BR1 and BR2 in Boiler Room 004.
- Replace a total of ten (10) safety switches in the electrical supply, Mechanical Room 005 and Boiler Room 004. Also, replace ten (10) safety switches for mechanical equipment at the access to the roof.
- Provide a 1000 kVA, 13.2 kV-208/120V, 3 phase, 4 wire pad mounted transformer and 3000A switchboard with capacity to serve central air conditioning equipment and to replace existing obsolete knife blade panelboards.

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

System: B2010 - Exterior Walls

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,500.00

Unit of Measure: S.F.

Estimate: $48,434.21

Assessor Name: System

Date Created: 02/08/2016

Notes: The exterior brick surfaces are generally in fair to good condition for their age. Recently a few exterior walls were completely renovated as part of the Philadelphia Mural Project. In other locations for this school, 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.

System: D1010 - Elevators and Lifts

Location: Elevator Machine Room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace elevator - 4 stop electric traction

Qty: 1.00

Unit of Measure: Ea.

Estimate: $291,060.77

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace elevator machine and upgrade call buttons and lanterns.

System: D5030 - Communications and Security

Location: Building wide
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 2 - Response Time (2-3 yrs)
Correction: Replace fire alarm system
Qty: 71,000.00
Unit of Measure: S.F.
Estimate: $484,360.17
Assessor Name: System
Date Created: 01/26/2016

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

System: D5030 - Communications and Security

Location: Building wide
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 2 - Response Time (2-3 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 11.00
Unit of Measure: Ea.
Estimate: $72,457.15
Assessor Name: System
Date Created: 01/26/2016

Notes: Provide allowance for replacement of 11 interior video surveillance cameras and addition of 8 cameras, one monitor and one DVR.

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

System: C3020413 - Vinyl Flooring

Location: Building WIde

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $303,333.36

Assessor Name: System

Date Created: 02/08/2016

Notes: The floor finish for this school is a combination of terrazzo, concrete, ceramic tile in the kitchen and service line areas, wooden gym with 12 x 12 vinyl and 9 x 9 vinyl tile finishes. 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: D5010 - Electrical Service/Distribution

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Panelboard

Qty: 12.00

Unit of Measure: Ea.

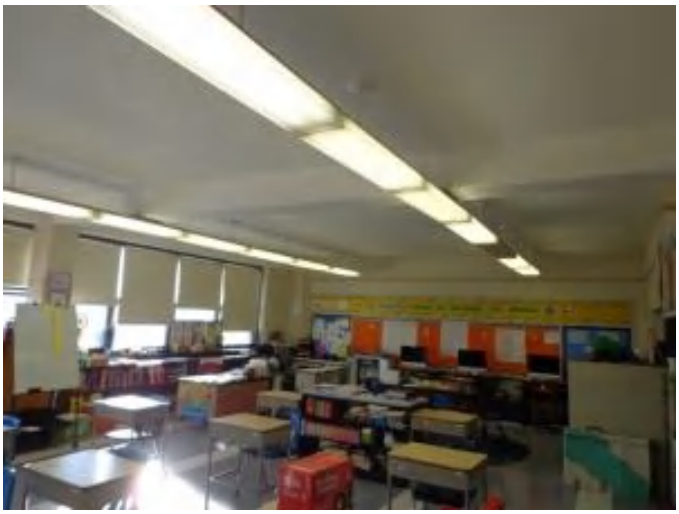
Estimate: $360,043.53

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace (12) 120/240V, 1 phase panelboards in the building, including their feeder conductors.

System: D5020 - Lighting and Branch Wiring



Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 58,668.00

Unit of Measure: S.F.

Estimate: $920,883.44

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace fluorescent lighting fixtures and branch circuit wiring throughout the building, except in those few rooms that have been previous upgraded (classrooms 25,300 SF; cafeteria, offices, restrooms, administration support, and miscellaneous 26,026 SF, mechanical and storage 6,342 SF).

System: D5020 - Lighting and Branch Wiring

Location: Gymnasium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace lighting fixtures

Qty: 48.00

Unit of Measure: Ea.

Estimate: $69,411.29

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace (24) 4 lamp, surface mounted fluorescent wraparound fixtures in the gymnasium with vandal resistant fixtures.

System: D5020 - Lighting and Branch Wiring

Location: Auditorium
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace lighting fixtures
Qty: 29.00
Unit of Measure: Ea.
Estimate: $49,762.09
Assessor Name: System
Date Created: 01/26/2016

Notes: Replace (20) metal halide cylinder style downlights and (9) wall mounted cylinder up/down fixtures in the auditorium with LED downlight fixtures.

System: D5020 - Lighting and Branch Wiring

Location: Building wide
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Wiring Device
Qty: 80.00
Unit of Measure: Ea.
Estimate: $40,308.94
Assessor Name: System
Date Created: 01/26/2016

Notes: Replace all existing duplex receptacles in the building with new devices due to their age and condition. Several receptacles are not 3 wire grounding type (estimate 80 duplex receptacles to be replaced).

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: 43.00

Unit of Measure: Ea.

Estimate: $36,456.22

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace all exit signs with LED type.

System: E2010 - Fixed Furnishings

Location: Stage

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 3 - Response Time (3-4 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

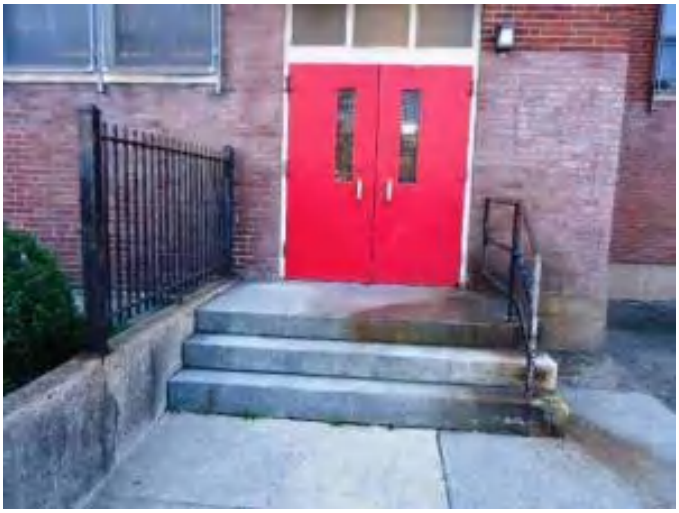
Assessor Name: System

Date Created: 02/08/2016

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 4 - Response Time (4-5 yrs):

System: B2030 - Exterior Doors



Location: Exterior Elevation
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Refinish and repaint exterior doors - per leaf
Qty: 14.00
Unit of Measure: Ea.
Estimate: $8,361.57
Assessor Name: System
Date Created: 02/08/2016

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

System: 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: 71,000.00
Unit of Measure: S.F.
Estimate: $359,782.82
Assessor Name: System
Date Created: 02/07/2016

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

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: 71,000.00

Unit of Measure: S.F.

Estimate: $348,308.26

Assessor Name: System

Date Created: 02/07/2016

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

System: D3040 - Distribution Systems

Location: classrooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: 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: 71,000.00

Unit of Measure: S.F.

Estimate: $3,424,986.12

Assessor Name: System

Date Created: 02/07/2016

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: Replace HVAC unit for Auditorium (200 seat).

Qty: 364.00

Unit of Measure: Seat

Estimate: $606,229.83

Assessor Name: System

Date Created: 02/07/2016

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

System: D3040 - Distribution Systems

Location: gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $344,860.27

Assessor Name: System

Date Created: 02/07/2016

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

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: 596.00

Unit of Measure: Student

Estimate: $304,985.18

Assessor Name: System

Date Created: 02/07/2016

Notes: 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 and control system.

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: 71,000.00

Unit of Measure: S.F.

Estimate: $1,523,100.98

Assessor Name: System

Date Created: 02/07/2016

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

System: D4010 - Sprinklers

Location: entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Install a fire protection sprinkler system

Qty: 71,000.00

Unit of Measure: S.F.

Estimate: $1,015,685.26

Assessor Name: System

Date Created: 02/07/2016

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

System: D5020 - Lighting and Branch Wiring

Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Provide surface raceway system and wiring devices

Qty: 900.00

Unit of Measure: L.F.

Estimate: $124,921.39

Assessor Name: System

Date Created: 01/26/2016

Notes: Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 30 classrooms.

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: 02/08/2016

Notes: Exterior windows are a single pane industrial grade aluminum framed single pane windows. Windows are in good condition with few exceptions. The exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features. This universal upgrade is expected to be completed as part of an overall renovation effort to eliminate dual efforts.

System: C1020 - Interior Doors

Location: Classroom

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 30.00

Unit of Measure: Ea.

Estimate: $143,117.61

Assessor Name: System

Date Created: 02/08/2016

Notes: Interior doors are typically wood in wood frames with wooden transom and wired glass glazing. Other interior doors include hollow metal in hollow metal frames at the stairwells and exit ways and access doors. Doors are generally in fair condition and is a mix of ADA compliant and non-complaint doors with both non-rated and fire rated. Several of the classroom doors are aging at a faster than normal rate for this application. Numerous repairs to locksets and door hardware have advanced the deterioration of the doors. This deficiency provides a budgetary consideration to replace a portion of the interior doors and frames with consideration for the physically challenged.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 200.00

Unit of Measure: Ea.

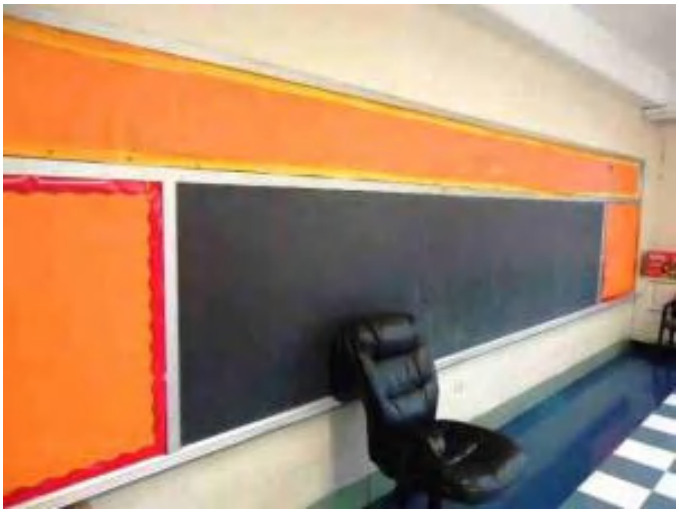
Estimate: $54,182.50

Assessor Name: System

Date Created: 02/08/2016

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

System: C1030 - Fittings



Location: Classroom

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 40.00

Unit of Measure: Ea.

Estimate: $8,077.53

Assessor Name: System

Date Created: 02/08/2016

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

System: C2010 - Stair Construction

Location: Stairs

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 800.00

Unit of Measure: L.F.

Estimate: $12,455.57

Assessor Name: System

Date Created: 02/08/2016

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

System: 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: 71,000.00

Unit of Measure: S.F.

Estimate: $1,140,230.64

Assessor Name: System

Date Created: 02/07/2016

Notes: Provide a two hundred ton chilled water system with air cooled package chiller on the roof with pumps, piping and controls. Connect to new air handling units and unit ventilators.

System: E1020 - Institutional Equipment

Location: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace sound system

Qty: 1.00

Unit of Measure: LS

Estimate: $16,769.59

Assessor Name: System

Date Created: 01/26/2016

Notes: Replace sound system cabinet and speakers in the auditorium.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 400.00

Unit of Measure: Ea.

Estimate: $360,762.20

Assessor Name: System

Date Created: 02/08/2016

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

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Traction geared elevators, passenger, 2000 lb, 5 floors, 200 FPM	1.00	Ea.	Elevator Machine Room	Amtech	Controller: IMC-MG	Controller: 3017993		30			$175,350.00	$192,885.00
D3020 Heat Generating Systems	Boiler, gas fired, natural or propane, cast iron, steam, gross output, 1875 MBH, includes standard controls and insulated jacket, packaged	2.00	Ea.	mechanical room	weil mclain	94 series 3			35	1990	2025	$41,217.30	$90,678.06
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 600 A, 5 stories, 50' horizontal	1.00	Ea.	Mechanical Room 005	Pelham Electric Mfg. Corp.	NA	NA		30			$34,030.80	$37,433.88
												Total:	**$320,996.94**

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):	109,600
Year Built:	1954
Last Renovation:	
Replacement Value:	$2,016,742
Repair Cost:	$544,990.51
Total FCI:	27.02 %
Total RSLI:	55.30 %

Description:

Attributes:

General Attributes:

Bldg ID:	S427001	Site ID:	S427001

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	38.37 %	31.53 %	$485,502.43
G40 - Site Electrical Utilities	110.00 %	12.48 %	$59,488.08
Totals:	**55.30 %**	**27.02 %**	**$544,990.51**

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 $
G2020	Parking Lots	$7.65	S.F.	33,600	30	1954	1984	2027	40.00 %	181.55 %	12		$466,649.91	$257,040
G2030	Pedestrian Paving	$11.52	S.F.	66,900	40	1954	1994	2027	30.00 %	0.00 %	12			$770,688
G2040	Site Development	$4.36	S.F.	109,600	25	1954	1979	2027	48.00 %	3.95 %	12		$18,852.52	$477,856
G2050	Landscaping & Irrigation	$3.78	S.F.	9,100	15	1954	1969	2027	80.00 %	0.00 %	12			$34,398
G4020	Site Lighting	$3.58	S.F.	109,600	20	1954	1974	2037	110.00 %	5.47 %	22		$21,454.12	$392,368
G4030	Site Communications & Security	$0.77	S.F.	109,600	20	1954	1974	2037	110.00 %	45.07 %	22		$38,033.96	$84,392
								Total	**55.30 %**	**27.02 %**			**$544,990.51**	**$2,016,742**

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.

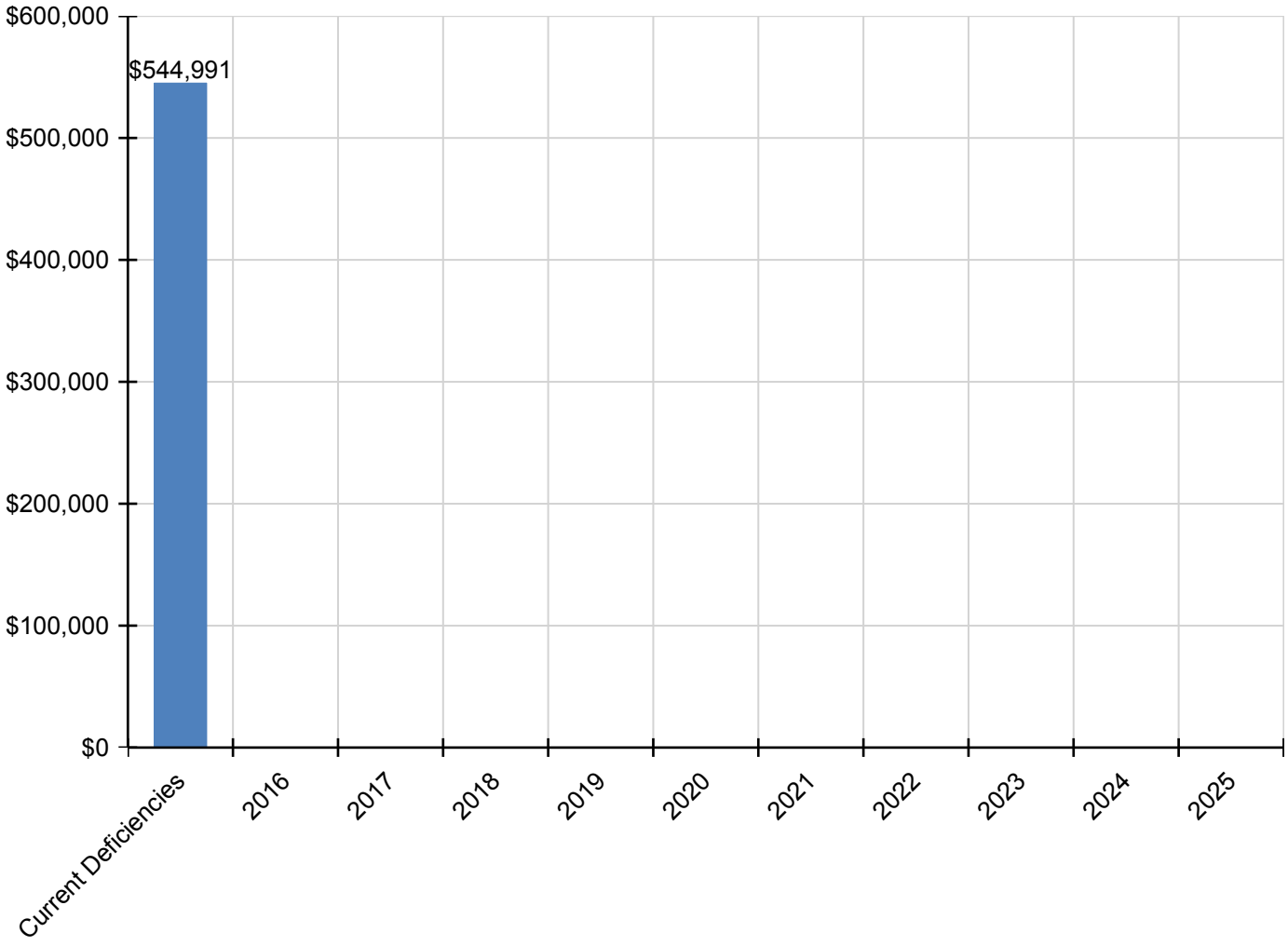
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$544,991**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$544,991**
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**
G2020 - Parking Lots	$466,650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$466,650**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2040 - Site Development	$18,853	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,853**
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	$21,454	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,454**
G4030 - Site Communications & Security	$38,034	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$38,034**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

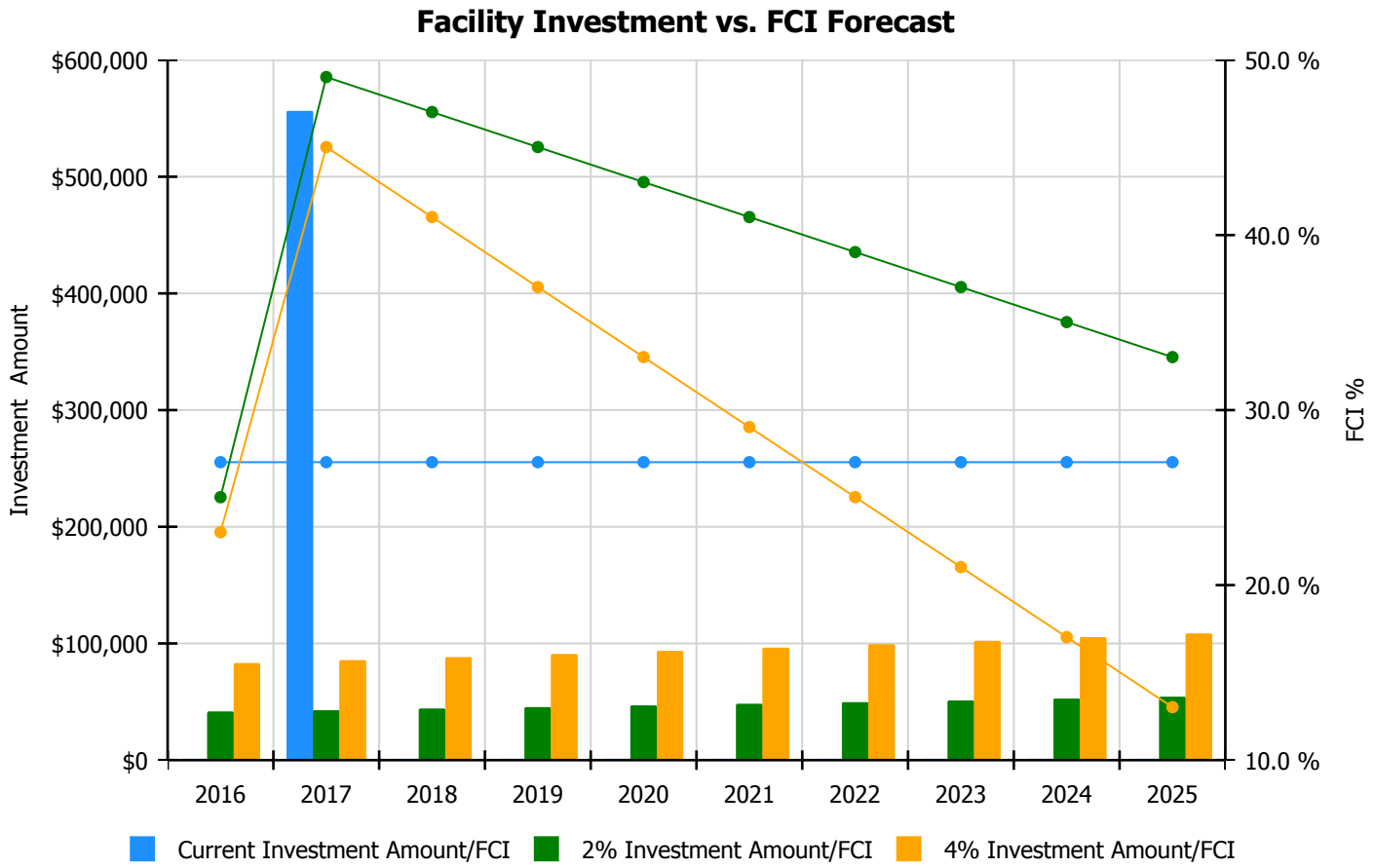
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

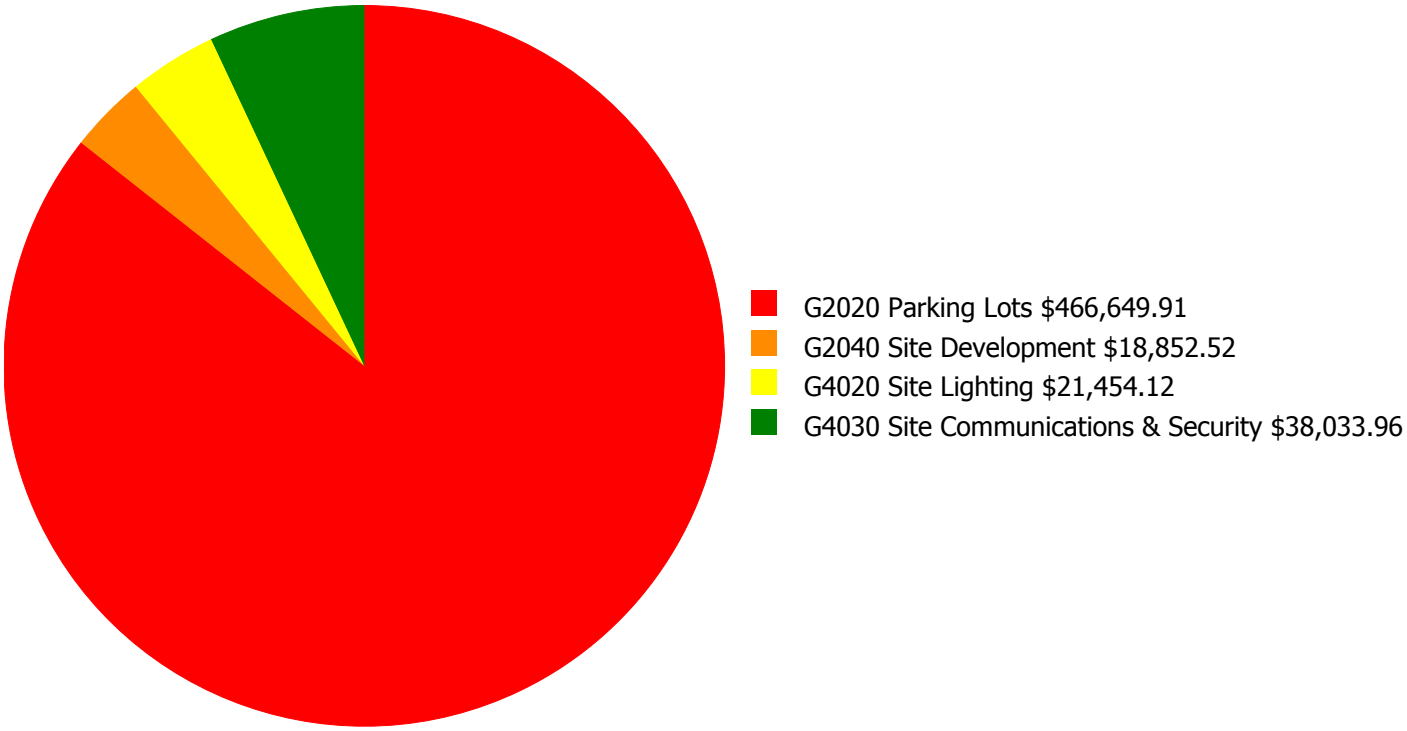
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 27.02%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$41,545.00	25.02 %	$83,090.00	23.02 %
2017	$556,374	$42,791.00	49.03 %	$85,582.00	45.03 %
2018	$0	$44,075.00	47.03 %	$88,150.00	41.03 %
2019	$0	$45,397.00	45.03 %	$90,794.00	37.03 %
2020	$0	$46,759.00	43.03 %	$93,518.00	33.03 %
2021	$0	$48,162.00	41.03 %	$96,324.00	29.03 %
2022	$0	$49,607.00	39.03 %	$99,214.00	25.03 %
2023	$0	$51,095.00	37.03 %	$102,190.00	21.03 %
2024	$0	$52,628.00	35.03 %	$105,256.00	17.03 %
2025	$0	$54,207.00	33.03 %	$108,413.00	13.03 %
Total:	**$556,374**	**$476,266.00**		**$952,531.00**	

Deficiency Summary by System

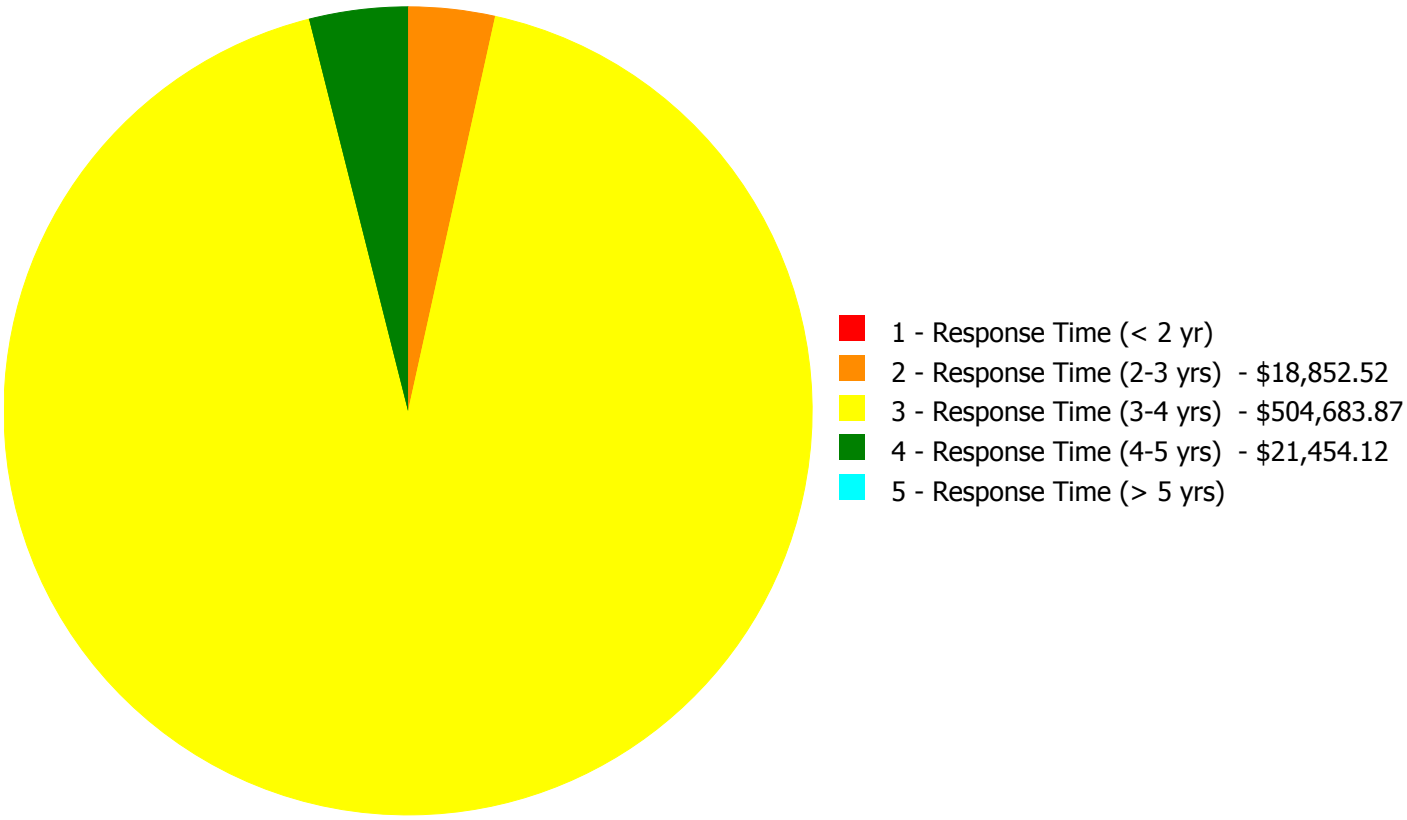
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $544,990.51

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: $544,990.51

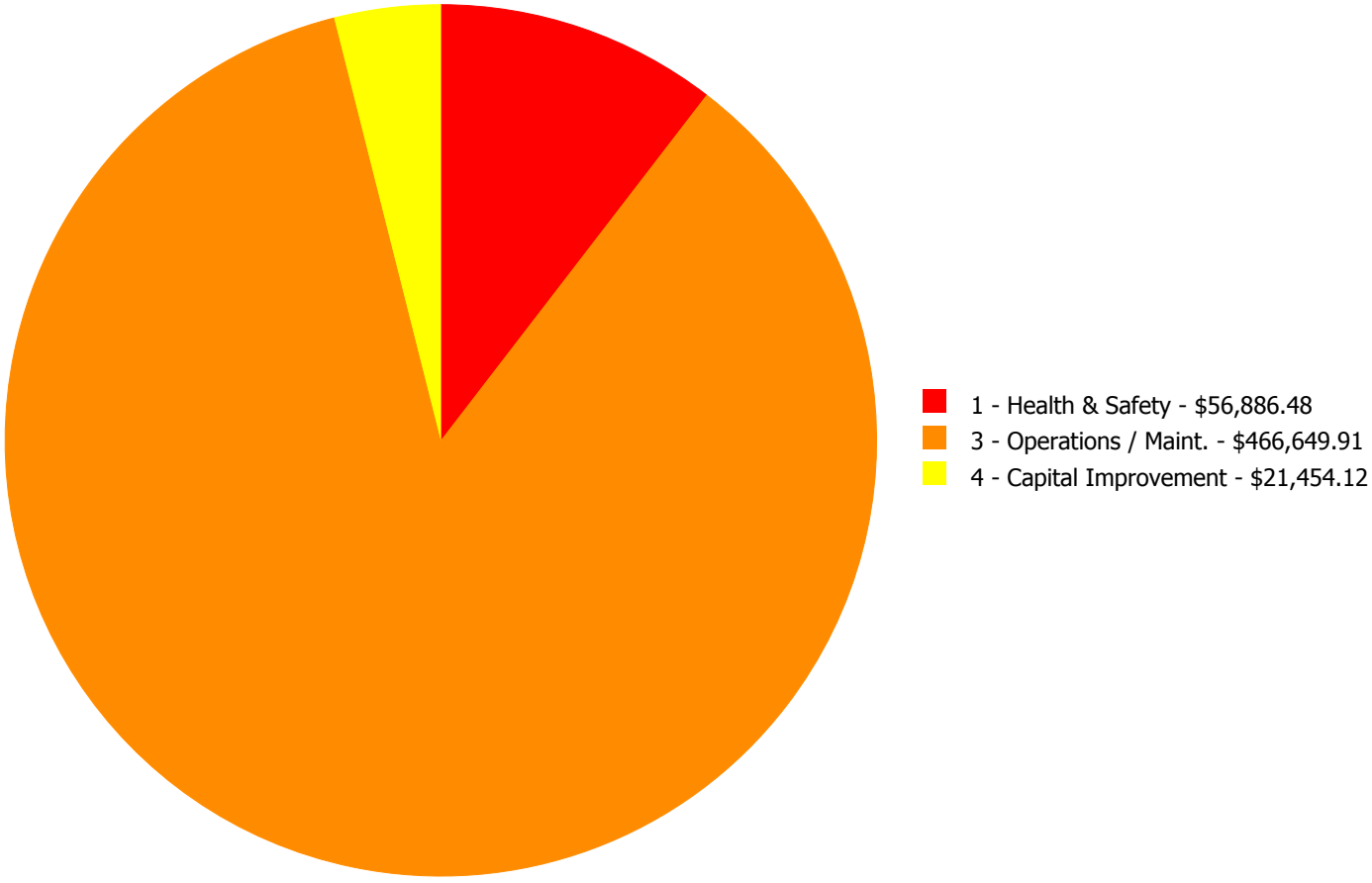
Deficiency By Priority Investment Table

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
G2020	Parking Lots	$0.00	$0.00	$466,649.91	$0.00	$0.00	$466,649.91
G2040	Site Development	$0.00	$18,852.52	$0.00	$0.00	$0.00	$18,852.52
G4020	Site Lighting	$0.00	$0.00	$0.00	$21,454.12	$0.00	$21,454.12
G4030	Site Communications & Security	$0.00	$0.00	$38,033.96	$0.00	$0.00	$38,033.96
	Total:	$0.00	$18,852.52	$504,683.87	$21,454.12	$0.00	$544,990.51

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: $544,990.51

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: Health Hazard / Risk

Category: 1 - Health & Safety

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: Gerald Petric

Date Created: 02/08/2016

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

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

System: G2020 - Parking Lots

Location: Parking Lot

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace AC paving parking lot

Qty: 33,000.00

Unit of Measure: S.F.

Estimate: $466,649.91

Assessor Name: Gerald Petric

Date Created: 02/08/2016

Notes: The parking area has ADA parking with approved curb cuts for access to the sidewalks that lead to the main entrance. However, the parking lots are in poor condition, the harsh environmental conditions associated with snow removal have taken its toll on the asphalt surface. Also, there is no marked path of ingress to the main entrance. This project provides a budgetary consideration for a parking lot renewal program that includes all aspects of the current ADA legislation. Universal upgrades are recommended.

System: G4030 - Site Communications & Security

Location: Site

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Replace video surveillance camera

Qty: 7.00

Unit of Measure: Ea.

Estimate: $38,033.96

Assessor Name: Gerald Petric

Date Created: 01/26/2016

Notes: Replace five (5) exterior video surveillance cameras and add two (2) cameras for improved surveillance of the site.

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

System: G4020 - Site Lighting

Location: Site

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add site lighting fixtures

Qty: 5.00

Unit of Measure: Ea.

Estimate: $21,454.12

Assessor Name: Gerald Petric

Date Created: 01/26/2016

Notes: Replace two (2) exterior building mounted HID floodlighting fixtures with LED type and add three (3) LED floodlights for the south and east sides of the building.

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