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.

Shoemaker School

Governance	CHARTER	Report Type	Middlehigh
Address	5301 Media St. Philadelphia, Pa 19131	Enrollment	786
		Grade Range	'07-12'
Phone/Fax	267-296-7111 / 267-296-7112	Admissions Category	Citywide With Criteria
Website	Www.Masterycharter.Org/Schools/Shoemaker-Campus/About-Shoemaker.Html	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	**20.47%**	**$16,126,310**	**$78,780,234**
Building	20.21 %	$15,836,843	$78,356,060
Grounds	68.24 %	$289,467	$424,174

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	77.49 %	$1,119,365	$1,444,470
Exterior Walls (Shows condition of the structural condition of the exterior facade)	02.44 %	$161,447	$6,627,720
Windows (Shows functionality of exterior windows)	18.04 %	$584,036	$3,236,640
Exterior Doors (Shows condition of exterior doors)	107.42 %	$236,790	$220,440
Interior Doors (Classroom doors)	85.79 %	$465,434	$542,520
Interior Walls (Paint and Finishes)	28.54 %	$698,162	$2,445,960
Plumbing Fixtures	00.00 %	$0	$2,014,320
Boilers	00.00 %	$0	$2,781,240
Chillers/Cooling Towers	00.00 %	$0	$3,647,160
Radiators/Unit Ventilators/HVAC	00.00 %	$0	$6,405,960
Heating/Cooling Controls	00.00 %	$0	$2,011,680
Electrical Service and Distribution	01.38 %	$21,935	$1,590,600
Lighting	03.16 %	$179,884	$5,685,240
Communications and Security (Cameras, Pa System and Fire Alarm)	00.00 %	$0	$2,129,160

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

S413001;Shoemaker

Final

Site Assessment Report

February 1, 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):	132,000
Year Built:	1925
Last Renovation:	2011
Replacement Value:	$78,780,234
Repair Cost:	$16,126,309.58
Total FCI:	20.47 %
Total RSLI:	65.55 %

Description:

Facility Assessment

July 2015

School District of Philadelphia

William H. Shoemaker School

5301 Media Street

Philadelphia, PA 19131

132,000 SF / 819 Students / LN 02

GENERAL

The Mastery Charter School William H. Shoemaker Campus is identified as B413001 and is located at 5301 Media St. in Philadelphia,

PA. The industrial design of the rectangle-shaped, concrete and steel-framed building includes brick facades with a concrete foundation, detailing, and ornamental molding.

The main entrance faces the eastern exterior on North Fifty-Third Street. This School serves students in grades 6-12. This school was originally constructed in 1925 and consists of a Basement level and four additional stories with a total gross square footage of 132,000 GSF.

This recent history of this school includes a remodeling effort that took place in 2011 that included almost all of the school. A large portion of the school is abandoned and was not part of the effort. This report will reflect both the original and renovated sections. This school has several classrooms, a boy's and girl's gym, cafeteria and student commons and auditorium and dining area, with supporting administrative spaces. The information for this report was collected during a site visit on July 13, 2015.

Ms. Kat Schoemaker, Assistant Principal of Operations, and Mr. Courtney Martin, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history.

ARCHITECTURAL/STRUCTURAL SYSTEMS

Foundations are reinforced concrete and appear to be in good condition. Basement walls are reinforced concrete and appear to be in good condition. The superstructure is concrete, steel and wooden framed with masonry construction.

Floor construction is a mix of wooden and concrete construction. There are a number of roof sections and six different roof elevations ranging from the pitched roofs in each well to the main roof. Parapet heights, coping materials, and the height of the flashing also varies in different sections. The main roof is a built up application that was installed in the early 1990'S. Two small pitched sections over the boy's and girl's Gym is an asphalt shingle application. Considering the age and condition of the roofing systems, universal upgrades are recommended.

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

Exterior windows are a mix of single pane industrial grade metal, double hung aluminum framed single pane and wooden framed windows. Windows are in good to poor condition based on the year of installation or last renovation. The single pane wood and metal -framed, double hung windows have been replaced in the last twenty years. The original steel-framed, multi-light windows in the Boy's and Girl's Gym are original have exceeded their useful service life. 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 a combination of metal applications with wooden and metal frames. There is a storefront system at the main entrance with a metal-framed metal and glass door application. 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, store front and service doors are recommended for upgrade.

Special consideration for those that may be physically challenged was a main factor in the 2011 re-construction effort for this school. The Media Street entrance has been upgraded with an exterior ADA ramp. The path of travel is not very clear from that entrance of the school and from the access point. The interior path of travel is partially supported by compliant ADA signage, elevator, dual level drinking fountains, door hardware, restrooms, hand rails and guard rails. However, the abandoned side of the building has received no upgrades and does not support a path of travel.

Interior partitions include CMU, glazed block, plaster on brick with both wood and metal framing. Considering the location of the finish the block, gypsum wallboard on wood or metal studs, moveable partitions, and glazed openings, interior partitions are in good to poor condition. There are painted walls, trim, and some painted ceilings in this building. In the older sections of the building, some textured concrete surfaces have been painted, while in the new section they are not. The interior finishes in the older sections are in fair to poor condition and will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. The finishes in the new section are in excellent to good condition. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Minor repairs should be completed before work begins. The abandoned section of the building is expected to require major repairs and additional efforts to restore the finishes. This effort is

expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

Interior floor finishes consist of a mixture of polished concrete, 9x9 floor tile, 12x12 floor tile, wooden floors, marble and Terrazzo finishes. The 2011 renovated finishes are in good condition however, the abandoned sections of the building will require serious efforts to restore finishes. Universal upgrades are recommended for the abandoned section of this school. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts

Interior doors are typically wood in wood frames with transom lites, sidelights, wired glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, hollow metal in hollow metal frames at stairwells and exit ways, access doors, and folding closet doors. Doors are generally in good to poor condition and are a mix of ADA compliant and non-complaint doors with both non-rated and fire rated. Doors swing in the direction of exit and do not obstruct hallways. . The abandoned section of the building is expected to require major repairs and additional efforts to restore the door finishes, universal upgrades are required for the abandoned section however, limited upgrades will be required for the newly renovated section of this school. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts

Fittings include: chalkboards; marker boards; tack boards; interior signage; toilet accessories and wood and marble toilet partitions; fixed wooden storage shelving. While using similar materials, the interior finishes vary significantly between the older and newer sections of the building. School laboratory, classrooms, and office space, most of its corridor floors are concrete, wooden or vinyl tile, with painted masonry block walls in the older sections and sealed unpainted concrete masonry unit (CMU) in the newer section. The restrooms have a painted and ceramic finish respectfully. The abandoned cafeteria and kitchen has a clay tile floor finish in poor condition. Carpet is located in some of the administrative, study areas, and office suites. Many of the wood doors have a single glazed panel. Some are large panes, some narrow and vertically-oriented, and some of the older ones have textured or ribbed glass. In the older sections of the building, the majority of the finishes are in very poor condition. The abandoned section of the building is expected to require major repairs and additional efforts to restore the fittings and general finishes, universal upgrades are required for the abandoned section however, limited upgrades will be required for the newly renovated section of this school. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts

Stair construction is a mix of concrete and marble designs. The stair system at the main entrance is a very high end application with marble stairs and decorative wall opening to a dual access to the second floor with single open access to the first floor. Other stair treads and landings are finished with a combination of rubber, marble and steel nosings with a mix of conditions ranging from good to poor. Handrails are a mix of wooden, metal and in some cases missing and do not have extensions and returns at landings. The stair systems in the abandoned section are recommended for universal upgrades. Limited upgrades such as hand rails will be required for the stairs in the newly renovated sections.

This school has two elevators that are currently in service. One freight and one passenger elevator are operational. One additional passenger elevator is no longer in service and is currently locked out to prevent usage.

Institutional equipment includes: library equipment that includes shelving and media equipment. A majestic stage with original wooden finishes with upgraded equipment; instrumental equipment; A/V equipment; and limited laboratory equipment; gym equipment – basketball backstops, scoreboards. Other equipment includes kitchen equipment; loading dock bumpers/levelers. Furnishings include: fixed casework; window shades and original fixed auditorium seating. In each case the finishes range from good to poor based on location and time of last renovation. Both Gyms, the abandoned cafeteria, stage area and library sections of this school are recommended for universal upgrade. Coordinated efforts are expected in order not to duplicate work between the electrical and mechanical recommendations included in this report.

According to interview questions of the buildings leads an asbestos material survey was conducted in this facility prior to this inspection. The purpose of the survey was to identify asbestos containing material (ACM) as defined by the Environmental Protection Agency. Any material greater than 1 percent asbestos was to be considered ACM. The intent of the survey was to identify both friable and non-friable suspect ACM, identify non-friable ACM that may become friable under demolition or renovation conditions, and provide approximate cost estimates for the removal of identified ACM prior to renovation. The following friable or non-friable materials are considered to be positive as ACM: thermal system insulation, floor covering and mastic, ceiling tile, debris, and miscellaneous ACM. It is recommended that these items be abated and disposed of according to all applicable national, state, and local regulations. Several considerations should be reviewed prior to any new renovation efforts.

MECHANICAL SYSTEMS

PLUMBING—Plumbing fixtures in the occupied renovated area are standard commercial quality china with wall mounted lavatories, urinals and water closets. Urinals and water closets have lever operated Sloan Royal flush valves. Lavatories have single lever faucets. Water coolers are high/low stainless steel with integral refrigeration. There are some miscellaneous stainless sinks, and an emergency shower in one classroom. Custodial closets adjacent to girls toilet rooms have fiberglass mop basins.

Supply piping in the renovated area is insulated copper. Sanitary, waste, rainwater and vent piping in the renovated area is hubless cast iron with band connections. Supply piping in the original section is copper and sanitary, waste, rainwater and vent piping is hub and spigot cast iron. New water supply is a four inch line from N. 53rd St. with a backflow preventer and four inch meter in the basement mechanical room. A three inch gas service and the main sewer are also from this location. A duplex Alyan booster pump system with control panel and air control tank are in the basement mechanical room.

Water heaters are Bradford White forty gallon electric heaters, total of nine, mounted on steel frames in the ceiling areas of service closets adjacent to boys and girls toilet rooms on four levels and one in the cafeteria mechanical space.

The plumbing system in the renovated area was part of the 2007 renovation and has substantial remaining service life, from fifteen to twenty five years. No problems were reported. The plumbing system in the original area is from 1927, has been abandoned and should be replaced similar to the renovated area with new fixtures, piping, and water heaters.

HVAC—The renovated area has a central water source heat pump system with cooling tower, pumps, piping, boilers, heat pumps and controls. The original area has no functional HVAC system. Boilers, house fan systems, and steam systems are abandoned. Electric wall mounted radiation was installed for freeze protection in these areas. Radiators and steam piping have been removed from the renovated area.

There are two gas fired Laars Rheos fifty seven hp hot water boilers in the fifth floor mechanical room. The boilers are water tube forced draft direct combustion type with fully modulating gas burner and integral factory installed gas train. Combustion air is direct connected with sheet metal ductwork and venting is double wall stainless steel manufactured vent system. Entry areas and toilet rooms have electric baseboard heat.

A single cell induced draft Evapco IC cooling tower is on the roof. Mammoth horizontal heat pump units are located above ceilings for classroom areas and in other mechanical rooms. There are six units above ceilings and one suspended unit exposed in the original building area at each level for classrooms. The auditorium has four twenty ton heat pumps in a mechanical space created on the original balcony. The cafeteria mechanical room has four fifteen ton heat pump units for that area and the gym mechanical room has two fifteen ton units for that space. Outside air is ducted to each unit. The two active elevator rooms have no cooling.

Heat pump water piping is black steel with Victaulic couplings. Heat pumps are connected with factory stainless flexible hose kits with balancing valves, strainers and shut off valves. Each unit has a control valve. There are two forty hp Paco end suction pumps with variable frequency drives in the boiler room for the heat pump water loop and also a Lakos solids filtration unit, compression tank and chemical treatment system. Duct systems are exposed and concealed, with exposed ductwork of spiral construction. The gym and cafeteria have inflatable supply duct systems. Toilet exhaust consists of one inline exhaust fan per floor connected to exhaust grills and ducted to exterior louvers.

Controls are direct digital with a building automation system by Distech with the computer in a third floor space. There are sensors in each space, control valves at each heat pump and a loop temperature control system to sequence the boilers and cooling tower.

The HVAC system is under a maintenance contract. All components and systems are part of the 2007 renovation and have substantial remaining service life, from ten to twenty five years. The only reported problem is that the automation system does not reliably control some functions, particularly the heat pump control valves.

FIRE PROTECTION—The renovated area has a complete wet automatic sprinkler system with standpipes. Piping is black steel with Victaulic couplings. Sprinkler heads in ceilings are semi recessed type. There is a six inch fire service from N. 53rd St. into the basement mechanical room. There is a twenty five hp inline Aurora fire pump and a small jockey pump and fire pump controller in this space. Standpipes have fire hose valve connections.

The 2007 fire protection system has no reported problems and has substantial remaining service life, approximately twenty five years. The only noticeable issue is excessive corrosion on the fire pump head.

ELECTRICAL SYSTEMS

Electrical Service-- The electrical service to the building is provided from a PECO Energy Company pad mounted transformer located on the east side of school along N. 53rd Street. Secondary service, rated at 480/277V, 3 phase, 4 wire, is routed underground to a Square D 3000A, 480/277V switchboard located in the Sub-Basement. The switchboard is provided with two (2) 1600A main circuit breakers and two (2) circuit breaker distribution sections and surge protection device. One distribution section feeds two step-down transformers, one rated 225 kVA and one 300 kVA, which feed 600A risers located on the north and south sides of the building to

serve for the 208/120V, 3 phase, 4 wire panelboards on each floor. The second distribution section serves a 1000A, 480/277V riser on the north side and a 600A, 480/277V riser on the south side, mainly serving HVAC and lighting loads. Panelboards are located on the north and south sides of the building on each floor.

The entire electrical service and distribution system, including all equipment and feeders, was replaced in a 2006-2007 renovation project. Existing electrical service equipment in the Sub-basement was not removed, but abandoned in place.

The 2006-2007 renovation project also included a complete replacement of all wiring devices, lighting, and communication and alarm systems in the portion of the building that is currently occupied. The Fifth Floor is currently unoccupied and needs to be renovated prior to being occupied. The west side of Floors 1 through 4 is also unoccupied and need to be completely renovated before being occupied. The electrical costs for these unoccupied spaces are included in the architectural deficiency.

Receptacles-- Classrooms are typically supplied with only two duplex receptacles, one on the front wall and one on the back wall. Additional receptacles have been provided in some classrooms by using a surface metal raceway system to extend the receptacle branch circuit. At least three duplex receptacles should be added in each classroom spaced along all walls to eliminate the use of extension cords to connect equipment.

Lighting-- The facility has a mixture of fixture types. Corridors typically have 2X4 lay-in grid, fluorescent troffers with direct/indirect lighting. The illumination level recorded in the corridor was 30 FC. Stem mounted shallow dome fixtures with compact fluorescent lamps (CFLs) are located at the corridor intersections. Classrooms generally have two rows of continuous 1x4, 3 lamp fluorescent fixtures with 32 watt, T8 lamps and parabolic louvers. Lighting is controlled by a double-throw light switch that controls either one lamp or two lamps. Most classrooms are provided with occupancy sensors for lighting control. The unoccupied portion of Floors 1 through 4 and Floor 5 will require new lighting. Lay-in grid 2x4 fluorescent fixtures are typically located in restrooms.

Lighting in the auditorium consists of decorative incandescent fixtures surface mounted under the balcony and recessed downlights above the house floor, with a single stem mounted chandelier. There are also 12 theatrical lighting fixtures mounted in the house area for stage lighting.

Two rows of pendant mounted, direct/indirect, metal halide industrial type fixtures are provided in the gymnasium and cafeteria. The lighting system has approximately 12 years of useful life remaining before replacement. The illumination levels in these rooms meet the Illuminating Engineering Society (IES) recommended foot-candle levels.

Lighting in the Sub-basement and old coal room consists of 4 foot, industrial fluorescent fixtures with T12 lamps. These fixtures are beyond their useful life and need to be replaced.

There are quartz floodlighting fixtures mounted along the perimeter of the roof. Eight fixtures are not operational and need to be repaired or replaced. There are also wall mounted, high intensity discharge (HID) lighting fixtures that illuminate the front façade of the building.

Remote emergency lighting heads are mounted above the exterior doors. These remote heads provide lighting only when there is a utility outage, and not at night. To comply with code, the remote heads need to be replaced with exterior wall mounted fixtures, with battery backup, that provide illumination at night and when utility service is interrupted.

Fire Alarm System-- The fire alarm system is an addressable type by Siemens. The system consists of manual pull stations at egress doors, audio and visual notification appliances in corridors, classrooms and restrooms, and smoke detectors installed at elevator landings. The main fire alarm control panel (FACP) is a Siemens Model MXL located in the Basement. There is a Cerberus Pyrotronics RCC-1 remote fire alarm annunciator panel at the main entrance.

Telephone/LAN-- The incoming telephone service hub is located in a room adjacent to the main entrance on the First Floor. There is a telephone and data outlet in each classroom. The IT distribution equipment is located in Room 311. Wireless access points are located in corridors and classrooms throughout the building.

Public Address/Paging-- The paging system is accessed through the telephone system. Each classroom has a paging speaker. There are also flush mounted paging speakers in corridor ceilings. This system is estimated to have 10 years of useful life remaining.

Clock and Program System-- There is no program or clock system in the school.

Television System-- There are television outlets in each classroom, but no televisions located within the classrooms.

Video Surveillance System –video cameras are generally ceiling mounted in each corridor on each floor and on the exterior of the building. There are a total of 14 cameras, including interior and exterior cameras, that are monitored by a 16 channel digital video recorder on a single monitor located in the Truancy Office located behind the Main Reception area. The system is expected to have 10 years useful life remaining.

Emergency Power System—There is an Onan 20 kW, 208/120 volt, 3 phase, 4 wire standby generator with Onan 100A automatic transfer switch (ATS) that powers emergency lighting in the building. With proper maintenance, the generator has approximately 8 years of useful life remaining.

Emergency Lighting System / Exit Lighting-- Selected lighting fixtures are connected to the standby power system. Battery powered emergency lighting units provide supplement emergency lighting in the corridors and stairwells. The exit lights are battery backed LED type. An exit sign needs to be added on each floor at the south end of the north/south corridor where it intersects with the east/west corridor. A total of five exit signs are required.

Lightning Protection System --There is no lightning protection system for this facility.

Conveying Systems--There are three elevators in this facility; two passenger and one freight. The south passenger elevator (Elevator 1) has not been operational since acquired by Mastery Charter Schools. It has exceeded its useful service life and needs to be replaced. There was no equipment nameplate for this elevator. The north passenger elevator (Elevator 2) is a 25 HP motor-generator type that was upgraded and modernized in 2011. The freight elevator (Elevator 3) is located in the unoccupied portion of the building. Elevator No. 3 is manufactured by Digital Elevator and is a motor-generator type with 10 HP DC motor.

GROUNDS

There is a single paved driveway that is accessed via North Fifty-Third Street that leads to limited parking. This area has concrete paver construction in good condition. Pedestrian pavements are concrete pavers in fair condition. Fencing is limited to the parking area and the North Peach Street side of the facility with a stone exterior retaining wall that surround the school. The stone exterior wall and the fencing is in fair to poor condition. Landscaping systems are fair condition. Upgrades for the exterior fence and the retaining wall are recommended.

Site Lighting—Site lighting is provided by wall mounted HID lighting fixtures around the perimeter of the building that are aimed to illuminate the site. The site lighting fixtures have approximately 10 years of useful life remaining before replacement.

RECOMMENDATIONS

- Renovate abandoned portion of the school on floors 1 through 5. This facility is unique in its usage to the school system. As previously noted the school was partially renovated in 2011 as part of the effort to recover the school. The remaining section of the school is abandoned and has had no preventative maintenance or measures to mitigate damage that result from these conditions. There are several deficiencies noted in this report that reflect either building wide or specific issues as related to both spaces. Considering the overall effort to recover such an area, this deficiency is a combination of the coordinated requirements for a renovation to include all aspects of HVAC, Electrical, Fire, Life Safety, Health and ADA. Note: This effort also includes budgetary consideration for Asbestos, Lead Paint and a major Abatement program.
- Replace asphalt shingle roof application.
- Replace built up roofing system.
- Conduct repairs to the exterior brick finish. Selective point and tuck work is recommended.
- This facility is basically divided into two sections, one that was renovated in 2011 and the abandoned section. This deficiency reflects on the abandoned section of the building’s exterior windows. Remove and replace abandoned section windows.
- Remove and replace service doors.
- Remove and replace exterior door systems.
- Remove and replace interior door system.
- Remove and replace carpet.
- Upgrade painted interior wall finish.
- Remove and replace Ceramic and Clay tile finishes.
- Remove and replace corridor fire rated doors and frames. X16 Also, correct fire rated walls and transoms.
- Remove blackboard and replace with marker boards.
- Install directional and room signage.
- Remove and replace tackboards.
- Remove abandoned partitions and replace with wall section.
- Upgrade stair railing system.
- Upgrade stair construction in abandoned section of the school.

- Remove and replace carpet.
- Remove and replace damaged wall tile.
- Replace damaged floor tile in kitchen area and food prep stations.
- Remove Asbestos 9 x 9 floor tile and replace with 12 x 12 vinyl floor tile.
- Repair and selective replacement of wooden floor finish.
- Remove Gym floors and replace with new wooden floors.
- Refinish concrete floor finish.
- Remove damaged ceiling finish and upgrade to acoustical tile ceiling finish.
- Repair and repaint ceiling finish.
- Have a service technician from the building automation/controls contractor evaluate, repair or reprogram system as required and demonstrate proper operation to operating personnel. Provide adequate training of personnel with video records.
- Install in each of two elevator machine rooms a one ton ductless split system with roof mounted condensing unit and indoor console unit. Include refrigerant piping and drain line.
- Provide new HVAC, plumbing, and fire protection systems in non renovated portions of building. Include as part of complete renovation in these areas as described in other portions of this report.
- Replace the panelboard in the Fifth Floor Mechanical Room that has exposed bus, knife blade switches and cartridge fuses with a new 225A panelboard.
- Add surface raceway system with three duplex receptacles in each classroom.
- Replace obsolete 4-foot, 2 lamp, industrial fluorescent lighting fixtures in the Sub-Basement and old coal room. (Total of 21 fixtures).
- Remove the remote emergency lighting heads above the exterior doors on both the north and south sides (total of 4 doors) and replace with replace with exterior wall mounted fixtures, with battery backup.
- Add a total of five (5) exit signs; one on each of Floors B through 4 at the south end of the north/south corridor where it intersects with the east/west corridor.
- Replace eight (8) quartz floodlighting fixtures along the perimeter of the roof that are not operational.
- Provide elevator upgrade/modernization for passenger Elevator 1 and freight Elevator 3 and their machine rooms.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 1 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S413001		

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.

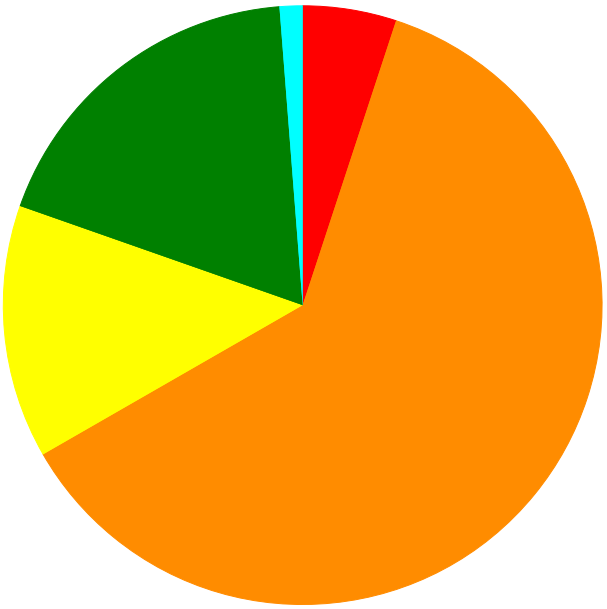
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	62.00 %	0.00 %	$0.00
A20 - Basement Construction	62.00 %	0.00 %	$0.00
B10 - Superstructure	62.00 %	66.77 %	$8,875,463.63
B20 - Exterior Enclosure	76.28 %	9.74 %	$982,273.71
B30 - Roofing	84.96 %	77.49 %	$1,119,365.46
C10 - Interior Construction	66.86 %	36.38 %	$1,378,317.62
C20 - Stairs	62.00 %	47.09 %	$101,317.68
C30 - Interior Finishes	59.97 %	29.07 %	$2,754,558.89
D10 - Conveying	105.71 %	60.32 %	$383,761.67
D20 - Plumbing	75.46 %	0.00 %	$0.00
D30 - HVAC	68.90 %	0.18 %	$29,282.82
D40 - Fire Protection	77.14 %	0.00 %	$0.00
D50 - Electrical	59.58 %	2.20 %	$212,501.20
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	0.00 %	$0.00
G20 - Site Improvements	55.62 %	85.41 %	$289,466.90
G40 - Site Electrical Utilities	29.06 %	0.00 %	$0.00
Totals:	**65.55 %**	**20.47 %**	**$16,126,309.58**

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)
B413001;Shoemaker	132,000	20.21	$814,705.84	$9,941,308.49	$2,205,091.43	$2,676,241.36	$199,495.56
G413001:Grounds	19,600	68.24	$0.00	$0.00	$0.00	$289,466.90	$0.00
Total:		**20.47**	**$814,705.84**	**$9,941,308.49**	**$2,205,091.43**	**$2,965,708.26**	**$199,495.56**

Deficiencies By Priority



- 1 - Response Time (< 2 yr) - $814,705.84
- 2 - Response Time (2-3 yrs) - $9,941,308.49
- 3 - Response Time (3-4 yrs) - $2,205,091.43
- 4 - Response Time (4-5 yrs) - $2,965,708.26
- 5 - Response Time (> 5 yrs) - $199,495.56

Budget Estimate Total: $16,126,309.58

Executive Summary

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

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

Function:	Middle Secondary
Gross Area (SF):	132,000
Year Built:	1927
Last Renovation:	2007
Replacement Value:	$78,356,060
Repair Cost:	$15,836,842.68
Total FCI:	20.21 %
Total RSLI:	65.64 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B413001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S413001		

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	62.00 %	0.00 %	$0.00
A20 - Basement Construction	62.00 %	0.00 %	$0.00
B10 - Superstructure	62.00 %	66.77 %	$8,875,463.63
B20 - Exterior Enclosure	76.28 %	9.74 %	$982,273.71
B30 - Roofing	84.96 %	77.49 %	$1,119,365.46
C10 - Interior Construction	66.86 %	36.38 %	$1,378,317.62
C20 - Stairs	62.00 %	47.09 %	$101,317.68
C30 - Interior Finishes	59.97 %	29.07 %	$2,754,558.89
D10 - Conveying	105.71 %	60.32 %	$383,761.67
D20 - Plumbing	75.46 %	0.00 %	$0.00
D30 - HVAC	68.90 %	0.18 %	$29,282.82
D40 - Fire Protection	77.14 %	0.00 %	$0.00
D50 - Electrical	59.58 %	2.20 %	$212,501.20
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	0.00 %	$0.00
Totals:	**65.64 %**	**20.21 %**	**$15,836,842.68**

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	$27.05	S.F.	132,000	100	1927	2027	2077	62.00 %	0.00 %	62			$3,570,600
A1030	Slab on Grade	$6.04	S.F.	132,000	100	1927	2027	2077	62.00 %	0.00 %	62			$797,280
A2010	Basement Excavation	$5.09	S.F.	132,000	100	1927	2027	2077	62.00 %	0.00 %	62			$671,880
A2020	Basement Walls	$11.74	S.F.	132,000	100	1927	2027	2077	62.00 %	0.00 %	62			$1,549,680
B1010	Floor Construction	$98.06	S.F.	132,000	100	1927	2027	2077	62.00 %	68.57 %	62		$8,875,463.63	$12,943,920
B1020	Roof Construction	$10.55	S.F.	33,000	100	1927	2027	2077	62.00 %	0.00 %	62			$348,150
B2010	Exterior Walls	$50.21	S.F.	132,000	100	1927	2027	2077	62.00 %	2.44 %	62		$161,447.36	$6,627,720
B2020	Exterior Windows	$24.52	S.F.	132,000	40	1990	2030	2057	105.00 %	18.04 %	42		$584,036.01	$3,236,640
B2030	Exterior Doors	$1.67	S.F.	132,000	25	2011	2036		84.00 %	107.42 %	21		$236,790.34	$220,440
B3010105	Built-Up	$43.61	S.F.	30,000	20	1990	2010	2032	85.00 %	77.69 %	17		$1,016,460.33	$1,308,300
B3010140	Shingle & Tile	$44.73	S.F.	3,000	20	1990	2010	2032	85.00 %	76.69 %	17		$102,905.13	$134,190
B3020	Roof Openings	$0.06	S.F.	33,000	30	1990	2020	2032	56.67 %	0.00 %	17			$1,980
C1010	Partitions	$20.95	S.F.	132,000	100	1927	2027	2077	62.00 %	27.34 %	62		$756,164.81	$2,765,400
C1020	Interior Doors	$4.11	S.F.	132,000	40	1927	1967	2047	80.00 %	85.79 %	32		$465,433.90	$542,520
C1030	Fittings	$3.64	S.F.	132,000	40	1927	1967	2047	80.00 %	32.62 %	32		$156,718.91	$480,480
C2010	Stair Construction	$1.63	S.F.	132,000	100	1927	2027	2077	62.00 %	47.09 %	62		$101,317.68	$215,160
C3010230	Paint & Covering	$15.45	S.F.	132,000	10	2007	2017	2023	80.00 %	20.26 %	8		$413,206.50	$2,039,400
C3010232	Wall Tile	$3.08	S.F.	132,000	30	1927	1957	2038	76.67 %	70.09 %	23		$284,955.98	$406,560

Site Assessment Report - B413001;Shoemaker

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3020411	Carpet	$8.54	S.F.	2,000	10	2007	2017	2027	120.00 %	262.08 %	12		$44,763.04	$17,080
C3020412	Terrazzo & Tile	$88.36	S.F.	20,000	50	1927	1977	2030	30.00 %	44.66 %	15		$789,220.58	$1,767,200
C3020413	Vinyl Flooring	$11.33	S.F.	28,000	20	2007	2027	2030	75.00 %	38.25 %	15		$121,333.34	$317,240
C3020414	Wood Flooring	$26.07	S.F.	64,000	25	1927	1952	2030	60.00 %	22.22 %	15		$370,746.80	$1,668,480
C3020415	Concrete Floor Finishes	$1.14	S.F.	18,000	50	1927	1977	2030	30.00 %	74.94 %	15		$15,378.13	$20,520
C3030	Ceiling Finishes	$24.54	S.F.	132,000	25	2007	2032	2030	60.00 %	22.07 %	15		$714,954.52	$3,239,280
D1010	Elevators and Lifts	$4.82	S.F.	132,000	35	1927	1962	2052	105.71 %	60.32 %	37		$383,761.67	$636,240
D2010	Plumbing Fixtures	$15.26	S.F.	132,000	35	2007	2042		77.14 %	0.00 %	27			$2,014,320
D2020	Domestic Water Distribution	$1.90	S.F.	132,000	25	2007	2032		68.00 %	0.00 %	17			$250,800
D2030	Sanitary Waste	$2.85	S.F.	132,000	30	2007	2037		73.33 %	0.00 %	22			$376,200
D2040	Rain Water Drainage	$2.61	S.F.	132,000	30	2007	2037		73.33 %	0.00 %	22			$344,520
D3020	Heat Generating Systems	$21.07	S.F.	132,000	35	2007	2042		77.14 %	0.00 %	27			$2,781,240
D3030	Cooling Generating Systems	$27.63	S.F.	132,000	30	2007	2037		73.33 %	0.00 %	22			$3,647,160
D3040	Distribution Systems	$48.53	S.F.	132,000	25	2007	2032		68.00 %	0.00 %	17			$6,405,960
D3050	Terminal & Package Units	$13.09	S.F.	132,000	20	2007	2027		60.00 %	1.69 %	12		$29,282.82	$1,727,880
D3060	Controls & Instrumentation	$15.24	S.F.	132,000	20	2007	2027		60.00 %	0.00 %	12			$2,011,680
D4010	Sprinklers	$7.94	S.F.	132,000	35	2007	2042		77.14 %	0.00 %	27			$1,048,080
D4020	Standpipes	$1.14	S.F.	132,000	35	2007	2042		77.14 %	0.00 %	27			$150,480
D5010	Electrical Service/Distribution	$12.05	S.F.	132,000	30	2007	2037		73.33 %	1.38 %	22		$21,934.81	$1,590,600
D5020	Lighting and Branch Wiring	$43.07	S.F.	132,000	20	2007	2027		60.00 %	3.16 %	12		$179,883.59	$5,685,240
D5030	Communications and Security	$16.13	S.F.	132,000	15	2007	2022		46.67 %	0.00 %	7			$2,129,160
D5090	Other Electrical Systems	$1.76	S.F.	132,000	30	2007	2037		73.33 %	4.60 %	22		$10,682.80	$232,320
E1020	Institutional Equipment	$4.92	S.F.	132,000	35	1927	1962	2027	34.29 %	0.00 %	12			$649,440
E1090	Other Equipment	$11.35	S.F.	132,000	35	1927	1962	2027	34.29 %	0.00 %	12			$1,498,200
E2010	Fixed Furnishings	$2.17	S.F.	132,000	40	1927	1967	2027	30.00 %	0.00 %	12			$286,440
								Total	**65.64 %**	**20.21 %**			**$15,836,842.68**	**$78,356,060**

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 Surfaces 70%
Ceramic wall tile 10
Marble 10
brick 10

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

Note:

Carpet floor finish	2%
Tile Ceramic and Clay	15%
Vinyl Floor 9x9 and 12x12	22%
Wood floor finish	48%
Concrete sealed	13%

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

Note: Total of 3 transformers- (1) 15kVA on 5th Floor, (1) 225 kVA and (1) 300 kVA in Basement

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:	**$15,836,843**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,880,458**	**$2,841,796**	**$0**	**$0**	**$21,559,097**
*** 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	$8,875,464	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$8,875,464**
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	$161,447	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$161,447**
B2020 - Exterior Windows	$584,036	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$584,036**
B2030 - Exterior Doors	$236,790	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$236,790**
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	$1,016,460	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,016,460**
B3010140 - Shingle & Tile	$102,905	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$102,905**
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	$756,165	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$756,165**
C1020 - Interior Doors	$465,434	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$465,434**
C1030 - Fittings	$156,719	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$156,719**

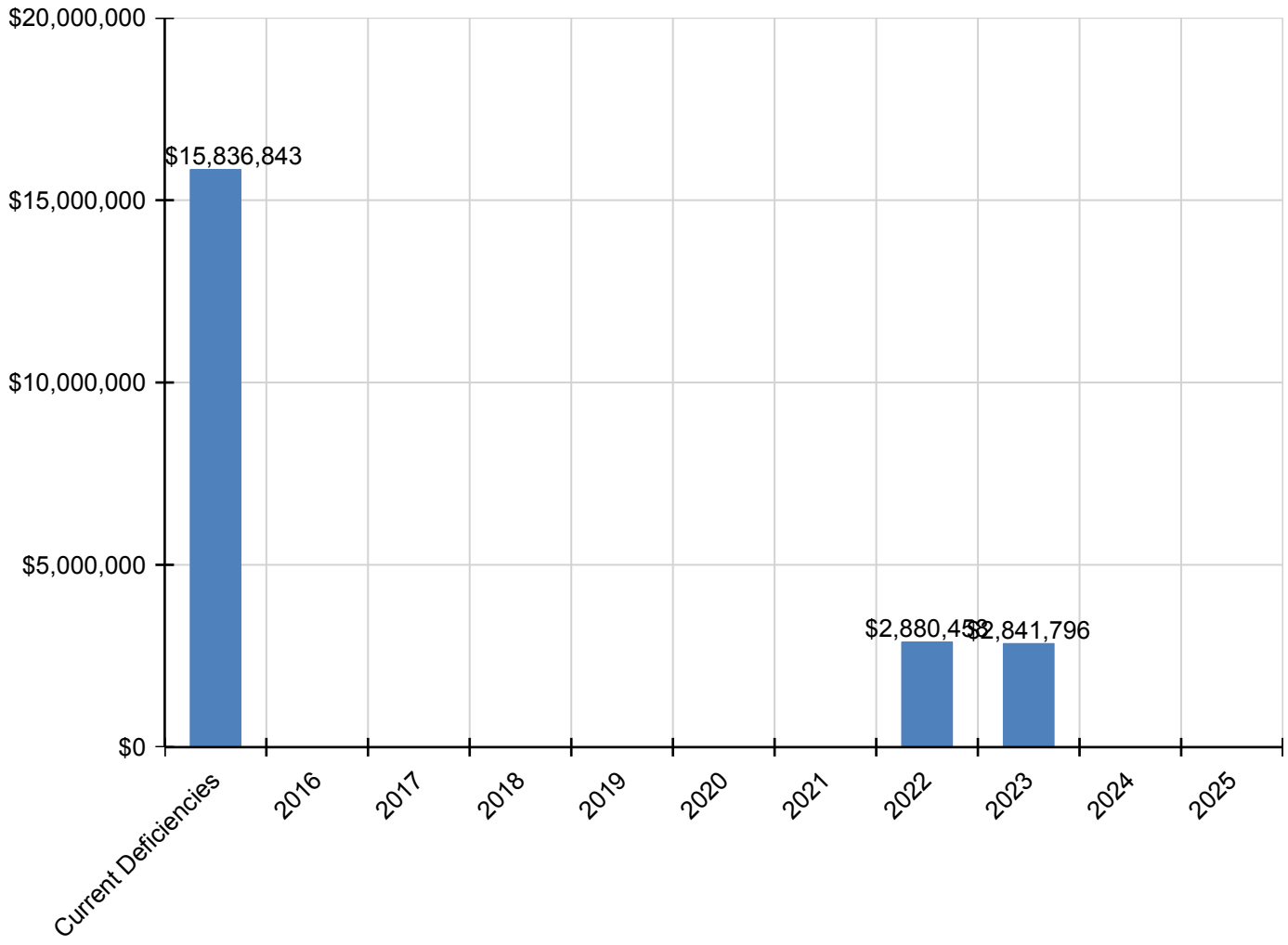
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$101,318	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$101,318**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$413,207	$0	$0	$0	$0	$0	$0	$0	$2,841,796	$0	$0	**$3,255,002**
C3010232 - Wall Tile	$284,956	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$284,956**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$44,763	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$44,763**
C3020412 - Terrazzo & Tile	$789,221	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$789,221**
C3020413 - Vinyl Flooring	$121,333	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$121,333**
C3020414 - Wood Flooring	$370,747	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$370,747**
C3020415 - Concrete Floor Finishes	$15,378	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$15,378**
C3030 - Ceiling Finishes	$714,955	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$714,955**
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	$383,762	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$383,762**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3040 - Distribution Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3050 - Terminal & Package Units	$29,283	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$29,283**
D3060 - Controls & Instrumentation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$21,935	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$21,935**
D5020 - Lighting and Branch Wiring	$179,884	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$179,884**

D5030 - Communications and Security	$0	$0	$0	$0	$0	$0	$0	$2,880,458	$0	$0	$0	**$2,880,458**
D5090 - Other Electrical Systems	$10,683	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$10,683**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

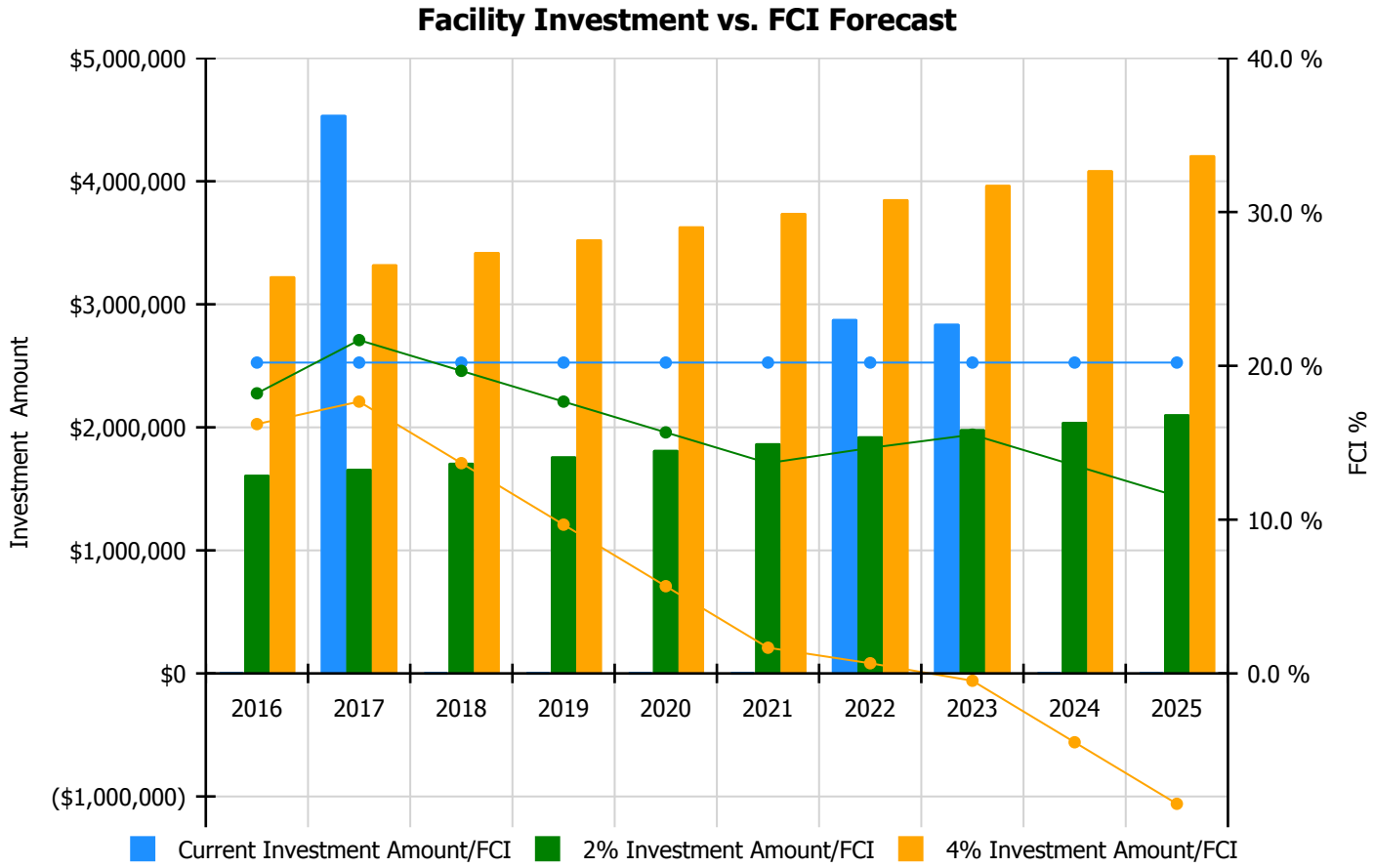
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

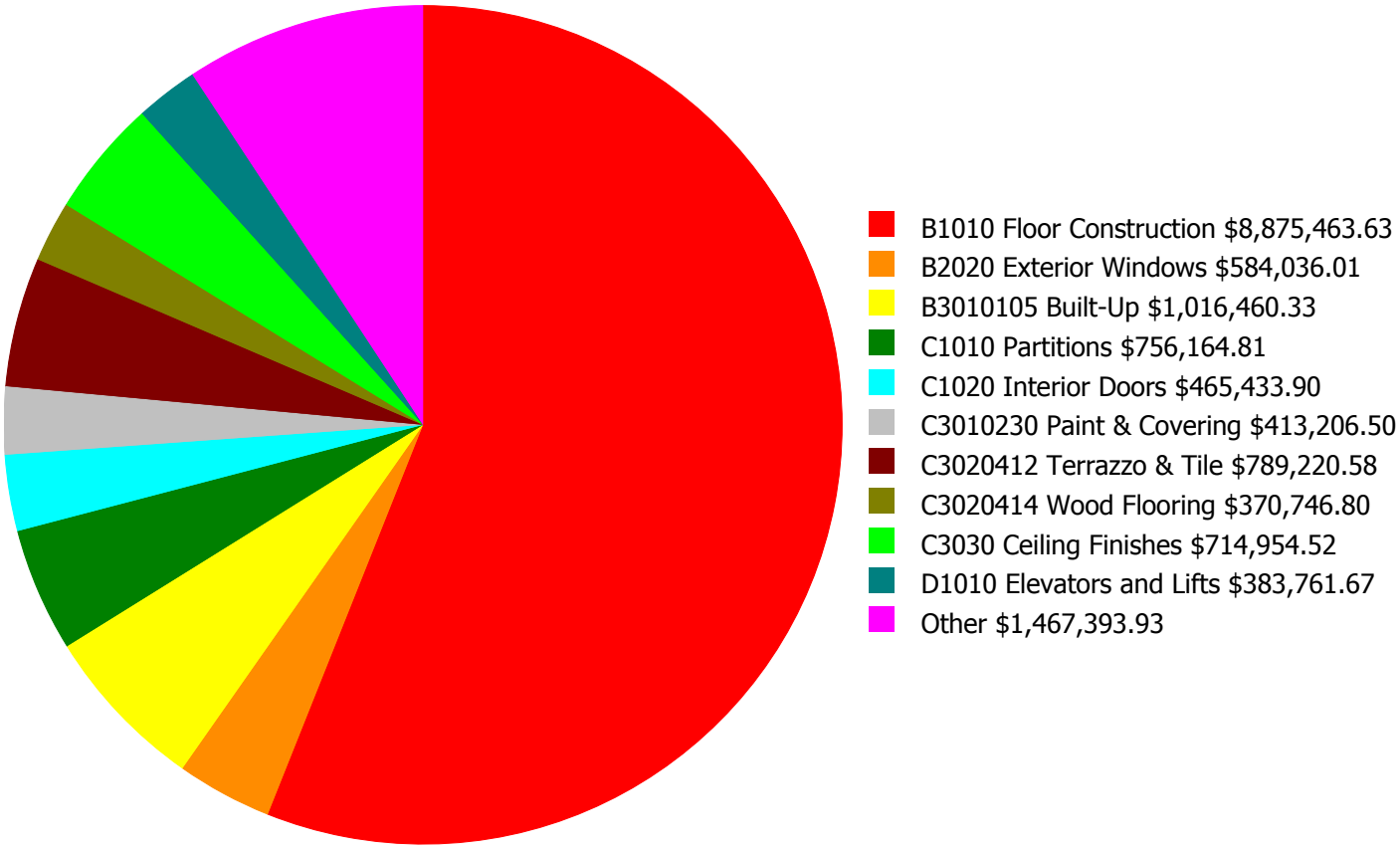
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 20.21%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,614,135.00	18.21 %	$3,228,270.00	16.21 %
2017	$4,539,544	$1,662,559.00	21.67 %	$3,325,118.00	17.67 %
2018	$0	$1,712,436.00	19.67 %	$3,424,871.00	13.67 %
2019	$0	$1,763,809.00	17.67 %	$3,527,617.00	9.67 %
2020	$0	$1,816,723.00	15.67 %	$3,633,446.00	5.67 %
2021	$0	$1,871,225.00	13.67 %	$3,742,449.00	1.67 %
2022	$2,880,458	$1,927,361.00	14.66 %	$3,854,723.00	0.66 %
2023	$2,841,796	$1,985,182.00	15.52 %	$3,970,365.00	-0.48 %
2024	$0	$2,044,738.00	13.52 %	$4,089,475.00	-4.48 %
2025	$0	$2,106,080.00	11.52 %	$4,212,160.00	-8.48 %
Total:	**$10,261,798**	**$18,504,248.00**		**$37,008,494.00**	

Deficiency Summary by System

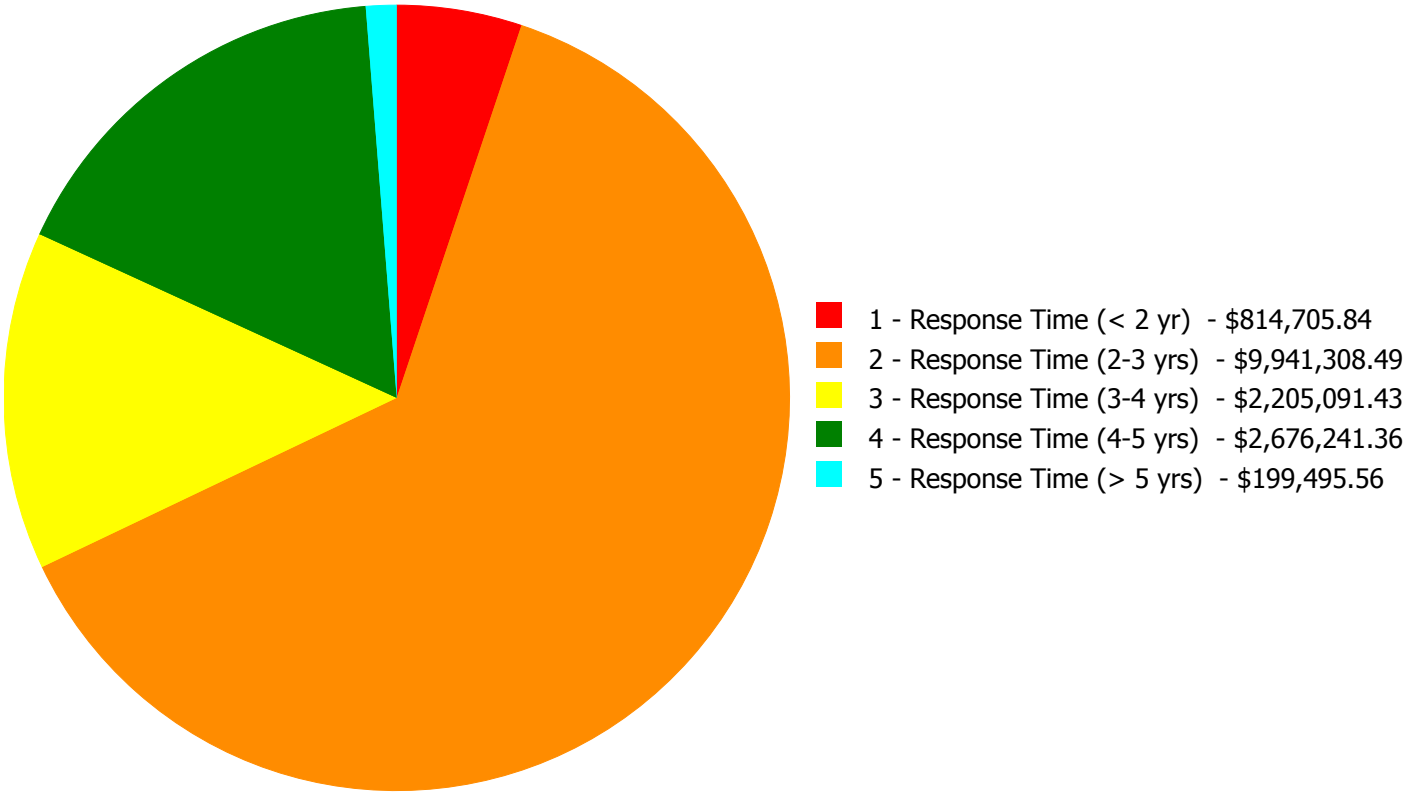
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $15,836,842.68

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: $15,836,842.68

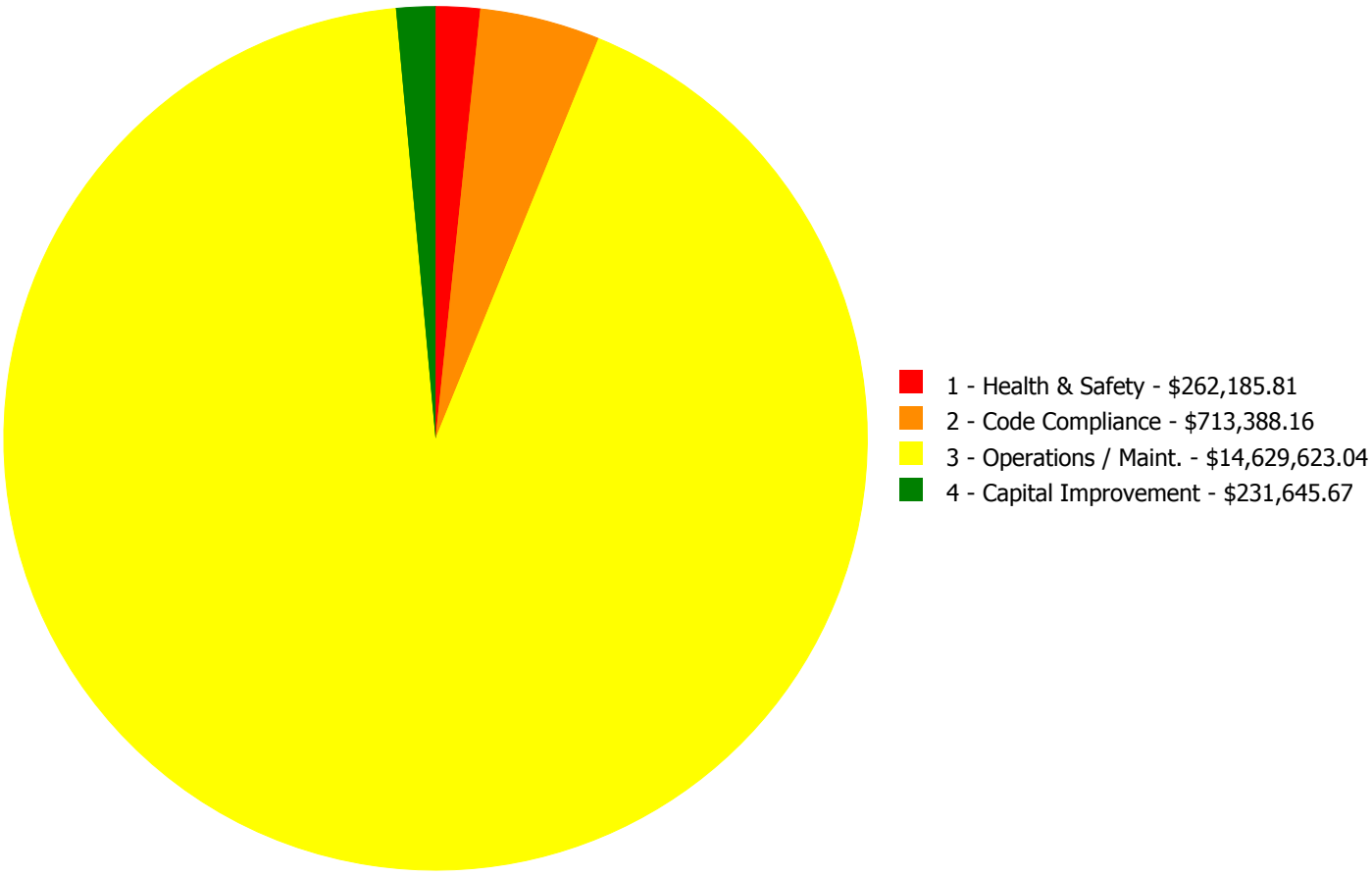
Deficiency By Priority Investment Table

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
B1010	Floor Construction	$0.00	$8,875,463.63	$0.00	$0.00	$0.00	$8,875,463.63
B2010	Exterior Walls	$0.00	$0.00	$0.00	$161,447.36	$0.00	$161,447.36
B2020	Exterior Windows	$0.00	$0.00	$584,036.01	$0.00	$0.00	$584,036.01
B2030	Exterior Doors	$0.00	$91,073.21	$0.00	$145,717.13	$0.00	$236,790.34
B3010105	Built-Up	$0.00	$0.00	$1,016,460.33	$0.00	$0.00	$1,016,460.33
B3010140	Shingle & Tile	$0.00	$102,905.13	$0.00	$0.00	$0.00	$102,905.13
C1010	Partitions	$713,388.16	$0.00	$0.00	$0.00	$42,776.65	$756,164.81
C1020	Interior Doors	$0.00	$465,433.90	$0.00	$0.00	$0.00	$465,433.90
C1030	Fittings	$0.00	$0.00	$0.00	$0.00	$156,718.91	$156,718.91
C2010	Stair Construction	$101,317.68	$0.00	$0.00	$0.00	$0.00	$101,317.68
C3010230	Paint & Covering	$0.00	$406,432.62	$6,773.88	$0.00	$0.00	$413,206.50
C3010232	Wall Tile	$0.00	$0.00	$0.00	$284,955.98	$0.00	$284,955.98
C3020411	Carpet	$0.00	$0.00	$0.00	$44,763.04	$0.00	$44,763.04
C3020412	Terrazzo & Tile	$0.00	$0.00	$0.00	$789,220.58	$0.00	$789,220.58
C3020413	Vinyl Flooring	$0.00	$0.00	$121,333.34	$0.00	$0.00	$121,333.34
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$370,746.80	$0.00	$370,746.80
C3020415	Concrete Floor Finishes	$0.00	$0.00	$0.00	$15,378.13	$0.00	$15,378.13
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$714,954.52	$0.00	$714,954.52
D1010	Elevators and Lifts	$0.00	$0.00	$383,761.67	$0.00	$0.00	$383,761.67
D3050	Terminal & Package Units	$0.00	$0.00	$0.00	$29,282.82	$0.00	$29,282.82
D5010	Electrical Service/Distribution	$0.00	$0.00	$21,934.81	$0.00	$0.00	$21,934.81
D5020	Lighting and Branch Wiring	$0.00	$0.00	$60,108.59	$119,775.00	$0.00	$179,883.59
D5090	Other Electrical Systems	$0.00	$0.00	$10,682.80	$0.00	$0.00	$10,682.80
	Total:	$814,705.84	$9,941,308.49	$2,205,091.43	$2,676,241.36	$199,495.56	$15,836,842.68

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:



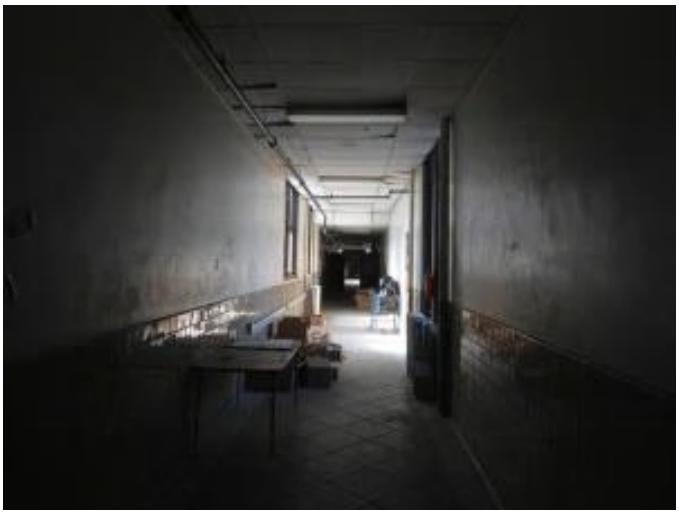
Budget Estimate Total: $15,836,842.68

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: C1010 - Partitions



Location: Building wide

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

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

Qty: 14,500.00

Unit of Measure: S.F.

Estimate: $713,388.16

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace corridor fire rated doors and frames. X16 Also, correct fire rated walls and transoms.

System: C2010 - Stair Construction

Location: Building Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

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

Qty: 600.00

Unit of Measure: L.F.

Estimate: $101,317.68

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Upgrade stair railing system.

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

System: B1010 - Floor Construction

Location: Building Wide Abandoned

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Rehabilitate abandoned portion of building - all systems

Qty: 14,550.00

Unit of Measure: S.F.

Estimate: $8,875,463.63

Assessor Name: Ben Nixon

Date Created: 08/03/2015

Notes: This facility is unique in its usage to the school system. As previously noted the school was partially renovated in 2011 as part of the effort to recover the school. The remaining section of the school is abandoned and has had no preventative maintenance or measures to mitigate damage that results from these conditions. There are several deficiencies noted in this report that reflect either building wide or specific issues as related to both spaces. Considering the overall effort to recover such an area this deficiency is a combination of the coordinated requirements for a renovation to include all aspects of HVAC, Electrical, Fire Life Safety, Health and ADA. Note: This effort also includes budgetary consideration for Asbestos, Lead Paint and a major Abatement program.

System: B2030 - Exterior Doors

Location: Roof Service Doors

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 10.00

Unit of Measure: Ea.

Estimate: $91,073.21

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace service doors.

System: B3010140 - Shingle & Tile

Location: Roof Well 1 and Well 2

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace asphalt shingle roof - partial area

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $102,905.13

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Replace asphalt shingle roof application.

System: C1020 - Interior Doors

Location: Unoccupoied Spaces

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace interior doors - wood doors with wood frame - per leaf

Qty: 100.00

Unit of Measure: Ea.

Estimate: $465,433.90

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace interior door system.

System: C3010230 - Paint & Covering

Location: Building Wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $406,432.62

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Upgrade painted interior wall finish.

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

System: B2020 - Exterior Windows

Location: Exterior Windows

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 140.00

Unit of Measure: Ea.

Estimate: $584,036.01

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: This facility is basically divided into two sections, one that was renovated in 2011 and the abandoned section. This deficiency reflects on the abandoned section of the building's exterior windows. Remove and replace abandoned section windows.

System: B3010105 - Built-Up

Location: Main Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 30,000.00

Unit of Measure: S.F.

Estimate: $1,016,460.33

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Replace built up roofing system.

System: C3010230 - Paint & Covering

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $6,773.88

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Upgrade stair construction in abandoned section of the school.

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: 8,000.00

Unit of Measure: S.F.

Estimate: $121,333.34

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove Asbestos 9 x 9 floor tile and replace with 12 x 12 vinyl floor tile.

System: D1010 - Elevators and Lifts

Location: B413001;Shoemaker

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Upgrade elevator cab and machinery - based on 3 stops, change the stops if required

Qty: 2.00

Unit of Measure: Ea.

Estimate: $383,761.67

Assessor Name: Tom Moe

Date Created: 07/27/2015

Notes: Provide elevator upgrade/modernization for passenger Elevator 1 and freight Elevator 3 and their machine rooms.

System: D5010 - Electrical Service/Distribution

Location: 5th Floor

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Replace Panelboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $21,934.81

Assessor Name: Ben Nixon

Date Created: 07/26/2015

Notes: Replace the panelboard in the Fifth Floor Mechanical Room that has exposed bus, knife blade switches and cartridge fuses with a new 225A panelboard.

System: D5020 - Lighting and Branch Wiring

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace lighting fixtures

Qty: 8.00

Unit of Measure: Ea.

Estimate: $33,874.01

Assessor Name: Ben Nixon

Date Created: 07/27/2015

Notes: Replace eight (8) quartz floodlighting fixtures along the perimeter of the roof that are not operational.

System: D5020 - Lighting and Branch Wiring

Location: Sub-basement

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Replace lighting fixtures

Qty: 21.00

Unit of Measure: Ea.

Estimate: $19,317.40

Assessor Name: Ben Nixon

Date Created: 07/26/2015

Notes: Replace obsolete 4-foot, 2 lamp, industrial fluorescent lighting fixtures in the Sub-Basement and old coal room. (Total of 21 fixtures).

System: D5020 - Lighting and Branch Wiring

Location: Exterior Doors

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Replace lighting fixtures

Qty: 1.00

Unit of Measure: Ea.

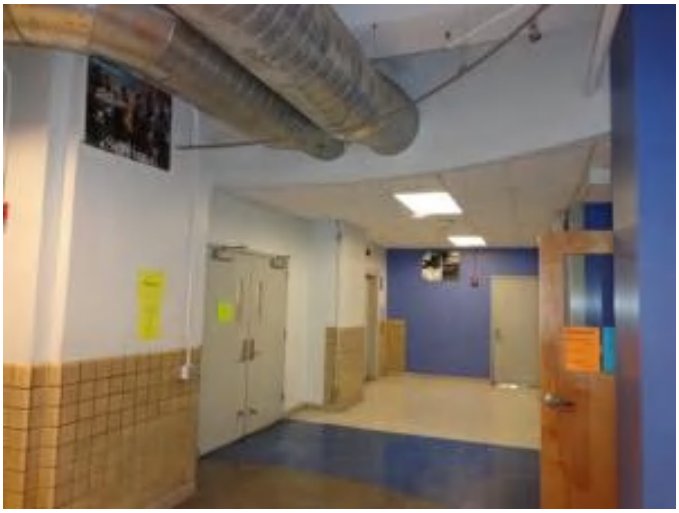
Estimate: $6,917.18

Assessor Name: Ben Nixon

Date Created: 07/26/2015

Notes: Remove the remote emergency lighting heads above the exterior doors on both the north and south sides (total of 4 doors) and replace with replace with exterior wall mounted fixtures, with battery backup.

System: D5090 - Other Electrical Systems



Location: Corridors

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Add Emergency/Exit Lighting

Qty: 5.00

Unit of Measure: Ea.

Estimate: $10,682.80

Assessor Name: Tom Moe

Date Created: 07/26/2015

Notes: Add a total of five (5) exit signs; one on each of Floors B through 4 at the south end of the north/south corridor where it intersects with the east/west corridor.

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

System: B2010 - Exterior Walls

Location: Exterior Brick Finish

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $161,447.36

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Conduct repairs to the exterior brick finish. Selective point and tuck work is recommended.

System: B2030 - Exterior Doors

Location: Entrance Door Systems

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 16.00

Unit of Measure: Ea.

Estimate: $145,717.13

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace exterior door systems.

System: C3010232 - Wall Tile

Location: Unoccupied Spaces

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace and regrout wall tiles - based on the SF of area

Qty: 10,000.00

Unit of Measure: S.F.

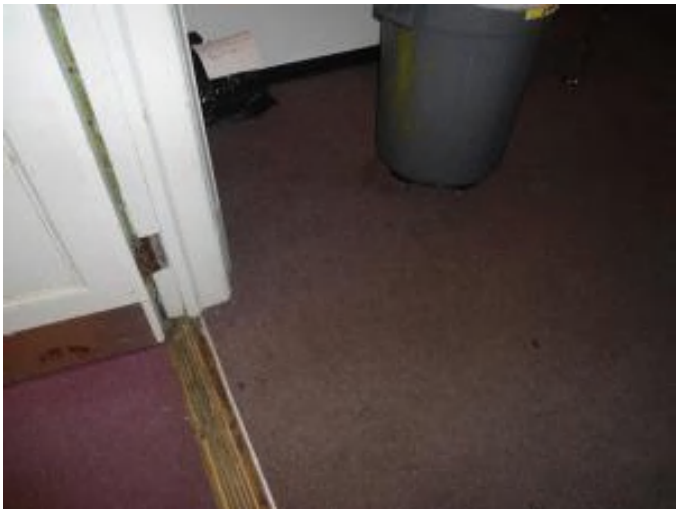
Estimate: $284,955.98

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace damaged wall tile.

System: C3020411 - Carpet



Location: Office

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace carpet

Qty: 2,000.00

Unit of Measure: S.F.

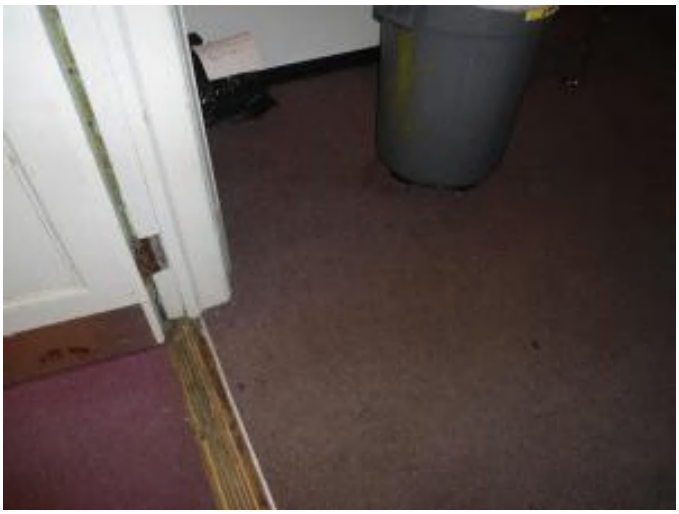
Estimate: $22,381.52

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace carpet.

System: C3020411 - Carpet



Location: Office and Administrative area
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace carpet
Qty: 2,000.00
Unit of Measure: S.F.
Estimate: $22,381.52
Assessor Name: Ben Nixon
Date Created: 07/29/2015

Notes: Remove and replace carpet.

System: C3020412 - Terrazzo & Tile

Location: Unoccupied Spaces
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace and re-grout floor tile
Qty: 20,000.00
Unit of Measure: S.F.
Estimate: $717,473.25
Assessor Name: Ben Nixon
Date Created: 07/29/2015

Notes: Remove and replace Ceramic and Clay tile finishes.

System: C3020412 - Terrazzo & Tile

Location: Kitchen

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace and re-grout floor tile

Qty: 2,000.00

Unit of Measure: S.F.

Estimate: $71,747.33

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Replace damaged floor tile in kitchen area and food prep stations.

System: C3020414 - Wood Flooring

Location: Boys and Girls Gym

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace wood flooring

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $291,520.71

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove Gym floors and replace with new wooden floors.

System: C3020414 - Wood Flooring

Location: Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace partial area of wood flooring and refinish entire floor - set replacement area

Qty: 8,000.00

Unit of Measure: S.F.

Estimate: $79,226.09

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Repair and selective replacement of wooden floor finish.

System: C3020415 - Concrete Floor Finishes

Location: Unoccupied Spaces

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 4,000.00

Unit of Measure: S.F.

Estimate: $15,378.13

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Refinish concrete floor finish.

System: C3030 - Ceiling Finishes

Location: Unoccupied Spaces

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 30,000.00

Unit of Measure: S.F.

Estimate: $452,472.91

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove damaged ceiling finish and upgrade to acoustical tile ceiling finish.

System: C3030 - Ceiling Finishes

Location: Unoccupied Spaces

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Repair and resurface plaster ceilings - 2 coats plaster

Qty: 20,000.00

Unit of Measure: S.F.

Estimate: $262,481.61

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Repair and repaint ceiling finish.

System: D3050 - Terminal & Package Units

This deficiency has no image.

Location: two elevator machine rooms

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Install ductless split system for equipment room

Qty: 2.00

Unit of Measure: Ea.

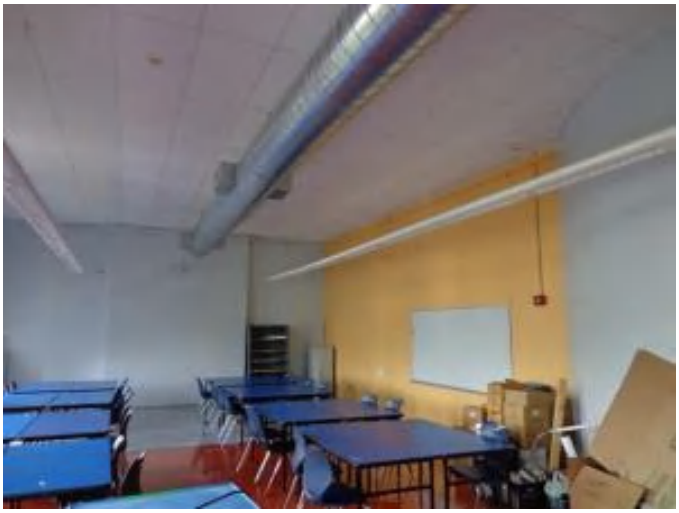
Estimate: $29,282.82

Assessor Name: Ben Nixon

Date Created: 08/05/2015

Notes: • Install in each of two elevator machine rooms a one ton ductless split system with roof mounted condensing unit and indoor console unit. Include refrigerant piping and drain line.

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: 1,845.00

Unit of Measure: L.F.

Estimate: $119,775.00

Assessor Name: Ben Nixon

Date Created: 07/26/2015

Notes: Add surface raceway system with three duplex receptacles in each classroom. (Total of 41 classrooms)

Priority 5 - Response Time (> 5 yrs):

System: C1010 - Partitions

Location: Shared Classrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 1,920.00

Unit of Measure: S.F.

Estimate: $42,776.65

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove abandoned partitions and replace with wall section.

System: C1030 - Fittings

Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 120.00

Unit of Measure: Ea.

Estimate: $82,587.85

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove blackboard and replace with marker boards.

System: C1030 - Fittings

Location: Building Wide Signage

Distress: Beyond Service Life

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: $58,276.55

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Install directional and room signage.

System: C1030 - Fittings

Location: Hallways

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace tackboards - select size

Qty: 20.00

Unit of Measure: Ea.

Estimate: $15,854.51

Assessor Name: Ben Nixon

Date Created: 07/29/2015

Notes: Remove and replace tackboards.

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, freight, 4000 lb, 5 floors, 50 FPM class'B'	1.00	Ea.	West Side	Digital Elevator	Cat. No. 284EDH010A006	563329		30			$209,055.00	$229,960.50
D1010 Elevators and Lifts	Traction geared elevators, passenger, 2500 lb., 5 floors, 200 FPM	1.00	Ea.	North Corridor	Otis	M-G Data 324A/320T	563322		30			$179,550.00	$197,505.00
D2020 Domestic Water Distribution	Pump, pressure booster system, 1 HP pump, includes diaphragm tank, control and pressure switch	1.00	Ea.	mechanical room					25	2007	2032	$9,262.50	$10,188.75
D3020 Heat Generating Systems	Boiler, packaged water tube, gas fired, steam or hot water, gross output, 1680 MBH	1.00	Ea.	boiler room					35	2007	2042	$40,323.70	$44,356.07
D3020 Heat Generating Systems	Boiler, packaged water tube, gas fired, steam or hot water, gross output, 1680 MBH	1.00	Ea.	boiler room					35	2007	2042	$40,323.70	$44,356.07
D3020 Heat Generating Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 25 H.P., to 1550 GPM, 6" size	1.00	Ea.	boiler room					35	2007	2042	$26,334.00	$28,967.40
D3020 Heat Generating Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 25 H.P., to 1550 GPM, 6" size	1.00	Ea.	boiler room					35	2007	2042	$26,334.00	$28,967.40
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, induced air, double flow, vertical, gear drive, 297 ton, includes standard controls, excludes pumps and piping	275.00	TonAC	roof					30	2007	2037	$134.01	$40,538.03
D4010 Sprinklers	Fire pumps, electric, 500 GPM, 50 psi, 27 HP, 1,770 RPM, 4" pump, including controller, fittings and relief valve	1.00	Ea.	mechanical room					35	2007	2042	$22,805.80	$25,086.38
D5010 Electrical Service/Distribution	Circuit breaker, 3 pole, 600 volt, 1200 amp, enclosed (NEMA 1)	1.00	Ea.	Basement Electrical Room	Square D	Type NAL361000	None		30	2007	2037	$13,662.00	$15,028.20
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 1600 A	4.00	Ea.	Basement Electrical Room	Square D	Power Style QED	Cat. No. 22971237-061		30	2007	2037	$53,561.25	$235,669.50
D5090 Other Electrical Systems	Variable frequency drives, enclosed, 460 volt, 40 HP motor size, NEMA 1	1.00	Ea.	boiler room					30	2007	2037	$12,047.40	$13,252.14
D5090 Other Electrical Systems	Variable frequency drives, enclosed, 460 volt, 40 HP motor size, NEMA 1	1.00	Ea.	boiler room					30	2007	2037	$12,047.40	$13,252.14
												Total:	**$927,127.58**

Executive Summary

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

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

Function:	
Gross Area (SF):	19,600
Year Built:	1927
Last Renovation:	
Replacement Value:	$424,174
Repair Cost:	$289,466.90
Total FCI:	68.24 %
Total RSLI:	50.28 %

Description:

Attributes:

General Attributes:

Bldg ID:	S413001	Site ID:	S413001

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	55.62 %	85.41 %	$289,466.90
G40 - Site Electrical Utilities	29.06 %	0.00 %	$0.00
Totals:	**50.28 %**	**68.24 %**	**$289,466.90**

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 $
G2010	Roadways	$11.52	S.F.	0	30				0.00 %	0.00 %				$0
G2020	Parking Lots	$7.65	S.F.	5,000	30	1990	2020	2025	33.33 %	0.00 %	10			$38,250
G2030	Pedestrian Paving	$11.52	S.F.	15,400	40	1927	1967	2027	30.00 %	0.00 %	12			$177,408
G2040	Site Development	$4.36	S.F.	19,600	25	1990	2015	2042	108.00 %	338.73 %	27		$289,466.90	$85,456
G2050	Landscaping & Irrigation	$3.78	S.F.	10,000	15	1927	1942	2027	80.00 %	0.00 %	12			$37,800
G4020	Site Lighting	$3.58	S.F.	19,600	30	1990	2020		16.67 %	0.00 %	5			$70,168
G4030	Site Communications & Security	$0.77	S.F.	19,600	30	2011	2041		86.67 %	0.00 %	26			$15,092
								Total	**50.28 %**	**68.24 %**			**$289,466.90**	**$424,174**

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.

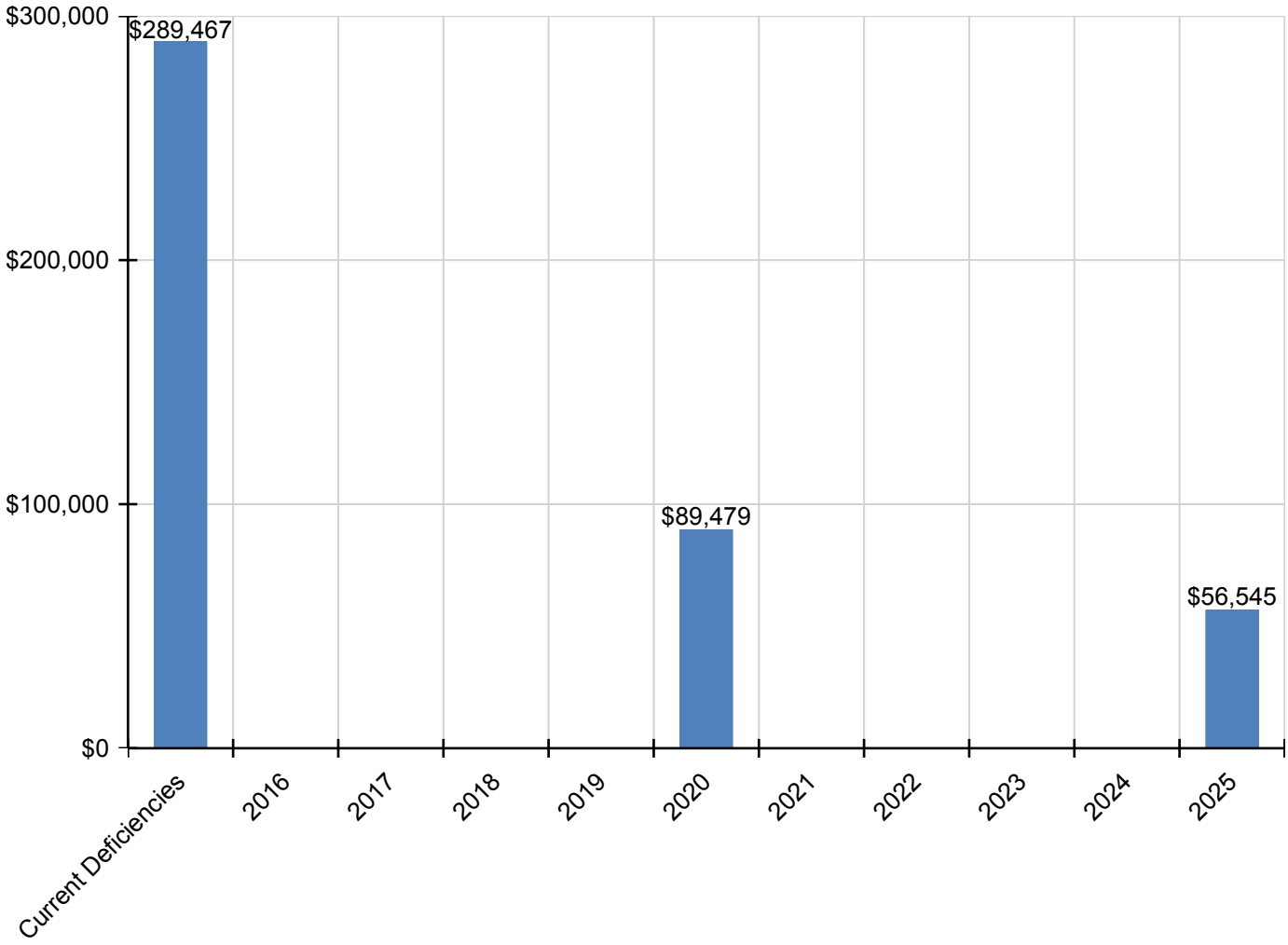
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$289,467**	**$0**	**$0**	**$0**	**$0**	**$89,479**	**$0**	**$0**	**$0**	**$0**	**$56,545**	**$435,491**
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**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$56,545	**$56,545**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2040 - Site Development	$289,467	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$289,467**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$89,479	$0	$0	$0	$0	$0	**$89,479**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

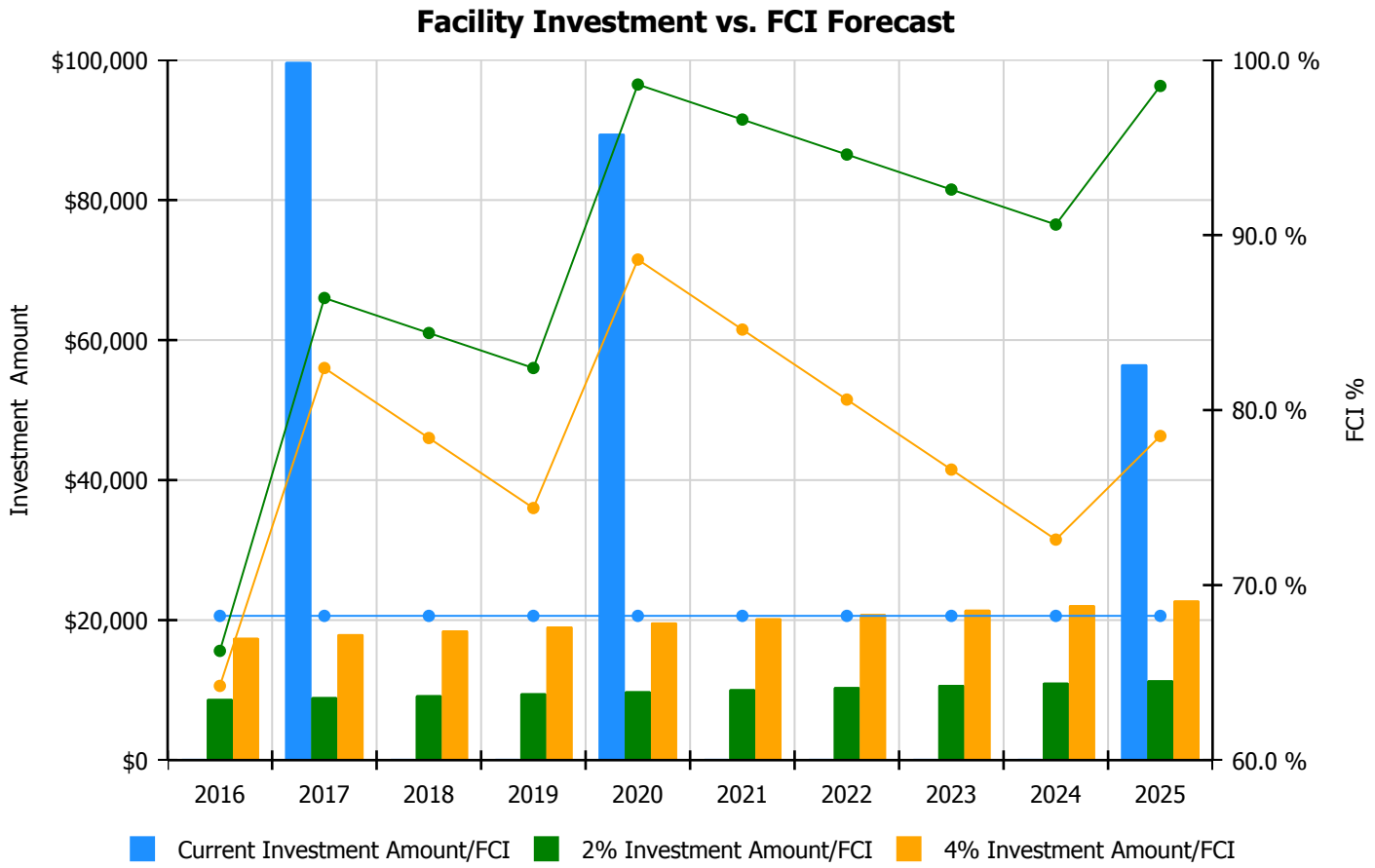
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

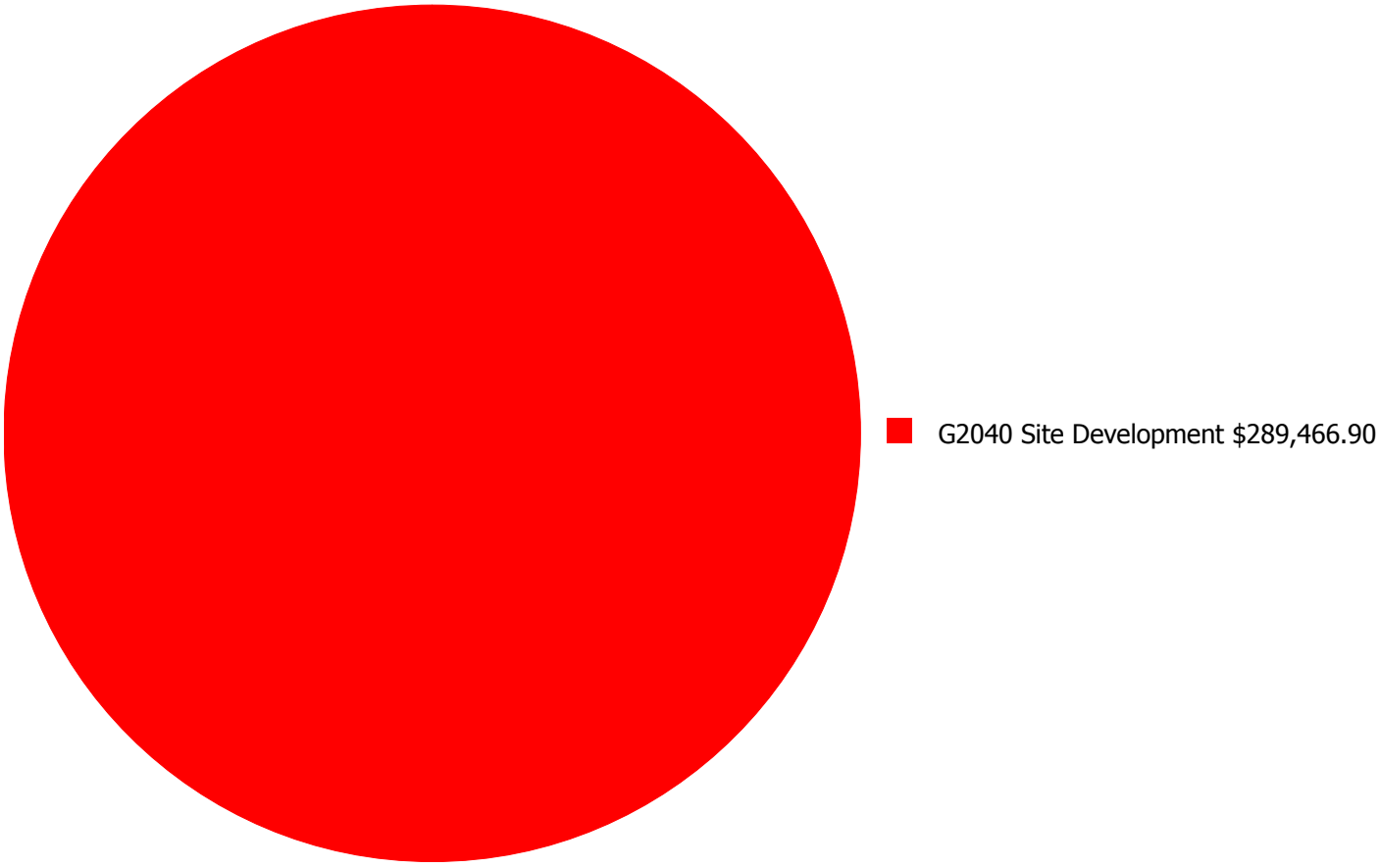
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 68.24%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$8,738.00	66.24 %	$17,476.00	64.24 %
2017	$99,727	$9,000.00	86.40 %	$18,000.00	82.40 %
2018	$0	$9,270.00	84.40 %	$18,540.00	78.40 %
2019	$0	$9,548.00	82.40 %	$19,096.00	74.40 %
2020	$89,479	$9,835.00	98.60 %	$19,669.00	88.60 %
2021	$0	$10,130.00	96.60 %	$20,259.00	84.60 %
2022	$0	$10,434.00	94.60 %	$20,867.00	80.60 %
2023	$0	$10,747.00	92.60 %	$21,493.00	76.60 %
2024	$0	$11,069.00	90.60 %	$22,138.00	72.60 %
2025	$56,545	$11,401.00	98.52 %	$22,802.00	78.52 %
Total:	**$245,751**	**$100,172.00**		**$200,340.00**	

Deficiency Summary by System

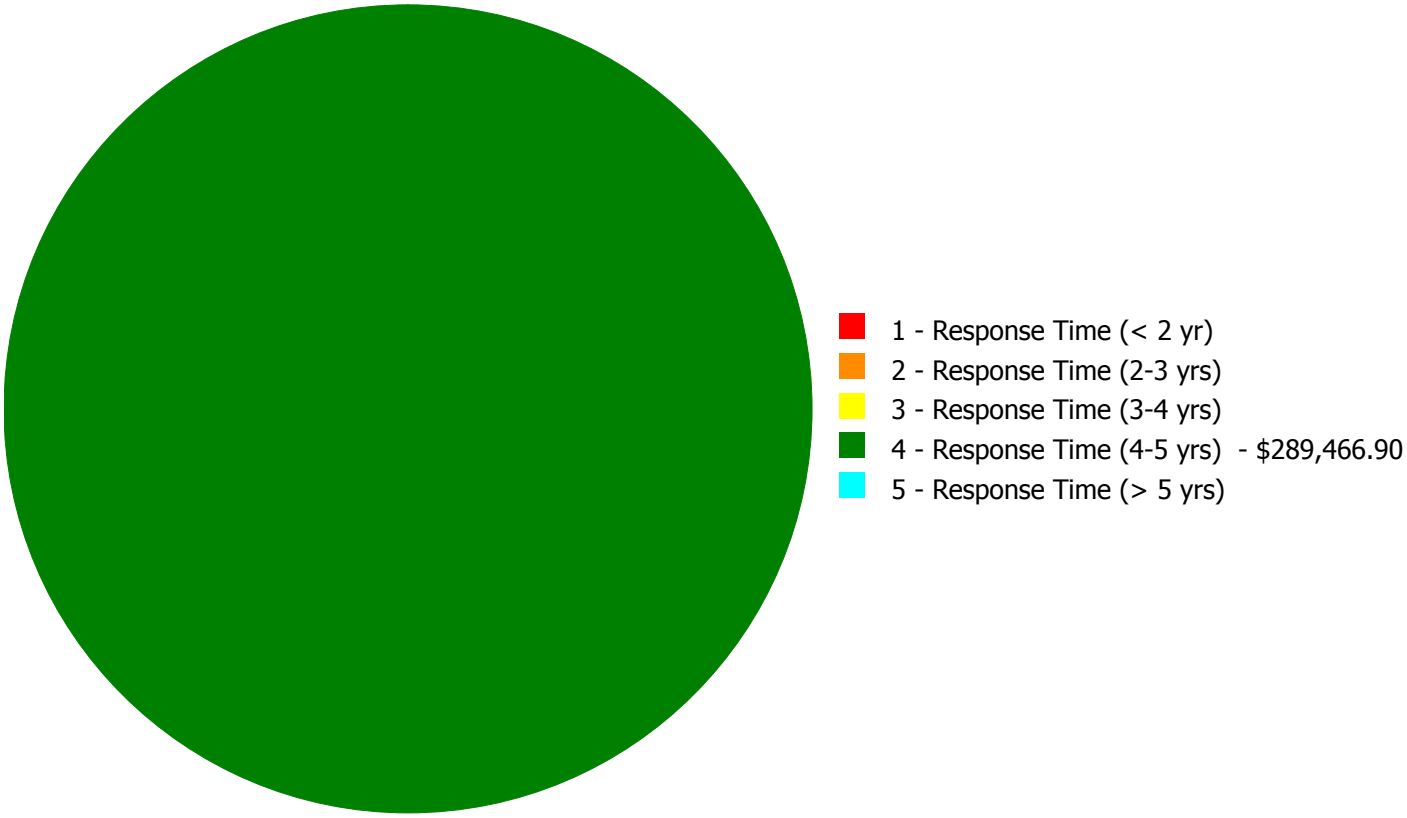
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $289,466.90

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: $289,466.90

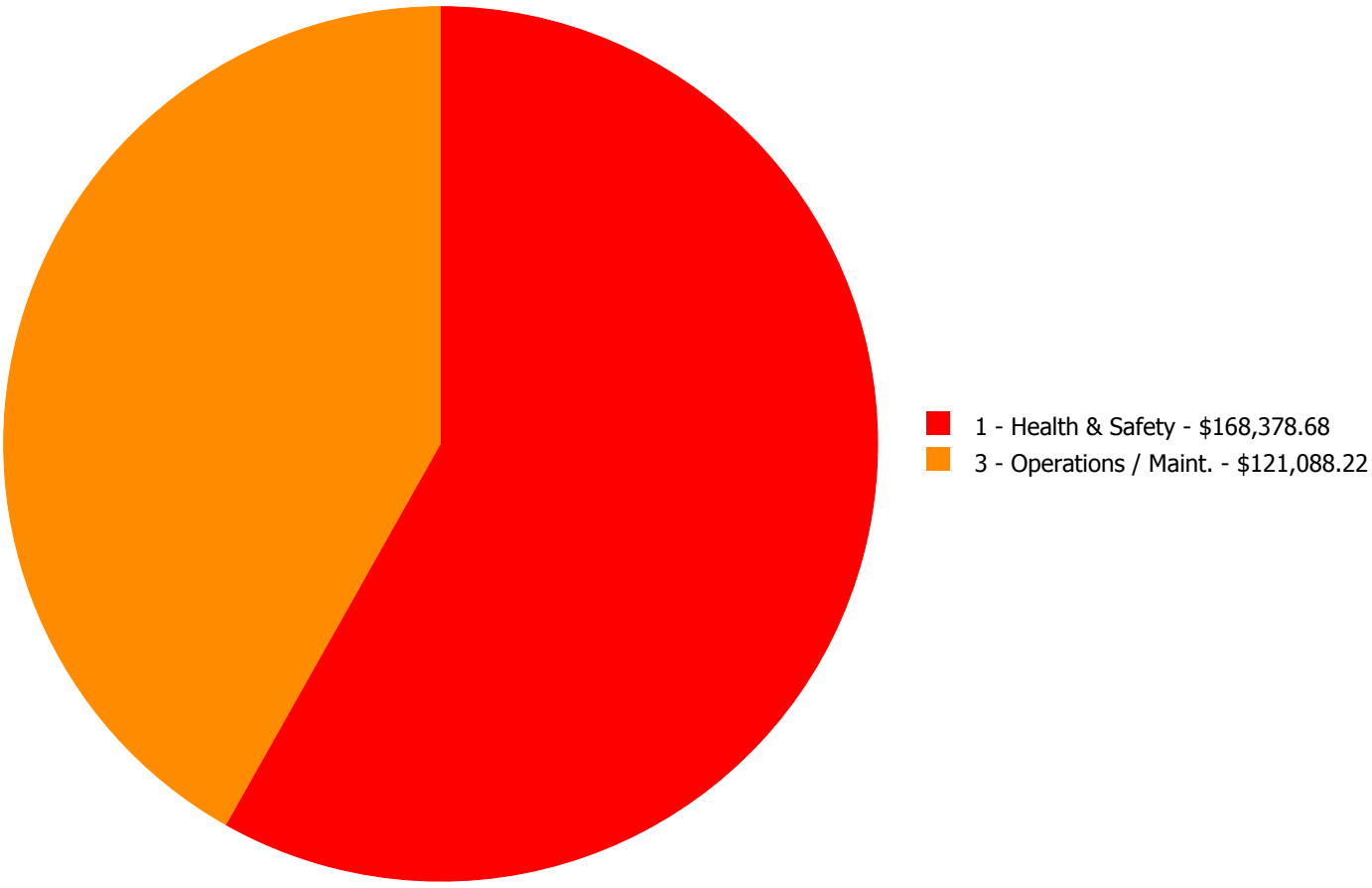
Deficiency By Priority Investment Table

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
G2040	Site Development	$0.00	$0.00	$0.00	$289,466.90	$0.00	$289,466.90
	Total:	$0.00	$0.00	$0.00	$289,466.90	$0.00	$289,466.90

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: $289,466.90

Deficiency Details by Priority

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

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

System: G2040 - Site Development

This deficiency has no image.

Location: Exterior Elevation
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace metal picket fence - input number of gates
Qty: 1,000.00
Unit of Measure: L.F.
Estimate: $168,378.68
Assessor Name: Craig Anding
Date Created: 07/30/2015

Notes: Remove and replace exterior rusted fence system.

System: G2040 - Site Development

This deficiency has no image.

Location: Exterior Elevation
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Repair and regrout stone retaining wall - LF of wall - up to 4' tall
Qty: 300.00
Unit of Measure: S.F.
Estimate: $121,088.22
Assessor Name: Craig Anding
Date Created: 07/30/2015

Notes: Repair damaged stone retaining wall.

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