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.

McMichael School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	3543 Fairmount Ave.	Enrollment	404
	Philadelphia, Pa 19104	Grade Range	'00-08'
Phone/Fax	215-823-8205 / 215-386-3549	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Mcmichael	Turnaround Model	Turnaround

Building/System FCI Tiers

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

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

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**38.84%**	**$20,164,501**	**$51,917,028**
Building	39.53 %	$19,889,274	$50,320,449
Grounds	17.24 %	$275,226	$1,596,579

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	00.00 %	$0	$1,908,689
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.17 %	$6,102	$3,691,000
Windows (Shows functionality of exterior windows)	225.77 %	$4,066,033	$1,801,000
Exterior Doors (Shows condition of exterior doors)	156.34 %	$226,690	$145,000
Interior Doors (Classroom doors)	217.82 %	$764,543	$351,000
Interior Walls (Paint and Finishes)	00.00 %	$0	$1,965,000
Plumbing Fixtures	18.03 %	$243,790	$1,352,000
Boilers	54.22 %	$1,012,205	$1,867,000
Chillers/Cooling Towers	49.20 %	$1,204,455	$2,448,000
Radiators/Unit Ventilators/HVAC	107.95 %	$4,640,559	$4,299,000
Heating/Cooling Controls	132.68 %	$1,791,141	$1,350,000
Electrical Service and Distribution	96.20 %	$933,115	$970,000
Lighting	16.09 %	$557,915	$3,468,000
Communications and Security (Cameras, Pa System and Fire Alarm)	06.95 %	$90,317	$1,299,000

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.

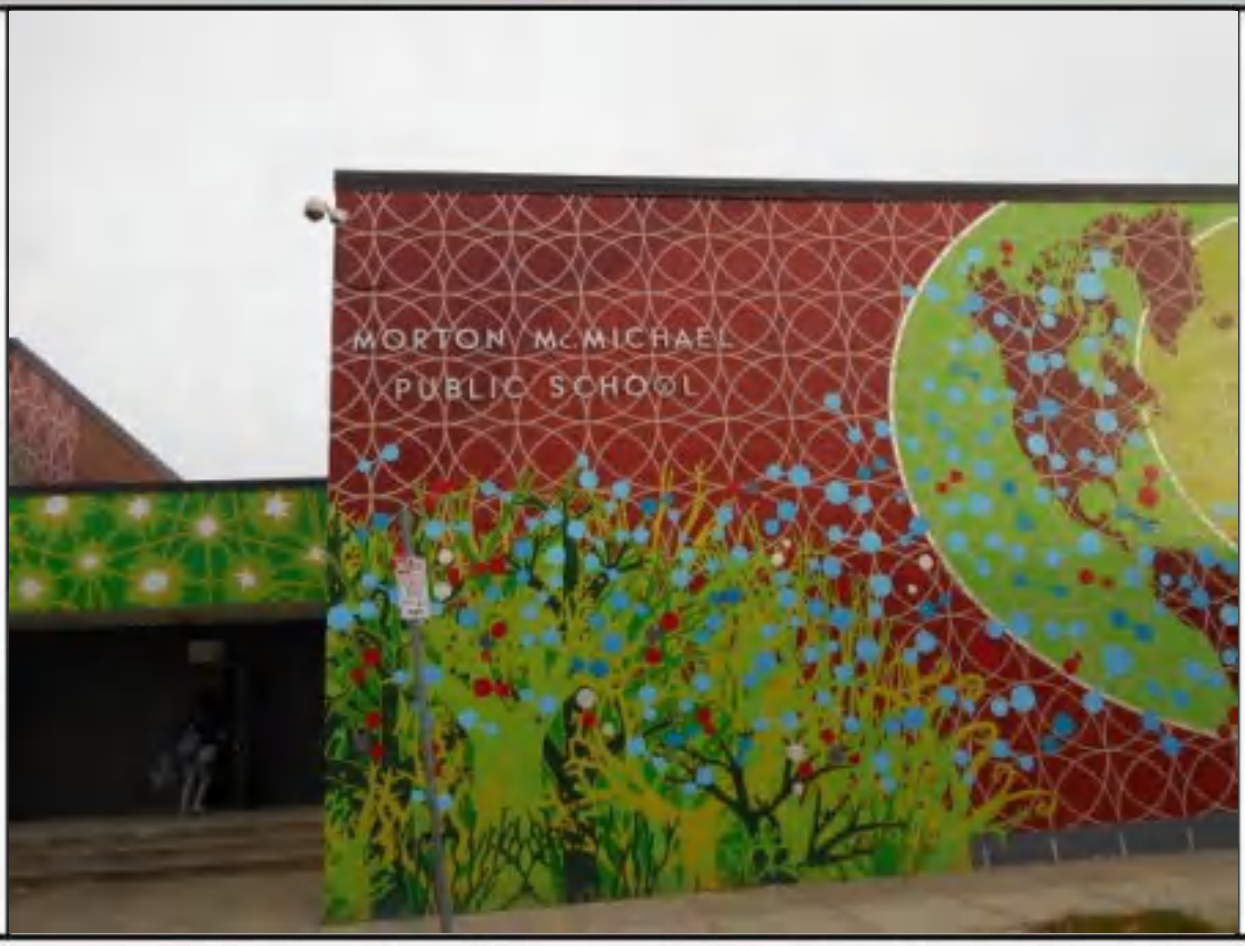
School District of Philadelphia

S136001;McMichael

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):	100,000
Year Built:	1963
Last Renovation:	2010
Replacement Value:	$51,917,028
Repair Cost:	$20,164,500.54
Total FCI:	38.84 %
Total RSLI:	73.86 %

Description:

Facility Assessment
November 2015

School District of Philadelphia
Morton McMichael School
3543 Fairmount Avenue
Philadelphia, PA 19104

100,000 SF / 874 Students / LN 02

The Morton McMichael School building is located at 3543 Fairmount Avenue in Philadelphia, PA. The 3 story, 100,000 square foot building was originally constructed in 1963. There have been no additions. The building has basement. A $2M renovation project was completed circa 2010.

The school capacity is approximately 874 students with 2015/16 enrollment of 395 serving grades K-8.

The school plan is rectangular figure 8 with the long axis running N/S.

Mr. Steve Tuttle, accompanied the team on its tour of the school and provided information on building systems and maintenance history. At the date of assessment, this school did not have a Building Engineer. Mr. Brian Wallace, principal, provided input to the Parsons assessment team on current problems.

ARCHITECTURAL/STRUCTURAL SYSTEMS

The building bears on concrete foundations and basement walls that are not showing signs of significant settlement or damage. The basement floor is slab on grade. The main structure is cast in place concrete framing. The roof structure over the gym and auditorium is concrete plank on steel bar joists. Exterior walls are brick masonry on CMU. Murals are painted on the south and east exterior walls. Anti-graffiti coating at the west elevation, first floor, is hazed. In general, masonry is in good condition; it appears that caulk joints have been recently maintained. Windows are original single pane glass and acrylic glazing in aluminum frames. Operable units are hopper or awning style. Windows are in poor condition with some broken panes, many replacement panes and discolored glazing. First floor windows and one bank of windows at 3rd floor classrooms facing the courtyard have security grilles. First floor windows at the south courtyard face concrete lightwells protected with metal grates at grade. Lightwells have area drains that are working. Exterior doors are typically hollow metal in hollow metal frames with glazing, in functional condition. Hardware has been replaced, possibly multiple times. Door appearance is poor. Roofing is low slope built-up with mineral cap sheet. Roofs are in fair condition no splitting or bubbling of the membrane or patching was seen; some evidence of roof leaks at the interior may be old unrepaired stains. There is some loss of granules. Roof age is estimated at 12-15 years based on historical aerial images. Drainage is via interior roof drains with no overflow drains or scuppers. Expansion joints are incorporated into the roof system. Roof access is via stairwell to the main roof. Access to low roofs is via portable ladder. Generally, the building is not accessible per ADA requirements.

Partition walls are typically CMU in generally good condition. One broken block was noted. Some of the corridors have glazed block wainscot at the south end of the building. Some spaces previously used as district offices have low partitions of gypboard, presumably on metal studs, with wood caps. Walls at the office have glazing in hollow metal frames. A vinyl accordion partition is installed in the nursing office. There are folding partitions between some classrooms. Interior classroom and office doors are generally original solid core wood veneer in hollow metal frames with slot lights and transom lights. Doors do not have ADA hardware and are in fair condition with some damaged veneer. Doors swing in the direction of exit and are recessed, thus do not reduce corridor width or interfere with traffic. Wardrobe doors are removed. Doors leading to exit stairways are hollow metal doors and frames without panic hardware in functional condition.

Fittings include: toilet accessories in poor condition; toilet partitions are a mixture of baked enamel and plastic in fair to poor condition; marker boards are present in some classrooms; obsolete chalk boards are present in many classrooms; bulletin boards are present in classrooms; lockers are in poor condition in the abandoned locker/shower rooms; lockers in classrooms are used as storage cabinets; interior identifying signage is typically directly painted on wall or door surfaces and is inadequate.

Stair construction is concrete filled steel pans with steel nosings fair condition. Treads and landings are concrete. Handrails are painted tubular steel. Handrails do not meet modern codes for configuration with no extensions at landings, and improper mounting height. Barrier rails at landings and stairs are too low.

Interior wall finishes are typically paint in generally good condition. Walls in the vestibule and at the main office corridor are painted with colorful supergraphics. Flooring is mostly 9" VAT, occurring at typical classrooms, corridors, kitchen, the auditorium and stage. Carpeting is installed at the IMC, in good condition. The gym, office, and renovated classrooms have 12" VCT in good condition. Toilet rooms and some service areas have painted concrete floors, typically in worn condition. Ceilings are typically painted structure in corridors, classrooms and the gym, in good condition. 2x4 suspended acoustical panels in good condition are installed in the IMC and renovated classrooms. 2 x 4 acoustical tile in the kitchen is vinyl faced and is in fair to poor condition. The auditorium, cafeteria, lobby, and offices have 12" glued on acoustical tile that is in fair to poor condition. Many water damaged, yellowed or missing tiles were observed.

The building has one passenger elevator.

Institutional Equipment includes; stage draperies beyond their expected life and in worn condition; stage lighting that is adequate; approximately half of the classrooms have Smartboards installed; and wood library shelving that is in good condition; auditorium sound equipment is portable and that is satisfactory to the principal. Other equipment includes: kitchen equipment in fair condition; residential appliances in good condition; and basketball backstops in the gym in fair condition.

Furnishings include: fixed casework in classrooms (particularly in old home ec classrooms), generally in fair condition for its age; glass front display cases in corridors in good condition; window roller shades, generally in fair condition; auditorium window drapes; and auditorium seating in aged condition with several broken or missing seats.

MECHANICAL

Toilet room plumbing fixtures include wall mounted water closets, urinals, and lavatories. Most fixtures are vitreous china, but some replacement lavatories are enameled cast iron. Vintage fixtures exist throughout the building, and many are cracked and stained. Flush valves are installed in pipe chases with pushbutton operation. They were mostly replaced circa 2010 including new supply piping. Lavatory faucets are hot and cold mixing with momentary action valves. Some do not flow hot or cold. The nurse office lavatory drips. District should budget to replace 25% of water closets, 50% of urinals, and 20% of faucets. The cafeteria kitchen has a twin basin, floor standing, stainless steel, commercial sink without sanitization chemical injection system, grease trap, or disposal. There is also a porcelain lavatory. Life skills classroom has a cabinet mounted stainless steel residential kitchen sink with a single lever handle faucet. Kitchen sinks are in fair condition and will not need replacement for 10 - 15 years. Third floor science room was remodeled including four lab sinks. The teacher's sink faucet is damaged and should be replaced. Service sinks are located in cleaning closets adjacent to toilet rooms on each floor as well as in alcoves in the corridors. Alcove sinks are enameled cast iron with integral backsplash, stainless steel rim, and mixing hot and cold faucets with vacuum breakers. Closet sinks are floor level concrete with wall mounted faucets. Service sinks are lightly stained but in fair condition otherwise and will remain serviceable for at least 10 years. There are boys and girls showers in the locker rooms located in the basement. Locker rooms are the original facilities and presently used as storage space. Drinking fountains are a mixture of types, styles, and ages. Typically, they are not accessible, not chilled, and beyond their service life. They should be upgraded to accessible type fountains with integral chillers on each floor.

Domestic water distribution pipe is soldered copper. Approximately half of the building has new pipes installed. The remaining water distribution pipe has exceeded it service life and shows severe corrosion in areas, so it should be inspected and repaired as needed. Municipal water service enters the basement behind the stairs along 36th St. through a 4 inch pipe. There is a water meter with a bypass line, but there is no backflow prevention device of any sort. A reduced pressure double back flow prevention valve should be installed. There is a backflow preventer and water meter for the boiler water supply line. The water entry pipe, valves, and meter are in fair condition and should last 5 years or longer. There is no pressure booster system. An A.O. Smith 65 gallon water heater was installed in 2002. It has exceeded its expected life by 4 years and the district should plan to replace it. There is a hot water circulation pump, and hot water was available at upstairs faucets quickly.

Sanitary drain pipe is hub and spigot cast iron for drains and threaded galvanized steel for vents. It is likely original, and it has certainly surpassed its expected lifespan and flows poorly. Areas of the pipe have been perforated by rust and repaired with clamp-on patches. Sanitary drain pipes should be inspected in detail and repaired or replaced as needed. The building does not have a sewage ejector.

Rain water drain pipes are threaded galvanized steel fed from cast iron roof drains. Drain pipes run inside the building. There are no overflow drains on the roof but there are no parapets. The pipe appears to be original. There were no noticed or reported drainage problems. There is no ground water sump. Rain water drains should remain serviceable for 10 more years.

The building is heated and ventilated by unit ventilators for classrooms and two air handlers for gymnasium and auditorium.

Two Easco brand, model FST 180 S015, 6,026 MBH (180 HP) fire tube steam boilers manufactured in 2002 are in the boiler room. Boiler 2 was not operational at the time of the inspection due to a steam leak at the manway. Insulation is failing on the exhaust of boiler 1. Boilers are in bad condition due to poor operation and should be placed. Gordon Piatt oil and gas burners operate on oil only because the gas equipment is installed but not connected to the utility service. There is a valve operator missing from one of the gas valves. The 10,000 oil tank is installed indoors in the old coal storage room along with two oil circulation pumps. Boiler feedwater tank has three pumps for the two boilers and a third spare pump. Feed pump 2 appears inoperable with the spare pump being used for boiler 2. There is a condensate collection tank with two transfer pumps near the center of the building. There is a water softener for boiler makeup water. Boiler exhausts have draft fans and the exhaust preheats the combustion air. The building has a 1¼ inch natural gas supply line for the boiler pilot lights and water heater. It enters the building from 36th Street in the basement behind the stairs.

There is no central cooling generating equipment in the building. Nineteen window unit air conditioners are installed in offices, the IMC, and a few classrooms. There is one ductless split system and two roof top condensing units. Condensing units were installed to cool district offices located in the building. Total installed cooling capacity is approximately 48 tons. Window units should be removed and replaced with a central cooling plant to air condition the entire building, 250 ton estimated capacity.

The original two air handlers are still installed in a third floor mechanical room. (One still has the original shipping tag dated Feb. 22, 1963.) They each consist of filters, steam heating coils, and fans with 2 HP motors. They are beyond their service life and lack cooling coils so they should be replaced with modern units when air conditioning is added. The cafeteria kitchen has no fuel burning appliances and has no dedicated ventilation system. Toilet room exhaust fans are located on the roof and draw from pipe chases. Fans are not working properly, and noticeable foul odors were present in toilet rooms. Fans should be replaced or

upgraded. Classrooms are heated and ventilated by original unit ventilators. They blow poorly, have exceeded their service life, and lack cooling coils, so unit vents should be replaced. Rooms discharge excess air through transfer ducts in coat closets to the corridors. There are two central vertical duct chases that discharge corridor excess air to gravity vents on the roof. Steam and condensate pipe is flanged and threaded steel of unknown age. Steam and condensate pipe should be inspected and repaired or replaced as needed. The building engineer said there were many failed steam traps in the building, and steam venting from the condensate collection tank in the building was condensing in crawlspaces and on boiler room equipment. The entire building steam traps should be inspected and repaired.

Heating for stairways, toilet rooms, corridors, small offices, and secondary heating for classrooms is provided by finned tube steam convection units. Convectors are the same age as unit vents and should be replaced with them.

The building is equipped with pneumatic controls for air handlers and unit vents and pneumatic thermostats. Some parts of the controls are still operative. There was an active air leak on a valve operator for the air handler as well as a steam leak from the valve body. The pneumatic control system should be completely upgraded to DDC when other HVAC renovations are done. There is a duplex air compressor with a refrigerated filter dryer for the pneumatic controls. It was working well during the inspection.

Fire Protection - The building does not have stand pipes or sprinklers. A fire sprinkler system should be installed to increase occupant safety, including a fire pump if needed.

ELECTRICAL SYSTEMS

The electrical service for this facility is an original 800A, 120/208V service entrance electrical equipment. The original electrical service equipment and the utility meter PECO 02 017006221 are located in the basement. The service entrance electrical equipment has already exceeded its useful service life. The electrical service does not have capacity for future Heating, Ventilation, Air Conditioning (HVAC) system. The electrical service needs to be upgraded. The new service will be 480/277V approximate 1600A.The new electrical service would feed a 480V Motor Control Center (MCC) and HVAC (Heating, Ventilation and Air Conditioning) equipment, and a 480V 3 phase to 120V/208V 3 phase, 500kVA step-down transformer to feed receptacles, lighting and other smaller loads.

In each floor, there are original, surface mounted, panelboards for lighting and receptacles. Panelboards are located in locked closets. We have accessed to some of them but not all of them. The original panelboards and associated wiring have exceeded the end of their useful life and they need to be replaced.

There number of receptacles in classrooms varies, approximately in 40% of the classrooms the quantity of receptacles are inadequate. Teachers use extension cords. The teacher's whiteboard wall and the opposite of it need to be provided with double compartment surface raceways, the other two walls with minimum two-duplex outlets each, when feasible.

Most of the third floor classrooms have been remodeled in the last 4 years and the lighting fixtures are recessed, up/down fluorescent with T-8 lamps. Non-remodeled classrooms, corridors and stairways are provided with surface mounted wraparound fluorescent fixtures. The gymnasium is illuminated with pendant HID fixtures. The auditorium is illuminated with pendant HID cylinders. The mechanical rooms are illuminated, with pendant mounted, industrial type fluorescent fixtures. Fluorescent fixtures in the corridors and remodeled classrooms are provided with T-8 lamps all other areas fluorescent fixtures are provided with T-12 lamps.T-12 lamps are becoming more expensive, consume more energy and are difficult to find, therefore replace all existing fluorescent fixtures with T-12 lamps with fluorescent fixtures with T-8 lamps.

The Fire Alarm system is manufactured by General Electric EST. The fire alarm system was installed in 2013 and is expected to provide 15 more years of useful service life.

The present telephone system is adequate. During the assessment, randomly, we verified that each wall mounted handset is provided with a dial tone.

An independent and separate PA system does not exist, or is not working. School uses the telephone systems for public announcement. The system is working adequately for most part.

The present clock control system is manufactured by Primex. Clock system is wireless, synchronized battery operated. System is approximately 5 years old and is expected to provide 10 more years of useful service life.

There is not television system.

The school security system consists of surveillance CCTV cameras. The first floor is provided with two surveillance CCTV cameras, the

second floor is not provided with surveillance CCTV cameras, and the third floor is provided with (3) surveillance CCTV cameras. Additional surveillance CCTV cameras are required for a complete coverage of the interior of the school.

The emergency power system consists of a gas powered generator manufactured by Generac. The emergency power system serves the stairways, corridors, exit signs, battery charger, gymnasium, auditorium and the boiler. The gas powered generator is approximately 20 years old and is expected to provide 10 more years of useful service life. The present emergency system does not have capacity for future emergency loads, provide an outdoor, diesel powered generator

There is adequate UPS in the IT room.

The emergency lighting is obtained with lighting fixtures with battery backup located along the exit corridors. Exit signs are located at each exit door and corridors.

The school lightning protection system is accomplished with air terminals mounted on the chimney. A study needs to be conducted to verify if the air terminals provide the proper coverage.

The school is provided with one traction power elevator. The elevator motor is rated 25HP, 208V. The elevator motor and the elevator controller, look fairly new, approximately 10 years old.

The auditorium is provided with one row of theatrical downlight fixtures controlled by local panel board. Modern school auditorium requires front, upstage, high side, back, theatrical lighting and to create different scenes theatrical lighting fixtures are controlled by a dimming system. Provide theatrical lighting and dimming control system.

The auditorium sound system is obtained with a portable system. Provide a permanent installed sound system

The exterior of the school is illuminated with wall mounted lighting fixtures. Lighting fixtures are located along the building perimeter. There were no indication of additional lighting fixtures are required.

There are two outdoor, surveillance CCTV cameras. Provide additional outdoor surveillance CCTV cameras along the building perimeter for a safer environment.

There is a wall mounted loud speaker facing the playground area. There were no indication that additional loud speaker is required.

GROUNDS SYSTEMS

Overall, the site slopes from southwest to northeast. The asphalt parking lot is located at east of the building at the south end of the site with access from Fairmount Street. Striping and parking bumpers are in place. There are no designated handicap spaces. The asphalt is in fair condition with some alligatoring, and vegetation in the asphalt. It appears that the asphalt may be an overlay. The entrance is gated. The parking lot is segregated from playground areas with low fencing. Pedestrian paving is concrete along city streets with some damaged sections. The main playground are north of the parking lot is concrete fair condition. Many sections of the pavement have been replaced over the years, no cracked or heaved sections were seen. A smaller asphalt playground is located north of the building and is in fair condition with some cracks. The north courtyard is paved in concrete. Concrete steps on site have been repaired, though additional repairs are recommended where there are chips in nosings. Granite steps are installed at the south end of the concrete playground

Fence surrounds the site from mid-building on N. 36th street to the SE building corner. Antique wrought iron fencing is present around the concrete playground atop a concrete retaining wall and is in fair condition. The retaining wall appears to have been recently painted. It has weep holes, and appears to be in fair condition. Monitoring of the retaining wall is recommended. The remainder of the perimeter fencing is metal picket in fair to good condition with some leaning sections. There is a small section of chain link fencing around the gas utility apparatus that is also protected by concrete filled bollards. Other site features include a flagpole near the front entry, and a soft playground surface in the north courtyard that is in poor condition.

Landscaping consists of: fairly recently planted street trees on 36th St. and Fairmount Avenue: a mature tree in the southeast corner of the large playground; lawn in the south courtyard, and a strip of lawn about 10 feet wide at the south end of the parking lot. There is no irrigation system.

RECOMMENDATIONS:

- Install fixed ladders to access lower roofs
- Replace exterior windows and rusted security grilles
- Replace exterior doors
- Reconfigure toilet rooms on each floor for accessibility; provide new toilet partitions and toilet accessories including grab bars. Provide unisex accessible toilets on each floor for faculty/staff and in the nurse office.
- Replace interior room doors in existing frames
- Replace exit stairwell doors
- Replace exit stair handrails with code compliant configurations
- Replace/install interior signage
- Replace blackboards with marker boards
- Replace 12" acoustical tile ceilings where they occur
- Replace acoustical tile in kitchen
- Replace 9"VAT with 12" VCT
- Replace classroom cabinetry
- Replace exterior window shades
- Replace worn stage drapes
- Replace auditorium seating
- Provide ADA compliant ramps at main/visitor entrance on Fairmount Avenue, one interior and one exterior. Repair treads and landing at front entrance.
- Crack fill north asphalt playground and asphalt parking lot
- Adjust manhole height and concrete sidewalk near parking lot entrance drive on Fairmount Ave.

MECHANICAL

- Replace stained water closets, 18
- Replace stained and cracked urinals, 18
- Replace leaky or inoperative faucets, 10
- Install accessible fountains with integral chillers on each floor, 3 pairs
- Inspect and repair domestic water distribution pipe, 50,000 s.f.
- Install 4 inch backflow preventer
- Replace domestic water heater due to age
- Perform detailed inspection of sanitary drain pipes and repair or replace where needed
- Replace failing boilers, 2
- Install cooling system for entire building, 250 tons
- Replace original gym HVAC, 4500 s.f.
- Replace original auditorium HVAC, 586 seats
- Replace roof top exhaust fans due to toilet room odors, 4
- Replace original unit vents, 47
- Inspect and repair steam and condensate pipes due to age, 100,000 s.f.
- Survey and repair steam traps, 100,000 s.f.
- Replace convection units due to age, 600 l.f.
- Replace pneumatic controls with DDC, 100,00 s.f.

ELECTRICAL

- Provide a new electrical service 480V/277V, 3 phase power, approximate 1600 Amperes.
- Replace original surface mounted panelboards and their associated wiring/conduits. Approximate (15) 208/120V panel boards.
- Provide (2)25FT of surface raceways with 24" receptacles on center and two-duplex wall mount receptacles. Approximate 346
- Replace 40% of the existing lighting fluorescent fixtures with fluorescent fixtures with T8 lamps. Approximate 500 fixtures.
- Provide indoor surveillance CCTV cameras for a complete coverage of the school interior. Approximate 16 CCTV cameras
- Provide 100 KW, outdoor, diesel powered generator.
- Prepare a study to determine if the air terminals on the chimney provide the proper protection to the school building.

- Provide the auditorium with theatrical lighting and dimming system.
- Provide the auditorium with a permanent installed sound system.
- Provide outdoor surveillance CCTV cameras. Approximate 10 CCTV cameras

Site Assessment Report - S136001;McMichael

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 4 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S136001		

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.

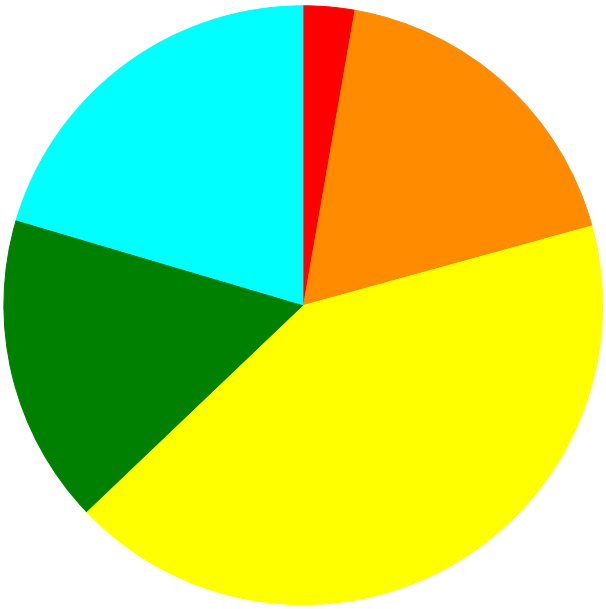
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	48.00 %	2.15 %	$56,207.07
A20 - Basement Construction	48.00 %	0.00 %	$0.00
B10 - Superstructure	48.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	67.75 %	76.26 %	$4,298,825.81
B30 - Roofing	34.89 %	0.00 %	$0.00
C10 - Interior Construction	63.40 %	51.78 %	$1,270,568.30
C20 - Stairs	48.00 %	143.46 %	$202,275.17
C30 - Interior Finishes	73.23 %	26.94 %	$1,329,860.78
D10 - Conveying	71.43 %	0.00 %	$0.00
D20 - Plumbing	79.09 %	48.21 %	$984,410.45
D30 - HVAC	100.58 %	77.75 %	$8,648,359.38
D40 - Fire Protection	92.47 %	0.00 %	$0.00
D50 - Electrical	99.79 %	30.98 %	$1,821,167.08
E10 - Equipment	71.85 %	18.44 %	$293,594.70
E20 - Furnishings	105.00 %	461.97 %	$984,005.48
G20 - Site Improvements	91.86 %	7.89 %	$90,848.86
G40 - Site Electrical Utilities	50.00 %	41.48 %	$184,377.46
Totals:	**73.86 %**	**38.84 %**	**$20,164,500.54**

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)
B136001;McMichael	100,000	39.53	$530,386.09	$3,556,488.49	$8,316,141.19	$3,367,649.96	$4,118,608.49
G136001;Grounds	76,500	17.24	$23,383.64	$67,465.22	$184,377.46	$0.00	$0.00
Total:		**38.84**	**$553,769.73**	**$3,623,953.71**	**$8,500,518.65**	**$3,367,649.96**	**$4,118,608.49**

Deficiencies By Priority



Budget Estimate Total: $20,164,500.54

Executive Summary

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

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

Function:	Elementary School
Gross Area (SF):	100,000
Year Built:	1963
Last Renovation:	
Replacement Value:	$50,320,449
Repair Cost:	$19,889,274.22
Total FCI:	39.53 %
Total RSLI:	73.66 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B136001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S136001		

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	48.00 %	2.15 %	$56,207.07
A20 - Basement Construction	48.00 %	0.00 %	$0.00
B10 - Superstructure	48.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	67.75 %	76.26 %	$4,298,825.81
B30 - Roofing	34.89 %	0.00 %	$0.00
C10 - Interior Construction	63.40 %	51.78 %	$1,270,568.30
C20 - Stairs	48.00 %	143.46 %	$202,275.17
C30 - Interior Finishes	73.23 %	26.94 %	$1,329,860.78
D10 - Conveying	71.43 %	0.00 %	$0.00
D20 - Plumbing	79.09 %	48.21 %	$984,410.45
D30 - HVAC	100.58 %	77.75 %	$8,648,359.38
D40 - Fire Protection	92.47 %	0.00 %	$0.00
D50 - Electrical	99.79 %	30.98 %	$1,821,167.08
E10 - Equipment	71.85 %	18.44 %	$293,594.70
E20 - Furnishings	105.00 %	461.97 %	$984,005.48
Totals:	**73.66 %**	**39.53 %**	**$19,889,274.22**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$1,840,000
A1030	Slab on Grade	$7.73	S.F.	100,000	100	1963	2063	2063	48.00 %	7.27 %	48		$56,207.07	$773,000
A2010	Basement Excavation	$6.55	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$655,000
A2020	Basement Walls	$12.70	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$1,270,000
B1010	Floor Construction	$75.10	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$7,510,000
B1020	Roof Construction	$13.88	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$1,388,000
B2010	Exterior Walls	$36.91	S.F.	100,000	100	1963	2063	2063	48.00 %	0.17 %	48		$6,102.45	$3,691,000
B2020	Exterior Windows	$18.01	S.F.	100,000	40	1963	2003	2057	105.00 %	225.77 %	42		$4,066,033.11	$1,801,000
B2030	Exterior Doors	$1.45	S.F.	100,000	25	1963	1988	2042	108.00 %	156.34 %	27		$226,690.25	$145,000
B3010105	Built-Up	$37.76	S.F.	50,389	20	2002	2022	2022	35.00 %	0.00 %	7			$1,902,689
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	100,000	20				0.00 %	0.00 %				$6,000
C1010	Partitions	$17.91	S.F.	100,000	100	1963	2063	2063	48.00 %	15.71 %	48		$281,303.89	$1,791,000
C1020	Interior Doors	$3.51	S.F.	100,000	40	1963	2003	2057	105.00 %	217.82 %	42		$764,542.50	$351,000
C1030	Fittings	$3.12	S.F.	100,000	40	1963	2003	2057	105.00 %	72.03 %	42		$224,721.91	$312,000
C2010	Stair Construction	$1.41	S.F.	100,000	100	1963	2063	2063	48.00 %	143.46 %	48		$202,275.17	$141,000

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System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$19.07	S.F.	100,000	10	2010	2020	2020	50.00 %	0.00 %	5			$1,907,000
C3010231	Vinyl Wall Covering	$0.00	S.F.	100,000	15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$0.58	S.F.	100,000	100	1963	2063	2063	48.00 %	0.00 %	48			$58,000
C3020411	Carpet	$7.30	S.F.	3,000	10	2013	2023	2023	80.00 %	0.00 %	8			$21,900
C3020412	Terrazzo & Tile	$75.52	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$9.68	S.F.	87,000	20	1963	1983	2037	110.00 %	108.06 %	22		$910,000.08	$842,160
C3020414	Wood Flooring	$22.27	S.F.		25				0.00 %	0.00 %				$0
C3020415	Concrete Floor Finishes	$0.97	S.F.	10,000	10	2010	2020	2027	120.00 %	0.00 %	12			$9,700
C3030	Ceiling Finishes	$20.97	S.F.	100,000	25	2010	2035	2035	80.00 %	20.02 %	20		$419,860.70	$2,097,000
D1010	Elevators and Lifts	$1.53	S.F.	100,000	35	2005	2040	2040	71.43 %	0.00 %	25			$153,000
D2010	Plumbing Fixtures	$13.52	S.F.	100,000	35	1963	1998	2042	77.14 %	18.03 %	27		$243,789.99	$1,352,000
D2020	Domestic Water Distribution	$1.68	S.F.	100,000	25	1963	1988	2042	108.00 %	188.07 %	27		$315,959.78	$168,000
D2030	Sanitary Waste	$2.90	S.F.	100,000	25	1963	1988	2042	108.00 %	146.43 %	27		$424,660.68	$290,000
D2040	Rain Water Drainage	$2.32	S.F.	100,000	30	1963	1993	2025	33.33 %	0.00 %	10			$232,000
D3020	Heat Generating Systems	$18.67	S.F.	100,000	35	2002	2037		62.86 %	54.22 %	22		$1,012,205.26	$1,867,000
D3030	Cooling Generating Systems	$24.48	S.F.	100,000	30			2047	106.67 %	49.20 %	32		$1,204,454.53	$2,448,000
D3040	Distribution Systems	$42.99	S.F.	100,000	25	1963	1988	2042	108.00 %	107.95 %	27		$4,640,559.07	$4,299,000
D3050	Terminal & Package Units	$11.60	S.F.	100,000	20	1963	1983	2037	110.00 %	0.00 %	22			$1,160,000
D3060	Controls & Instrumentation	$13.50	S.F.	100,000	20	1963	1983	2037	110.00 %	132.68 %	22		$1,791,140.52	$1,350,000
D4010	Sprinklers	$7.05	S.F.	100,000	35			2052	105.71 %	0.00 %	37			$705,000
D4020	Standpipes	$1.01	S.F.	100,000	35				0.00 %	0.00 %				$101,000
D5010	Electrical Service/Distribution	$9.70	S.F.	100,000	30	1963	1993	2047	106.67 %	96.20 %	32		$933,115.17	$970,000
D5020	Lighting and Branch Wiring	$34.68	S.F.	100,000	20	1963	1983	2037	110.00 %	16.09 %	22		$557,914.83	$3,468,000
D5030	Communications and Security	$12.99	S.F.	100,000	15	2010	2025		66.67 %	6.95 %	10		$90,317.16	$1,299,000
D5090	Other Electrical Systems	$1.41	S.F.	100,000	30	1963	1993	2047	106.67 %	170.09 %	32		$239,819.92	$141,000
E1020	Institutional Equipment	$4.82	S.F.	100,000	35	1963	1998	2052	105.71 %	60.91 %	37		$293,594.70	$482,000
E1090	Other Equipment	$11.10	S.F.	100,000	35	2000	2035	2035	57.14 %	0.00 %	20			$1,110,000
E2010	Fixed Furnishings	$2.13	S.F.	100,000	40	1963	2003	2057	105.00 %	461.97 %	42		$984,005.48	$213,000
								Total	**73.66 %**	**39.53 %**			**$19,889,274.22**	**$50,320,449**

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:
Paint 97%
Wall tile 3% (glazed block with 100 year life)

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

Note:
Carpet3%
Vinyl 87%
Concrete 10%

System: C3030 - Ceiling Finishes — This system contains no images

Note:
Painted structure 65%
Suspended acoustical tile 20%
12" acoustical tile 8%
Unpainted 7%

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:	**$19,889,274**	**$0**	**$0**	**$0**	**$0**	**$2,431,809**	**$0**	**$2,574,074**	**$30,516**	**$0**	**$2,263,290**	**$27,188,964**
*** 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	$56,207	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$56,207**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$6,102	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$6,102**
B2020 - Exterior Windows	$4,066,033	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,066,033**
B2030 - Exterior Doors	$226,690	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$226,690**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$0	$0	$0	$0	$0	$0	$0	$2,574,074	$0	$0	$0	**$2,574,074**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$281,304	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$281,304**

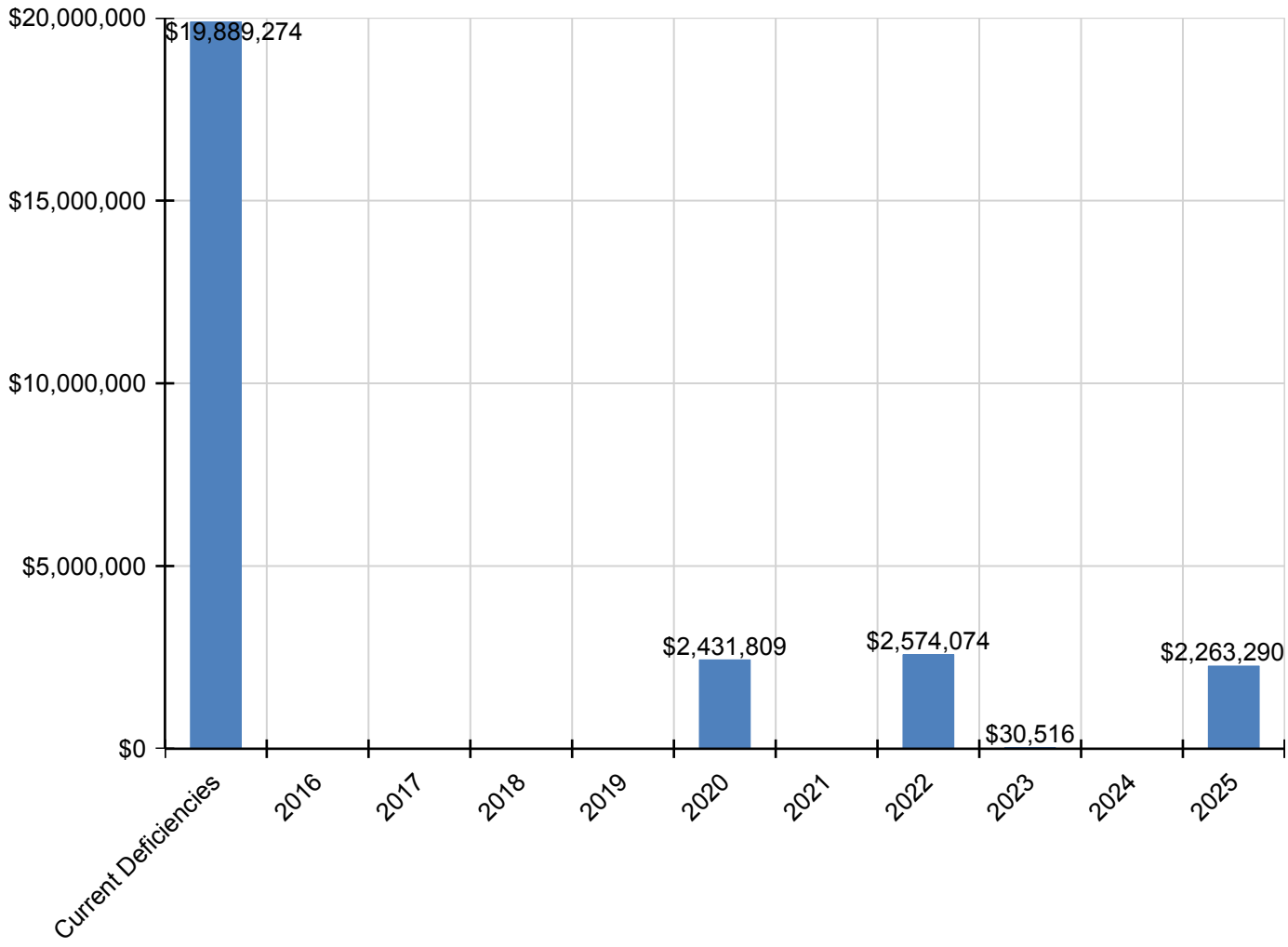
C1020 - Interior Doors	$764,543	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$764,543**
C1030 - Fittings	$224,722	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$224,722**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$202,275	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$202,275**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$2,431,809	$0	$0	$0	$0	$0	**$2,431,809**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$30,516	$0	$0	**$30,516**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$910,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$910,000**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$419,861	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$419,861**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$243,790	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$243,790**
D2020 - Domestic Water Distribution	$315,960	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$315,960**
D2030 - Sanitary Waste	$424,661	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$424,661**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$342,967	**$342,967**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$1,012,205	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,205**
D3030 - Cooling Generating Systems	$1,204,455	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,204,455**
D3040 - Distribution Systems	$4,640,559	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,640,559**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,791,141	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,791,141**
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	$933,115	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$933,115**
D5020 - Lighting and Branch Wiring	$557,915	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$557,915**
D5030 - Communications and Security	$90,317	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,920,322	**$2,010,639**
D5090 - Other Electrical Systems	$239,820	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$239,820**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$293,595	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$293,595**
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	$984,005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$984,005**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

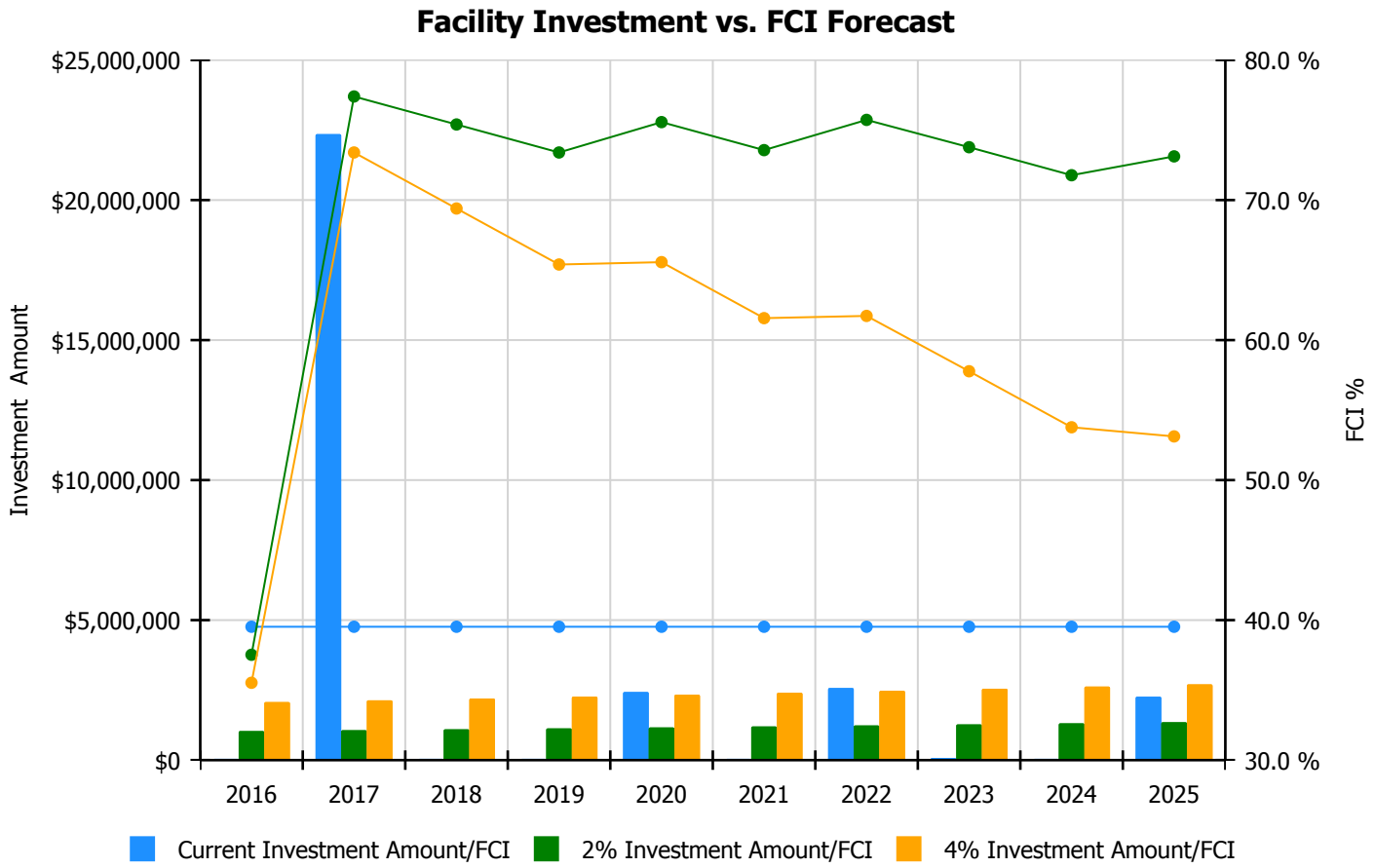
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

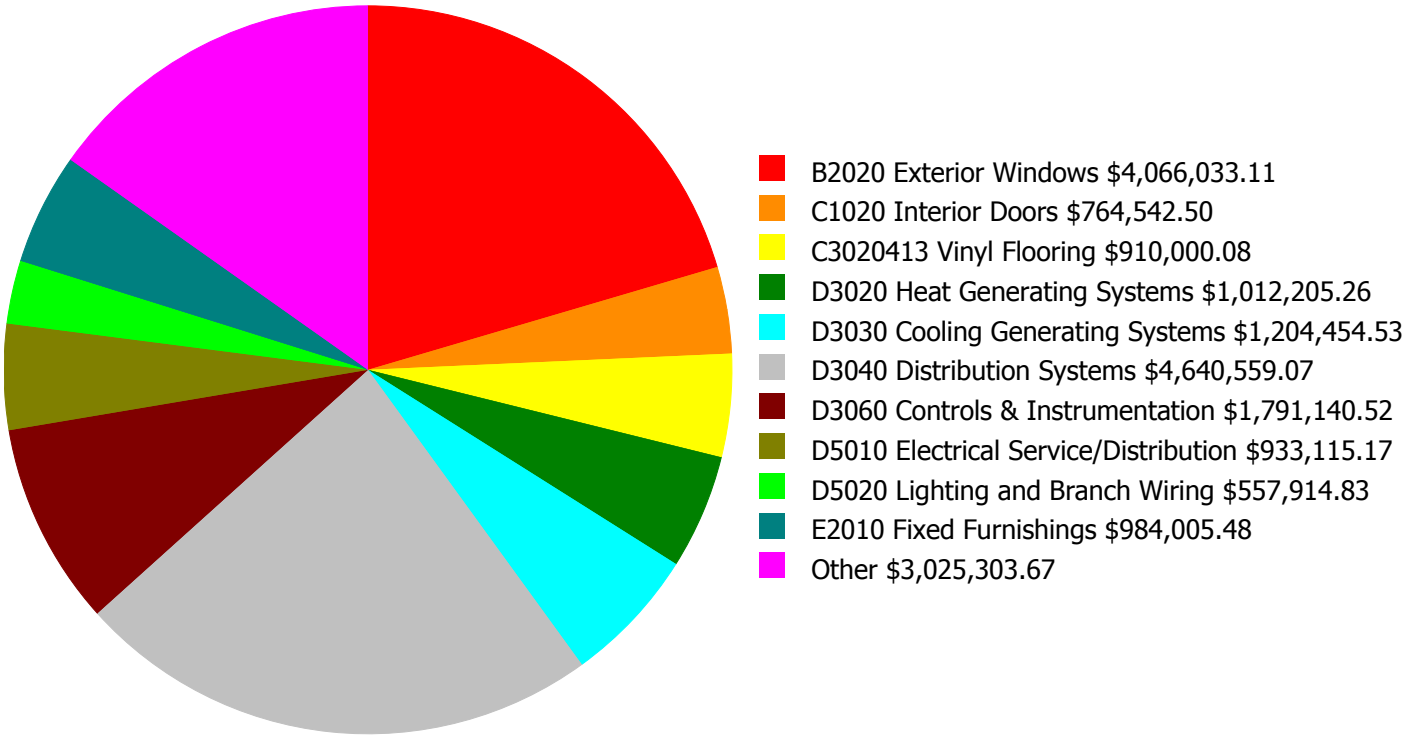
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 39.53%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,036,601.00	37.53 %	$2,073,202.00	35.53 %
2017	$22,353,530	$1,067,699.00	77.40 %	$2,135,399.00	73.40 %
2018	$0	$1,099,730.00	75.40 %	$2,199,461.00	69.40 %
2019	$0	$1,132,722.00	73.40 %	$2,265,444.00	65.40 %
2020	$2,431,809	$1,166,704.00	75.57 %	$2,333,408.00	65.57 %
2021	$0	$1,201,705.00	73.57 %	$2,403,410.00	61.57 %
2022	$2,574,074	$1,237,756.00	75.73 %	$2,475,512.00	61.73 %
2023	$30,516	$1,274,889.00	73.77 %	$2,549,778.00	57.77 %
2024	$0	$1,313,135.00	71.77 %	$2,626,271.00	53.77 %
2025	$2,263,290	$1,352,530.00	73.12 %	$2,705,059.00	53.12 %
Total:	**$29,653,220**	**$11,883,471.00**		**$23,766,944.00**	

Deficiency Summary by System

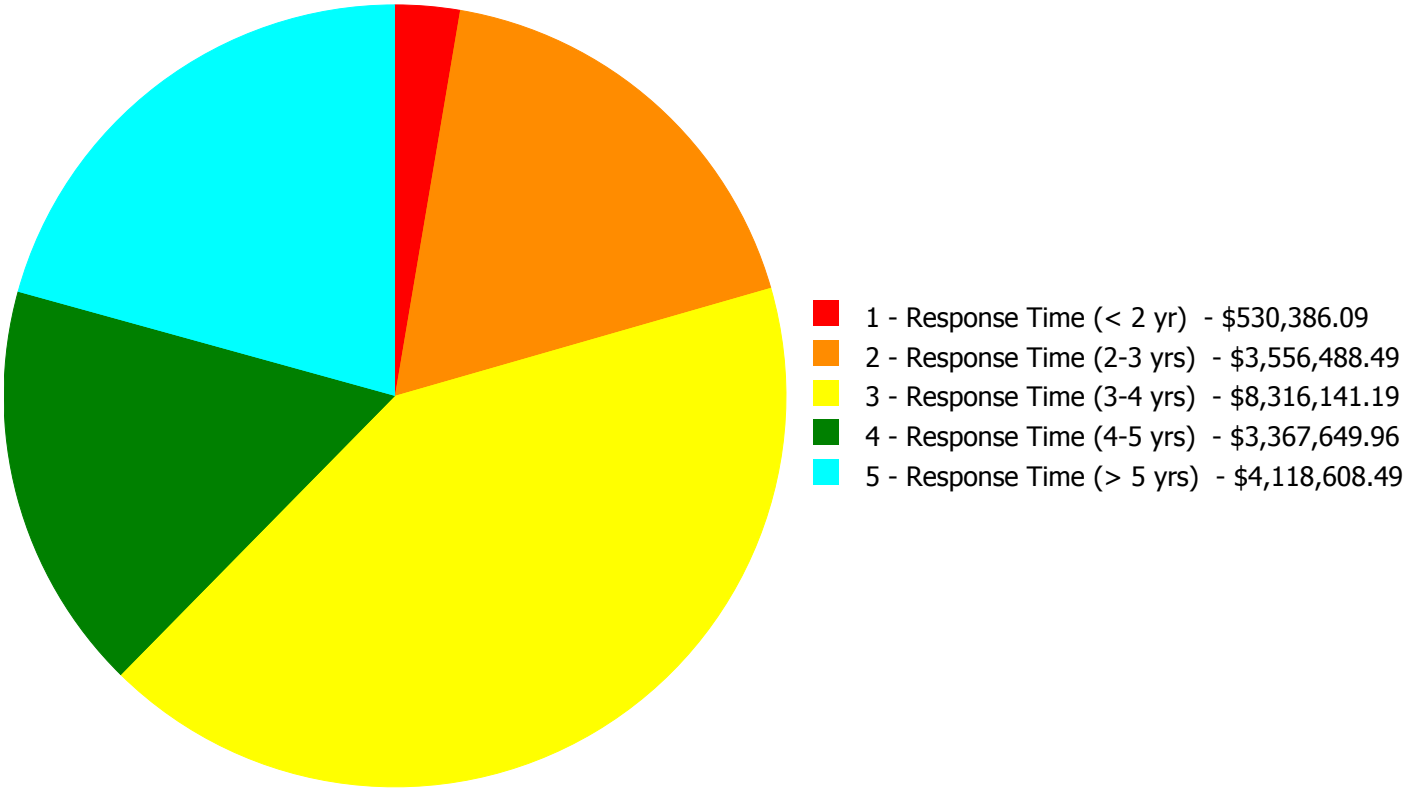
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $19,889,274.22

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: $19,889,274.22

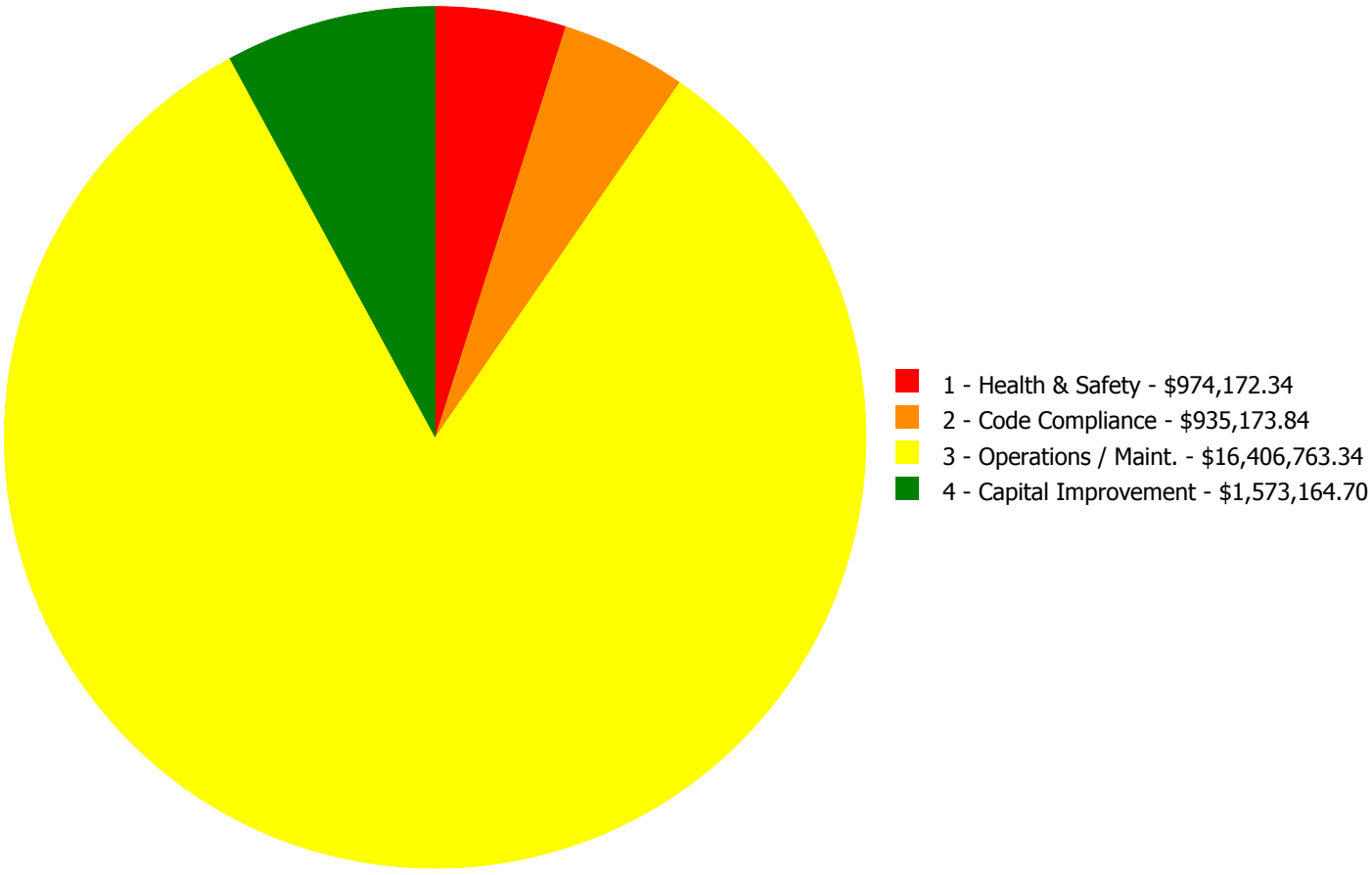
Deficiency By Priority Investment Table

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
A1030	Slab on Grade	$0.00	$0.00	$56,207.07	$0.00	$0.00	$56,207.07
B2010	Exterior Walls	$0.00	$6,102.45	$0.00	$0.00	$0.00	$6,102.45
B2020	Exterior Windows	$0.00	$0.00	$4,066,033.11	$0.00	$0.00	$4,066,033.11
B2030	Exterior Doors	$0.00	$226,690.25	$0.00	$0.00	$0.00	$226,690.25
C1010	Partitions	$0.00	$281,303.89	$0.00	$0.00	$0.00	$281,303.89
C1020	Interior Doors	$0.00	$764,542.50	$0.00	$0.00	$0.00	$764,542.50
C1030	Fittings	$0.00	$150,254.58	$0.00	$74,467.33	$0.00	$224,721.91
C2010	Stair Construction	$202,275.17	$0.00	$0.00	$0.00	$0.00	$202,275.17
C3020413	Vinyl Flooring	$0.00	$910,000.08	$0.00	$0.00	$0.00	$910,000.08
C3030	Ceiling Finishes	$0.00	$419,860.70	$0.00	$0.00	$0.00	$419,860.70
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$243,789.99	$0.00	$243,789.99
D2020	Domestic Water Distribution	$0.00	$19,182.58	$0.00	$296,777.20	$0.00	$315,959.78
D2030	Sanitary Waste	$0.00	$0.00	$424,660.68	$0.00	$0.00	$424,660.68
D3020	Heat Generating Systems	$0.00	$0.00	$1,012,205.26	$0.00	$0.00	$1,012,205.26
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,204,454.53	$1,204,454.53
D3040	Distribution Systems	$328,110.92	$224,781.48	$1,173,512.71	$0.00	$2,914,153.96	$4,640,559.07
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,791,140.52	$0.00	$1,791,140.52
D5010	Electrical Service/Distribution	$0.00	$0.00	$933,115.17	$0.00	$0.00	$933,115.17
D5020	Lighting and Branch Wiring	$0.00	$0.00	$126,995.17	$430,919.66	$0.00	$557,914.83
D5030	Communications and Security	$0.00	$0.00	$0.00	$90,317.16	$0.00	$90,317.16
D5090	Other Electrical Systems	$0.00	$0.00	$239,819.92	$0.00	$0.00	$239,819.92
E1020	Institutional Equipment	$0.00	$0.00	$0.00	$293,594.70	$0.00	$293,594.70
E2010	Fixed Furnishings	$0.00	$553,769.98	$283,592.10	$146,643.40	$0.00	$984,005.48
	Total:	$530,386.09	$3,556,488.49	$8,316,141.19	$3,367,649.96	$4,118,608.49	$19,889,274.22

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: $19,889,274.22

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: C2010 - Stair Construction

Location: Exit stairwells

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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: $202,275.17

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace exit stairwell handrails and barrier rails with code compliant assemblies.

System: D3040 - Distribution Systems

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Conduct a steam trap survey and replace failed units.

Qty: 100,000.00

Unit of Measure: S.F.

Estimate: $328,110.92

Assessor Name: System

Date Created: 02/09/2016

Notes: Survey and repair steam traps, 100,000 s.f.

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

System: B2010 - Exterior Walls

Location: Roofs to low roofs
Distress: OSHA
Category: 2 - Code Compliance
Priority: 2 - Response Time (2-3 yrs)
Correction: Add fixed ladders to wall
Qty: 22.00
Unit of Measure: V.L.F.
Estimate: $6,102.45
Assessor Name: System
Date Created: 02/26/2016

Notes: Provide fixed ladders at exterior walls to provide safe access from high roofs to low roofs for inspection and maintenance.

System: B2030 - Exterior Doors

Location: Exterior doors
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace exterior doors - per leaf
Qty: 28.00
Unit of Measure: Ea.
Estimate: $226,690.25
Assessor Name: System
Date Created: 02/26/2016

Notes: Replace expired exterior doors.

System: C1010 - Partitions

Location: TBD and nurse office

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Build new single restroom to meet code requirements

Qty: 4.00

Unit of Measure: Ea.

Estimate: $281,303.89

Assessor Name: System

Date Created: 02/26/2016

Notes: Provide unisex accessible toilet rooms, 1 per floor and 1 for the nurse's office. Current configurations do not have proper clearances and fittings.

System: C1020 - Interior Doors

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 175.00

Unit of Measure: Ea.

Estimate: $616,022.92

Assessor Name: System

Date Created: 02/26/2016

Notes: Interior doors are typically beyond their expected useful life, and are in only fair condition with damage to veneer surfaces. Hardware is not compliant with accessibility codes. Retrofit to install in existing frames.

System: C1020 - Interior Doors

Location: Exit stairwells

Distress: Beyond Service Life

Category: 2 - Code Compliance

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

Correction: Remove and replace hollow metal frames and doors

Qty: 27.00

Unit of Measure: Ea.

Estimate: $148,519.58

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace exit stairwell doors that are beyond their service life with code compliant assemblies.

System: C1030 - Fittings

Location: Student toilet rooms

Distress: Beyond Service Life

Category: 2 - Code Compliance

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

Correction: Remove and replace toilet partitions

Qty: 40.00

Unit of Measure: Ea.

Estimate: $109,617.71

Assessor Name: System

Date Created: 02/26/2016

Notes: Toilet rooms are not accessible per current codes. Toilet partitions are typically in only fair condition. In many cases, newer doors are installed with old divider partitions that are rusted. Replace toilet partitions.

System: C1030 - Fittings

Location: Throughout the building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

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

Qty: 150.00

Unit of Measure: Ea.

Estimate: $40,636.87

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace/install code compliant interior signage

System: C3020413 - Vinyl Flooring

Location: Throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 60,000.00

Unit of Measure: S.F.

Estimate: $910,000.08

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace 9" VAT with 12" VCT throughout the building.

System: C3030 - Ceiling Finishes

Location: Auditorium, office, cafeteria, lobby

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace glued on or mechanically attached acoustical ceiling tiles

Qty: 32,000.00

Unit of Measure: S.F.

Estimate: $399,321.79

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace 12” acoustical tile ceilings where they occur. Ceilings are beyond their expected useful life, have missing tile, stains, etc.

System: C3030 - Ceiling Finishes

Location: Kitchen

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 1,200.00

Unit of Measure: S.F.

Estimate: $20,538.91

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace acoustical tile ceiling system in kitchen. Tile are stained. Grid is yellowed with age.

System: D2020 - Domestic Water Distribution

Location: Basement

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Provide 4" reduced pressure back flow preventer

Qty: 1.00

Unit of Measure: Ea.

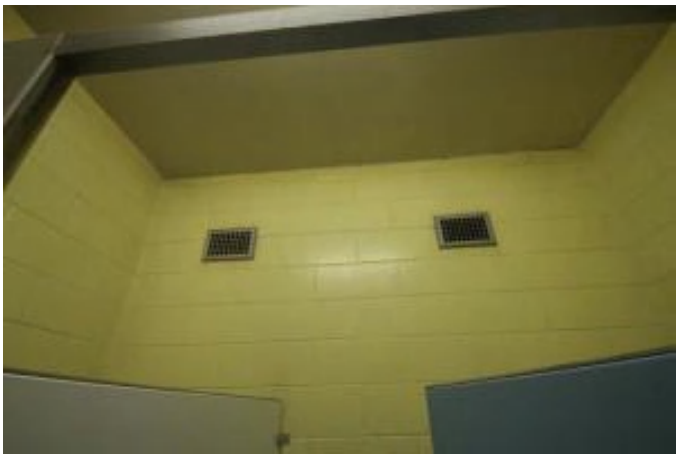
Estimate: $19,182.58

Assessor Name: System

Date Created: 02/09/2016

Notes: Install 4 inch backflow preventer.

System: D3040 - Distribution Systems



Location: Rooftop

Distress: Not Reliable

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (36" dia.)

Qty: 4.00

Unit of Measure: Ea.

Estimate: $224,781.48

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace roof top exhaust fans due to toilet room odors, 4

System: E2010 - Fixed Furnishings

Location: Auditrorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 614.00

Unit of Measure: Ea.

Estimate: $553,769.98

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace auditorium seating. Existing seating is difficult to find replacement parts for. Seating will need to be removed to replace flooring. Replacement of seating in same project with flooring replacement is recommended.

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

System: A1030 - Slab on Grade

Location: Front entry

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Install interior handicap ramp - per LF 5' wide - insert the LF in the quantity

Qty: 28.00

Unit of Measure: L.F.

Estimate: $56,207.07

Assessor Name: System

Date Created: 02/25/2016

Notes: Provide ramp at building interior front entry for accessibility.

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: 652.00

Unit of Measure: Ea.

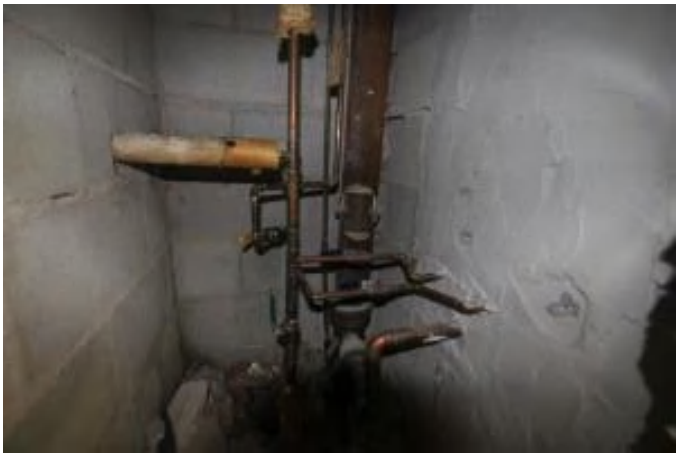
Estimate: $4,066,033.11

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace exterior windows that are energy inefficient and in poor condition, primarily due to age.

System: D2030 - Sanitary Waste



Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Inspect sanitary waste piping and replace damaged sections. (+100KSF)

Qty: 100,000.00

Unit of Measure: S.F.

Estimate: $424,660.68

Assessor Name: System

Date Created: 02/09/2016

Notes: Perform detailed inspection of sanitary drain pipes and repair or replace where needed

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace boiler, cast iron sectional (150 HP)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $1,012,205.26

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace failing boilers

System: D3040 - Distribution Systems

Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Perform testing to identify and replace damaged steam and condensate piping.

Qty: 100,000.00

Unit of Measure: S.F.

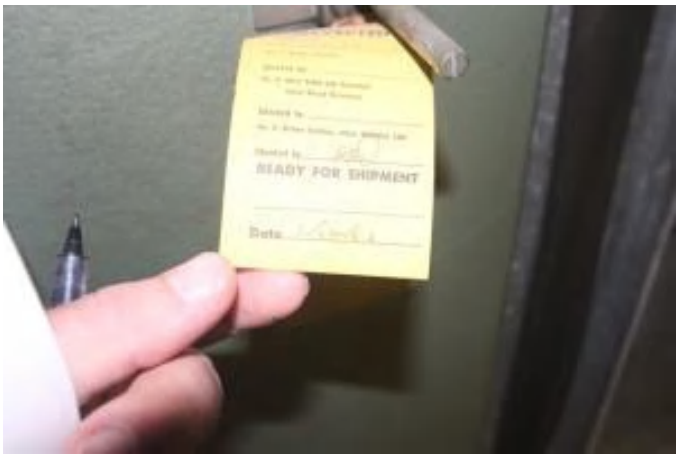
Estimate: $946,037.34

Assessor Name: System

Date Created: 02/09/2016

Notes: Inspect and repair steam and condensate pipes due to age, 100,000 s.f.

System: D3040 - Distribution Systems



Location: Gym

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace HVAC unit for Gymnasium (single station)

Qty: 6,000.00

Unit of Measure: S.F.

Estimate: $227,475.37

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace original gym HVAC

System: D5010 - Electrical Service/Distribution

Location: Basement

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Switchboard

Qty: 1.00

Unit of Measure: Ea.

Estimate: $526,691.26

Assessor Name: System

Date Created: 01/20/2016

Notes: Provide a new electrical service 480V/277V, 3 phase power, approximate 1600 Amperes.

System: D5010 - Electrical Service/Distribution

Location: Entire Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $406,423.91

Assessor Name: System

Date Created: 01/20/2016

Notes: Replace original surface mounted panelboards and their associated wiring/conduits. Approximate (15) 208/120V panel boards.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add wiring device

Qty: 346.00

Unit of Measure: Ea.

Estimate: $126,995.17

Assessor Name: System

Date Created: 01/20/2016

Notes: Provide (2)25FT of surface raceways with 24” receptacles on center and two-duplex wall mount receptacles. Approximate 346

System: D5090 - Other Electrical Systems

Location: Outdoor

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Standby Generator System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $215,570.10

Assessor Name: System

Date Created: 01/20/2016

Notes: Provide 100 KW, outdoor, diesel powered generator

System: D5090 - Other Electrical Systems

Location: Roof

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Repair Lightning Protection System

Qty: 1.00

Unit of Measure: Job

Estimate: $24,249.82

Assessor Name: System

Date Created: 01/20/2016

Notes: Prepare a study to determine if the air terminals on the chimney provide the proper protection to the school building.

System: E2010 - Fixed Furnishings

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace casework - per LF - insert quantities for cabinets in the estimate

Qty: 200.00

Unit of Measure: L.F.

Estimate: $201,181.44

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace classroom cabinetry.

System: E2010 - Fixed Furnishings

Location: Stage

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 4.00

Unit of Measure: Ea.

Estimate: $82,410.66

Assessor Name: System

Date Created: 02/25/2016

Notes: Replace worn stage curtains.

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

System: C1030 - Fittings

Location: Classrooms

Distress: Obsolete

Category: 3 - Operations / Maint.

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

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

Qty: 60.00

Unit of Measure: Ea.

Estimate: $74,467.33

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace chalkboards with marker boards.

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace water closet - quantify additional units

Qty: 18.00

Unit of Measure: Ea.

Estimate: $134,318.66

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace stained water closets

System: D2010 - Plumbing Fixtures

Location: Toilet rooms

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 18.00

Unit of Measure: Ea.

Estimate: $59,743.50

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace stained urinals

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Remove and replace water fountains to meet ADA - includes high and low fountains and new recessed alcove

Qty: 3.00

Unit of Measure: Ea.

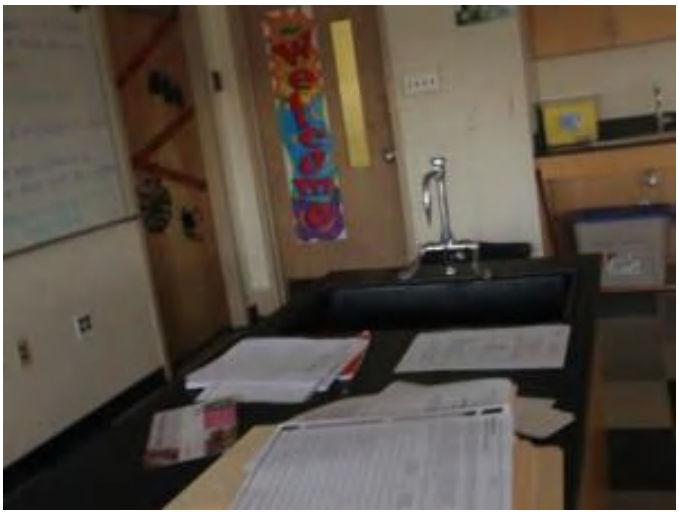
Estimate: $47,078.70

Assessor Name: System

Date Created: 02/09/2016

Notes: Install accessible fountains with integral chillers on each floor

System: D2010 - Plumbing Fixtures



Location: Toilet rooms, et al.
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace lavatory faucet
Qty: 10.00
Unit of Measure: Ea.
Estimate: $2,649.13
Assessor Name: System
Date Created: 02/09/2016

Notes: Replace failing faucets

System: D2020 - Domestic Water Distribution

Location: Entire building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace domestic water piping (75 KSF)
Qty: 50,000.00
Unit of Measure: S.F.
Estimate: $253,368.31
Assessor Name: System
Date Created: 02/09/2016

Notes: Inspect and repair domestic water distribution pipe, 50,000 s.f.

System: D2020 - Domestic Water Distribution

Location: Boiler room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace vertical tank type gas-fired water heater (75 gal)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $43,408.89

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace domestic water heater due to age

System: D3060 - Controls & Instrumentation

Location: Entire building

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace pneumatic controls with DDC (150KSF)

Qty: 100,000.00

Unit of Measure: S.F.

Estimate: $1,791,140.52

Assessor Name: System

Date Created: 02/09/2016

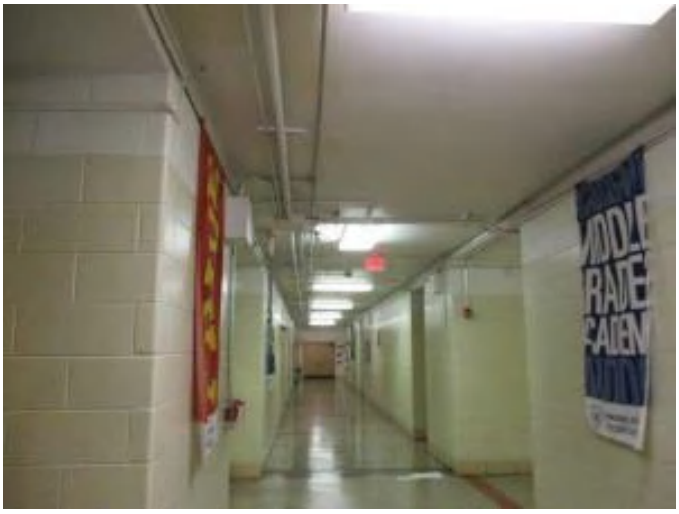
Notes: Replace pneumatic controls with DDC, 100,00 s.f.

System: D5020 - Lighting and Branch Wiring

Location: Entire Building
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add Lighting Fixtures
Qty: 500.00
Unit of Measure: Ea.
Estimate: $430,919.66
Assessor Name: System
Date Created: 01/20/2016

Notes: Replace 40% of the existing lighting fluorescent fixtures with fluorescent fixtures with T8 lamps. Approximate 500 fixtures.

System: D5030 - Communications and Security



Location: Entire Building
Distress: Security Issue
Category: 1 - Health & Safety
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $64,172.26
Assessor Name: System
Date Created: 01/20/2016

Notes: Provide indoor surveillance CCTV cameras for a complete coverage of the school interior. Approximate 16 CCTV cameras

System: D5030 - Communications and Security

Location: Auditorium
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $26,144.90
Assessor Name: System
Date Created: 01/20/2016

Notes: Provide the auditorium with a permanent installed sound system.

System: E1020 - Institutional Equipment

Location: Auditorium
Distress: Obsolete
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Stage Theatrical Lighting System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $293,594.70
Assessor Name: System
Date Created: 01/20/2016

Notes: Provide the auditorium with theatrical lighting and dimming system

System: E2010 - Fixed Furnishings

Location: Exterior windows

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace or add roller shades

Qty: 9,000.00

Unit of Measure: S.F.

Estimate: $146,643.40

Assessor Name: System

Date Created: 02/26/2016

Notes: Replace exterior window shades

Priority 5 - Response Time (> 5 yrs):

System: D3030 - Cooling Generating Systems

Location: Entire building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 75,000.00

Unit of Measure: S.F.

Estimate: $1,204,454.53

Assessor Name: System

Date Created: 02/09/2016

Notes: Install cooling system for entire building, 250 tons

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace classroom unit ventilator (htg/clg coils, 5 tons, 2,000 CFM)

Qty: 47.00

Unit of Measure: Ea.

Estimate: $2,344,297.62

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace original unit vents

System: D3040 - Distribution Systems

Location: Auditorium

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Install / replace HVAC unit for Auditorium (800 seat).

Qty: 586.00

Unit of Measure: Seat

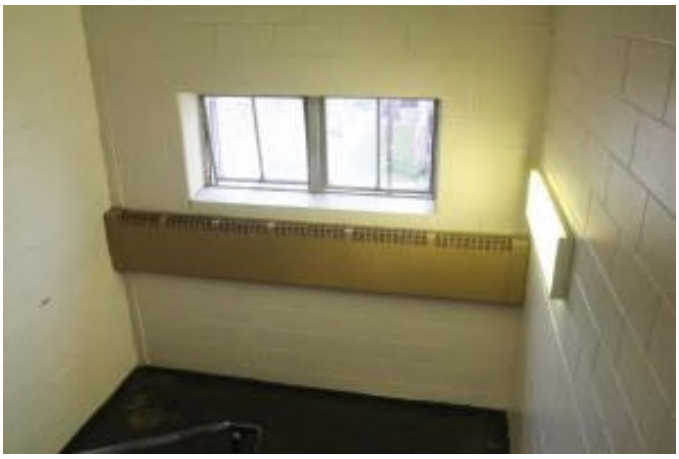
Estimate: $327,731.48

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace original auditorium HVAC

System: D3040 - Distribution Systems



Location: Entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace finned tube radiation terminals (per 100 LF)

Qty: 600.00

Unit of Measure: L.F.

Estimate: $242,124.86

Assessor Name: System

Date Created: 02/09/2016

Notes: Replace convection units due to age, 600 l.f.

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	Electric traction residential elevators, cab type, 2 floor, 3 stop, custom model, max	1.00	Ea.	Elevator machine room at roof					35	2005	2040	$63,562.00	$69,918.20
D3020 Heat Generating Systems	Boiler, packaged scotch marine, fire tube, gross output, #2 oil, 15 PSI steam, 6696 MBH, 200 H.P.	2.00	Ea.	Boiler room	Easco	FST 180 S015	11640		35	2002	2037	$148,561.00	$326,834.20
D3020 Heat Generating Systems	Boiler, packaged scotch marine, fire tube, gross output, #2 oil, 15 PSI steam, 6696 MBH, 200 H.P.	2.00	Ea.	Boiler room	Easco	FST 180 S015	11640		35	2002	2037	$148,561.00	$326,834.20
D5010 Electrical Service/Distribution	Switchboards, no main disconnect, 4 wire, 120/208 V, 800 amp, incl CT compartment, excl CT's or PT's	1.00	Ea.	Basement					30	1963	2047	$7,638.30	$8,402.13
												Total:	**$731,988.73**

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):	76,500
Year Built:	1963
Last Renovation:	
Replacement Value:	$1,596,579
Repair Cost:	$275,226.32
Total FCI:	17.24 %
Total RSLI:	80.21 %

Description:

Attributes:

General Attributes:

Bldg ID:	S136001	Site ID:	S136001

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	91.86 %	7.89 %	$90,848.86
G40 - Site Electrical Utilities	50.00 %	41.48 %	$184,377.46
Totals:	**80.21 %**	**17.24 %**	**$275,226.32**

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.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$8.50	S.F.	25,100	30	2010	2040	2040	83.33 %	31.15 %	25		$66,459.05	$213,350
G2030	Pedestrian Paving	$12.30	S.F.	48,000	40	2013	2053	2053	95.00 %	4.13 %	38		$24,389.81	$590,400
G2040	Site Development	$4.36	S.F.	76,500	25	2013	2038	2038	92.00 %	0.00 %	23			$333,540
G2050	Landscaping & Irrigation	$4.36	S.F.	3,400	15	2013	2028	2028	86.67 %	0.00 %	13			$14,824
G4020	Site Lighting	$4.84	S.F.	76,500	30	2000	2030		50.00 %	0.00 %	15			$370,260
G4030	Site Communications & Security	$0.97	S.F.	76,500	30	2000	2030		50.00 %	248.47 %	15		$184,377.46	$74,205
								Total	**80.21 %**	**17.24 %**			**$275,226.32**	**$1,596,579**

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.

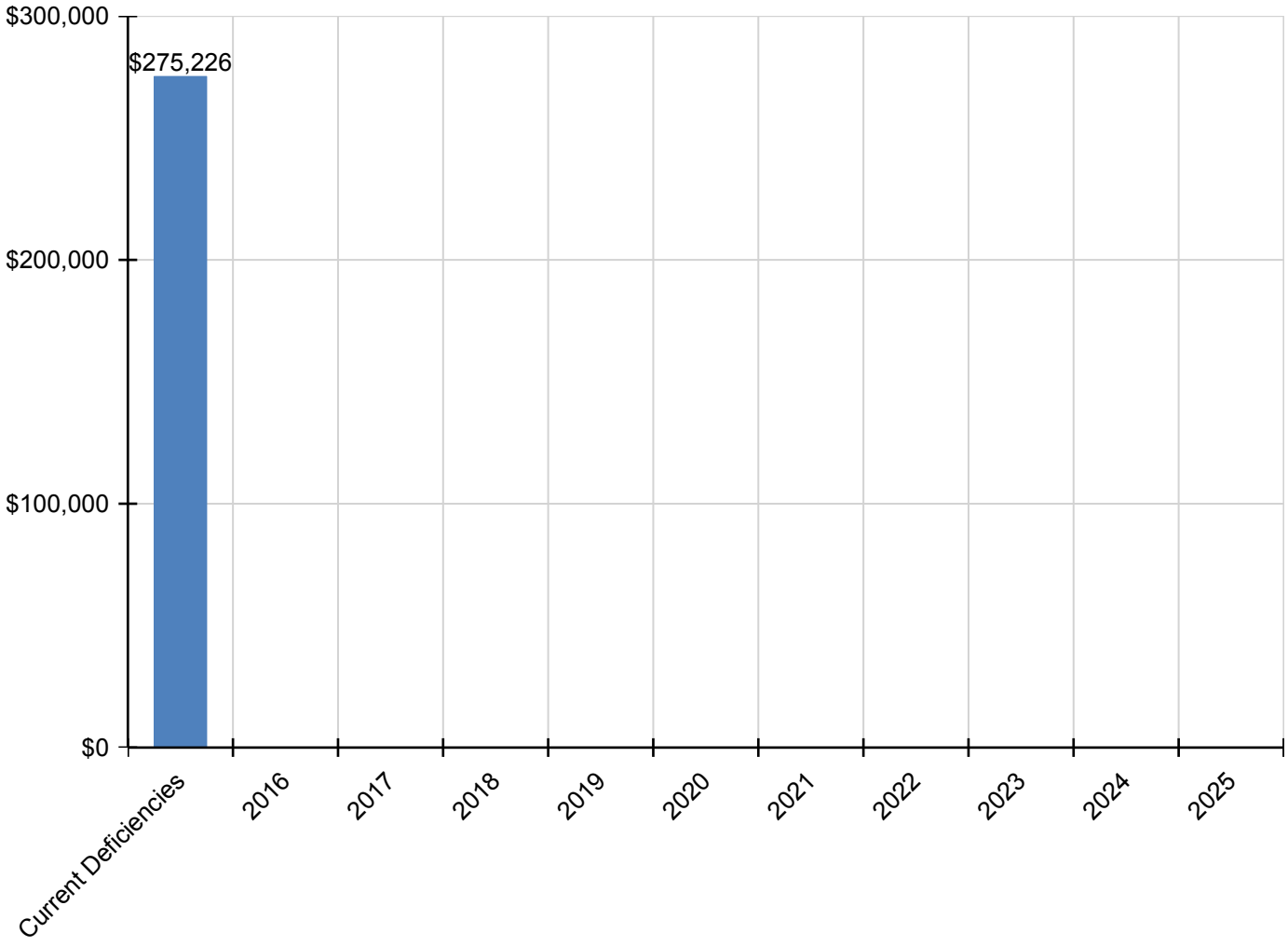
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$275,226**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$275,226**
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	$66,459	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$66,459**
G2030 - Pedestrian Paving	$24,390	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$24,390**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$184,377	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$184,377**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

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

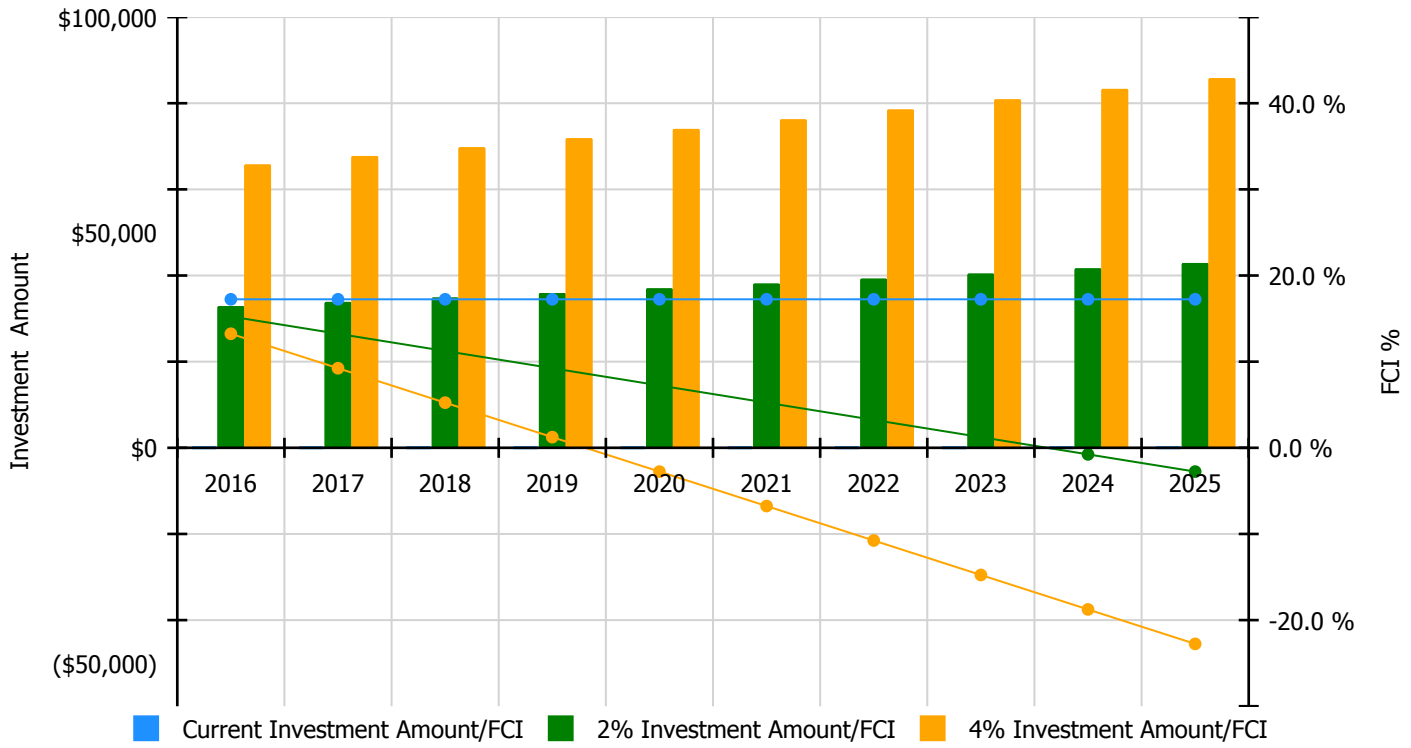


10 Year FCI Forecast by Investment Scenario

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

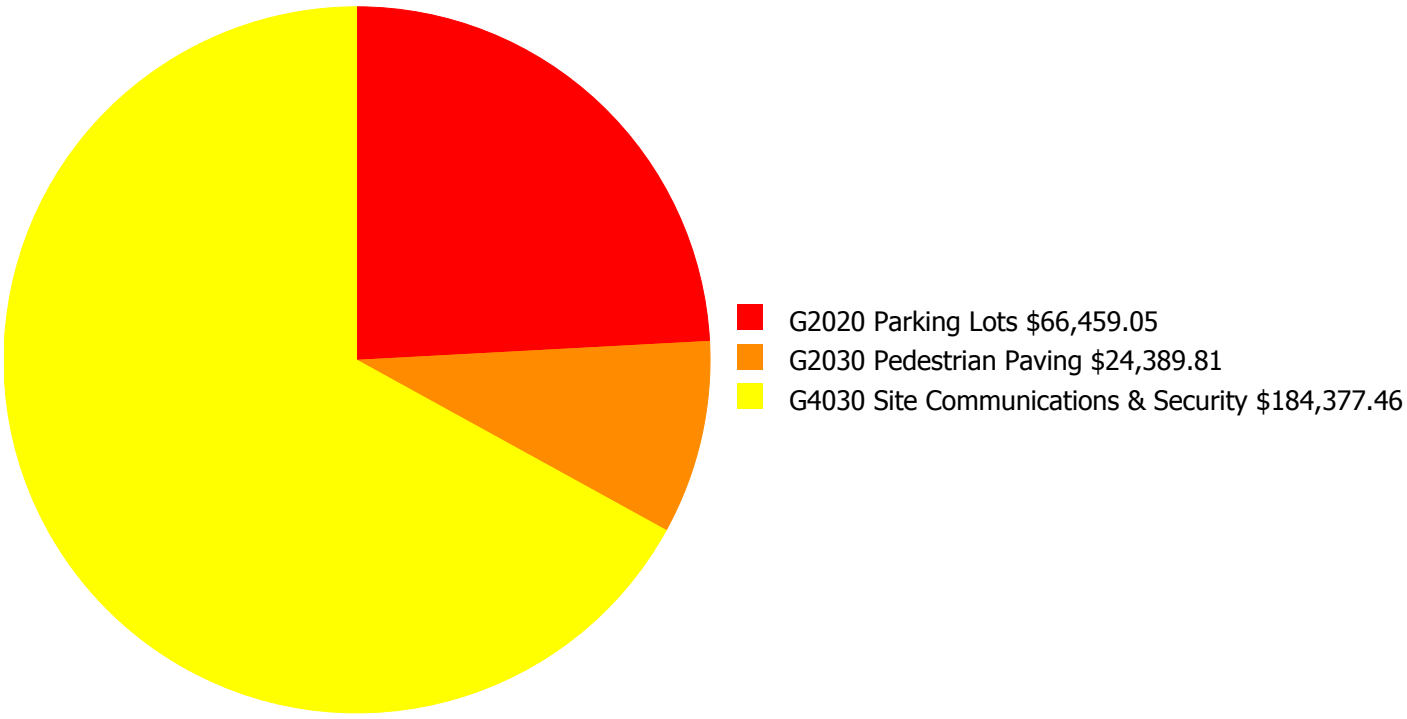
Facility Investment vs. FCI Forecast



Year	Investment Amount Current FCI - 17.24%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$32,890.00	15.24 %	$65,779.00	13.24 %
2017	$0	$33,876.00	13.24 %	$67,752.00	9.24 %
2018	$0	$34,892.00	11.24 %	$69,785.00	5.24 %
2019	$0	$35,939.00	9.24 %	$71,879.00	1.24 %
2020	$0	$37,017.00	7.24 %	$74,035.00	-2.76 %
2021	$0	$38,128.00	5.24 %	$76,256.00	-6.76 %
2022	$0	$39,272.00	3.24 %	$78,544.00	-10.76 %
2023	$0	$40,450.00	1.24 %	$80,900.00	-14.76 %
2024	$0	$41,663.00	-0.76 %	$83,327.00	-18.76 %
2025	$0	$42,913.00	-2.76 %	$85,827.00	-22.76 %
Total:	**$0**	**$377,040.00**		**$754,084.00**	

Deficiency Summary by System

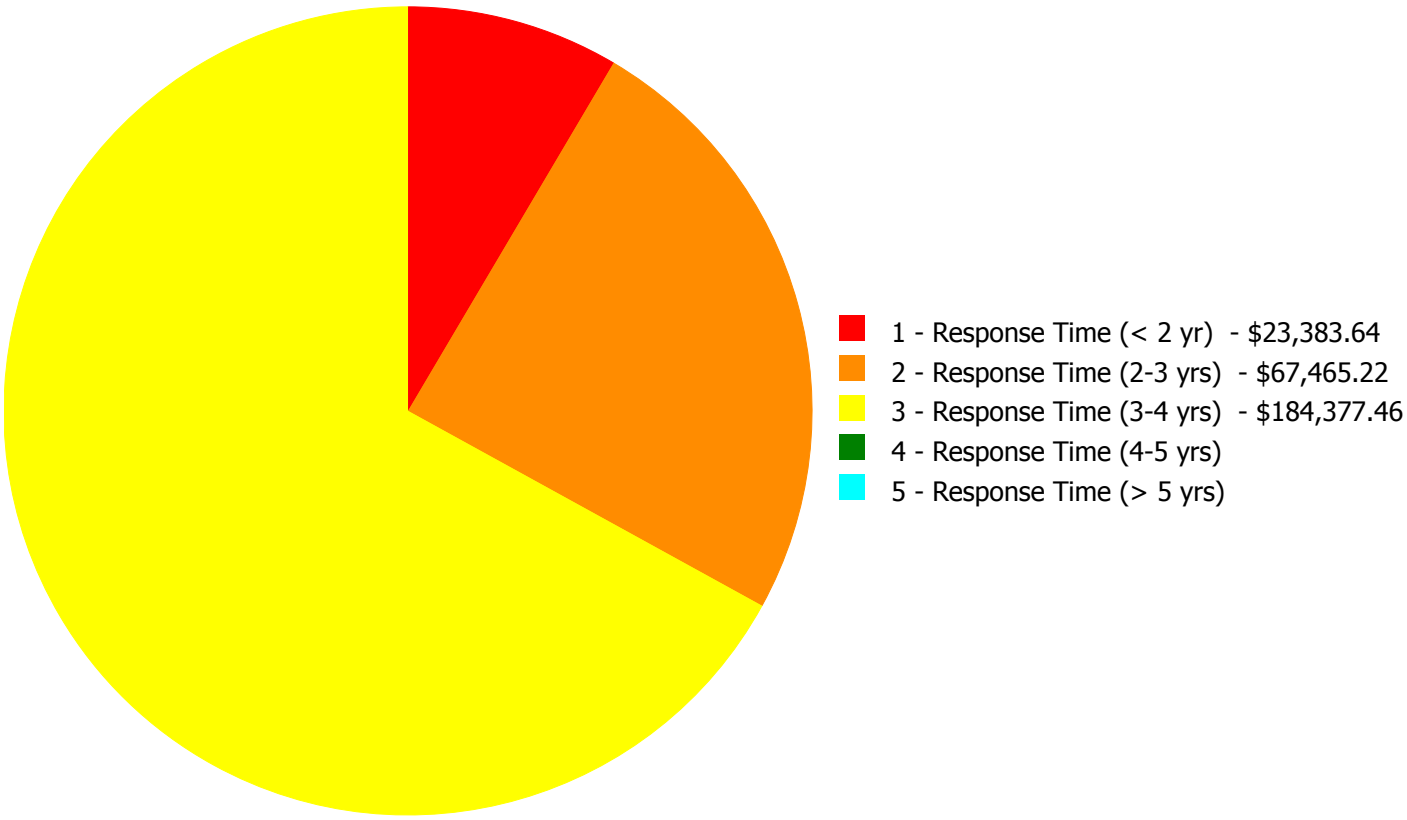
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $275,226.32

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: $275,226.32

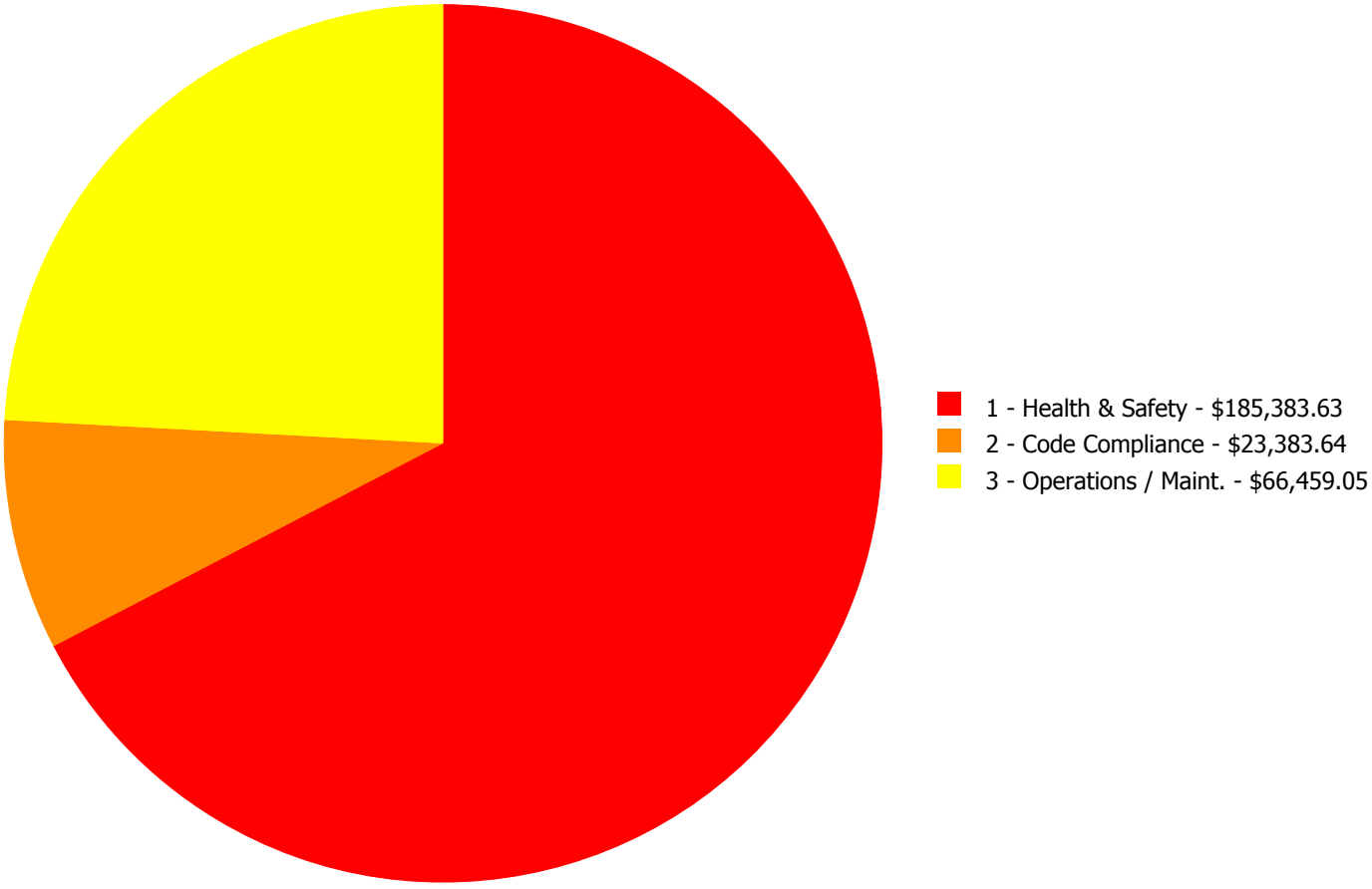
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$66,459.05	$0.00	$0.00	$0.00	$66,459.05
G2030	Pedestrian Paving	$23,383.64	$1,006.17	$0.00	$0.00	$0.00	$24,389.81
G4030	Site Communications & Security	$0.00	$0.00	$184,377.46	$0.00	$0.00	$184,377.46
	Total:	$23,383.64	$67,465.22	$184,377.46	$0.00	$0.00	$275,226.32

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: $275,226.32

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: G2030 - Pedestrian Paving

Location: Front entry

Distress: Accessibility

Category: 2 - Code Compliance

Priority: 1 - Response Time (< 2 yr)

Correction: Install an exterior ADA ramp - based on 5' wide by the linear foot - up to a 48" rise - per LF of ramp - figure 1 LF per inch of rise

Qty: 18.00

Unit of Measure: L.F.

Estimate: $23,383.64

Assessor Name: Ann Buerger Linden

Date Created: 02/25/2016

Notes: Provide ramp for accessibility at main entrance. Includes repair of chipped treads and exposed rebar at landing.

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

System: G2020 - Parking Lots

Location: Parking lot

Distress: Maintenance Required

Category: 3 - Operations / Maint.

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

Correction: Fill pavement cracks and reseal parking lot - including striping - change the LF of crack repair if it is severe

Qty: 32,000.00

Unit of Measure: S.F.

Estimate: $66,459.05

Assessor Name: Ann Buerger Linden

Date Created: 02/25/2016

Notes: Crack fill north asphalt playground and asphalt parking lot

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System: G2030 - Pedestrian Paving

Location: Fairmount Avenue

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Remove and replace concrete paving - pedestrian or parking - 8" concrete thickness

Qty: 18.00

Unit of Measure: S.F.

Estimate: $1,006.17

Assessor Name: Ann Buerger Linden

Date Created: 02/25/2016

Notes: Adjust manhole cover and sidewalk to eliminate trip hazard.

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

System: G4030 - Site Communications & Security

Location: Building Perimeter

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Video Surveillance System

Qty: 10.00

Unit of Measure: Ea.

Estimate: $184,377.46

Assessor Name: Ann Buerger Linden

Date Created: 01/20/2016

Notes: Provide outdoor surveillance CCTV cameras. Approximate 10 CCTV cameras

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