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.

Spring Garden School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	1146 Melon St.	Enrollment	280
	Philadelphia, Pa 19123	Grade Range	'00-08'
Phone/Fax	215-684-5070 / 215-684-5059	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Springgarden	Turnaround Model	N/A

Building/System FCI Tiers

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

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

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**60.47%**	**$12,710,251**	**$21,019,073**
Building	58.54 %	$11,879,124	$20,292,131
Grounds	114.33 %	$831,127	$726,942

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	96.02 %	$394,251	$410,603
Exterior Walls (Shows condition of the structural condition of the exterior facade)	28.80 %	$336,947	$1,170,030
Windows (Shows functionality of exterior windows)	235.90 %	$1,206,073	$511,270
Exterior Doors (Shows condition of exterior doors)	00.00 %	$0	$62,350
Interior Doors (Classroom doors)	77.80 %	$107,386	$138,030
Interior Walls (Paint and Finishes)	130.97 %	$635,819	$485,470
Plumbing Fixtures	22.73 %	$273,465	$1,203,140
Boilers	114.64 %	$815,348	$711,220
Chillers/Cooling Towers	24.93 %	$232,517	$932,670
Radiators/Unit Ventilators/HVAC	179.29 %	$2,934,916	$1,637,010
Heating/Cooling Controls	155.54 %	$799,231	$513,850
Electrical Service and Distribution	170.43 %	$571,612	$335,400
Lighting	45.01 %	$540,380	$1,200,560
Communications and Security (Cameras, Pa System and Fire Alarm)	51.69 %	$232,494	$449,780

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

S556001;Spring Garden

Final

Site Assessment Report

January 31, 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):	43,000
Year Built:	1931
Last Renovation:	
Replacement Value:	$21,019,073
Repair Cost:	$12,710,250.97
Total FCI:	60.47 %
Total RSLI:	72.83 %

Description:

Facility Assessment
October 2015

School District of Philadelphia
Spring Garden Elementary School
1146 Melon Street
Philadelphia, PA 19123

43,000 SF / 258 Students / LN 03

The Spring Garden Elementary school building is located at 1146 Melon Street in Philadelphia, PA. The 3 story, 43,000 square foot building was originally constructed in 1931. The building has a basement and two penthouses on the roof partially open to roof area. Portion of the roof is converted in to a paved play area completely enclosed with wire mesh structure.

Mr. Derek Parker, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Ms. Sheerita Wilson, Building Engineer, accompanied us on our tour of the school and provided us with detailed information on the building systems and recent maintenance history. The school principal, Ms. Laureal L. Robinson, provided additional information about the school condition.

STRUCTURAL/ EXTERIOR CLOSURE:

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement. However, there is evidence of severe water penetration through basement windows and window wells during rain. Foundation walls do not show signs of deterioration. The mold build-up is not evident in boiler room and other parts of mechanical spaces. Portions of the basement slab are cracked but do not show signs of heaving.

The main structure consists typically of cast-in-place concrete columns, beams and one-way concrete slabs. Long slab spans are supported with steel truss girders. Above ground floor slabs are generally in good condition. The penthouse roof structure partially exposed to weather is in god condition with some rusting of lintels and deterioration of supporting beams – spalled concrete and exposed rusting reinforcement. The outdoor gym on the main roof is enclosed with wire mesh netting supported by pipe framing. The structure is deteriorating and rusty.

The building envelope is typically masonry with face brick with decorative terracotta portal at entrance doors. In general, masonry is in fair to poor condition with deteriorated and missing mortar from joints; some face brick buckling and cracks are evident. The penthouse walls show thermal cracking just below concrete roof slab. Water penetration through wall has been reported.

The original windows were replaced approximately in early 1980's with extruded aluminum double hung windows, single glazed with acrylic sheet. Basement and first floor windows are fitted with security screens anchored to masonry at window perimeter. All windows are generally beyond their service life, in poor condition; most are difficult to operate, some hardware is missing.

Roofing is typically built-up in fair condition. All roofing and flashing is typically in poor condition with some deterioration of the built-up system including water ponding and soft spots; play area on the roof is in fair condition; however, concrete topping is not installed; leaks have been reported.

Exterior doors are typically hollow metal in fair to good condition. Service doors are generally in poor condition with peeling paint and rusty. Generally, the building is not accessible per ADA requirements due to first floor- grade separation with no ramps or lifts.

INTERIORS:

Partition wall types include plastered ceramic hollow blocks and painted CMU. The interior wall finishes are generally painted plaster or drywall and some painted brick with marble and glazed brick wainscot in stairways and toilets. Generally, paint is in poor condition with water deterioration on inside face of the exterior walls.

Most ceilings are 2x4 suspended acoustical panels installed in 2005; however about 30% is damaged. The balance of ceilings are exposed, painted, old and with moisture damage.

Flooring in classrooms, gym and auditorium is generally hardwood; and patterned concrete in most corridors and toilets. Most flooring is original and in poor condition, it is often uneven creating possible tripping hazard; sections of hardwood were replaced with plywood. Some areas have VCT tile, generally in fair condition; however about 40% of tiles are VAT tiles (containing asbestos), in poor condition. Flooring in toilets and kitchen is painted concrete severely deteriorated.

Interior doors are generally rail and stile and solid core wood doors, some glazed; with matching wood frame side lights and transoms. Door finishes are typically in poor condition. Most doors are fitted with door knobs and are not ADA compliant. The doors leading to exit stairways are hollow metal doors and frames in good condition.

Fittings include original chalk boards, generally in poor condition; toilet accessories were recently replaced and in good condition; toilet partitions, generally in good condition (recently replaced), accessible stalls of ambulatory type are provided in most students' toilets; staff toilets are generally original and not accessible. Handrails and ornamental metals are generally in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition.

Stair construction is generally concrete with terrazzo treads and risers, in good condition.

Institutional and Commercial equipment includes: stage equipment, generally in poor condition; A/V equipment in fair condition; gym equipment – basketball backstops, scoreboards, etc.; generally in poor condition.

Other equipment includes kitchen equipment, generally in good condition.

Furnishings include fixed casework in classrooms, corridors and library, generally in fair to poor condition; window shades/blinds, generally in poor condition; fixed auditorium seating is original, generally in fair condition with some damaged seats.

CONVEYING SYSTEMS:

The building has no elevators.

PLUMBING:

Plumbing Fixtures - Many of the original plumbing fixtures were upgraded in the 1980s. Fixtures in the restrooms on each floor consist of wall mounted flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. The Building Engineer reported that the plumbing fixtures require frequent maintenance to stay in working order. The plumbing fixtures are beyond their service life and should be replaced within the next 5 years.

Drinking fountains in the corridors are wall hung porcelain fountains. The porcelain fountains are well beyond their service life and should be replaced.

A service sink is available in the corridor on each floor for use by the janitorial staff.

The Kitchen has one one-compartment stainless steel sink with lever operated faucets and integral grease trap.

Domestic Water Distribution - A 3" city water service enters the building from Melon Street. The meter is 3" and located in the basement coal/ash room. A reduced pressure backflow preventer is installed on the domestic water side. The original domestic hot and cold water distribution piping was replaced with copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures.

Skid mounted duplex 3HP domestic water booster pumps are installed to ensure adequate pressure throughout the building. The pumps run continuously and must be shut off manually at the end of each day. The domestic water distribution system should be inspected by a qualified contractor.

A single Bradford White gas fired, 75 gallon, vertical hot water heater with small circulating pump supplies hot water for

domestic use. The unit is located in the boiler room on the basement level and was installed in 2013. The hot water heater is equipped with a T&P relief valve, and expansion tank. This unit should provide reliable service for the next 6-8 years.

Sanitary Waste - The original storm and sanitary sewer piping is heavy weight cast iron with hub and spigot fittings. The Building Engineer reported that when it rains water backs up into the building from sinks and plumbing fixtures. A back flow preventer should be installed on the outgoing sewer line to prevent a health hazard.

A sewage ejector pit located in the basement receives water from the basement area floor drains and two restrooms. One Gorman Rupp pump installed in 2015 is not functioning properly; it was short cycling during the site visit and had recently failed causing a flood in the basement. A plumber was on-site trying to correct the problem. The district should provide service to the sewage ejector system for the next 15-20 years.

The maintenance staff reported several problems with the sanitary waste piping systems. The sewer piping has been in service for nearly 85 years and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Rain Water Drainage - The rain water drains from the roof are routed through mechanical chases in the building and are original. The original galvanized piping with threaded fitting remains in service. The drain piping is beyond its service life and should be inspected by a qualified contractor and repaired as necessary.

MECHANICAL:

Energy Supply - A 1” city gas service enters the building from Melon Street near the middle of the block. The meter is 1” and located in the in the basement coal/ash room.

The oil supply is stored in an 8,000 gallon underground storage tank (UST) located in the school yard off North Street. Duplex pumps located in the basement boiler room circulate oil through the system. The fuel oil pumps have leaked in the past, are beyond their service life, and should be replaced with a new system and control scheme. Oil is used as the only fuel for the boilers. It is estimated that the storage tank is beyond its useful life and should be inspected on a regular basis.

Heat Generating Systems - Low pressure steam is generated at a maximum of 15 lbs/sq. in., typically 5-8 lbs/sq. in., by two 120HP Weil-McLain Model 1994 cast iron sectional boilers, net IBR rating of 4,061MBH. The building engineer said the boilers were installed in 1967, which puts them well beyond their useful service life. One boiler can hold the load in normal winter weather conditions; two units are required on very cold days. Each boiler is equipped with a Power Flame burner designed to operate on fuel oil. The burners should be replaced as they are beyond their service life and newer, more efficient technologies are available. Each boiler is equipped with a small compressor. Burner oil pumps are loose and not driven by the fan motor. Combustion air makeup is supplied by louvers equipped with motorized dampers. Cast iron sectional boilers have an anticipated service life of 35 years or more; as these units have been in service for 48 years they should be replaced.

The condensate receiver, located in the basement boiler room, is functional but approaching the end of its service life. A Shipco boiler feed tank provides treated make up water to the boilers. The unit has duplex pumps mounted on the tank. The building engineer reported no steam leaks from the condensate return system.

Distribution Systems - Steam piping is black steel with welded fittings. The condensate piping is black steel with threaded fittings. Steam and condensate piping mains from the basement level run up through the building to the radiators on all three floors. The distribution piping has been in use well beyond its service life and will require more

frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Two pipe fin tube radiators provide heating for the majority of classrooms, offices, and hallways. The radiators are original to the building and well beyond their service life. A new heating system should be installed to meet ventilation requirements and achieve more efficient operation. The new units should be designed for quiet operation and equipped with hot water coils, chilled water coils, and integral heat exchangers, where applicable, to introduce sufficient outdoor air to the building.

The school has no operable mechanical ventilation. The six (6) existing exhaust fans located in penthouses on the roof are inoperable due to “environmental conditions”. Ventilation for the Cafeteria should be provided by installing a constant volume air handling unit with distribution ductwork and registers. For the Gymnasium install a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Install similar units for the administration offices. Provide ventilation for the Auditorium by installing a constant volume air handling unit with distribution ductwork and registers. These units would be equipped with hot water heating coils and chilled water cooling coils. Install steam converters in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.

The six (6) exhaust fans serving the restrooms should be replaced after asbestos abatement is complete.

Terminal & Package Units - Several of the classrooms in the school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 110 ton air-cooled chiller with pumps located in a mechanical room and chilled water distribution piping would supply more reliable air conditioning for the building with a much longer service life.

A Mitsubishi split system air conditioning system provides cooling to the LAN room located on the first floor off of the Main Office. The installation date of this unit is unknown; the anticipated service life of a split system air conditioner is 15 years. The district should budget to replace this unit within the next 7-10 years.

Controls & Instrumentation - The original pneumatic systems still provide basic control functions in some classrooms. Pneumatic room thermostats are intended to control the steam radiator control valves. In reality the radiator control valves are wide open, or removed, and heating control is achieved via the boilers. Pneumatic control air is supplied from a compressor and Hankison air dryer located in the boiler room. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

A new building automation system (BAS) with modern DDC modules and communications network should be installed to serve the HVAC systems in this building to improve reliability and energy efficiency. An interface should be provided with the preferred system in use throughout the District.

Sprinklers - The school building is NOT covered by an automatic sprinkler system. A fire stand pipe is installed along the north wall of the building and is accessible in each corridor and on the roof. Installing a sprinkler system with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure. The building does have standpipes in the stairwells.

ELECTRICAL:

Site electrical service – This school has two electrical services. The original service has a primary power at 13.2KV from

the street power pole which feeds a 200KVA pole-top transformer (13.2KV – 120V/240V). The secondary power runs overhead into the building and into the electrical room. This electrical service is old and does not have enough capacity for the new HVAC loads. The old main switchboard is rated at 600 Amp, 120V/240V480 V, 2 phase, 3W, and is located in main electrical room with PECO meter (PECO 219MU-78148). This electrical service with the 600A switchboard is outdated and has reached the end of its useful service. The second service with PECO meter (PECO 124 – 084334) feeds the IT equipment and new mechanical loads. The new service is fairly new and has new panels that are also in good condition.

Distribution system - The old electrical distribution is accomplished with a 120V/240V distribution switchboard, located in the electrical room, feeding several panels throughout the building. These panels are not in good condition. They have reached the end of their service life (total of 6). The new panels from the new electrical service are in good condition.

Receptacles - The receptacles in classrooms, computer rooms, libraries, and other areas are not adequate. Minimum of two receptacles on each wall of the classrooms and other rooms are required.

Lighting - Interior building is illuminated by various types of fixtures. Fluorescent lighting fixtures (with T-12 & T-8) are in the majority of the areas, including; classrooms, corridor, offices and Kitchen. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. Gymnasium is illuminated by metal halide enclosed glass fixtures. The majority of interior lighting fixtures is in a poor condition and has reached the end of their service life.

Fire alarm - The present Fire Alarm system is not automatic/addressable, and is not in compliance with safety code. There are manual pulls stations throughout the building. There is not sufficient number of horn/strobes installed in the classrooms, corridors, offices and other areas in the school.

Telephone/LAN - The school telephone and data systems are new and working adequately. The main distribution frame (MDF) along with a telephone PBX system are providing the communication system function for the building. School is also equipped with Wi-Fi system.

Public address - A separate PA system does not exist. School uses the telephone systems for public announcement. This system is working properly. The present Intercom System is functioning properly. Each class room is provided with an intercom telephone service. The system permits paging and intercom communication between main office to each classroom, between each classroom to main office, and between classrooms to classrooms.

Clock and Program system - Clock and program systems are fairly new and working properly. Classrooms are provided with 12-inch wall mounted, round clocks, and they are not controlled properly by central master control panel.

Television System - Television system is not provided in the school. Most classes are provided with smart boards having the ability to connect with computers and internet.

Security Systems, access control, and video surveillance- The school is not provided with adequate video surveillance system. Cameras are not installed at all exit doors, corridors, exterior, and other critical areas. The cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School is provided with a 60KW emergency power. The emergency generator is fairly new (less than 5 years old) and feeds an emergency Panel through an Automatic Transfer Switch (ATS).

Emergency lighting system, including exit lighting - there are insufficient emergency lights/exit lights in corridors, library and other exit ways. Exit signs and emergency fixtures are old and have reached the end of their Service life.

Lightning Protection System - There is adequate lightning protection system installed in the school. There are existing lightning rods on the roof that are properly connected to the ground via stranded aluminum cables.

Grounding - The present grounding system is adequate. All equipment are bonded properly to the ground.

Site Lighting and paging system - The present site lighting and paging system is old and has reached the end of useful service.

ACCESSIBILITY:

The building does not have accessible entrance, and accessible routes. The toilets are equipped with accessible fixtures, toilet partitions are configured for ambulatory accessibility only (no wheelchair access), grab bars are provided on one side of toilet only. The doors in the building generally do not have ADA required door handles.

GROUNDS (SITE):

Parking lot adjacent to the building is unused and in poor condition, paving is cracked and deteriorated; no striping. Staff uses a parking strip on north side of Melon Street which is also not striped. Perimeter fences are generally in poor condition and rusting. There is no landscaping.

RECOMMENDATIONS:

- Repair spalled concrete on penthouse roof structure
- Refurbish wire mesh structure enclosing outdoor gym on main roof; clean and paint framing, install new wire mesh
- Repair cracks in masonry, tuck-point all walls
- Install all new roofing system including insulation within next 4 to 5 years; tear-down existing roofing; install flashing, counter flashing and reglets
- Replace roofing and paving at roof play area
- Replace all windows
- Replace suspended acoustical ceilings (30% area)
- Repair and repaint exposed ceilings (50% area)
- Repair and repaint interior walls (60% area)
- Replace carpet in library
- Replace all VAT tile with VCT tile
- Repair & refinish hardwood flooring (replacement 15%)
- Refinish concrete flooring in toilets and kitchen
- Install 3000 lb traction elevator serving all floors and basement
- Provide ADA compliant ramp at one entrance (location TBD)
- Repair and refinish all interior doors
- Provide ADA compliant hardware on interior doors
- Replace signage throughout
- Reconfigure toilets on each floor for accessibility, provide new toilet partitions
- Provide new toilet accessories including grab bars
- Resurface parking area; provide new striping incl. ADA spaces and aisles.
- Resurface playground
- Replace chain link fence at parking/play ground perimeter
- Replace picket fence at south playground side
- Rebuild south area way brick wall and stone coping
- Replace twenty-five (25) water closets in the restrooms with new code compliant fixtures.

- Replace eighteen (18) wall hung urinals in the restrooms with new low flow fixtures.
- Replace eight (8) porcelain wall hung drinking fountains in the corridors. These units are beyond their service life and most are NOT accessible type.
- Replace the duplex 3HP domestic water booster pumps and isolation valves on incoming domestic water line.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Install a back flow preventer on the sanitary sewer line to prevent sewage from backing up into the building when it rains.
- Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the existing duplex fuel oil pump system which is beyond its service life and frequently leaks oil into the boiler room.
- Replace the two existing 4,061MBH cast iron boilers, which are well beyond their service life, and install new burners, and exhaust ductwork.
- Hire a qualified contractor to examine the steam and condensate piping, in service for nearly 85 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Remove the existing fin tube steam radiators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Replace the six (6) existing, currently inoperable, exhaust fans serving the restrooms after abatement has been completed.
- Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.
- Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Remove the window air conditioning units and install a 110 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.
- Install a new 1000 KVA, 480V 3 phase electrical Service, with a 1600 A 480V Switchgear to replace both services plus future HVAC loads.
- Install a new 480 V MCC to handle the new HVAC loads.
- Install a new 300KV transformer (480V- 120V) to feed the existing 120V distribution panels.
- Install new panels to replace the old 120V panels throughout the building (total of 6).
- Install two receptacles on each wall of the classrooms and other areas within the building. Install surface-mounted receptacles in computer rooms.
- Install new lighting system for the entire building.

- Install new automated FA system.
- Install new Video Surveillance System with Cameras and CCTV.
- Install new emergency exit signs & emergency lights.
- Install additional outdoor lighting for the grounds
- Install additional speakers for the grounds.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 3 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S556001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	4.18 %	$183,073.57
B20 - Exterior Enclosure	59.48 %	88.49 %	$1,543,019.66
B30 - Roofing	110.00 %	96.02 %	$394,250.61
C10 - Interior Construction	60.48 %	33.29 %	$278,993.79
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	111.68 %	65.31 %	$1,074,241.41
D10 - Conveying	105.71 %	382.46 %	$669,348.22
D20 - Plumbing	48.32 %	57.61 %	$893,218.82
D30 - HVAC	103.81 %	112.87 %	$4,782,011.13
D40 - Fire Protection	105.71 %	157.60 %	$540,800.56
D50 - Electrical	110.11 %	74.71 %	$1,520,166.06
E10 - Equipment	0.00 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	0.00 %	$0.00
G20 - Site Improvements	106.21 %	132.06 %	$671,507.68
G40 - Site Electrical Utilities	106.67 %	73.07 %	$159,619.46
Totals:	**72.83 %**	**60.47 %**	**$12,710,250.97**

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)
B556001;Spring Garden	43,000	58.54	$1,519,141.67	$543,384.27	$5,466,511.77	$2,262,669.07	$2,087,417.05
G556001;Grounds	37,600	114.33	$0.00	$165,000.04	$604,412.24	$61,714.86	$0.00
Total:		**60.47**	**$1,519,141.67**	**$708,384.31**	**$6,070,924.01**	**$2,324,383.93**	**$2,087,417.05**

Deficiencies By Priority

1 - Response Time (< 2 yr) - $1,519,141.67
2 - Response Time (2-3 yrs) - $708,384.31
3 - Response Time (3-4 yrs) - $6,070,924.01
4 - Response Time (4-5 yrs) - $2,324,383.93
5 - Response Time (> 5 yrs) - $2,087,417.05

Budget Estimate Total: $12,710,250.97

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):	43,000
Year Built:	1931
Last Renovation:	
Replacement Value:	$20,292,131
Repair Cost:	$11,879,123.83
Total FCI:	58.54 %
Total RSLI:	71.63 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B556001
Sewage Ejector:	Yes	Status:	Accepted by SDP
Site ID:	S556001		

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	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	4.18 %	$183,073.57
B20 - Exterior Enclosure	59.48 %	88.49 %	$1,543,019.66
B30 - Roofing	110.00 %	96.02 %	$394,250.61
C10 - Interior Construction	60.48 %	33.29 %	$278,993.79
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	111.68 %	65.31 %	$1,074,241.41
D10 - Conveying	105.71 %	382.46 %	$669,348.22
D20 - Plumbing	48.32 %	57.61 %	$893,218.82
D30 - HVAC	103.81 %	112.87 %	$4,782,011.13
D40 - Fire Protection	105.71 %	157.60 %	$540,800.56
D50 - Electrical	110.11 %	74.71 %	$1,520,166.06
E10 - Equipment	0.00 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	0.00 %	$0.00
Totals:	**71.63 %**	**58.54 %**	**$11,879,123.83**

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	$20.82	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$895,260
A1030	Slab on Grade	$13.28	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$571,040
A2010	Basement Excavation	$11.19	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$481,170
A2020	Basement Walls	$19.71	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$847,530
B1010	Floor Construction	$80.81	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$3,474,830
B1020	Roof Construction	$21.13	S.F.	43,000	100	1931	2031	2052	37.00 %	20.15 %	37		$183,073.57	$908,590
B2010	Exterior Walls	$27.21	S.F.	43,000	100	1931	2031	2052	37.00 %	28.80 %	37		$336,947.13	$1,170,030
B2020	Exterior Windows	$11.89	S.F.	43,000	40	1980	2020	2057	105.00 %	235.90 %	42		$1,206,072.53	$511,270
B2030	Exterior Doors	$1.45	S.F.	43,000	25	1995	2020	2042	108.00 %	0.00 %	27			$62,350
B3010105	Built-Up	$32.69	S.F.	8,200	20	1995	2015	2037	110.00 %	92.57 %	22		$248,149.00	$268,058
B3010120	Single Ply Membrane	$33.54	S.F.	4,250	20	1931	1951	2037	110.00 %	102.50 %	22		$146,101.61	$142,545
B3010130	Preformed Metal Roofing	$46.94	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$33.54	S.F.		20				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.58	S.F.		20				0.00 %	0.00 %				$0
C1010	Partitions	$12.76	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$548,680
C1020	Interior Doors	$3.21	S.F.	43,000	40	1931	1971	2057	105.00 %	77.80 %	42		$107,385.51	$138,030
C1030	Fittings	$3.52	S.F.	43,000	40	1931	1971	2057	105.00 %	113.38 %	42		$171,608.28	$151,360
C2010	Stair Construction	$1.08	S.F.	43,000	100	1931	2031	2052	37.00 %	0.00 %	37			$46,440

Site Assessment Report - B556001;Spring Garden

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	$11.29	S.F.	43,000	10	1990	2000	2027	120.00 %	130.97 %	12		$635,818.79	$485,470
C3010231	Vinyl Wall Covering	$0.83	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.25	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$6.24	S.F.	1,800	10	1990	2000	2027	120.00 %	162.44 %	12		$18,245.76	$11,232
C3020412	Terrazzo & Tile	$64.54	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$8.27	S.F.	11,600	20	1931	1951	2037	110.00 %	69.37 %	22		$66,545.58	$95,932
C3020414	Wood Flooring	$19.04	S.F.	13,400	25	1931	1956	2042	108.00 %	54.34 %	27		$138,651.46	$255,136
C3020415	Concrete Floor Finishes	$2.77	S.F.	9,400	50	1931	1981	2067	104.00 %	172.68 %	52		$44,961.66	$26,038
C3030	Ceiling Finishes	$17.93	S.F.	43,000	25	1990	2015	2042	108.00 %	22.05 %	27		$170,018.16	$770,990
D1010	Elevators and Lifts	$4.07	S.F.	43,000	35			2052	105.71 %	382.46 %	37		$669,348.22	$175,010
D2010	Plumbing Fixtures	$27.98	S.F.	43,000	35	1980	2015	2028	37.14 %	22.73 %	13		$273,464.79	$1,203,140
D2020	Domestic Water Distribution	$2.58	S.F.	43,000	25	1990	2015	2042	108.00 %	206.21 %	27		$228,766.12	$110,940
D2030	Sanitary Waste	$2.58	S.F.	43,000	25	1931	1956	2042	108.00 %	200.67 %	27		$222,621.14	$110,940
D2040	Rain Water Drainage	$2.92	S.F.	43,000	30	1931	1961	2030	50.00 %	134.09 %	15		$168,366.77	$125,560
D3020	Heat Generating Systems	$16.54	S.F.	43,000	35	1967	2002	2052	105.71 %	114.64 %	37		$815,348.23	$711,220
D3030	Cooling Generating Systems	$21.69	S.F.	43,000	20			2037	110.00 %	24.93 %	22		$232,516.50	$932,670
D3040	Distribution Systems	$38.07	S.F.	43,000	25	1931	1956	2042	108.00 %	179.29 %	27		$2,934,915.84	$1,637,010
D3050	Terminal & Package Units	$10.28	S.F.	43,000	20			2028	65.00 %	0.00 %	13			$442,040
D3060	Controls & Instrumentation	$11.95	S.F.	43,000	20	1967	1987	2037	110.00 %	155.54 %	22		$799,230.56	$513,850
D4010	Sprinklers	$7.11	S.F.	43,000	35			2052	105.71 %	176.89 %	37		$540,800.56	$305,730
D4020	Standpipes	$0.87	S.F.	43,000	35			2052	105.71 %	0.00 %	37			$37,410
D5010	Electrical Service/Distribution	$7.80	S.F.	43,000	30	1931	1961	2047	106.67 %	170.43 %	32		$571,612.20	$335,400
D5020	Lighting and Branch Wiring	$27.92	S.F.	43,000	20	1931	1951	2037	110.00 %	45.01 %	22		$540,380.33	$1,200,560
D5030	Communications and Security	$10.46	S.F.	43,000	15	1931	1946	2032	113.33 %	51.69 %	17		$232,494.25	$449,780
D5090	Other Electrical Systems	$1.14	S.F.	43,000	30	1931	1961	2047	106.67 %	358.38 %	32		$175,679.28	$49,020
E1020	Institutional Equipment	$4.73	S.F.		35				0.00 %	0.00 %				$0
E1090	Other Equipment	$10.86	S.F.		35				0.00 %	0.00 %				$0
E2010	Fixed Furnishings	$2.09	S.F.	43,000	40	1931	1971	2057	105.00 %	0.00 %	42			$89,870
								Total	**71.63 %**	**58.54 %**			**$11,879,123.83**	**$20,292,131**

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 100%

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

Note: Hardwood 37%
VCT/VAT 32%
Carpet 5%
Concrete 26%

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

Note: ACT 35%
Exposed/plaster painted 65%

Renewal Schedule

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

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$11,879,124**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$11,879,124**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A10 - Foundations**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A20 - Basement Construction**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$183,074	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$183,074**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$336,947	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$336,947**
B2020 - Exterior Windows	$1,206,073	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,206,073**
B2030 - Exterior Doors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$248,149	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$248,149**
B3010120 - Single Ply Membrane	$146,102	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$146,102**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

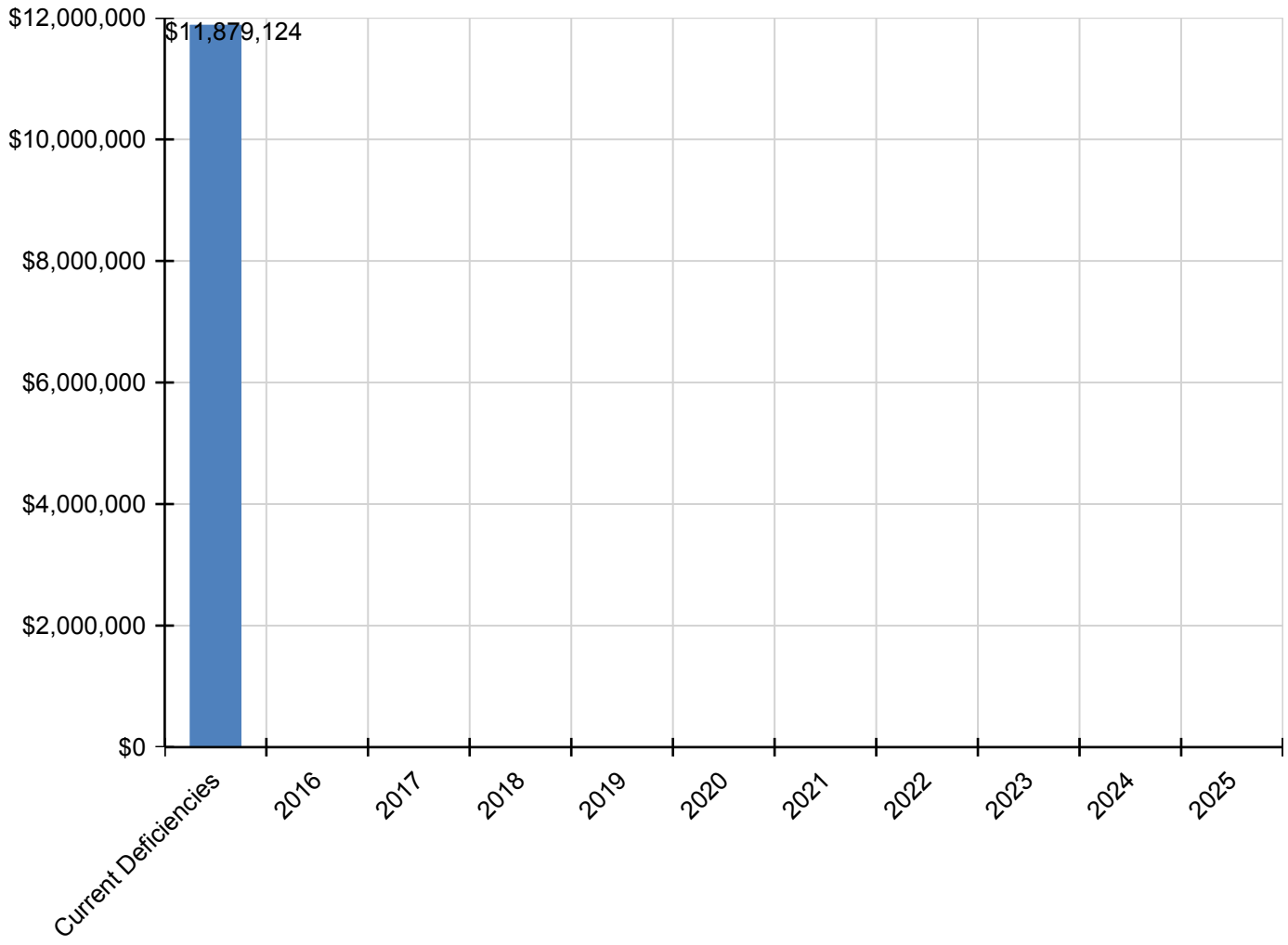
C1020 - Interior Doors	$107,386	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$107,386**
C1030 - Fittings	$171,608	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$171,608**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$635,819	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$635,819**
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	$18,246	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$18,246**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$66,546	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$66,546**
C3020414 - Wood Flooring	$138,651	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$138,651**
C3020415 - Concrete Floor Finishes	$44,962	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$44,962**
C3030 - Ceiling Finishes	$170,018	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$170,018**
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	$669,348	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$669,348**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$273,465	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$273,465**
D2020 - Domestic Water Distribution	$228,766	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$228,766**
D2030 - Sanitary Waste	$222,621	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$222,621**
D2040 - Rain Water Drainage	$168,367	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$168,367**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$815,348	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$815,348**
D3030 - Cooling Generating Systems	$232,517	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$232,517**
D3040 - Distribution Systems	$2,934,916	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,934,916**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$799,231	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$799,231**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$540,801	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$540,801**
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	$571,612	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$571,612**
D5020 - Lighting and Branch Wiring	$540,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$540,380**
D5030 - Communications and Security	$232,494	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$232,494**
D5090 - Other Electrical Systems	$175,679	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$175,679**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

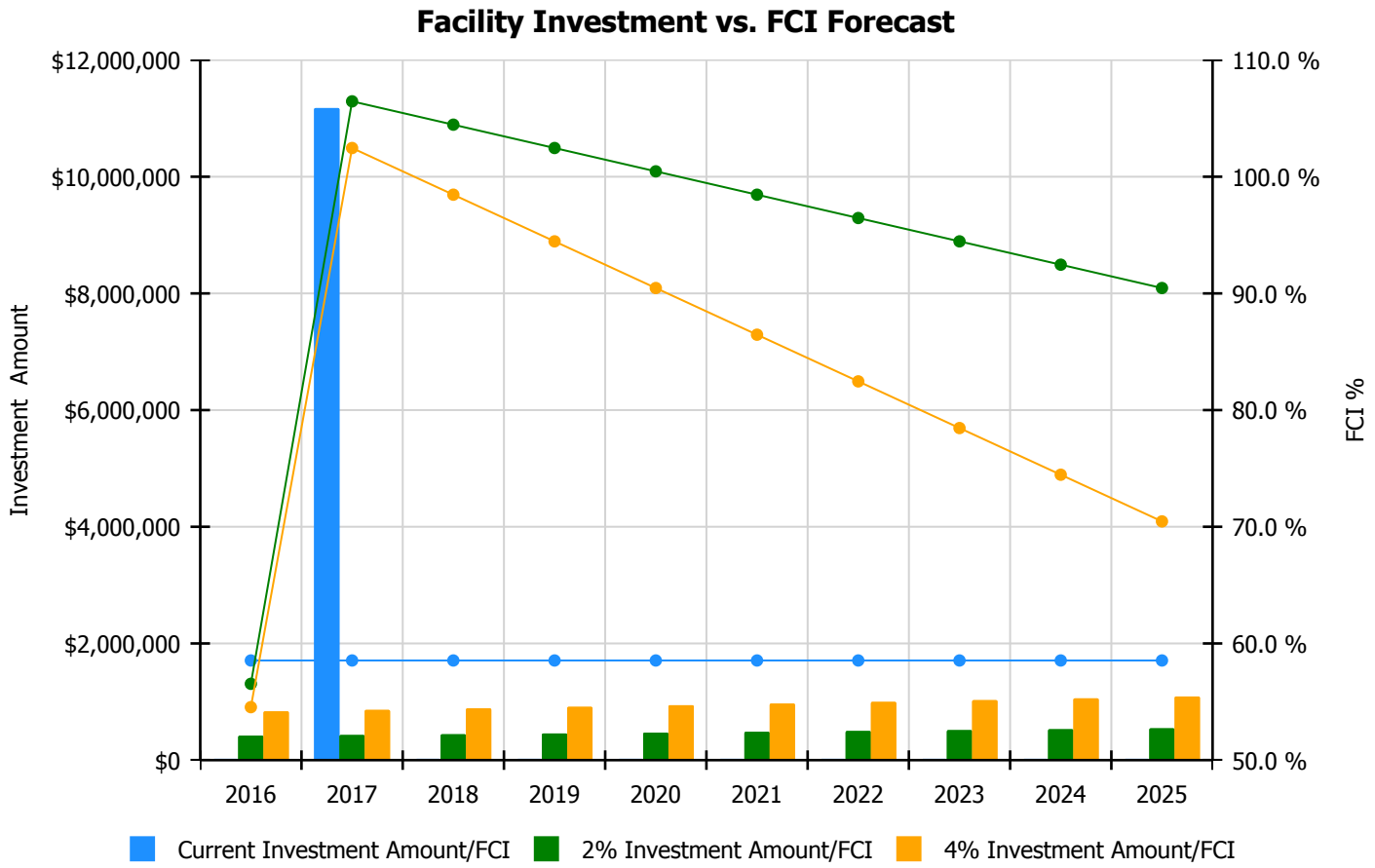
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

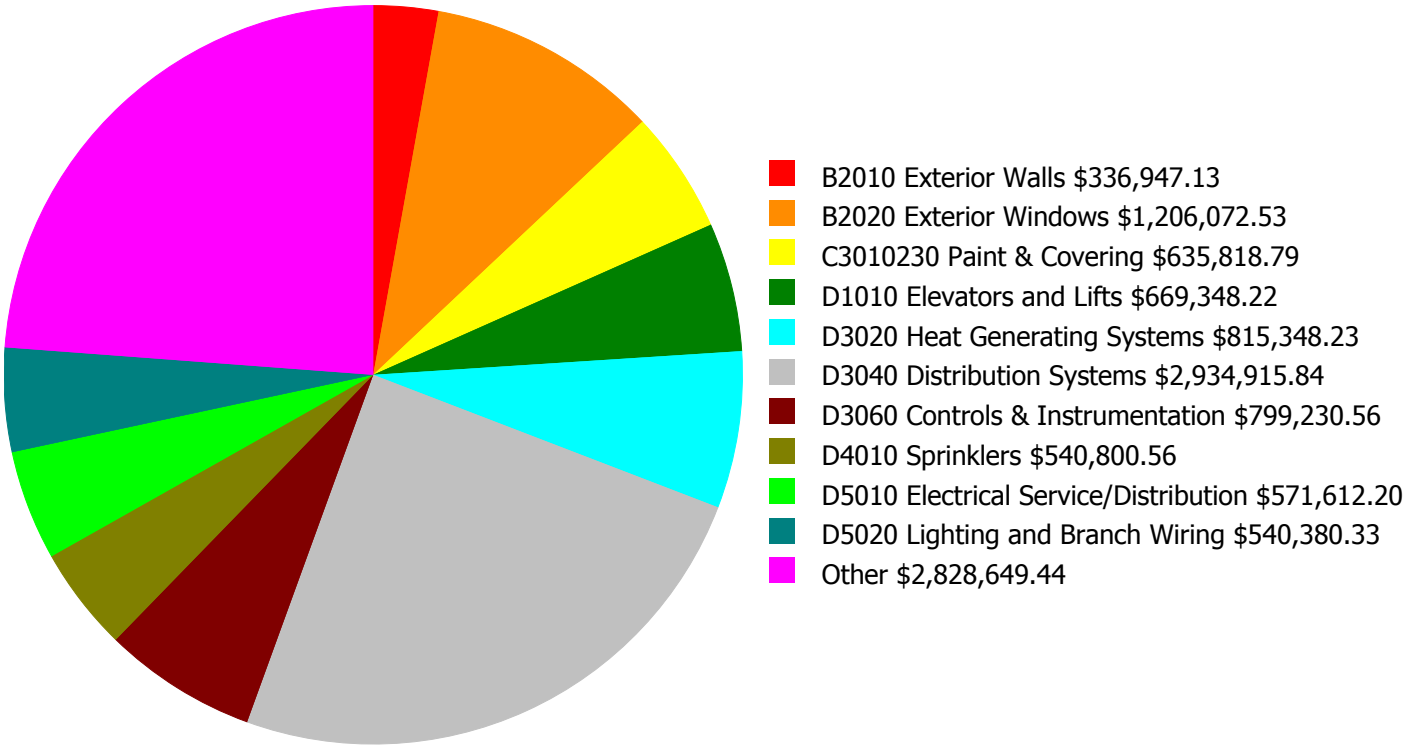
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 58.54%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$418,018.00	56.54 %	$836,036.00	54.54 %
2017	$11,177,222	$430,558.00	106.46 %	$861,117.00	102.46 %
2018	$0	$443,475.00	104.46 %	$886,950.00	98.46 %
2019	$0	$456,779.00	102.46 %	$913,559.00	94.46 %
2020	$0	$470,483.00	100.46 %	$940,966.00	90.46 %
2021	$0	$484,597.00	98.46 %	$969,195.00	86.46 %
2022	$0	$499,135.00	96.46 %	$998,270.00	82.46 %
2023	$0	$514,109.00	94.46 %	$1,028,219.00	78.46 %
2024	$0	$529,533.00	92.46 %	$1,059,065.00	74.46 %
2025	$0	$545,419.00	90.46 %	$1,090,837.00	70.46 %
Total:	**$11,177,222**	**$4,792,106.00**		**$9,584,214.00**	

Deficiency Summary by System

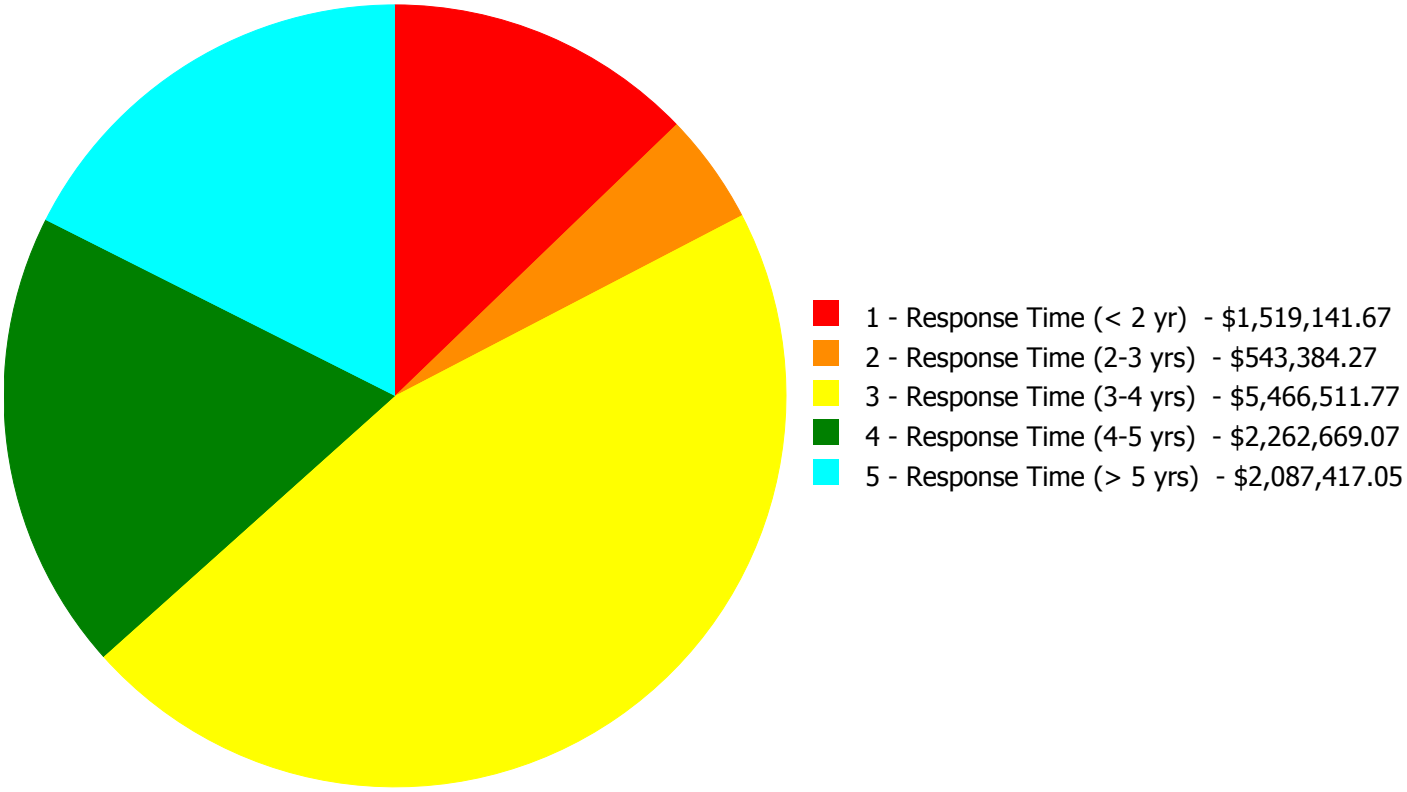
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $11,879,123.83

Deficiency Summary by Priority

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



Budget Estimate Total: $11,879,123.83

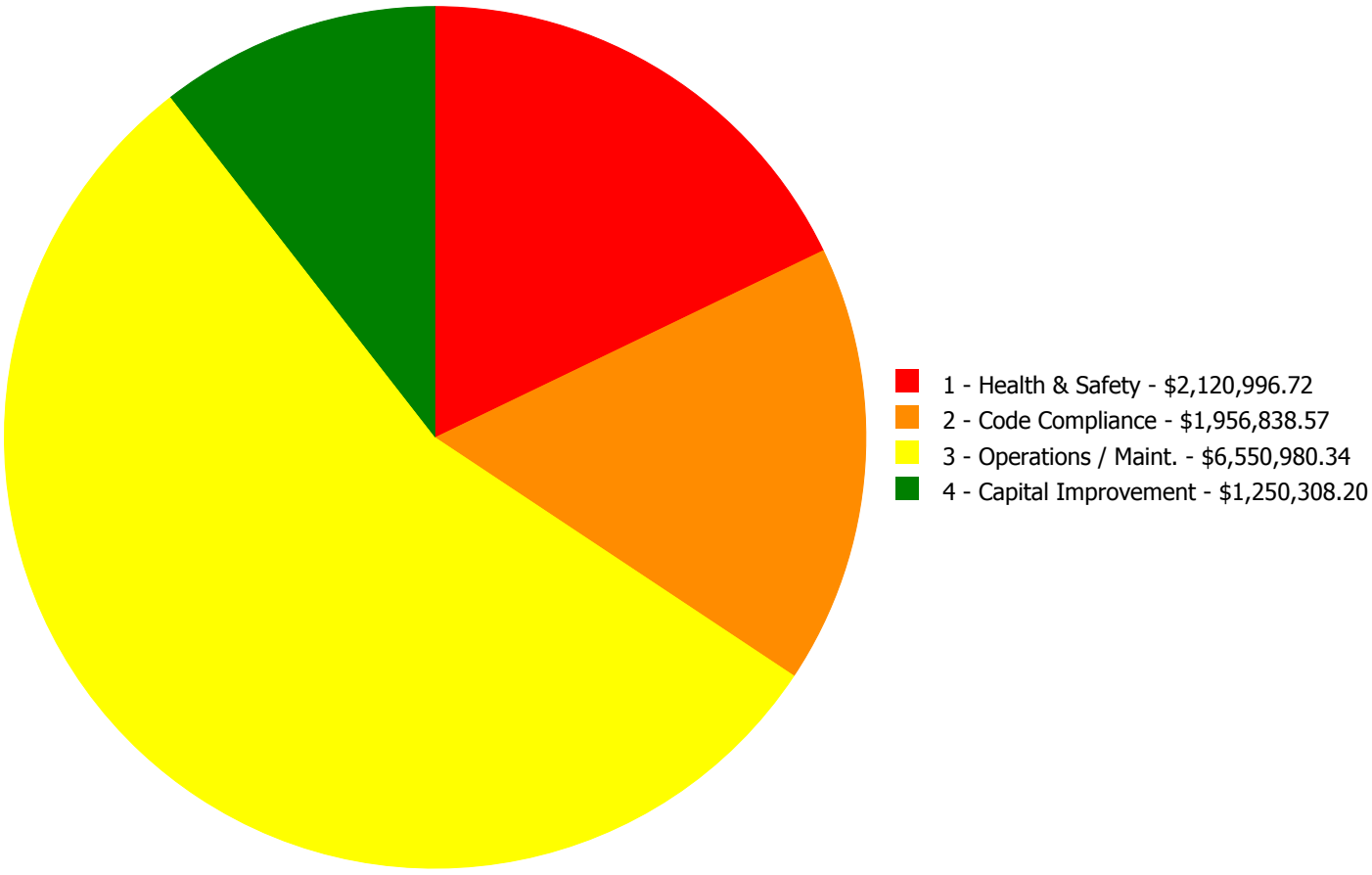
Deficiency By Priority Investment Table

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
B1020	Roof Construction	$0.00	$41,503.07	$141,570.50	$0.00	$0.00	$183,073.57
B2010	Exterior Walls	$0.00	$0.00	$336,947.13	$0.00	$0.00	$336,947.13
B2020	Exterior Windows	$0.00	$0.00	$1,206,072.53	$0.00	$0.00	$1,206,072.53
B3010105	Built-Up	$0.00	$0.00	$248,149.00	$0.00	$0.00	$248,149.00
B3010120	Single Ply Membrane	$0.00	$146,101.61	$0.00	$0.00	$0.00	$146,101.61
C1020	Interior Doors	$0.00	$59,186.02	$0.00	$48,199.49	$0.00	$107,385.51
C1030	Fittings	$0.00	$0.00	$0.00	$171,608.28	$0.00	$171,608.28
C3010230	Paint & Covering	$0.00	$0.00	$635,818.79	$0.00	$0.00	$635,818.79
C3020411	Carpet	$0.00	$0.00	$18,245.76	$0.00	$0.00	$18,245.76
C3020413	Vinyl Flooring	$0.00	$0.00	$66,545.58	$0.00	$0.00	$66,545.58
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$138,651.46	$0.00	$138,651.46
C3020415	Concrete Floor Finishes	$0.00	$0.00	$44,961.66	$0.00	$0.00	$44,961.66
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$170,018.16	$0.00	$170,018.16
D1010	Elevators and Lifts	$0.00	$0.00	$669,348.22	$0.00	$0.00	$669,348.22
D2010	Plumbing Fixtures	$0.00	$0.00	$273,464.79	$0.00	$0.00	$273,464.79
D2020	Domestic Water Distribution	$0.00	$42,298.97	$186,467.15	$0.00	$0.00	$228,766.12
D2030	Sanitary Waste	$0.00	$34,749.33	$187,871.81	$0.00	$0.00	$222,621.14
D2040	Rain Water Drainage	$0.00	$0.00	$168,366.77	$0.00	$0.00	$168,366.77
D3020	Heat Generating Systems	$794,720.24	$20,627.99	$0.00	$0.00	$0.00	$815,348.23
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$232,516.50	$232,516.50
D3040	Distribution Systems	$183,620.87	$0.00	$358,400.31	$1,337,224.67	$1,055,669.99	$2,934,915.84
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$799,230.56	$799,230.56
D4010	Sprinklers	$540,800.56	$0.00	$0.00	$0.00	$0.00	$540,800.56
D5010	Electrical Service/Distribution	$0.00	$198,917.28	$0.00	$372,694.92	$0.00	$571,612.20
D5020	Lighting and Branch Wiring	$0.00	$0.00	$540,380.33	$0.00	$0.00	$540,380.33
D5030	Communications and Security	$0.00	$0.00	$208,222.16	$24,272.09	$0.00	$232,494.25
D5090	Other Electrical Systems	$0.00	$0.00	$175,679.28	$0.00	$0.00	$175,679.28
	Total:	$1,519,141.67	$543,384.27	$5,466,511.77	$2,262,669.07	$2,087,417.05	$11,879,123.83

Deficiency Summary by Category

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



Budget Estimate Total: $11,879,123.83

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: D3020 - Heat Generating Systems

Location: Boiler room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace boiler, cast iron sectional (100 HP)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $794,720.24
Assessor Name: System
Date Created: 10/20/2015

Notes: Replace the two existing 4,061MBH cast iron boilers, which are well beyond their service life, and install new burners, and exhaust ductwork.

System: D3040 - Distribution Systems

Location: Restrooms
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 1 - Response Time (< 2 yr)
Correction: Replace utility set exhaust fan (5 HP)
Qty: 6.00
Unit of Measure: Ea.
Estimate: $183,620.87
Assessor Name: System
Date Created: 10/20/2015

Notes: Replace the six (6) existing, currently inoperable, exhaust fans serving the restrooms after abatement has been completed.

System: D4010 - Sprinklers

Location: Throughout building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 43,000.00

Unit of Measure: S.F.

Estimate: $540,800.56

Assessor Name: System

Date Created: 10/20/2015

Notes: Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.

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

System: B1020 - Roof Construction

Location: Exterior/Interior

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Repair and epoxy grout exposed rebar on the underside of roof structure and roof beams

Qty: 600.00

Unit of Measure: S.F.

Estimate: $41,503.07

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair spalled concrete on penthouse roof structure

System: B3010120 - Single Ply Membrane

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete deck topping including remove and replace waterproofing membrane - add for epoxy coating if required by inserting the SF in the estimate

Qty: 4,250.00

Unit of Measure: S.F.

Estimate: $146,101.61

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace roofing and paving at roof play area

System: C1020 - Interior Doors

Location: Interior

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish interior doors

Qty: 95.00

Unit of Measure: Ea.

Estimate: $59,186.02

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair and refinish all interior doors

System: D2020 - Domestic Water Distribution

Location: Basement

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace duplex domestic booster pump set (5 HP)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $42,298.97

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace the duplex 3HP domestic water booster pumps and isolation valves on incoming domestic water line.

System: D2030 - Sanitary Waste

Location: Basement

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Install backwater prevention system to prevent storm water from backing up into the sanitary sewer system - 8" - change the pipe lengths if necessary - assumes 100 SF hardscape repair

Qty: 1.00

Unit of Measure: Ea.

Estimate: $34,749.33

Assessor Name: System

Date Created: 10/20/2015

Notes: Install a back flow preventer on the sanitary sewer line to prevent sewage from backing up into the building when it rains.

System: D3020 - Heat Generating Systems

Location: Boiler room

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace fuel oil pumps

Qty: 1.00

Unit of Measure: Ea.

Estimate: $20,627.99

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace the existing duplex fuel oil pump system which is beyond its service life and frequently leaks oil into the boiler room.

System: D5010 - Electrical Service/Distribution

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Panelboard - 400 amp

Qty: 1.00

Unit of Measure: Ea.

Estimate: $198,917.28

Assessor Name: System

Date Created: 01/18/2016

Notes: Install new panels to replace the old 120V panels throughout the building (total of 6).

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

System: B1020 - Roof Construction

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Rehabilitate chain link fabric roof structure - paint the frame and replace the chain link - insert the SF of roof area in the qty.

Qty: 4,250.00

Unit of Measure: S.F.

Estimate: $141,570.50

Assessor Name: System

Date Created: 01/18/2016

Notes: Refurbish wire mesh structure enclosing outdoor gym on main roof; clean and paint framing, install new wire mesh

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

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

Qty: 12,100.00

Unit of Measure: S.F.

Estimate: $336,947.13

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair cracks in masonry, tuck-point all walls

System: B2020 - Exterior Windows

Location: Exterior

Distress: Building Envelope Integrity

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: 205.00

Unit of Measure: Ea.

Estimate: $1,206,072.53

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace all windows

System: B3010105 - Built-Up

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 8,200.00

Unit of Measure: S.F.

Estimate: $248,149.00

Assessor Name: System

Date Created: 01/18/2016

Notes: Install all new roofing system including insulation within next 4 to 5 years; tear-down existing roofing; install flashing, counter flashing and reglets

System: C3010230 - Paint & Covering

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 90,700.00

Unit of Measure: S.F.

Estimate: $635,818.79

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair and repaint interior walls (60% area)

System: C3020411 - Carpet

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace carpet

Qty: 1,800.00

Unit of Measure: S.F.

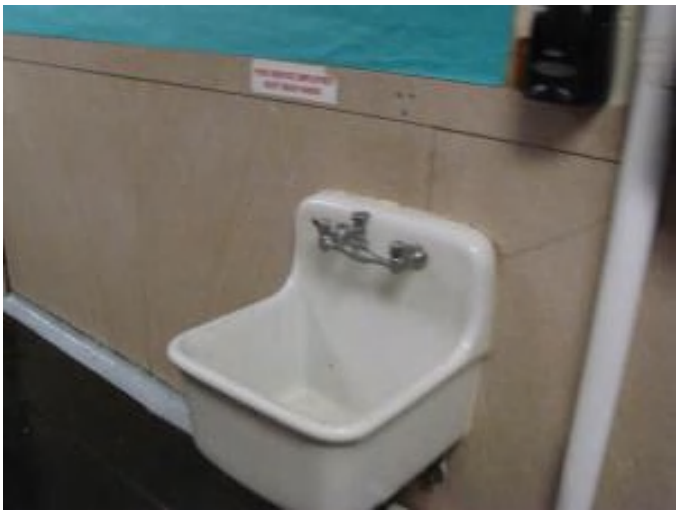
Estimate: $18,245.76

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace carpet in library

System: C3020413 - Vinyl Flooring



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 4,640.00

Unit of Measure: S.F.

Estimate: $66,545.58

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace all VAT tile with VCT tile

System: C3020415 - Concrete Floor Finishes

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Prepare and repaint concrete floor

Qty: 9,400.00

Unit of Measure: S.F.

Estimate: $44,961.66

Assessor Name: System

Date Created: 01/18/2016

Notes: Refinish concrete flooring in toilets and kitchen

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add interior elevator - 5 floors - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $669,348.22

Assessor Name: System

Date Created: 01/18/2016

Notes: Install 3000 lb traction elevator serving all floors and basement

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 25.00

Unit of Measure: Ea.

Estimate: $165,280.28

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace twenty-five (25) water closets in the restrooms with new code compliant fixtures.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 18.00

Unit of Measure: Ea.

Estimate: $55,116.66

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace eighteen (18) wall hung urinals in the restrooms with new low flow fixtures.

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 8.00

Unit of Measure: Ea.

Estimate: $53,067.85

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace eight (8) porcelain wall hung drinking fountains in the corridors. These units are beyond their service life and most are NOT accessible type.

System: D2020 - Domestic Water Distribution

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace domestic water piping (75 KSF)

Qty: 43,000.00

Unit of Measure: S.F.

Estimate: $186,467.15

Assessor Name: System

Date Created: 10/20/2015

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.

System: D2030 - Sanitary Waste

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 43,000.00

Unit of Measure: S.F.

Estimate: $187,871.81

Assessor Name: System

Date Created: 10/20/2015

Notes: Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect internal rain water drainage piping and replace pipe - based on SF of multi-story building - insert SF of building

Qty: 43,000.00

Unit of Measure: S.F.

Estimate: $168,366.77

Assessor Name: System

Date Created: 10/20/2015

Notes: Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D3040 - Distribution Systems

Location: Throughout 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: 43,000.00

Unit of Measure: S.F.

Estimate: $358,400.31

Assessor Name: System

Date Created: 10/20/2015

Notes: Hire a qualified contractor to examine the steam and condensate piping, in service for nearly 85 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 0.00

Unit of Measure: S.F.

Estimate: $346,091.28

Assessor Name: System

Date Created: 01/18/2016

Notes: Install new lighting system for the entire building.

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace Wiring Devices (SF) - surface mounted conduit and boxes

Qty: 0.00

Unit of Measure: S.F.

Estimate: $194,289.05

Assessor Name: System

Date Created: 01/18/2016

Notes: Install two receptacles on each wall of the classrooms and other areas within the building. Install surface-mounted receptacles in computer rooms.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $208,222.16

Assessor Name: System

Date Created: 01/18/2016

Notes: Install new automated FA system.

System: D5090 - Other Electrical Systems

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add Emergency/Exit Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $175,679.28

Assessor Name: System

Date Created: 01/18/2016

Notes: Install new emergency exit signs emergency lights.

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

System: C1020 - Interior Doors

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 95.00

Unit of Measure: Ea.

Estimate: $48,199.49

Assessor Name: System

Date Created: 01/18/2016

Notes: Provide ADA compliant hardware on interior doors

System: C1030 - Fittings

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 40.00

Unit of Measure: Ea.

Estimate: $123,509.97

Assessor Name: System

Date Created: 01/18/2016

Notes: Reconfigure toilets on each floor for accessibility, provide new toilet partitions

System: C1030 - Fittings

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 105.00

Unit of Measure: Ea.

Estimate: $27,358.39

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace signage throughout

System: C1030 - Fittings

Location: Interior

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace toilet accessories - select accessories and quantity

Qty: 20.00

Unit of Measure: Ea.

Estimate: $20,739.92

Assessor Name: System

Date Created: 01/18/2016

Notes: Provide new toilet accessories including grab bars

System: C3020414 - Wood Flooring

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 13,400.00

Unit of Measure: S.F.

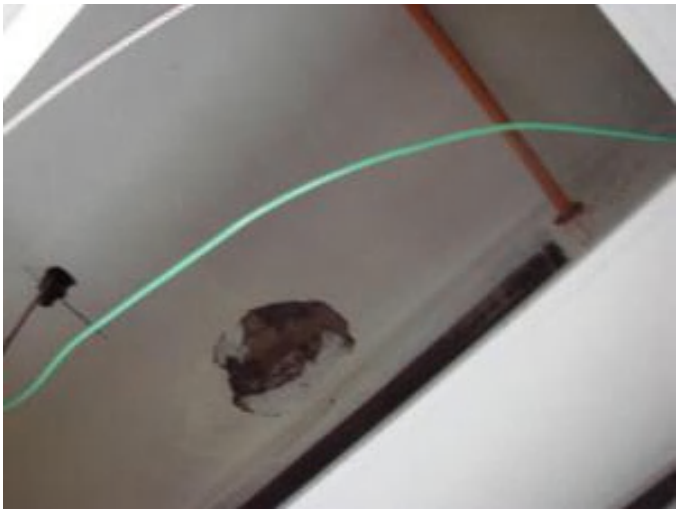
Estimate: $138,651.46

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair refinish hardwood flooring (replacement 15%)

System: C3030 - Ceiling Finishes



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Repair and resurface plaster ceilings - 2 coats plaster

Qty: 11,800.00

Unit of Measure: S.F.

Estimate: $121,892.26

Assessor Name: System

Date Created: 01/18/2016

Notes: Repair and repaint exposed ceilings (50% area)

System: C3030 - Ceiling Finishes

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 3,800.00

Unit of Measure: S.F.

Estimate: $48,125.90

Assessor Name: System

Date Created: 01/18/2016

Notes: Replace suspended acoustical ceilings (30% area)

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 18.00

Unit of Measure: C

Estimate: $1,337,224.67

Assessor Name: System

Date Created: 10/20/2015

Notes: Remove the existing fin tube steam radiators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.

System: D5010 - Electrical Service/Distribution

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Service Transformer, Add Switchboard

Qty: 0.00

Unit of Measure: Ea.

Estimate: $372,694.92

Assessor Name: System

Date Created: 01/18/2016

Notes: Install a new 1000 KVA, 480V 3 phase electrical Service, with a 1600 A 480V Switchgear to replace both services plus future HVAC loads.
Install a new 480 V MCC to handle the new HVAC loads.
Install a new 300KV transformer (480V- 120V) to feed the existing 120V distribution panels.

System: D5030 - Communications and Security

Location: throughout the building

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $24,272.09

Assessor Name: System

Date Created: 01/18/2016

Notes: Install new Video Surveillance System with Cameras and CCTV.

Priority 5 - Response Time (> 5 yrs):

System: D3030 - Cooling Generating Systems

Location: Throughout 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: 4,300.00

Unit of Measure: S.F.

Estimate: $232,516.50

Assessor Name: System

Date Created: 10/20/2015

Notes: Remove the window air conditioning units and install a 110 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $288,457.17

Assessor Name: System

Date Created: 10/20/2015

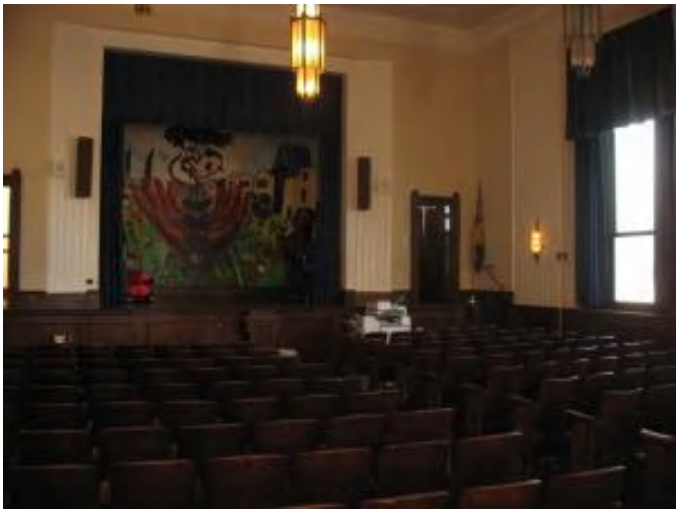
Notes: Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings.

System: D3040 - Distribution Systems

Location: Cafeteria
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 5 - Response Time (> 5 yrs)
Correction: Install HVAC unit for Cafeteria (850 students).
Qty: 616.00
Unit of Measure: Pr.
Estimate: $268,335.79
Assessor Name: System
Date Created: 10/20/2015

Notes: Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.

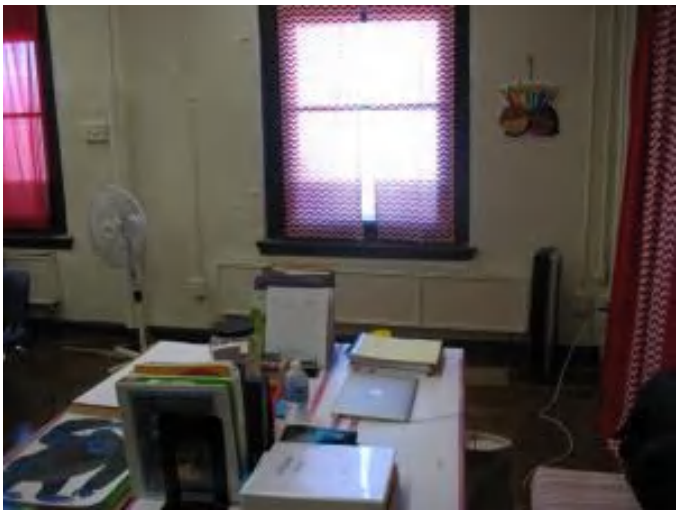
System: D3040 - Distribution Systems



Location: Auditorium
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 5 - Response Time (> 5 yrs)
Correction: Install HVAC unit for Auditorium (200 seat).
Qty: 200.00
Unit of Measure: Seat
Estimate: $257,700.71
Assessor Name: System
Date Created: 10/20/2015

Notes: Provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3040 - Distribution Systems



Location: Administration

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Administration (2000 students).

Qty: 616.00

Unit of Measure: Pr.

Estimate: $241,176.32

Assessor Name: System

Date Created: 10/20/2015

Notes: Provide ventilation for the administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 43,000.00

Unit of Measure: S.F.

Estimate: $799,230.56

Assessor Name: System

Date Created: 10/20/2015

Notes: Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D2020 Domestic Water Distribution	Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Basement	Alyan Pump				25	2000	2025	$8,650.00	$19,030.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	1994			35	1967	2002	$110,000.00	$242,000.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 5230 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Boiler Room	Weil-McLain	1994			35	1967	2002	$110,000.00	$242,000.00
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 0 stories, 0' horizontal	4.00	Ea.	electrical room					30	2010	2040	$6,300.00	$27,720.00
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	electrical room					30	2010	2040	$40,900.00	$44,990.00
												Total:	**$575,740.00**

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):	37,600
Year Built:	1931
Last Renovation:	
Replacement Value:	$726,942
Repair Cost:	$831,127.14
Total FCI:	114.33 %
Total RSLI:	106.35 %

Description:

Attributes:

General Attributes:

Bldg ID:	S556001	Site ID:	S556001

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	106.21 %	132.06 %	$671,507.68
G40 - Site Electrical Utilities	106.67 %	73.07 %	$159,619.46
Totals:	**106.35 %**	**114.33 %**	**$831,127.14**

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.	8,700	30	1931	1961	2047	106.67 %	44.82 %	32		$33,143.22	$73,950
G2030	Pedestrian Paving	$12.30	S.F.	22,000	40	1931	1971	2057	105.00 %	116.93 %	42		$316,422.71	$270,600
G2040	Site Development	$4.36	S.F.	37,600	25	1931	1956	2042	108.00 %	196.38 %	27		$321,941.75	$163,936
G2050	Landscaping & Irrigation	$4.36	S.F.		15				0.00 %	0.00 %				$0
G4020	Site Lighting	$4.84	S.F.	37,600	30	1931	1961	2047	106.67 %	53.80 %	32		$97,904.60	$181,984
G4030	Site Communications & Security	$0.97	S.F.	37,600	30	1931	1961	2047	106.67 %	169.21 %	32		$61,714.86	$36,472
								Total	**106.35 %**	**114.33 %**			**$831,127.14**	**$726,942**

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.

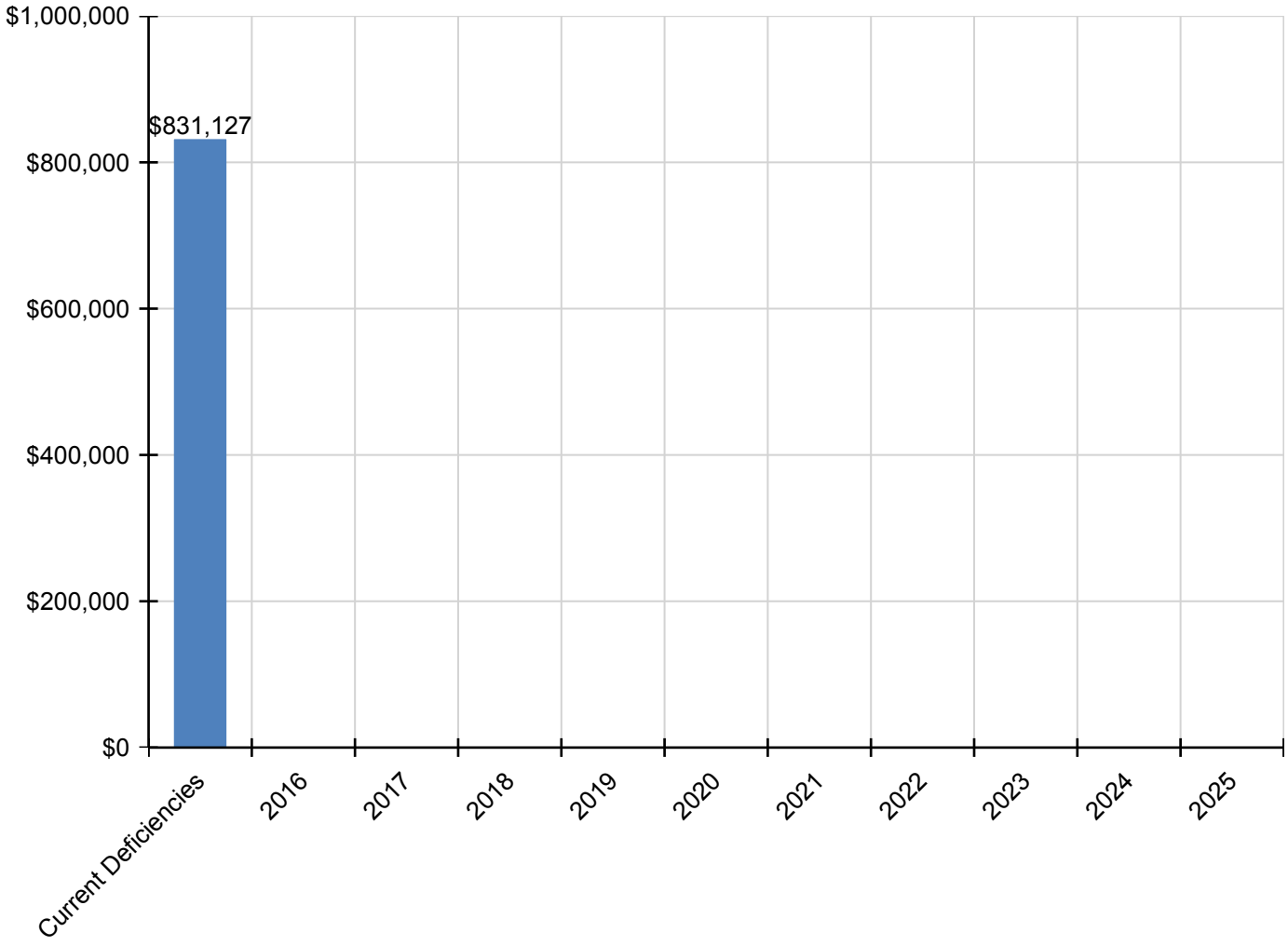
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$831,127**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$831,127**
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	$33,143	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$33,143**
G2030 - Pedestrian Paving	$316,423	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$316,423**
G2040 - Site Development	$321,942	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$321,942**
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	$97,905	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$97,905**
G4030 - Site Communications & Security	$61,715	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$61,715**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

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

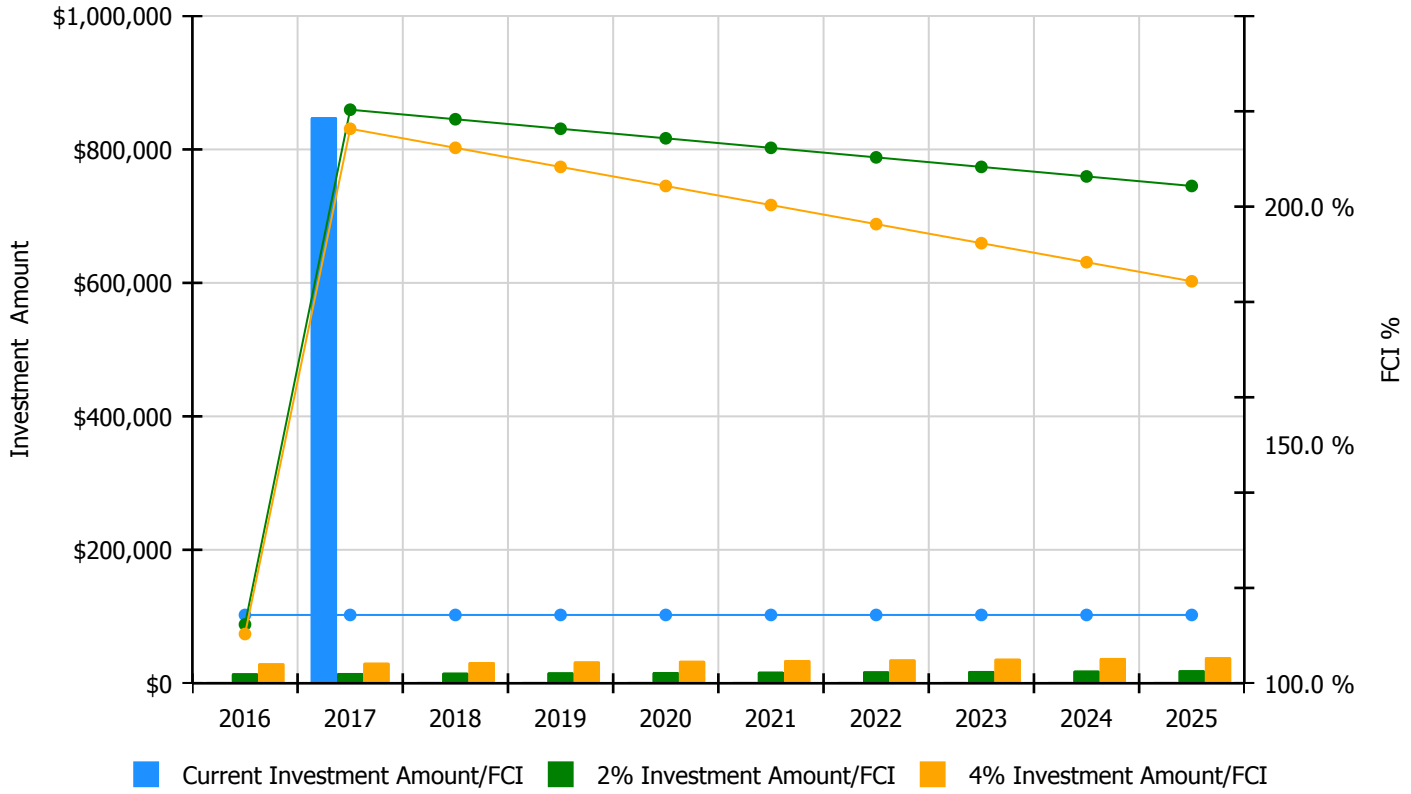


10 Year FCI Forecast by Investment Scenario

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

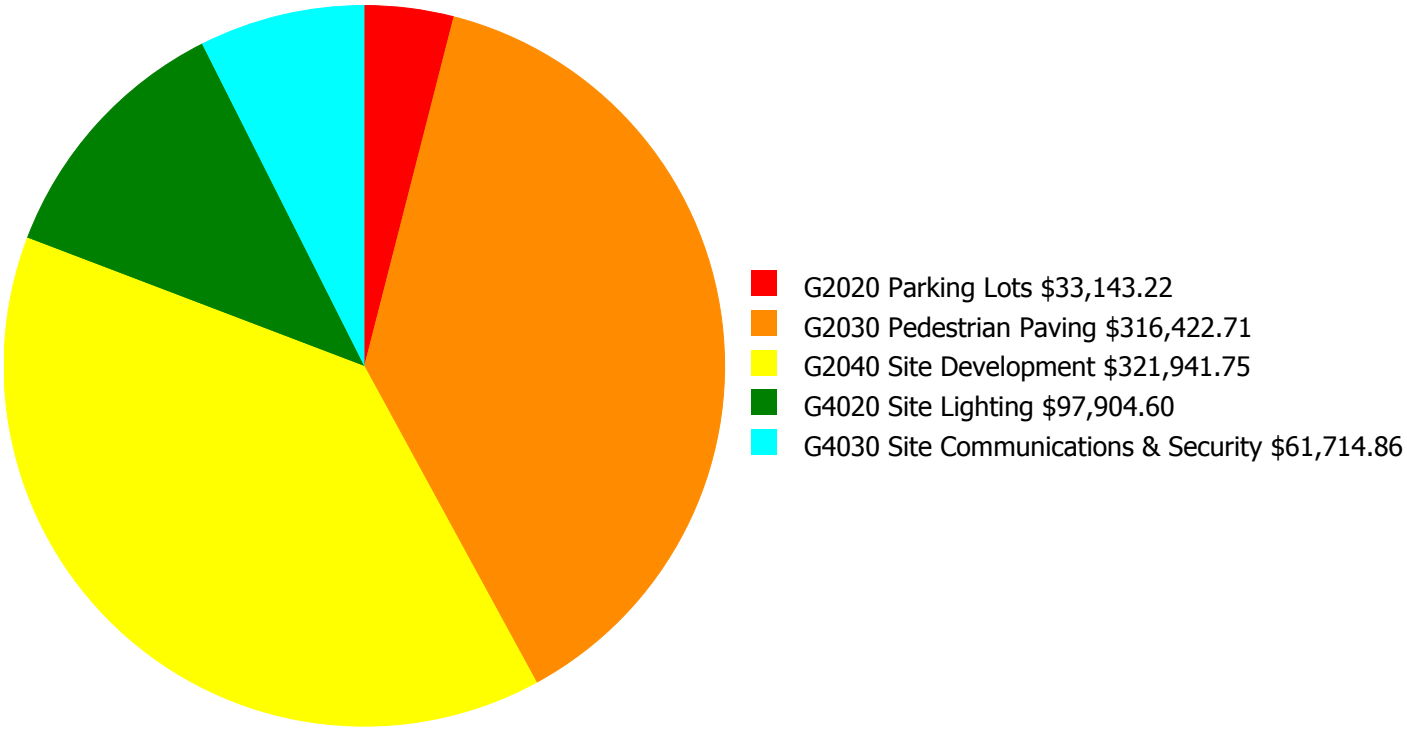
Facility Investment vs. FCI Forecast



Year	Investment Amount Current FCI - 114.33%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$14,975.00	112.33 %	$29,950.00	110.33 %
2017	$848,334	$15,424.00	220.33 %	$30,849.00	216.33 %
2018	$0	$15,887.00	218.33 %	$31,774.00	212.33 %
2019	$0	$16,364.00	216.33 %	$32,727.00	208.33 %
2020	$0	$16,855.00	214.33 %	$33,709.00	204.33 %
2021	$0	$17,360.00	212.33 %	$34,720.00	200.33 %
2022	$0	$17,881.00	210.33 %	$35,762.00	196.33 %
2023	$0	$18,417.00	208.33 %	$36,835.00	192.33 %
2024	$0	$18,970.00	206.33 %	$37,940.00	188.33 %
2025	$0	$19,539.00	204.33 %	$39,078.00	184.33 %
Total:	**$848,334**	**$171,672.00**		**$343,344.00**	

Deficiency Summary by System

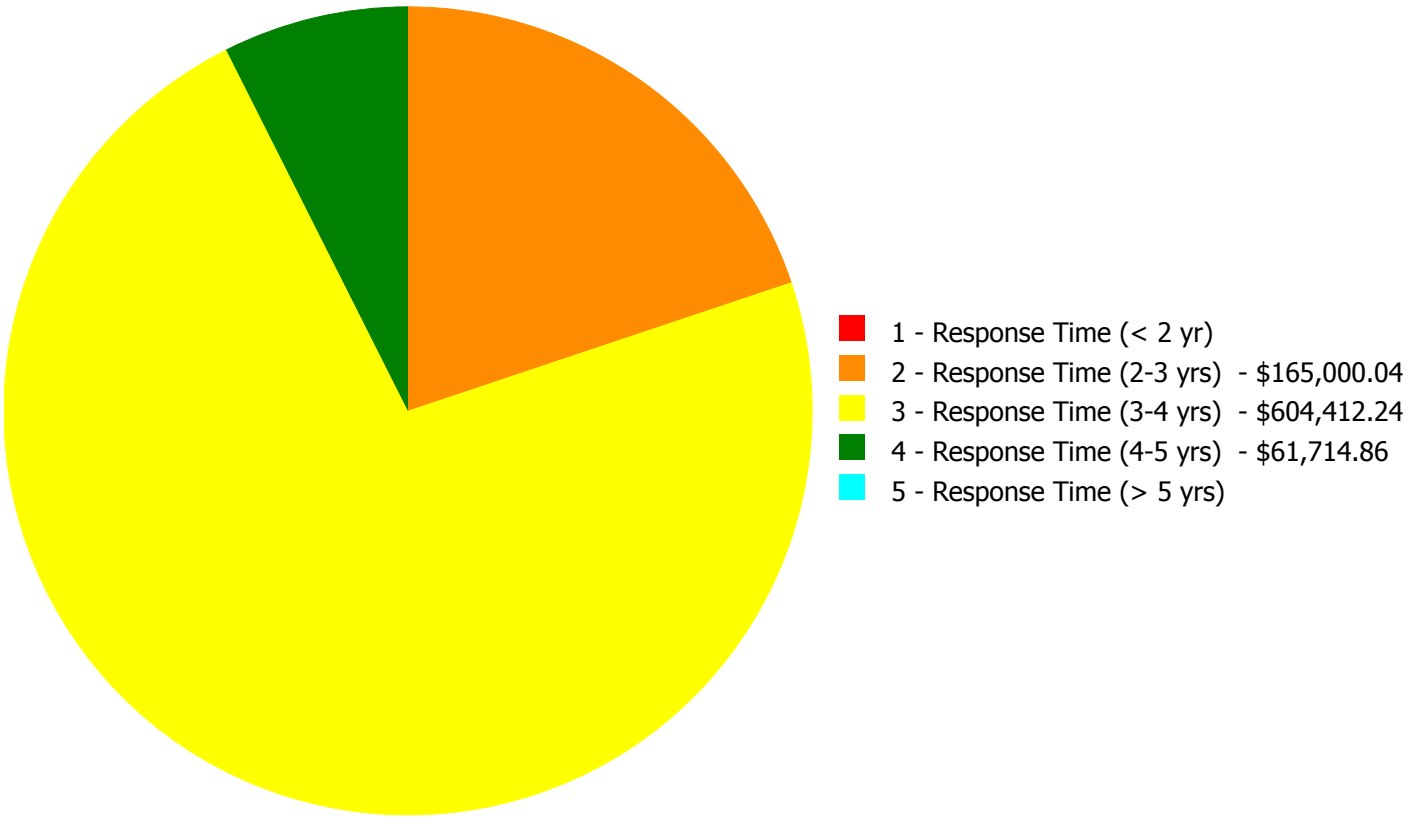
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $831,127.14

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: $831,127.14

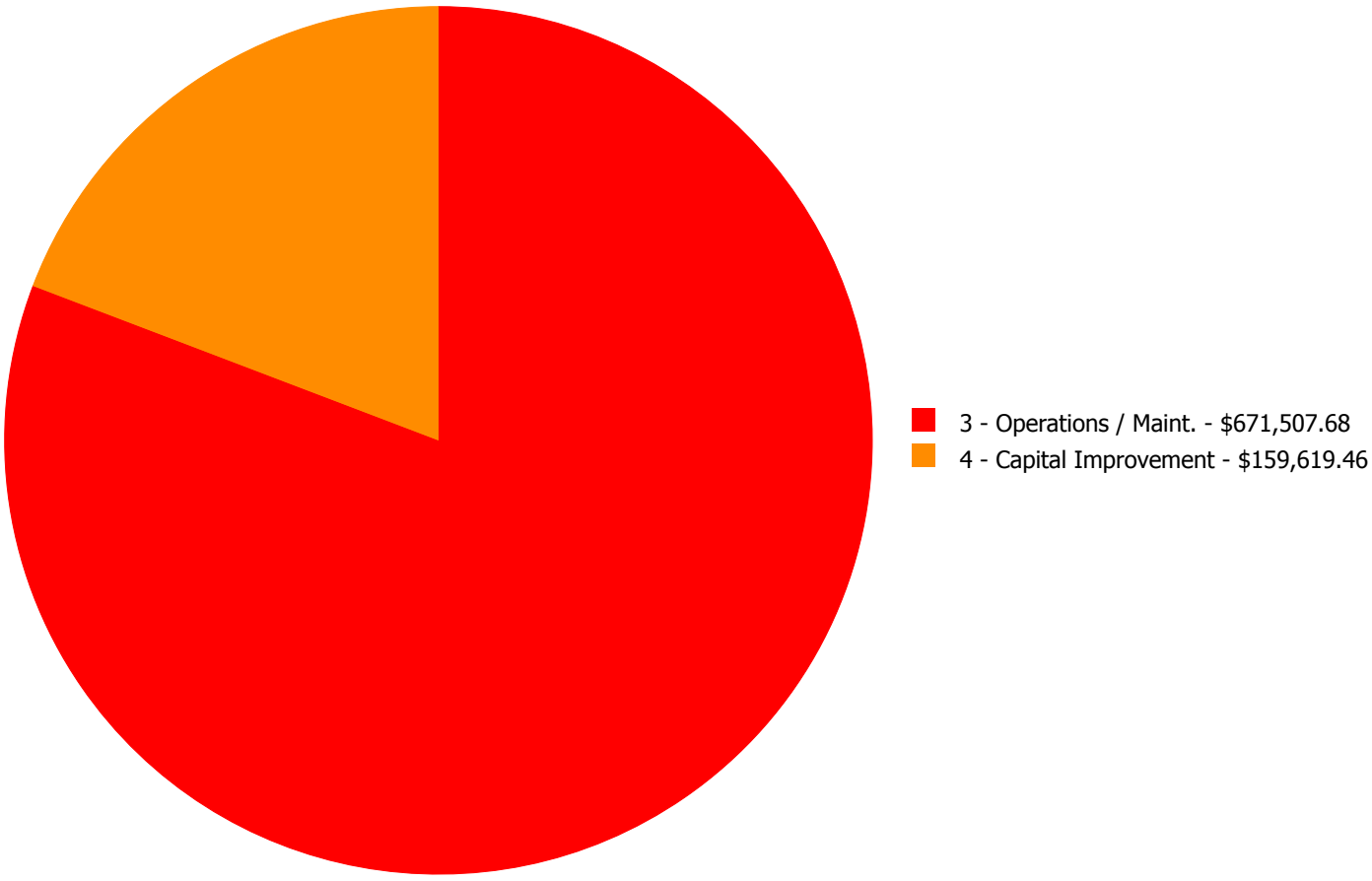
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$0.00	$33,143.22	$0.00	$0.00	$33,143.22
G2030	Pedestrian Paving	$0.00	$0.00	$316,422.71	$0.00	$0.00	$316,422.71
G2040	Site Development	$0.00	$165,000.04	$156,941.71	$0.00	$0.00	$321,941.75
G4020	Site Lighting	$0.00	$0.00	$97,904.60	$0.00	$0.00	$97,904.60
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$61,714.86	$0.00	$61,714.86
	Total:	$0.00	$165,000.04	$604,412.24	$61,714.86	$0.00	$831,127.14

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: $831,127.14

Deficiency Details by Priority

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

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

System: G2040 - Site Development

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Repair exterior brick retaining wall - per LF of wall - up to 4' tall

Qty: 320.00

Unit of Measure: L.F.

Estimate: $165,000.04

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Rebuild south area way brick wall and stone coping

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

System: G2020 - Parking Lots

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Resurface parking lot - grind and resurface including striping

Qty: 8,700.00

Unit of Measure: S.F.

Estimate: $33,143.22

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Resurface parking area; provide new striping incl. ADA spaces and aisles.

System: G2030 - Pedestrian Paving

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 22,000.00

Unit of Measure: S.F.

Estimate: $316,422.71

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Resurface playground

System: G2040 - Site Development

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace chain link fence - 8' high

Qty: 800.00

Unit of Measure: L.F.

Estimate: $89,590.24

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Replace chain link fence at parking/play ground perimeter

System: G2040 - Site Development

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 400.00

Unit of Measure: L.F.

Estimate: $67,351.47

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Replace picket fence at south playground side

System: G4020 - Site Lighting

Location: Grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Lighting - pole mounted - select the proper light and pole

Qty: 1.00

Unit of Measure: Ea.

Estimate: $97,904.60

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Install additional outdoor lighting for the grounds

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

System: G4030 - Site Communications & Security

Location: Grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Paging System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $61,714.86

Assessor Name: Craig Anding

Date Created: 01/18/2016

Notes: Install additional exterior speakers for the grounds.

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