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.

Kearny School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	601 Fairmount Ave.	Enrollment	406
	Philadelphia, Pa 19123	Grade Range	'00-08'
Phone/Fax	215-351-7343 / 215-351-7129	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Kearny	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	**36.40%**	**$16,342,364**	**$44,896,673**
Building	35.81 %	$15,962,621	$44,573,273
Grounds	117.42 %	$379,743	$323,400

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	79.05 %	$1,039,370	$1,314,899
Exterior Walls (Shows condition of the structural condition of the exterior facade)	38.89 %	$1,291,579	$3,321,088
Windows (Shows functionality of exterior windows)	92.54 %	$1,499,572	$1,620,504
Exterior Doors (Shows condition of exterior doors)	111.69 %	$145,717	$130,468
Interior Doors (Classroom doors)	113.29 %	$357,794	$315,823
Interior Walls (Paint and Finishes)	72.77 %	$633,964	$871,209
Plumbing Fixtures	23.95 %	$291,349	$1,216,503
Boilers	00.00 %	$0	$1,679,889
Chillers/Cooling Towers	45.42 %	$1,000,514	$2,202,661
Radiators/Unit Ventilators/HVAC	71.17 %	$2,753,021	$3,868,154
Heating/Cooling Controls	110.02 %	$1,336,468	$1,214,703
Electrical Service and Distribution	58.54 %	$510,922	$872,787
Lighting	22.96 %	$716,362	$3,120,437
Communications and Security (Cameras, Pa System and Fire Alarm)	33.34 %	$389,632	$1,168,814

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

S548001;Kearny

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):	49,000
Year Built:	1921
Last Renovation:	2012
Replacement Value:	$44,896,673
Repair Cost:	$16,342,364.14
Total FCI:	36.40 %
Total RSLI:	77.19 %

Description:

Facility Assessment, July 2015

School District of Philadelphia

Kearny Elementary School

601 Fairmount Ave.

Philadelphia, PA 19123

77,300 SF / 417 Students / LN 03

The Kearny Elementary school building is located at 601 Fairmount Avenue in Philadelphia, PA. The 3 story with basement, approximately 62,300 square foot building was originally constructed in 1921. The building has a two level basement. A new addition, approximately 15,000 square feet built in 2012, has been added to the original building that features a gym, support areas (lockers & toilets), mechanical room, and four (4) classrooms.

Mr. Derek Parker, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Mr. Ernest Mitchell, custodian, accompanied us on our tour of the school and provided us with as much information as he could on the building systems and recent maintenance history. Subsequent telephone conversation with school's principal, Mr. Daniel Kurtz added to the information gathered during the site visit.

STRUCTURAL/ EXTERIOR CLOSURE:

The original building typically rests on concrete foundations and bearing walls that are not showing signs of settlement. However, there is severe and constant water seepage through basement walls especially in the unused coal and ash bunkers indicating possible high ground water levels. The mold build-up is evident in bunkers and other parts of mechanical spaces. There is evidence of leaks through wall and mold in basement level cafeteria.

The main structure consists typically of cast-in-place concrete columns, beams and concrete slabs. The new addition structure (1 story) consists of steel framing (columns and girders) supporting truss roof structure. The original roof structure consists of concrete one-way slab supported by main structural frame in good condition; the addition's roof structure consists of galvanized steel structural deck supported by steel truss joists.

The original building envelope is typically stone and face brick masonry. The new addition exterior walls are face brick with CMU backup. In general, masonry is in fair to poor condition with some stone and face brick facing showing cracks and missing mortar. There is evidence of water penetration through walls, around windows in particular.

The original building windows were retrofitted in late 1980's or early 1990's with extruded aluminum double hung windows single glazed with acrylic glazing; original wood frames are left in place and deteriorating. All windows are generally in poor condition with some of the windows inoperable; first floor windows have security screens in fair to poor condition; windows are unsafe to operate due to possible balancing mechanism failure (one case of serious injury reported). The windows are generally not energy efficient. Windows in the new addition are anodized aluminum frames with double insulating glass and integral security screens; gym's clerestory windows are insulating fiberglass translucent panels.

The original building's exterior doors are typically hollow metal doors and frames, painted. The doors are generally in poor condition; no weather-stripping is installed; some doors have vision glazing with security screens. The new addition has fully glazed hollow metal doors in aluminum, store front type frames for people access and hollow metal doors and frames leading to support spaces.

Roofing system on the original building is built-up, and in fair condition; all roofing and flashing is typically in fair condition with some deterioration of the built-up system; leaks have been reported by school principal. Gravity roof vents are mostly rusted and damaged.

INTERIORS:

I the original building partition wall types include plastered ceramic hollow blocks and drywall; basement corridors and cafeteria/gym have glazed brick wainscot. In the new addition partitions are generally painted CMU.

Interior doors in the original building are generally rail and stile wood doors, some glazed with matching wood frame side lights, some doors are missing closers. Some of the doors leading to exit stairways are hollow metal doors and frames in good condition. New addition has solid core doors in hollow metal frames in very good condition.

Fittings include: toilet accessories and toilet partitions, generally in good condition – replaced in 2012 and fully upgraded for accessibility. 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 in the original building.

The interior wall finishes in the original building are generally painted plaster or drywall and some painted brick with glazed tile or stone wainscot in stairways; toilets. Generally, paint is in poor condition throughout the original building. Boiler room and other mechanical and electrical spaces show extreme finish deterioration with paint peeling from walls and ductwork.

Most ceilings in the original building are 2x4 suspended acoustical panels with some pressed metal tiles and exposed, painted. The suspension system and tile are old and approaching the end of their useful life.

Flooring in classrooms and auditorium is generally hardwood; VCT in most corridors; and ceramic tile in toilets. Most flooring is in fair condition, however, is often uneven creating possible tripping hazard; The main office and cafeteria/gym has VCT tile, generally in poor condition. Library and principal's office has carpet in very poor condition.

Stair construction is generally concrete with cast iron non-slip treads 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:

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 wheelchair lift in the lobby connecting the original building with the new 2012 addition. Original building has no elevator.

PLUMBING:

In the original building many of the original plumbing fixtures remain in service. Fixtures in the restrooms on each of the three floors consist of floor mounted flush valve water closets, wall hung urinals and lavatories with twist-type handle faucets. With proper maintenance these fixtures should provide reliable service for the next 5-10 years. However, the older units should be replaced as part of any renovation of the spaces.

In the addition the fixtures in the restrooms consist of floor mounted flush valve water closets, wall hung urinals, and sinks with wheel handle and lever faucets. These facilities are handicap accessible.

In the original building drinking fountains in the corridors and at the restrooms are wall hung with integral refrigerated coolers. They are well beyond their service life and should be replaced; most are NOT accessible type.

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

The Cafeteria in the original building does not have a service sink.

In the original building a 4” city water service enters the original building from Fairmount Avenue near the intersection with Sixth. The 4” meter and valves are located in the basement level boiler room. Two backflow preventers and two domestic water booster pumps are installed. A reduced pressure backflow preventer is installed on the makeup line to the boilers. The original domestic hot and cold water distribution piping was replaced with copper piping and sweat fittings.

In the addition a 3” city water service enters the building from N. Marshall Street near the intersection with Brown Street. The 3” meter and valves are located in the boiler room. Two backflow preventers and two domestic water booster pumps are installed. A reduced pressure backflow preventer is installed on the makeup line to the boilers.

In the original building a 6” city gas service enters the building from N. Sixth Street near the intersection with Fairmount Avenue. The meter is 2” and located in the in the basement boiler room. The gas main has a booster pump connected in the boiler room.

In the addition a 4” city gas service enters the building from N. Marshall Street near the intersection with Brown Street. The meter is 2” and located in the in the boiler room.

In the addition two Bradford White gas fired, 50 gallon, vertical hot water heaters with recirculating pumps supply hot water for domestic use. The units are located in the boiler room on the ground level. The hot water heaters are equipped with a T&P relief valves, and have an expansion tank. A water softener located in the boiler room supplies conditioned water to the boilers.

The original storm and sanitary sewer piping is galvanized steel piping with threaded fittings. Downspouts from the roof run down the exterior of the building and connect to the storm sewer system underground.

A small sewage ejector pit located in the basement of the original building receives water from the basement area. It has a single pump that is reaching the end of its service life and should be replaced in the next 5-7 years. The pit is not sealed, but should be. Flooding was observed in the basement and a new pit, pump, and perimeter drain should be installed alleviate the water infiltration into the former coal ash room in the basement.

The maintenance staff and principal reported major problems with the sanitary waste piping systems in the original building. During rain storms the plumbing fixtures backup into the school system causing flooding and health and safety concerns. The sewer piping has been in service for nearly 70 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 to quantify the extent of potential failures.

In the original building natural gas is supplied by a 6" gas main with booster pump located in the basement. The piping appears to have been installed within the last 10 years.

In the original building one Bradford White gas fired, 75 gallon, vertical hot water heater with recirculating pump, installation date of 10/27/2014, supplies hot water for domestic use. The unit is located in the boiler room on the basement level. The hot water heater is equipped with a T&P relief valve, but has no expansion tank. The domestic hot water heater is within its service life and should provide reliable service for the next 10 years. A water softener located in the boiler room supplies conditioned water to the boilers.

MECHANICAL:

In the original building low pressure steam is generated at a maximum of 15 lbs/sq. in., typically 5-7 lbs/sq. in., by two HB Smith cast iron sectional boilers installed in approximately 2005 according to the custodian. Each boiler is equipped with a Power Flame burner designed to operate on natural gas and appear to be original to the boilers. Combustion air makeup is supplied by louvers equipped with motorized dampers. Induced draft fans with positive draft control are installed on the rear of each boiler. There is no insulation on the steam piping in the boiler room. Burner controls provide full modulation with electronic ignition, and digital flame sensing. The gas train serving the building was replaced in 2012 according to the custodian and does appear to have code required venting of the regulators and dual solenoid valves with venting of the chamber between. Cast iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service approximately 10 years. The boilers appear to have been maintained well. The District should provide reliable service for the next 15 to 20 years.

In the addition heating hot water is supplied by two Buderus GE515 cast iron section boilers. Each boiler is equipped with Webster Cyclonetic pressure jet burners designed to operate on natural gas or fuel oil. Combustion air makeup is supplied by louvers equipped with motorized dampers.

The reserve oil supply is stored in an underground storage tank (UST), size unknown, located in the play yard. This tank serves only the boilers in the addition. Duplex pumps located in the boiler room in the addition circulate oil through the system. Oil is used as a backup fuel and the District receives credit from the gas utility as an interruptible service. The current oil supply should be tested for quality on a regular schedule. USTs have an anticipated service life of 20 years.

The condensate receiver, boiler feed pump and tank assembly are installed in the basement and appear to be in decent condition.

In the original building steam piping is black steel (ASTM A53) with both threaded and welded fittings. The condensate piping is Schedule 80 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.

In the addition hot water distribution piping is black steel (ASTM A53). Hot water piping mains from the boiler room run to the unit ventilators in the classrooms and up to the air handling unit on the roof. This piping is only a few years old and should not require maintenance for many years.

In the original building two pipe cast iron radiators provide heating for the classrooms, offices, and hallways. These radiators are well beyond their service life and original to the building. Ventilation for the building is provided by opening windows, which does not meet current codes for outdoor air ventilation. 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 outdoor air to the building.

Several of the classrooms in the original school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 125 ton air-cooled chiller on the roof with pumps located in a mechanical room in the basement level and chilled water distribution piping could supply more reliable air conditioning for the building with a much longer service life.

In the addition heating and air conditioning of the classrooms is provided by unit ventilators served by the two boilers in the

mechanical room and a Carrier AquaForce chiller mounted on the roof. The gymnasium is conditioned by a Carrier roof mounted air handling unit.

The original school, besides the restrooms, has no mechanical ventilation. The existing ventilation system is inoperable. Ventilation could be provided for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers. For the administrative offices fan coil air handling units could be hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Ventilation could be provided 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. Steam converters could be installed in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.

In the addition unit ventilators provide heating, cooling, and outdoor air to the four (4) classrooms.

In the original building exhaust for the restrooms is provided by three roof mounted exhaust fans. The existing roof mounted exhaust fans are beyond their service life and should be replaced.

In the addition twelve (12) roof mounted Cook exhaust fans are installed.

In the original building the original pneumatic systems still provide basic control functions. Pneumatic room thermostats are intended to control the steam radiator control valves. In reality the radiator control valves are wide open and heating control is achieved via the boilers. Pneumatic control air is supplied from a compressor located in the boiler room. There is no air scrubber. 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 the original building to improve reliability and energy efficiency. An interface should be provided with the preferred system in use throughout the District. Controls in the addition are sufficient.

The addition does have a BAS and modern controls.

The original school building is NOT covered by an automatic sprinkler system. 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 standpipe in the stairwells.

The addition does have full sprinkler coverage for the building.

ELECTRICAL:

Electrical Service- The electrical service is fed from a medium voltage overhead line on wooden poles along N. Marshall St. The service crosses the street overhead to a riser pole, then to a 300 kVA, 480/277V, 3 phase, 4 wire pad mounted transformer. Service is then fed underground to the main electrical room located in the 2012 school addition.

Distribution System and Raceway System- The power distribution system is mainly a 480/277V three phase system with step down transformers providing 208/120V three phase for the newer section of school.

Power is supplied to the original school building via 480V:120/240V, 2 phase, 5 wire transformer located in the basement. Each of the floors contain 120/240V distribution panels for classroom lighting and receptacles. These panelboards and associated wiring have exceeded the end of its useful life and should be replaced.

Receptacles- Classrooms are typically supplied with 2 receptacles. Additional receptacles should be added to each of these classrooms. There is a classroom on each floor that has been upgraded. These classrooms typically contain 7 duplex outlets and 2 quadruplex outlets.

Lighting- The entire building, with the exception of the upgraded classrooms, is outfitted with fluorescent fixtures with T-12 lamps, with some incandescent lighting and compact fluorescent screw in type, located in specific areas. Classrooms consist of 8 - 2X4, 3 lamp lay-in grid and surface mounted fixtures. Classroom lighting is typically controlled by inboard/outboard switching. Lighting levels do not meet IES (Illuminating Engineering Society) recommended levels in some areas. Classroom lighting levels were found to be in the range of 23 fc in older classrooms, and 35 fc in the updated classrooms. Recommended lighting levels for classrooms is 50 fc. Storage and mechanical room lighting levels were as low as 2.5 fc vs. the recommended 35 fc. Lighting should be upgraded to

bring lighting levels up to recommended levels with T-8 lamps.

Fire Alarm System – The school has 2 separate fire alarm systems. The 2012 addition has an EST 0500 system that includes both audible and visual devices. The older school building has a non-addressable, 120V system. The system consists of pull stations and bells located in the corridors only. The fire alarm system located in the 2012 addition should be expanded to include the original building. New audible and visual devices should be installed to meet current life safety codes.

Telephone/LAN – The present telephone/LAN system is adequate.

Public Address/Intercom/Paging – An independent and separate PA system does not exist. School uses the telephone system for public announcement. Two way communication is not available through the public announcement system. Communication back to the office is through a wall mounted phone located in each classroom. This system is adequate and in working condition.

Clock and Program System – The present clocks and bell system are functioning properly.

Television System – The facility is equipped with TV coax system, however there presently are no televisions in the classrooms.

Security System – There exists an Altronix security system. The system is composed of door contacts on exterior doors in both new and old section, and motion sensors in the newer addition.

Emergency Power System – A 15kW natural gas Onan generator is housed in the basement of the school for emergency lighting. The generator is currently adequate for this facility but will require replacement for the addition of an elevator.

Emergency Lighting System / Exit Lighting- The emergency lighting in the older portion of the school is not adequate throughout the building. It is recommended that during the lighting upgrade, select fluorescent fixtures be connected to the generator. The exit lighting is adequate.

Lightning Protection System- A lightning protection system exists on the roof but it does not provide adequate coverage.

GROUNDS (SITE):

There is no parking lot at the site.

Playground adjacent to the building is in poor condition, paving is cracked and deteriorated; playground equipment is in good condition. Original perimeter fences are generally in poor condition and rusting. The landscaping is generally in poor condition with portions of the grass missing; a few plants are not mature yet.

Site Lighting - Site lighting is provided by building mounted flood lights installed around the entire perimeter of the school. The site lighting provides an adequate amount of lighting.

Video Surveillance – There are exterior cameras and cameras located on the first floor for video surveillance system in place.

Site Paging – There is an adequate amount of exterior speakers for site paging.

ACCESSIBILITY:

Generally, second and third floor of the original building are not accessible per ADA requirements due to lack of an elevator. Accessible route is provided via new addition to the first floor only. Toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. None of the doors in the original building have ADA required door handles.

RECOMMENDATIONS:

- Install membrane waterproofing at coal and ash bunkers. Provide perimeter drainage [see mechanical for additional sump pumps and piping]
- Remove mold from basement walls
- Repair cracks in masonry, replace missing mortar, tuck-point original building – all walls
- Install all new roofing system including insulation within next 3 to 4 years; tear-down existing roofing; install flashing, counter flashing and reglets
- Replace gravity roof vents

- Replace handrails at exterior door stoops
- Replace all windows within next 5 to 10 years
- Replace exterior doors including hardware
- Replace interior doors including hardware
- Replace window blinds
- Replace VCT flooring including cove base (approx 50%)
- Replace existing carpet
- Repair & refinish hardwood flooring (40% incl. auditorium stage)
- Replace all suspended acoustical ceilings in original building
- Repair and repaint all exposed ceilings, including Boiler Room and Mechanical spaces, abatement of lead base paint may be required
- Repair and repaint interior walls including basement mechanical spaces [60%]
- Conduct lead based paint abatement in locations indicated in environmental report.
- Replace damaged auditorium seats; refinish all seats
- Reconfigure toilets on each floor for accessibility, provide new toilet partitions and toilet accessories including grab bars
- Resurface playground paving.
- Replace original fence with new decorative security fence
- Provide sod in grass areas.
- Install 4 stop traction elevator, minimum 3000# capacity; machine-room-less type in the original building
- Replace the wheel lavatories in the restrooms with new code compliant fixtures.
- Replace sewage ejector pump in the next 5-7 years.
- A new pit, pump, and perimeter drain should be installed alleviate the water infiltration into the former coal ash room in the basement.
- Replace three existing roof mounted exhaust fans serving the bathrooms and utilize the existing ductwork.
- Replace the wall hung drinking fountains and integral refrigerated coolers in the corridors and at the restrooms. These units are well beyond their service life and most are NOT accessible type.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping to locate and replace any damaged piping and to further quantify the extent of potential failures.
- 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.
- Install insulation on steam piping in boiler room.
- Remove the existing cast iron steam radiators and install fan coil units with hot and chilled water coils and a dedicated outdoor air system to introduce outdoor air to the building.
- Remove the window air conditioning units and install a 125 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room in the basement level to supply more reliable air conditioning for the building with a much longer service life.
- Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- 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 the window openings.
- Provide ventilation for the corridors and 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.
- 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.
- Replace the electrical distribution system in the original school areas.
- Install minimum two receptacles on each wall of class rooms and other purpose rooms.
- Provide new lighting in the older school areas.
- Install a new addressable fire alarm system in the older school area and connect to the 2012 addition fire alarm system.
- Provide new emergency lighting throughout the older school area.
- Replace existing generator with larger generator sized to operate an elevator.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 1 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S548001		

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 %	16.72 %	$393,207.27
A20 - Basement Construction	37.00 %	9.82 %	$170,094.74
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	54.96 %	57.90 %	$2,936,867.78
B30 - Roofing	97.94 %	79.05 %	$1,039,369.53
C10 - Interior Construction	51.99 %	16.20 %	$357,794.03
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	116.05 %	34.11 %	$1,411,819.66
D10 - Conveying	91.43 %	486.92 %	$670,322.07
D20 - Plumbing	104.44 %	35.50 %	$652,173.80
D30 - HVAC	95.28 %	50.85 %	$5,090,003.07
D40 - Fire Protection	105.71 %	122.89 %	$891,227.88
D50 - Electrical	110.11 %	32.91 %	$1,740,720.86
E10 - Equipment	105.71 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	317.77 %	$609,020.53
G20 - Site Improvements	60.75 %	158.31 %	$379,742.92
G40 - Site Electrical Utilities	90.00 %	0.00 %	$0.00
Totals:	**77.19 %**	**36.40 %**	**$16,342,364.14**

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)
B548001;Kearny	77,300	35.81	$1,155,791.35	$3,696,811.65	$3,317,135.42	$1,429,867.07	$6,363,015.73
G548001;Grounds	19,200	117.42	$0.00	$0.00	$180,598.38	$124,737.34	$74,407.20
Total:		**36.40**	**$1,155,791.35**	**$3,696,811.65**	**$3,497,733.80**	**$1,554,604.41**	**$6,437,422.93**

Deficiencies By Priority

1 - Response Time (< 2 yr) - $1,155,791.35
2 - Response Time (2-3 yrs) - $3,696,811.65
3 - Response Time (3-4 yrs) - $3,497,733.80
4 - Response Time (4-5 yrs) - $1,554,604.41
5 - Response Time (> 5 yrs) - $6,437,422.93

Budget Estimate Total: $16,342,364.14

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):	77,300
Year Built:	1921
Last Renovation:	
Replacement Value:	$44,573,273
Repair Cost:	$15,962,621.22
Total FCI:	35.81 %
Total RSLI:	77.25 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B548001
Sewage Ejector:	Yes	Status:	Accepted by SDP
Site ID:	S548001		

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 %	16.72 %	$393,207.27
A20 - Basement Construction	37.00 %	9.82 %	$170,094.74
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	54.96 %	57.90 %	$2,936,867.78
B30 - Roofing	97.94 %	79.05 %	$1,039,369.53
C10 - Interior Construction	51.99 %	16.20 %	$357,794.03
C20 - Stairs	37.00 %	0.00 %	$0.00
C30 - Interior Finishes	116.05 %	34.11 %	$1,411,819.66
D10 - Conveying	91.43 %	486.92 %	$670,322.07
D20 - Plumbing	104.44 %	35.50 %	$652,173.80
D30 - HVAC	95.28 %	50.85 %	$5,090,003.07
D40 - Fire Protection	105.71 %	122.89 %	$891,227.88
D50 - Electrical	110.11 %	32.91 %	$1,740,720.86
E10 - Equipment	105.71 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	317.77 %	$609,020.53
Totals:	**77.25 %**	**35.81 %**	**$15,962,621.22**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	89,978	100	1921	2021	2052	37.00 %	23.75 %	37		$393,207.27	$1,655,595
A1030	Slab on Grade	$7.73	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$695,530
A2010	Basement Excavation	$6.55	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$589,356
A2020	Basement Walls	$12.70	S.F.	89,978	100	1921	2021	2052	37.00 %	14.89 %	37		$170,094.74	$1,142,721
B1010	Floor Construction	$75.10	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$6,757,348
B1020	Roof Construction	$13.88	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$1,248,895
B2010	Exterior Walls	$36.91	S.F.	89,978	100	1921	2021	2052	37.00 %	38.89 %	37		$1,291,578.88	$3,321,088
B2020	Exterior Windows	$18.01	S.F.	89,978	40	1985	2025	2050	87.50 %	92.54 %	35		$1,499,571.77	$1,620,504
B2030	Exterior Doors	$1.45	S.F.	89,978	25	1990	2015	2042	108.00 %	111.69 %	27		$145,717.13	$130,468
B3010105	Built-Up	$37.76	S.F.	27,500	20	1995	2015	2035	100.00 %	100.09 %	20		$1,039,369.53	$1,038,400
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.	5,000	30	2012	2042		90.00 %	0.00 %	27			$271,100
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	89,978	20	1995	2015	2035	100.00 %	0.00 %	20			$5,399
C1010	Partitions	$17.91	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$1,611,506
C1020	Interior Doors	$3.51	S.F.	89,978	40	1921	1961	2052	92.50 %	113.29 %	37		$357,794.03	$315,823
C1030	Fittings	$3.12	S.F.	89,978	40	2012	2052		92.50 %	0.00 %	37			$280,731
C2010	Stair Construction	$1.41	S.F.	89,978	100	1921	2021	2052	37.00 %	0.00 %	37			$126,869

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System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$13.21	S.F.	59,978	10	2005	2015	2028	130.00 %	80.01 %	13		$633,963.62	$792,309
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	30,000	30	2012	2042		90.00 %	0.00 %	27			$78,900
C3020411	Carpet	$7.30	S.F.	1,100	10	2000	2010	2028	130.00 %	153.30 %	13		$12,309.85	$8,030
C3020412	Terrazzo & Tile	$75.52	S.F.	6,100	50	2012	2062		94.00 %	0.00 %	47			$460,672
C3020413	Vinyl Flooring	$9.68	S.F.	27,106	20	1995	2015	2037	110.00 %	13.74 %	22		$36,052.60	$262,386
C3020414	Wood Flooring	$22.27	S.F.	28,000	25	1921	1946	2043	112.00 %	19.34 %	28		$120,589.73	$623,560
C3020415	Concrete Floor Finishes	$0.97	S.F.	27,672	50	1980	2030		30.00 %	0.00 %	15			$26,842
C3030	Ceiling Finishes	$20.97	S.F.	89,978	25	1995	2020	2045	120.00 %	32.27 %	30		$608,903.86	$1,886,839
D1010	Elevators and Lifts	$1.53	S.F.	89,978	35	2012	2047		91.43 %	486.92 %	32		$670,322.07	$137,666
D2010	Plumbing Fixtures	$13.52	S.F.	89,978	35	1975	2010	2052	105.71 %	23.95 %	37		$291,348.87	$1,216,503
D2020	Domestic Water Distribution	$1.68	S.F.	89,978	25	1980	2005	2042	108.00 %	0.00 %	27			$151,163
D2030	Sanitary Waste	$2.90	S.F.	89,978	25	1921	1946	2042	108.00 %	138.28 %	27		$360,824.93	$260,936
D2040	Rain Water Drainage	$2.32	S.F.	89,978	30	2012	2042		90.00 %	0.00 %	27			$208,749
D3020	Heat Generating Systems	$18.67	S.F.	89,978	35	2004	2039		68.57 %	0.00 %	24			$1,679,889
D3030	Cooling Generating Systems	$24.48	S.F.	89,978	30			2047	106.67 %	45.42 %	32		$1,000,513.97	$2,202,661
D3040	Distribution Systems	$42.99	S.F.	89,978	25	1921	1946	2042	108.00 %	71.17 %	27		$2,753,021.29	$3,868,154
D3050	Terminal & Package Units	$11.60	S.F.	89,978	20			2025	50.00 %	0.00 %	10			$1,043,745
D3060	Controls & Instrumentation	$13.50	S.F.	89,978	20	1950	1970	2037	110.00 %	110.02 %	22		$1,336,467.81	$1,214,703
D4010	Sprinklers	$7.05	S.F.	89,978	35			2052	105.71 %	140.50 %	37		$891,227.88	$634,345
D4020	Standpipes	$1.01	S.F.	89,978	35			2052	105.71 %	0.00 %	37			$90,878
D5010	Electrical Service/Distribution	$9.70	S.F.	89,978	30	1921	1951	2047	106.67 %	58.54 %	32		$510,922.00	$872,787
D5020	Lighting and Branch Wiring	$34.68	S.F.	89,978	20	1921	1941	2037	110.00 %	22.96 %	22		$716,362.24	$3,120,437
D5030	Communications and Security	$12.99	S.F.	89,978	15	1921	1936	2032	113.33 %	33.34 %	17		$389,631.55	$1,168,814
D5090	Other Electrical Systems	$1.41	S.F.	89,978	30	1921	1951	2047	106.67 %	97.58 %	32		$123,805.07	$126,869
E1020	Institutional Equipment	$4.82	S.F.	89,978	35	1921	1956	2052	105.71 %	0.00 %	37			$433,694
E1090	Other Equipment	$11.10	S.F.	89,978	35	1921	1956	2052	105.71 %	0.00 %	37			$998,756
E2010	Fixed Furnishings	$2.13	S.F.	89,978	40	1921	1961	2057	105.00 %	317.77 %	42		$609,020.53	$191,653
								Total	**77.25 %**	**35.81 %**			**$15,962,621.22**	**$44,573,273**

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 75%
Wall tile 25%

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

Note: Carpet 1.5%
Hardwood flooring 36%
Tile 8%
VCT flooring 22%
Concrete 33%

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

Note: Acoustical ceiling 65%
Exposed ceiling 35%

Renewal Schedule

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

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$15,962,621**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,542,976**	**$17,505,597**
*** 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	$393,207	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$393,207**
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	$170,095	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$170,095**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$1,291,579	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,291,579**
B2020 - Exterior Windows	$1,499,572	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,499,572**
B2030 - Exterior Doors	$145,717	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$145,717**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$1,039,370	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,039,370**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

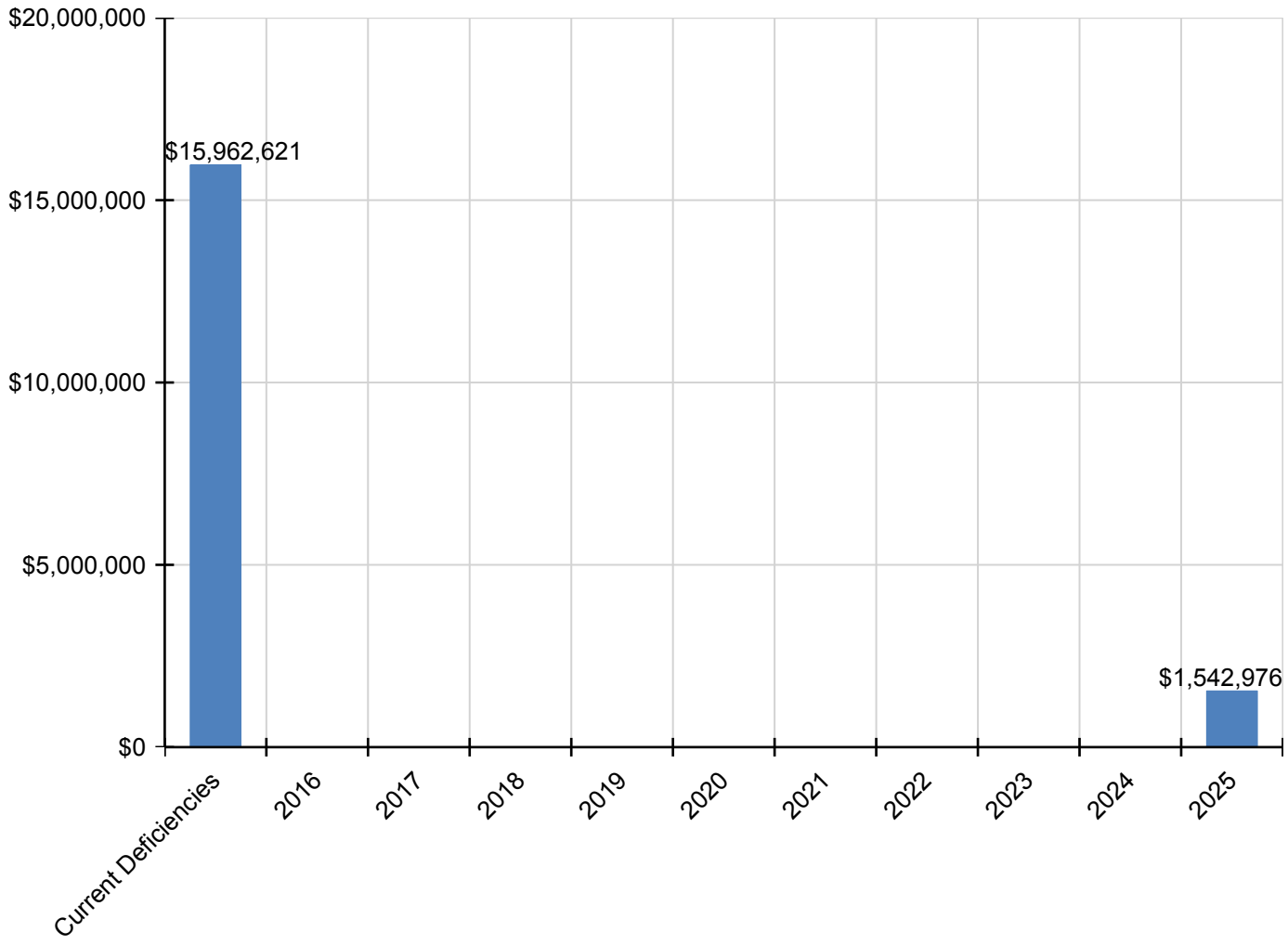
C1020 - Interior Doors	$357,794	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$357,794**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$633,964	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$633,964**
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	$12,310	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$12,310**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$36,053	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$36,053**
C3020414 - Wood Flooring	$120,590	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$120,590**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$608,904	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$608,904**
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	$670,322	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$670,322**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$291,349	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$291,349**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$360,825	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$360,825**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3030 - Cooling Generating Systems	$1,000,514	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,000,514**
D3040 - Distribution Systems	$2,753,021	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,753,021**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,542,976	**$1,542,976**
D3060 - Controls & Instrumentation	$1,336,468	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,336,468**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$891,228	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$891,228**
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	$510,922	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$510,922**
D5020 - Lighting and Branch Wiring	$716,362	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$716,362**
D5030 - Communications and Security	$389,632	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$389,632**
D5090 - Other Electrical Systems	$123,805	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$123,805**
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	$609,021	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$609,021**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

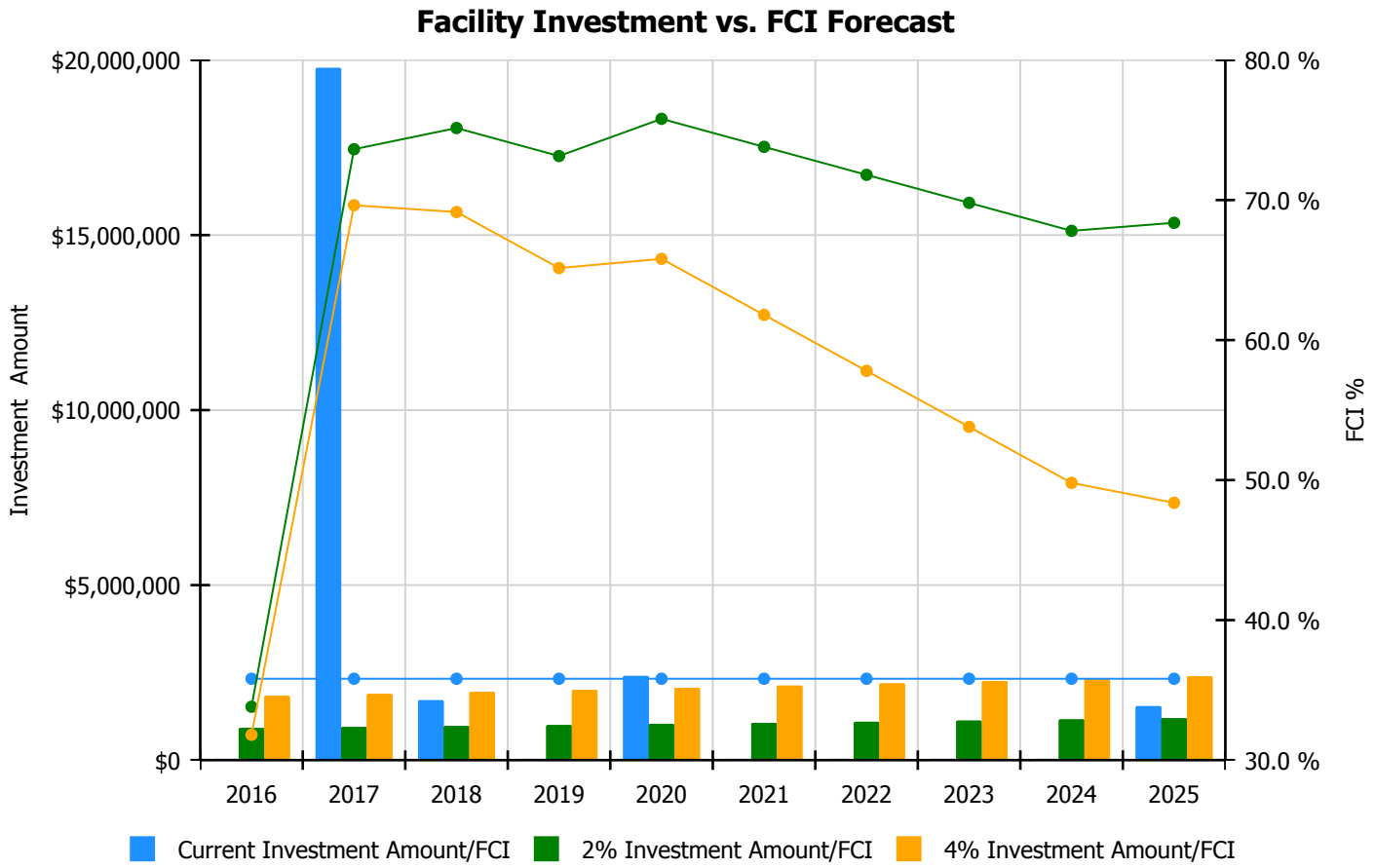
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

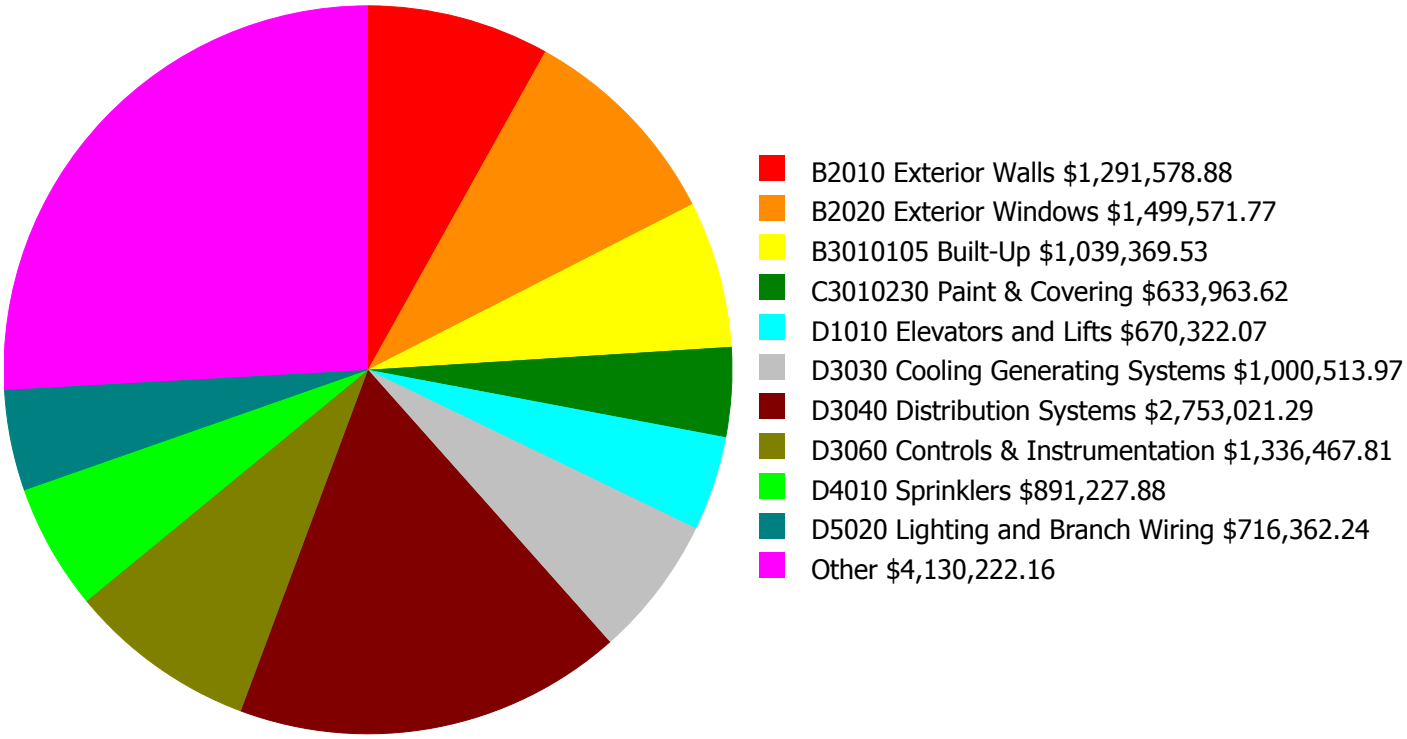
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 35.81%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$918,209.00	33.81 %	$1,836,419.00	31.81 %
2017	$19,774,887	$945,756.00	73.63 %	$1,891,511.00	69.63 %
2018	$1,711,526	$974,128.00	75.14 %	$1,948,257.00	69.14 %
2019	$0	$1,003,352.00	73.14 %	$2,006,704.00	65.14 %
2020	$2,406,100	$1,033,453.00	75.80 %	$2,066,906.00	65.80 %
2021	$0	$1,064,456.00	73.80 %	$2,128,913.00	61.80 %
2022	$0	$1,096,390.00	71.80 %	$2,192,780.00	57.80 %
2023	$0	$1,129,282.00	69.80 %	$2,258,564.00	53.80 %
2024	$0	$1,163,160.00	67.80 %	$2,326,320.00	49.80 %
2025	$1,542,976	$1,198,055.00	68.38 %	$2,396,110.00	48.38 %
Total:	**$25,435,490**	**$10,526,241.00**		**$21,052,484.00**	

Deficiency Summary by System

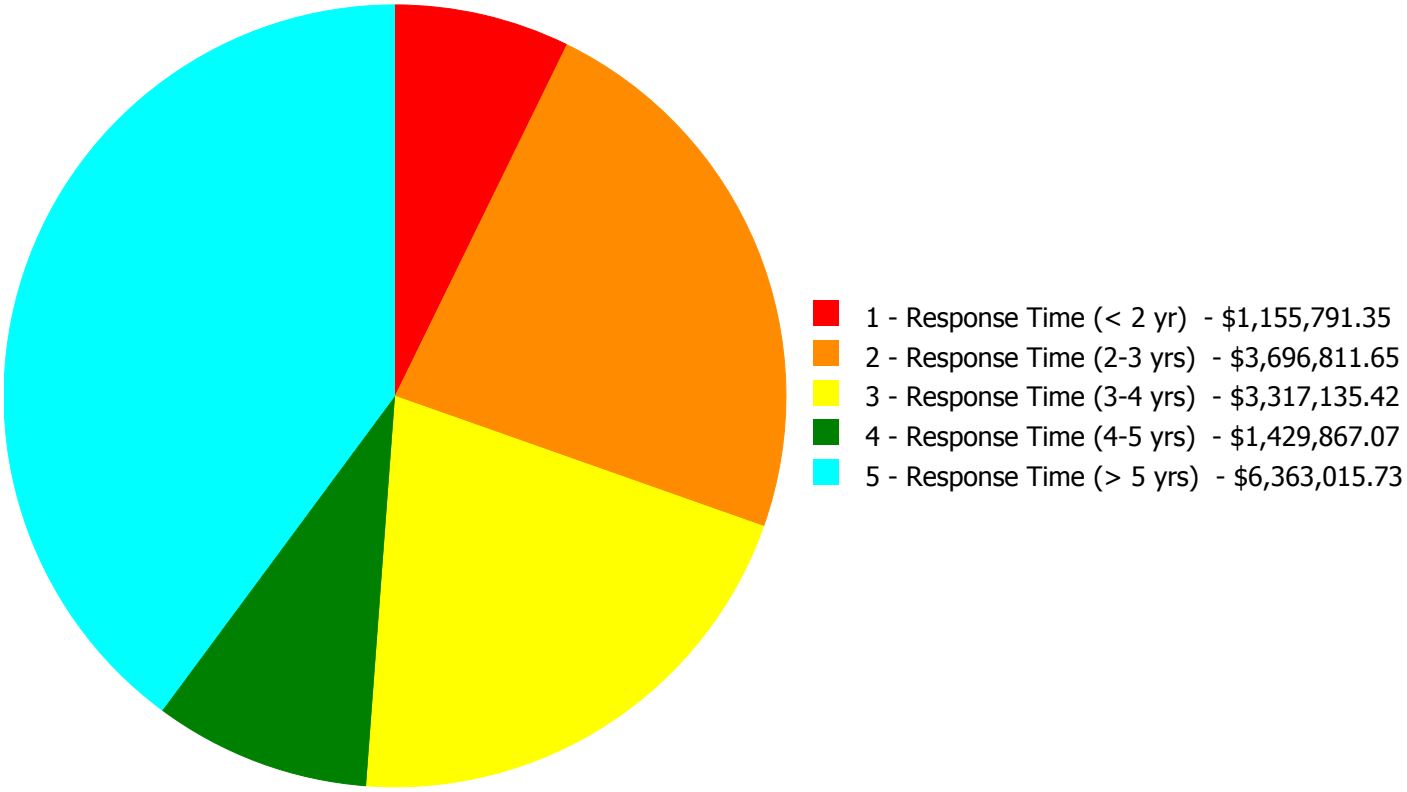
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $15,962,621.22

Deficiency Summary by Priority

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



Budget Estimate Total: $15,962,621.22

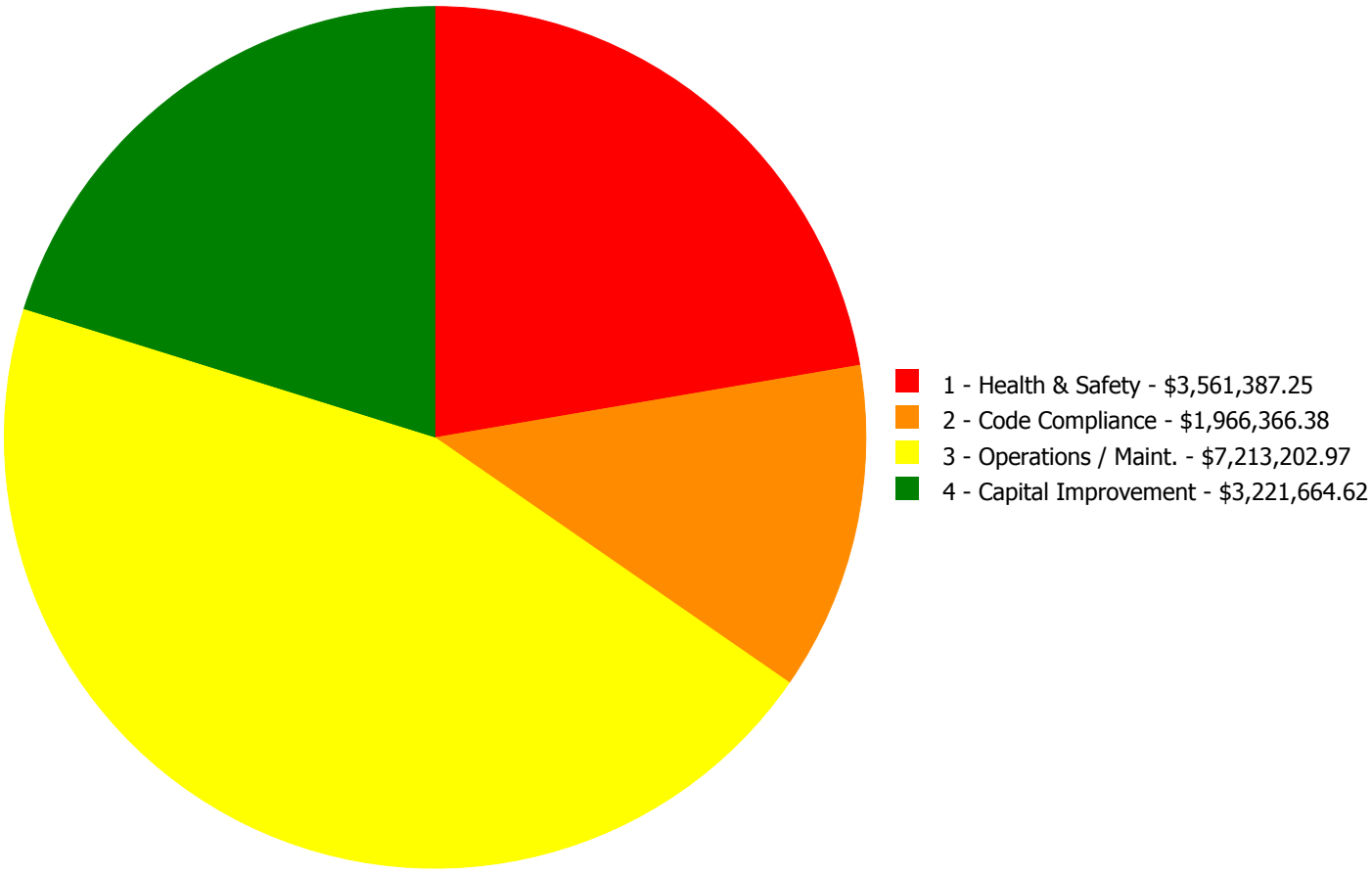
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
A1010	Standard Foundations	$0.00	$393,207.27	$0.00	$0.00	$0.00	$393,207.27
A2020	Basement Walls	$0.00	$170,094.74	$0.00	$0.00	$0.00	$170,094.74
B2010	Exterior Walls	$0.00	$1,291,578.88	$0.00	$0.00	$0.00	$1,291,578.88
B2020	Exterior Windows	$0.00	$0.00	$1,499,571.77	$0.00	$0.00	$1,499,571.77
B2030	Exterior Doors	$0.00	$0.00	$0.00	$0.00	$145,717.13	$145,717.13
B3010105	Built-Up	$0.00	$1,039,369.53	$0.00	$0.00	$0.00	$1,039,369.53
C1020	Interior Doors	$0.00	$0.00	$0.00	$0.00	$357,794.03	$357,794.03
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$633,963.62	$0.00	$633,963.62
C3020411	Carpet	$0.00	$0.00	$12,309.85	$0.00	$0.00	$12,309.85
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$36,052.60	$0.00	$36,052.60
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$0.00	$120,589.73	$120,589.73
C3030	Ceiling Finishes	$0.00	$0.00	$88,560.02	$0.00	$520,343.84	$608,903.86
D1010	Elevators and Lifts	$0.00	$670,322.07	$0.00	$0.00	$0.00	$670,322.07
D2010	Plumbing Fixtures	$0.00	$45,475.14	$245,873.73	$0.00	$0.00	$291,348.87
D2030	Sanitary Waste	$264,563.47	$65,575.51	$0.00	$0.00	$30,685.95	$360,824.93
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,000,513.97	$1,000,513.97
D3040	Distribution Systems	$0.00	$21,188.51	$78,084.08	$248,928.85	$2,404,819.85	$2,753,021.29
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$1,336,467.81	$1,336,467.81
D4010	Sprinklers	$891,227.88	$0.00	$0.00	$0.00	$0.00	$891,227.88
D5010	Electrical Service/Distribution	$0.00	$0.00	$0.00	$510,922.00	$0.00	$510,922.00
D5020	Lighting and Branch Wiring	$0.00	$0.00	$716,362.24	$0.00	$0.00	$716,362.24
D5030	Communications and Security	$0.00	$0.00	$389,631.55	$0.00	$0.00	$389,631.55
D5090	Other Electrical Systems	$0.00	$0.00	$123,805.07	$0.00	$0.00	$123,805.07
E2010	Fixed Furnishings	$0.00	$0.00	$162,937.11	$0.00	$446,083.42	$609,020.53
	Total:	$1,155,791.35	$3,696,811.65	$3,317,135.42	$1,429,867.07	$6,363,015.73	$15,962,621.22

Deficiency Summary by Category

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



Budget Estimate Total: $15,962,621.22

Deficiency Details by Priority

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

Priority 1 - Response Time (< 2 yr):

System: D2030 - Sanitary Waste

Location: Throughout building
Distress: Health Hazard / Risk
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Inspect sanitary waste piping and replace damaged sections. (+100KSF)
Qty: 62,300.00
Unit of Measure: S.F.
Estimate: $264,563.47
Assessor Name: System
Date Created: 07/27/2015

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

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: 62,300.00
Unit of Measure: S.F.
Estimate: $891,227.88
Assessor Name: System
Date Created: 07/27/2015

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: A1010 - Standard Foundations

Location: Basement/ exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Apply waterproofing on existing foundation walls - SF of foundation wall - add for sump and discharge piping

Qty: 2,600.00

Unit of Measure: S.F.

Estimate: $393,207.27

Assessor Name: System

Date Created: 07/30/2015

Notes: Install membrane waterproofing at coal and ash bunkers. Provide perimeter drainage [see mechanical for additional sump pumps and piping]

System: A2020 - Basement Walls

Location: Interior/ basement

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

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

Correction: Mold abatement on basement walls - insert proper quantities

Qty: 4,500.00

Unit of Measure: S.F.

Estimate: $170,094.74

Assessor Name: System

Date Created: 07/31/2015

Notes: Remove mold from basement walls

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

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

Qty: 40,000.00

Unit of Measure: S.F.

Estimate: $1,291,578.88

Assessor Name: System

Date Created: 07/31/2015

Notes: Repair cracks in masonry, replace missing mortar, tuck-point original building – all walls

System: B3010105 - Built-Up

Location: Roof

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Built Up Roof

Qty: 27,500.00

Unit of Measure: S.F.

Estimate: $1,039,369.53

Assessor Name: System

Date Created: 07/31/2015

Notes: Install all new roofing system including insulation within next 2 to 3 years; tear-down existing roofing; install flashing, counter flashing and reglets

System: D1010 - Elevators and Lifts

This deficiency has no image.

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add interior elevator - 4 floors - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $670,322.07

Assessor Name: System

Date Created: 07/31/2015

Notes: Install 4 stop traction elevator, minimum 3000# capacity; machine-room-less type in the original building

System: D2010 - Plumbing Fixtures

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 6.00

Unit of Measure: Ea.

Estimate: $45,475.14

Assessor Name: System

Date Created: 07/27/2015

Notes: Replace the wall hung drinking fountains and integral refrigerated coolers in the corridors and at the restrooms. These units are well beyond their service life and most are NOT accessible type.

System: D2030 - Sanitary Waste

Location: Basement

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Replace sanitary sewage ejector pit and pumps. (48" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $65,575.51

Assessor Name: System

Date Created: 07/29/2015

Notes: A new pit, pump, and perimeter drain should be installed alleviate the water infiltration into the former coal ash room in the basement.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace rooftop gravity ventilator units - select the proper type and size

Qty: 11.00

Unit of Measure: Ea.

Estimate: $21,188.51

Assessor Name: System

Date Created: 08/03/2015

Notes: Replace gravity roof vents.

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

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: 171.00

Unit of Measure: Ea.

Estimate: $1,008,351.43

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace all windows within next 3 to 4 years

System: B2020 - Exterior Windows

Location: Exterior windows/ 1st floor

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Replace security screens

Qty: 3,200.00

Unit of Measure: S.F.

Estimate: $491,220.34

Assessor Name: System

Date Created: 07/31/2015

Notes: Install security screens integral with windows

System: C3020411 - Carpet

Location: Library and (1)office

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace carpet

Qty: 1,100.00

Unit of Measure: S.F.

Estimate: $12,309.85

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace existing carpet

System: C3030 - Ceiling Finishes

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Re-paint ceilings - SF of ceilings

Qty: 18,500.00

Unit of Measure: S.F.

Estimate: $88,560.02

Assessor Name: System

Date Created: 07/31/2015

Notes: Repair and repaint all exposed ceilings, including Boiler Room and Mechanical spaces, abatement of lead base paint may be required.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace lavatory - with finishes

Qty: 30.00

Unit of Measure: Ea.

Estimate: $245,873.73

Assessor Name: System

Date Created: 07/27/2015

Notes: Replace the wheel lavatories in the restrooms with new code compliant fixtures.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 3.00

Unit of Measure: Ea.

Estimate: $78,084.08

Assessor Name: System

Date Created: 07/27/2015

Notes: Replace three existing roof mounted exhaust fans serving the bathrooms and utilize the existing ductwork.

System: D5020 - Lighting and Branch Wiring

Location: Throughout Building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace Lighting Fixtures (SF)
Qty: 0.00
Unit of Measure: S.F.
Estimate: $631,957.41
Assessor Name: System
Date Created: 07/28/2015

Notes: Provide new lighting.

System: D5020 - Lighting and Branch Wiring

Location: Classrooms
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Add wiring device
Qty: 1.00
Unit of Measure: Ea.
Estimate: $44,239.88
Assessor Name: System
Date Created: 07/28/2015

Notes: Install minimum two receptacles on each wall of class rooms and other purpose rooms

System: D5020 - Lighting and Branch Wiring

Location: Throughout Building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace lighting fixtures
Qty: 1.00
Unit of Measure: Ea.
Estimate: $40,164.95
Assessor Name: System
Date Created: 07/28/2015

Notes: Provide new emergency lighting.

System: D5030 - Communications and Security

Location: Throughout Building
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace fire alarm system
Qty: 1.00
Unit of Measure: S.F.
Estimate: $389,631.55
Assessor Name: System
Date Created: 07/28/2015

Notes: Install a new addressable fire alarm system in the older school area and connect to the 2012 addition fire alarm system.

System: D5090 - Other Electrical Systems

Location: Basement

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Replace standby generator system

Qty: 1.00

Unit of Measure: Ea.

Estimate: $123,805.07

Assessor Name: System

Date Created: 07/30/2015

Notes: Replace existing generator with larger generator sized to operate an elevator.

System: E2010 - Fixed Furnishings

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace or add roller shades

Qty: 10,000.00

Unit of Measure: S.F.

Estimate: $162,937.11

Assessor Name: System

Date Created: 08/03/2015

Notes: Replace window blinds

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

System: C3010230 - Paint & Covering

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 74,000.00

Unit of Measure: S.F.

Estimate: $633,963.62

Assessor Name: System

Date Created: 07/31/2015

Notes: Repair and repaint interior walls including basement mechanical spaces [60%]

System: C3020413 - Vinyl Flooring

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $36,052.60

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace VCT flooring including cove base (approx. 50%)

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 62,300.00

Unit of Measure: S.F.

Estimate: $204,413.32

Assessor Name: System

Date Created: 07/27/2015

Notes: 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.

System: D3040 - Distribution Systems

Location: Basement

Distress: Energy Efficiency

Category: 4 - Capital Improvement

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

Correction: Replace hydronic distribution piping insulation - 100 LF of piping

Qty: 1,275.00

Unit of Measure: L.F.

Estimate: $44,515.53

Assessor Name: System

Date Created: 07/27/2015

Notes: Install insulation on steam piping in boiler room.

System: D5010 - Electrical Service/Distribution

Location: Throughout Building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Electrical DIstribution System (U1)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $510,922.00

Assessor Name: System

Date Created: 07/29/2015

Notes: Replace the electrical distribution system

Priority 5 - Response Time (> 5 yrs):

System: B2030 - Exterior Doors

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace exterior doors - per leaf

Qty: 16.00

Unit of Measure: Ea.

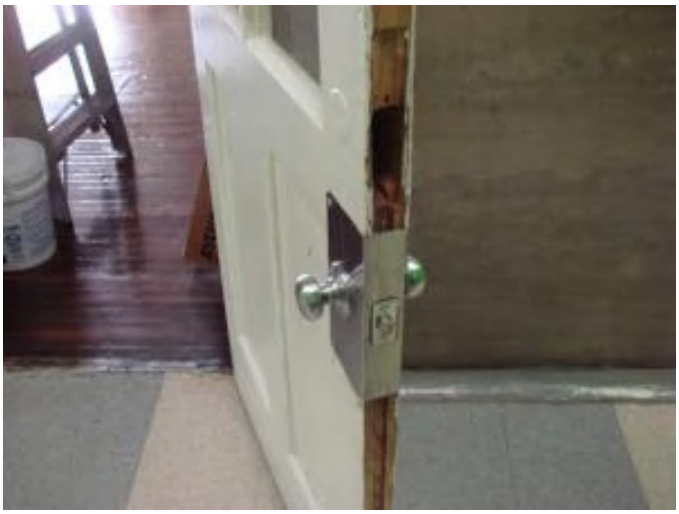
Estimate: $145,717.13

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace exterior doors including hardware

System: C1020 - Interior Doors



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 75.00

Unit of Measure: Ea.

Estimate: $357,794.03

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace interior doors including hardware

System: C3020414 - Wood Flooring

Location: Interior

Distress: Maintenance Required

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Refinish wood floors

Qty: 11,200.00

Unit of Measure: S.F.

Estimate: $120,589.73

Assessor Name: System

Date Created: 07/31/2015

Notes: Repair refinish hardwood flooring (40% incl. auditorium stage)

System: C3030 - Ceiling Finishes

Location: Interiors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 34,500.00

Unit of Measure: S.F.

Estimate: $520,343.84

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace all suspended acoustical ceilings in original building

System: D2030 - Sanitary Waste

Location: Basement

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace sanitary sewage ejector pit and pumps. (48" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $30,685.95

Assessor Name: System

Date Created: 07/27/2015

Notes: Replace sewage ejector pump in the next 5-7 years.

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: 62,300.00

Unit of Measure: S.F.

Estimate: $1,000,513.97

Assessor Name: System

Date Created: 07/27/2015

Notes: Remove the window air conditioning units and install a 125 ton air-cooled chiller on the roof with chilled water distribution piping and pumps located in a mechanical room in the basement level to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 21.00

Unit of Measure: C

Estimate: $1,744,280.82

Assessor Name: System

Date Created: 07/27/2015

Notes: Remove the existing cast iron steam radiators and install fan coil units with hot and chilled water coils and dedicated outdoor air system to introduce outdoor air to the building.

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: $285,085.41

Assessor Name: System

Date Created: 07/27/2015

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 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: 417.00

Unit of Measure: Pr.

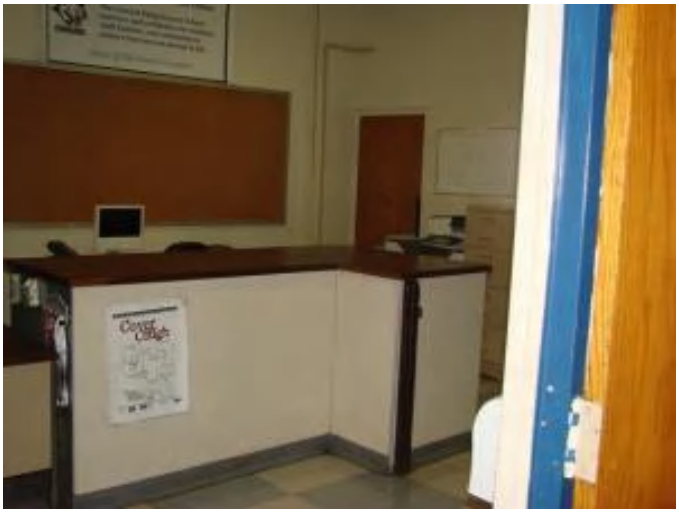
Estimate: $194,966.18

Assessor Name: System

Date Created: 07/27/2015

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

System: D3040 - Distribution Systems



Location: Administration

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 417.00

Unit of Measure: Pr.

Estimate: $180,487.44

Assessor Name: System

Date Created: 07/27/2015

Notes: Provide ventilation for the corridors and 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: 62,300.00

Unit of Measure: S.F.

Estimate: $1,336,467.81

Assessor Name: System

Date Created: 07/27/2015

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.

System: E2010 - Fixed Furnishings

Location: Auditorium

Distress: Appearance

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 400.00

Unit of Measure: Ea.

Estimate: $360,762.20

Assessor Name: System

Date Created: 08/03/2015

Notes: Replace damaged auditorium seats; refinish all seats

System: E2010 - Fixed Furnishings

Location: 1st Floor/Auditorium

Distress: Maintenance Required

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 450.00

Unit of Measure: Ea.

Estimate: $85,321.22

Assessor Name: System

Date Created: 07/31/2015

Notes: Replace damaged auditorium seats; refinish all seats

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Elevators/Lifts, residential, wheelchair lift, max	1.00	Ea.	Hallway	Savaria	V-1504-2010	213333		30	2012	2042	$23,653.40	$26,018.74
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	HB Smith	Mills 450			35	2005	2040	$122,870.00	$270,314.00
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	HB Smith	Mills 450			35	2005	2040	$122,870.00	$270,314.00
D3020 Heat Generating Systems	Boiler, packaged water tube, gas fired, steam or hot water, gross output, 1680 MBH	2.00	Ea.	Boiler Room	Buderus	GE515/8			35	2004	2039	$40,323.70	$88,712.14
D3020 Heat Generating Systems	Boiler, packaged water tube, gas fired, steam or hot water, gross output, 1680 MBH	2.00	Ea.	Boiler Room	Buderus	GE515/8	2530-206-000023-5086702		35	2004	2039	$40,323.70	$88,712.14
D3030 Cooling Generating Systems	Water chiller, screw liquid chiller, air cooled, insulated evaporator, 130 ton, includes standard controls	1.00	Ea.	Roof	Carrier	30XA	5112092938		30	2012	2042	$122,760.00	$135,036.00
D3040 Distribution Systems	Air handling unit, packaged weatherproof, with cooling/heating coil section, filters, mixing box, constant volume, single zone, 20,000 CFM, cooling coils may be chilled water or DX, heating coils may be hot water, steam or electric	1.00	Ea.	Roof	Carrier				25	1921	1946	$136,570.50	$150,227.55
D3040 Distribution Systems	Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Addition					25	1921	1946	$9,861.00	$21,694.20
D3040 Distribution Systems	Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Basement Mechanical Room	Bell & Gossett				25	2005	2030	$9,861.00	$21,694.20
D3040 Distribution Systems	Pump, pressure booster system, 3 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Basement Mechanical Room	Bell & Gossett				25	2005	2030	$9,861.00	$21,694.20
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, subfeed lug-rated, 400 amp, excl breakers	1.00	Ea.	Basement	Siemens				30	2012	2042	$3,167.10	$3,483.81
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, subfeed lug-rated, 400 amp, excl breakers	1.00	Ea.	Basement	Siemens				30	2012	2042	$3,167.10	$3,483.81
D5010 Electrical Service/Distribution	Switchgear installation, incl switchboard, panels & circuit breaker, 277/480 V, 1600 A	1.00	Ea.	Main Electrical Room	Siemens	SB			20	2012	2032	$53,561.25	$58,917.38
												Total:	**$1,160,302.17**

Executive Summary

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

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

Function:	
Gross Area (SF):	19,200
Year Built:	1921
Last Renovation:	
Replacement Value:	$323,400
Repair Cost:	$379,742.92
Total FCI:	117.42 %
Total RSLI:	68.30 %

Description:

Attributes:

General Attributes:

Bldg ID:	S548001	Site ID:	S548001

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	60.75 %	158.31 %	$379,742.92
G40 - Site Electrical Utilities	90.00 %	0.00 %	$0.00
Totals:	**68.30 %**	**117.42 %**	**$379,742.92**

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	$7.65	S.F.		30				0.00 %	0.00 %				$0
G2030	Pedestrian Paving	$11.52	S.F.	10,800	40	1990	2030		37.50 %	145.16 %	15		$180,598.38	$124,416
G2040	Site Development	$4.36	S.F.	19,200	25	2012	2037		88.00 %	88.88 %	22		$74,407.20	$83,712
G2050	Landscaping & Irrigation	$3.78	S.F.	8,400	15	2012	2027		80.00 %	392.85 %	12		$124,737.34	$31,752
G4020	Site Lighting	$3.58	S.F.	19,200	30	2012	2042		90.00 %	0.00 %	27			$68,736
G4030	Site Communications & Security	$0.77	S.F.	19,200	30	2012	2042		90.00 %	0.00 %	27			$14,784
								Total	**68.30 %**	**117.42 %**			**$379,742.92**	**$323,400**

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.

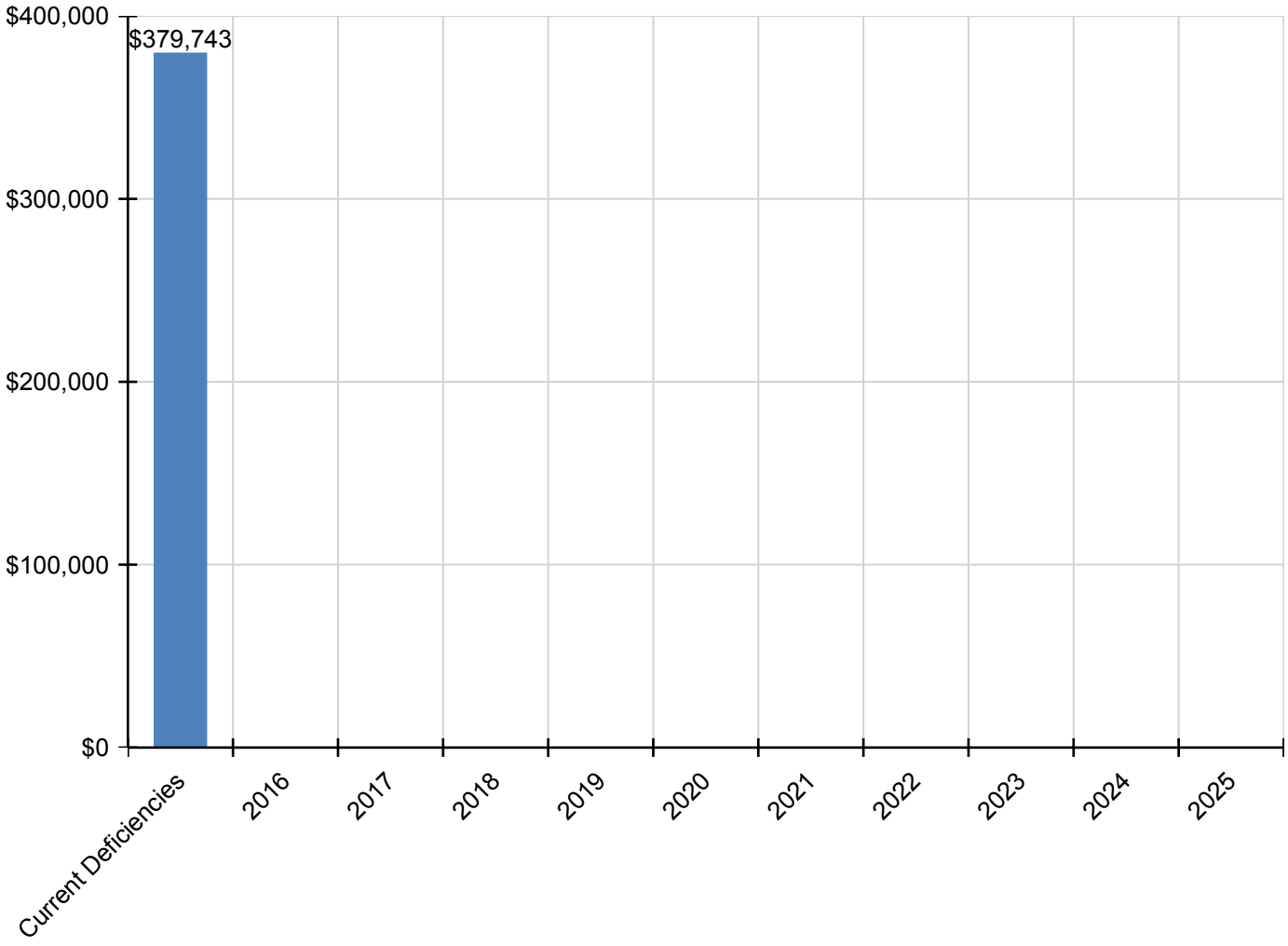
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$379,743**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$379,743**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$180,598	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$180,598**
G2040 - Site Development	$74,407	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$74,407**
G2050 - Landscaping & Irrigation	$124,737	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$124,737**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

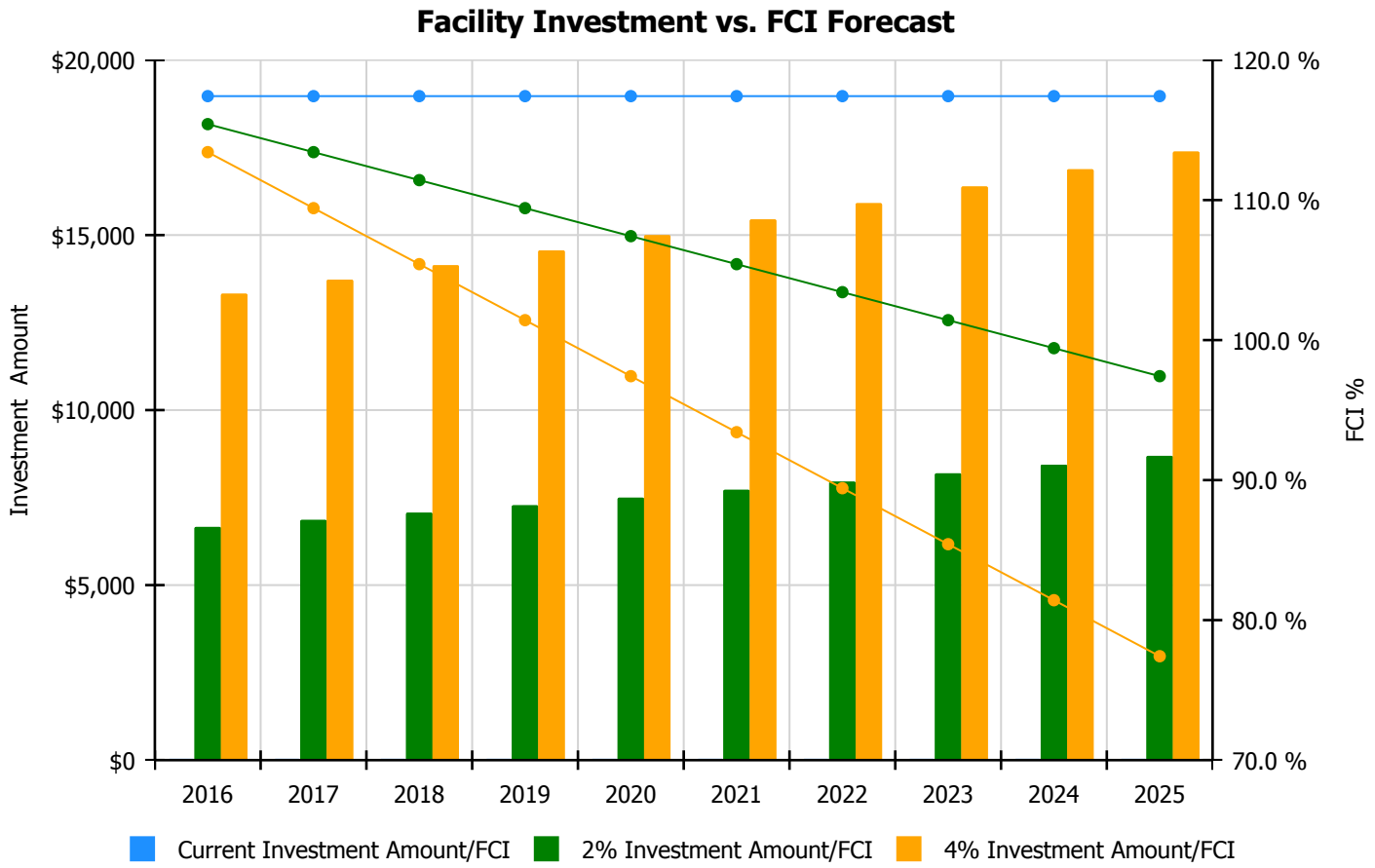
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

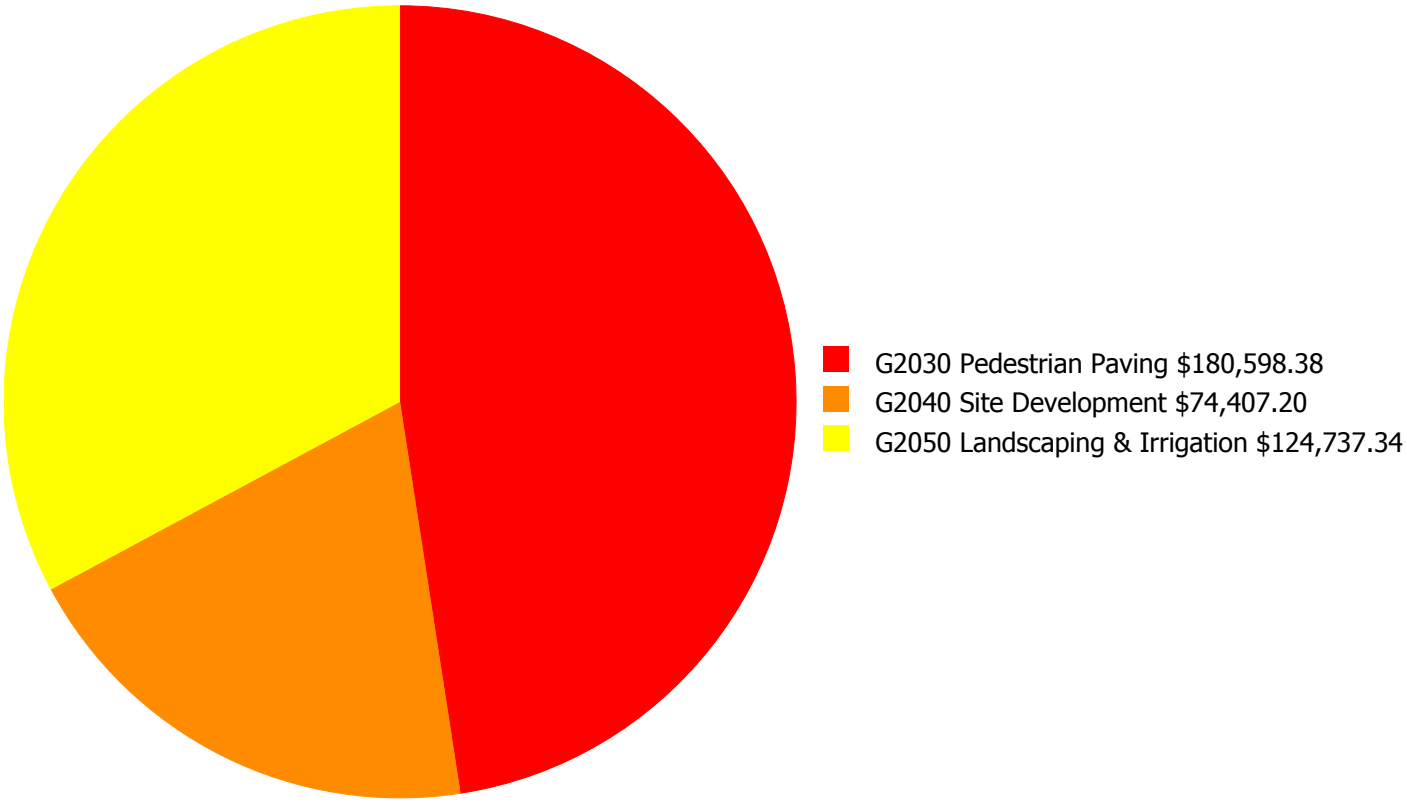
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 117.42%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$6,662.00	115.42 %	$13,324.00	113.42 %
2017	$0	$6,862.00	113.42 %	$13,724.00	109.42 %
2018	$0	$7,068.00	111.42 %	$14,136.00	105.42 %
2019	$0	$7,280.00	109.42 %	$14,560.00	101.42 %
2020	$0	$7,498.00	107.42 %	$14,996.00	97.42 %
2021	$0	$7,723.00	105.42 %	$15,446.00	93.42 %
2022	$0	$7,955.00	103.42 %	$15,910.00	89.42 %
2023	$0	$8,193.00	101.42 %	$16,387.00	85.42 %
2024	$0	$8,439.00	99.42 %	$16,879.00	81.42 %
2025	$0	$8,692.00	97.42 %	$17,385.00	77.42 %
Total:	**$0**	**$76,372.00**		**$152,747.00**	

Deficiency Summary by System

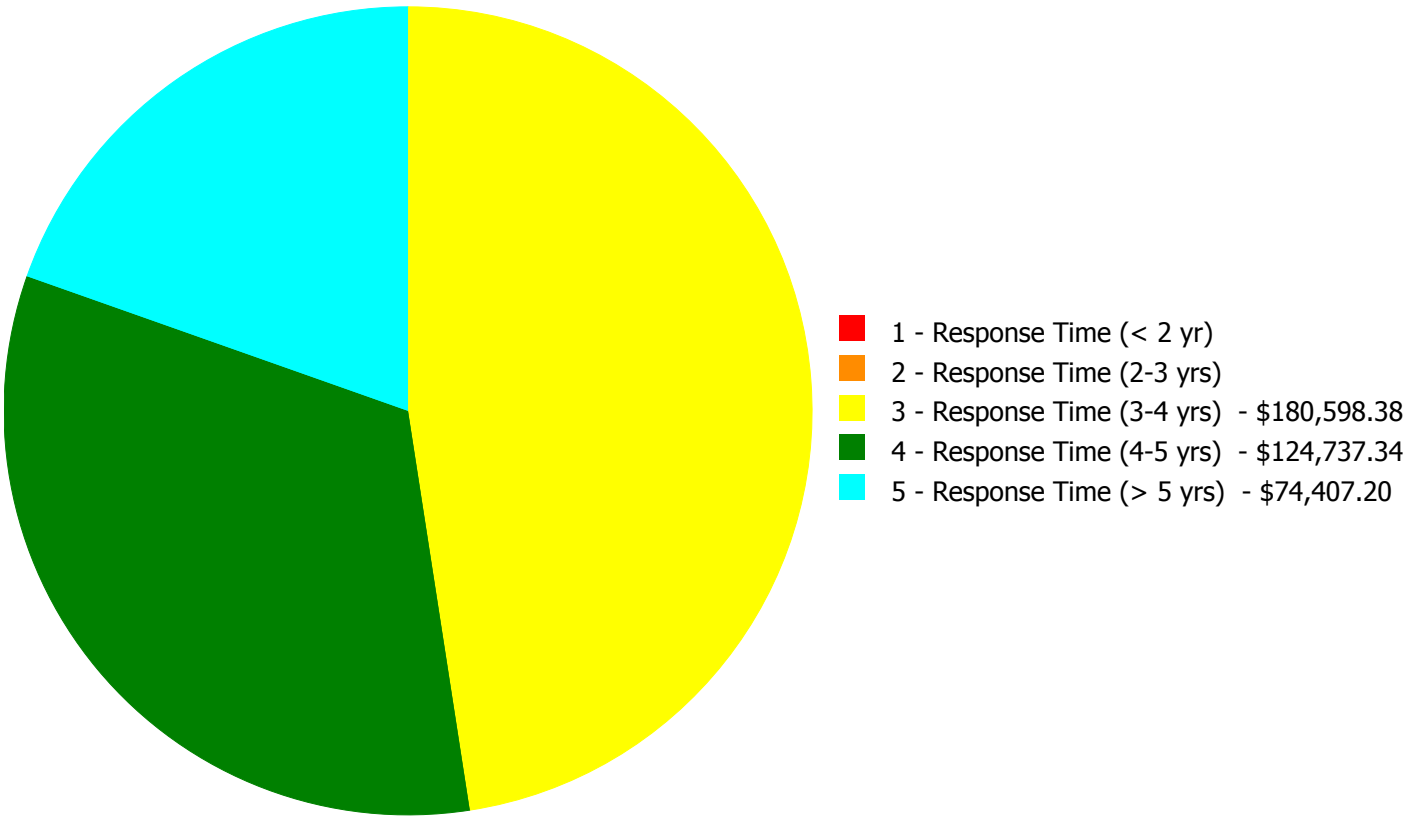
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $379,742.92

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: $379,742.92

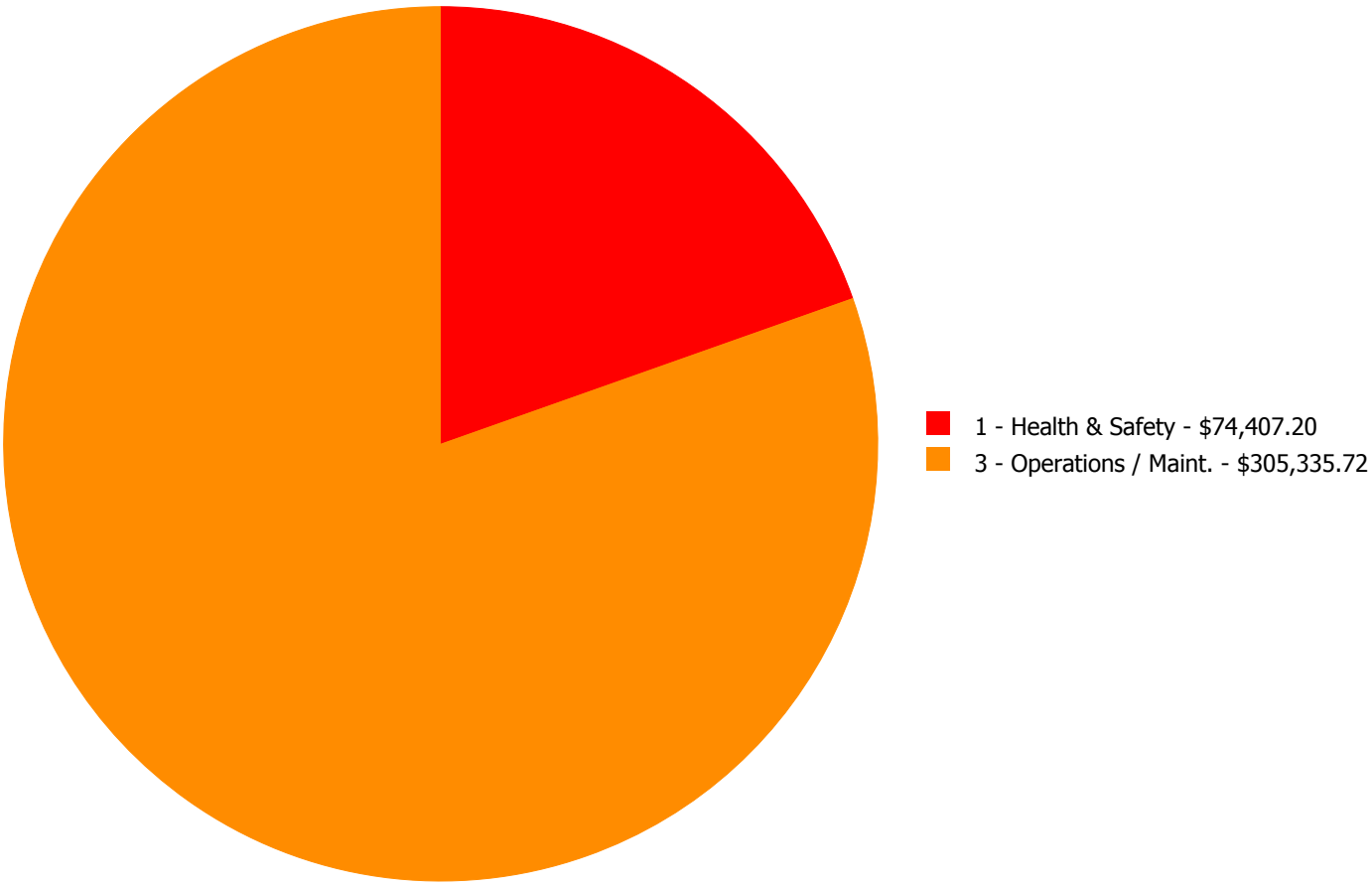
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2030	Pedestrian Paving	$0.00	$0.00	$180,598.38	$0.00	$0.00	$180,598.38
G2040	Site Development	$0.00	$0.00	$0.00	$0.00	$74,407.20	$74,407.20
G2050	Landscaping & Irrigation	$0.00	$0.00	$0.00	$124,737.34	$0.00	$124,737.34
	Total:	$0.00	$0.00	$180,598.38	$124,737.34	$74,407.20	$379,742.92

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: $379,742.92

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: Site

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 5,000.00

Unit of Measure: S.F.

Estimate: $180,598.38

Assessor Name: Ben Nixon

Date Created: 08/03/2015

Notes: Resurface playground paving.

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

System: G2050 - Landscaping & Irrigation

Location: Site

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace sod

Qty: 8,400.00

Unit of Measure: S.F.

Estimate: $124,737.34

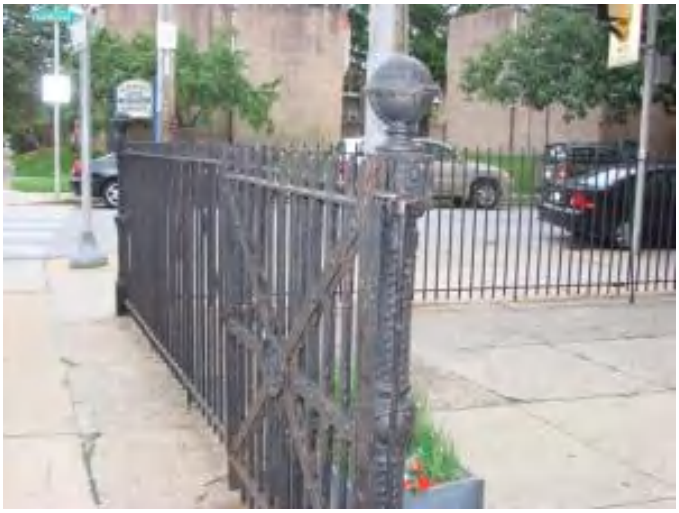
Assessor Name: Ben Nixon

Date Created: 08/03/2015

Notes: Provide sod in grass areas.

Priority 5 - Response Time (> 5 yrs):

System: G2040 - Site Development



Location: Grounds

Distress: Security Issue

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 400.00

Unit of Measure: L.F.

Estimate: $74,407.20

Assessor Name: Craig Anding

Date Created: 08/03/2015

Notes: Replace original fence with new decorative security fence

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