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.

CAPA School

Governance	DISTRICT	Report Type	High
Address	901 S. Broad St.	Enrollment	708
	Philadelphia, Pa 19147	Grade Range	'09-12'
Phone/Fax	215-952-2462 / 215-952-6472	Admissions Category	Special Admit
Website	Www.Philasd.Org/Schools/Capa	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	**02.98%**	**$3,042,597**	**$102,217,401**
Building	02.99 %	$3,014,116	$100,697,529
Grounds	01.87 %	$28,481	$1,519,872

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	46.15 %	$1,036,790	$2,246,355
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$8,258,183
Windows (Shows functionality of exterior windows)	13.43 %	$706,460	$5,258,843
Exterior Doors (Shows condition of exterior doors)	00.00 %	$0	$223,284
Interior Doors (Classroom doors)	00.00 %	$0	$733,172
Interior Walls (Paint and Finishes)	00.00 %	$0	$3,087,654
Plumbing Fixtures	00.16 %	$3,974	$2,542,774
Boilers	01.25 %	$43,715	$3,510,894
Chillers/Cooling Towers	00.00 %	$0	$4,603,987
Radiators/Unit Ventilators/HVAC	00.09 %	$6,983	$8,086,554
Heating/Cooling Controls	06.14 %	$156,012	$2,539,441
Electrical Service and Distribution	00.00 %	$0	$2,007,892
Lighting	00.00 %	$0	$7,176,754
Communications and Security (Cameras, Pa System and Fire Alarm)	37.99 %	$1,021,049	$2,687,742

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

S202001;CAPA

Final

Site Assessment Report

February 2, 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):	166,630
Year Built:	1878
Last Renovation:	1997
Replacement Value:	$102,217,401
Repair Cost:	$3,042,597.18
Total FCI:	2.98 %
Total RSLI:	59.79 %

Description:

Facility Assessment

August 26th, 2015

School District of Philadelphia

Creative and Performing Arts (CAPA) High School

901 S. Broad Street

Philadelphia, PA 19147

166,630 SF / 890 Students / LN 01

GENERAL

Mr. Dave Loftus FAC, provided input to the assessment team on current problems. Mr. Ivy Palmer Building Engineer accompanied us on our tour

of the school and provided us with detailed information on the building systems and maintenance history. At mid-morning, we had a meeting with the Principal Beaver and we had a brief discussion of the school conditions. Principal Beaver is new in the school.

The 5 story, 166,630 square foot building consists of the original building constructed in 1878 with a large addition and transformation into a school in 1997. The original building and addition have a one level basement while all mechanical is housed in the mechanical penthouse level in the addition. However, all the mechanical systems suffer from a lack of preventive maintenance.

ARCHITECHURAL/STRUCTURAL SYSTEMS

The original building typically rests on masonry foundations and bearing walls and addition rests on concrete foundations and bearing walls that are not showing signs of settlement damage. The main structure of the original building typically consists of masonry and steel while the addition is cast-in-place, structural fire protected concrete columns, beams, and concrete, one way ribbed slab. The original building roof structures consist of steel truss and addition roof is concrete one-way slab, both supported by main structural frame. Main roofing is built-up application in fair condition on original building and poor condition on addition with multiple patches and heavy granule drifting. The original building envelope is typically masonry with face granite in good condition. The addition building envelope is typically CMU with glazed and ground CMU face to simulate the look of the original granite and is in good condition with large metal framed window sections. Front elevation is enhanced with decorative stonework and columns around entrance. Windows in addition building are original extruded aluminum, double hung sliding windows, Lexan Plexiglas with insect/security screens. These windows are generally in poor condition with heavy hazing and energy inefficient. Exterior doors are hollow metal doors and frames in good condition. The front public access doors have large granite stoops and stairs on original building in fair condition and in need of re-pointing. The building is accessible via grade level entrances on addition entrances.

Partition walls are plastered ceramic hollow blocks in original building and CMU in addition with some metal stud and gypsum throughout all areas, all in good condition. Interior doors are generally hollow metal frame with solid core wood doors with glazing in very good condition and some large decorative wood doors with wood framing in original building. Doors leading to exit stairways are hollow metal frame and doors in good condition. Most interior doors in entire building have lever type handles. Fittings include: toilet accessories in very good condition; composite plastic and hollow metal toilet partitions in good condition; fixed metal lockers in good condition, sound reducing acoustic panels in cafeteria and band rooms in very good condition, fixed ballet bars, handrails and ornamental metals, generally in good condition. Most toilet partitions and accessories are ADA accessible. Interior identifying signage is typically plastic plaques with brail in very good condition. Stair construction is generally concrete in steel in good condition with the exception of the wood construction main grand staircase in the original building. Stair railings are floor and wall mounted metal railing in addition in very good condition.

The interior wall finishes include: painted plaster, gypsum or CMU throughout with wood panel wainscot in main entry, grand lobby, library, and green room in very good condition and ceramic tile wainscot in toilets and kitchen in very good condition. Paint is generally in good condition. Columns and walls in cafeteria are exposed brick. Flooring includes patterned or bare concrete in stairways, mechanical penthouse, portions of auditorium and basement service areas in good condition; hardwood in stage and dance rooms in good condition; vinyl flooring in most classrooms, office areas, corridors and orchestra pit in good to fair condition; ceramic tile in front entry, toilets, and kitchen in good condition; terrazzo tile in grand lobby in fair condition with a few settlement cracks; and carpet in a few offices, grand lobby mezzanine, and library in good condition. Gym flooring is a protective rubber coating over concrete in very good condition. Ceiling finishes include: suspended acoustic tile system in classrooms, corridors, cafeteria, kitchen, and office areas in good condition; painted plaster, gypsum or structural concrete in toilets, entry, grand lobby, library, and basement service areas in good condition. Ceiling in mechanical penthouse, auditorium, and storage areas in addition are unfinished structural fire protection. Gym ceiling is unfinished metal in very good condition.

The building has one passenger and one service elevator serving five floors with six stops and is accessible via the north, grade level entrance.

Commercial and Institutional equipment includes: theater & stage equipment in very good condition, gym equipment in very good condition, and audio-visual equipment in good condition. Other equipment includes: food service equipment in good condition.

Fixed furnishings include: window shades and blinds, and fixed casework in classrooms, corridors and library, generally in good condition; and fixed auditorium seating in very good condition.

MECHANICAL SYSTEMS

Building plumbing fixtures were installed during the 1996 addition. Restroom fixtures on each floor consist of wall hung water closets, urinals and lavatories. A few fixtures leak, drip, or do not flow at all and need repair. The fixtures should provide reliable service for the next 10 to 20 years.

Life skills classroom has stainless steel, single basin, rim mounted kitchen sink with single lever control, mixing faucet. The fourth floor green house and science storeroom and ground floor theatrical store room also have kitchen sinks. The science storeroom sink faucet drips. The ground floor store room also has supply and drain connections for a clothes washer and dryer which are present and appear operational. The school cafeteria kitchen sinks are all commercial stainless steel including two cook sinks, one three basin dish washing sink with chemical

sanitization and disposal system, and a lavatory. A ground floor storage room includes a Kitchen sinks are in good condition and should be serviceable for 10-15 years aside from normal maintenance of faucet valves.

Fourth floor science rooms have multiple laboratory sinks in good condition with new supply piping and faucets. They are within their service life and will not need replacement before 15 years.

Service sinks are located in janitor closets on each level. These are enamel on cast iron, floor standing, single basin sinks. They have lever handle mixing faucets with vacuum breakers. They all appear is good condition with no signs of leakage and should last another 10-15 years without replacement.

The male and female dressing rooms on the sides of the theater have showers that are inoperable. The shower heads have been removed and the spigots capped, and the control levers have been moved from the supply valves. They should be repaired and returned to service.

Drinking fountains in the corridors are wall hung, accessible, with integral refrigerated coolers. They are within their service life and will remain serviceable for 5-10 years.

A 4" city water service enters the building on the ground level in the room with the generator. Upon entering the building the water goes to the meter with bypass line, double backflow prevention valve without bypass, and then to the pressure booster. The booster has two 7.5 HP pumps but no storage tank. A pressurized potable water storage tank should be added to the system. The domestic hot and cold water distribution piping is copper piping and soldered connections. The principal and engineer reported no significant problems with domestic piping and the supply is adequate to the fixtures.

A 98 gallon vertical tank type, gas-fired water heater installed in 2012 supplies hot water for domestic use. There is a 1/3 HP circulation pump which works well, and hot water is available at the bathroom lavatories after less than 10 seconds. There is a 119 gallon electric water heater serving the cafeteria kitchen. The water heaters are within their service life and should provide reliable service for the next 5-10 years.

The sanitary sewer piping is hubless cast iron pipe with banded connections. Visible areas of sanitary piping are in very good condition, and it should be trouble free for 20 years. There is no sewage ejector, and there is no backflow prevention on the sewer line from the building to the city sewer system.

Rain water drain pipes are hubless cast iron with banded fittings, and should be trouble free for 20 years. The roof does not have overflow drains.

The building is heated and cooled by air supplied from multiple hydronic air handlers, variable air volume boxes, and fan coil units located throughout.

Hot water is supplied by 2 Smith, model 28A-10, cast iron, 1,939 MBH (58 HP) capacity boilers manufactured in 1998, after the building was rebuilt. They are fired by Power Flame burners on gas or pressure atomized fuel oil installed in 2001, again not original to the addition. Both boilers are operational, and will not need replacement for 15 years. There is a chemical treatment system for hydronic water. Combustion air makeup is supplied by louvers equipped with automatic control. Burner exhaust duct is equipped with draft dampers for each boiler but one is missing the balance weights and needs repair. Steam was supplied by a single Weil-McLain model 888 cast iron boiler with 1,904 MBH (57 HP) capacity installed during construction of the addition. The building engineer stated that steam was only used for humidification. It has a dual fuel Power Flame burner, dated 1996. The steam boiler is currently inoperable, and part of the fuel oil supply line is disconnected. The boiler feed water tank has 2 pumps. A water softener system for the steam boiler is currently unused. The oil supply is stored in a 10,000 gallon storage tank installed beneath the parking lot at the southeast corner of the building at the time of the addition. The gas service enters the building in the basement mechanical room and includes a booster in the attic boiler room.

Chilled water is provided by two McQuay, centrifugal, single compressor, 250 ton capacity chillers located in their own room on the top level. Two Marley evaporative cooling towers with 20 HP, two-speed fans are located on the roof above the boiler room. There is also a Carrier model 30GT, 35 ton, air-cooled chiller on the roof next to the cooling towers, which provides backup cooling for the main office. All cooling equipment is in good condition and can be expected to last 20 more years.

Forced air is supplied to various parts of the building from 7 Carrier model 39NX air handlers with hydronic heating and cooling coils in the attics and basement. Insulation is damaged or missing from some air handlers and their hydronic piping. Consequently, condensation on chilled water piping is causing water damage to pipes, fittings, equipment, and the building. The insulation should be replaced with moisture resistant insulation. Air filters are removed from most equipment and consequently dust collects throughout the building at air outlets and the building air flow is unbalanced. New filters and prefilters should be installed, the equipment and ducts cleaned, and the system rebalanced. Fan coil units with separate heating and cooling coils supply the classrooms and are located in the ceiling plenums. There is a large puddle on the floor of the boiler room emanating from one of the air handlers. Its cause should be investigated and eliminated, probably condensate leakage due to a drain clogged by dust. Hallway air is delivered through variable air volume boxes. Building exhaust air is discharged by over 30 exhaust fans on the roof

top and in the attic mechanical room. Aside from lack of maintenance, air distribution equipment is in good condition and should be serviceable for 5-15 more years.

Hydronic piping is steel with welded, threaded, and flanged connections and copper with soldered and threaded connections. Visible sections of piping due to missing insulation show rust and corrosion from excessive moisture. Steam piping is threaded steel. The hydronic pipe insulation should be repaired to prevent further damage. Otherwise the piping is within its service life and should last 15 years or more.

There are 13 hydronic pumps from 5 to 20 HP, all located in the attic mechanical room. Steam piping is steel with threaded connections. The building's three zones each have a pair of hot water pumps and a pair of chilled water pumps. The last pump is for backup cooling for the main office from the roof top air-cooled chiller. Chilled water pumps 1 – 3 have had their motors replaced. Pump 1 was not running and its coupler guard was removed. Spare pumps are stored in the attic mechanical room.

Several small building spaces, like stairwells, have hydronic unit heaters. The attic mechanical room has ceiling mounted electric heaters. The fourth floor science store room has an open front cabinet with exhaust system. There is also a paint spray booth with exhaust system, however the primary filter is heavily clogged with paint and needs replacement. The ceramic art room has 3 kilns with vent hoods and they all appear functional. Elevator penthouses have inoperable window unit air conditioning, but the units are not necessary for elevator operation. The cafeteria kitchen has a gas burning stove with exhaust hood and fire extinguishing system. This system appears functional and will not need replacement within 10 years.

The original electric control system has been inoperable for over 10 years according to the building engineer. Class rooms have wall mounted analog thermostats. The principal stated the chillers do not restart automatically after energy saving shutdowns and also the lack of control system operation causes the building HVAC to run at full capacity and make the building either too hot in the winter or too cold in the summer and waste energy either way. The building control system should be inspected, repaired or upgraded as needed, and recommissioned to allow variable control of systems components for improved comfort and energy savings. Several pressure and temperature instruments throughout the building are damaged and need replacement.

The school building has stand pipes and an automatic sprinkler system. The building fire water supply connection is 8". A 150 HP electric motor driven fire pump is located in the basement mechanical room with a 2 HP jockey pump. The motor controller has dual feeds but the electric lines to the backup generator are not connected to the generator.

ELECTRICAL SYSTEMS

This school is composed of two connected buildings. The first building constructed in 1800 was a library but in 1997 was remodeled and adapted to the school and the second building was constructed in 1997.

An underground lateral service and a pad mounted transformer on Carpenter Street provide the electrical service to this school. A Square D, electrical service entrance switchboard is located in the sub-basement, rated 2000 Amperes 480/277V. The electrical service was installed in 1997 and is expected to provide 20 more years of useful life.

The electrical distribution is obtained using 1200 A vertical bus bar that runs through the electrical room in each floor. Each electrical room houses a safety switch, 480/277 panelboard, step-down transformer and 120/208V distribution panelboard. There are (3) MCCs to serve mechanical equipment. Electrical distribution equipment is manufactured by Square D and they were installed in 1997 and are expected to provide 20 more years of useful service life. Raceways are concealed in ceiling or wall spaces. Electrical rooms are used as storage in noncompliance with the National Electric Code (NEC)

Classrooms are provided with the proper amount of receptacles. Receptacles are provided at the teacher's whiteboard wall and the opposite of it, the other two walls with two-duplex outlets.

Most of the classrooms, offices and corridors are illuminated with recessed mounted fluorescent fixtures with T-8 lamps. The auditorium is illuminated with down lights and wall mounted fixtures with fluorescent lamps. The main entrance lobby is illuminated with wall mounted up-light fixtures. Fixtures were installed in 1997 and are expected to provide 10 more years of useful service life.

The control room houses the Honeywell Fire Alarm system. The fire alarm system is not addressable and is reaching its useful service life. Provide a new fire alarm system.

The present telephone system is adequate.

An independent and separate Simplex Building Communication System PA rack that interface with the telephone system is used for public announcement. This system is working adequately for most part.

The school is provided with a Simplex central clock system. The present clocks are old and difficult to find parts and repair.

Replace clock system with wireless, battery operated, clock system.

There is not television system.

The school is not provided with interior CCTV cameras or motion sensors at exit doors. Provide CCTV system to the interior of the school.

The emergency power system consists of an indoor, diesel powered generator, manufactured by Generac rated 200KW/250KVA. Diesel generator was installed in 1997 and is expected to provide 12 more years of useful service life. The emergency feeder of the fire pump is not connected to the generator.

There is adequate UPS in the IT room.

The emergency lighting is obtained with dedicated fixtures connected to the emergency generator. Exit signs are located at each exit door and corridors and are connected to the school emergency system.

The lightning protection is obtained with air terminals at the roof perimeter providing the proper coverage to the building.

The school is provided with two traction power elevators, one is rated 20HP and the other 40HP. Elevators are manufactured by Dover. They were installed in 1997 and they are expected to provide 12 more years of useful service life.

The auditorium is provided with a complete professional theatrical and dimming control systems.

The auditorium is provided with a complete professional sound system.

GROUNDS SYSTEMS

The site surrounds the building on all four sides which is set back from the street. Front yard space on west side of original building is landscaped with asphalt roadway in good condition. North, south, and east sides are asphalt paving used for parking and in good condition. The addition building has a concrete loading dock on the southeast corner in good condition. Metal fencing over stone perimeter wall surrounding the parking area is in good condition. Landscaping consists of mature trees along the north, west, and south sides of the building and is in good condition.

Accessibility: the building is accessible at the north entrance and has accessible routes. Some toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. Most of the doors in the addition building have lever type door handles.

The school perimeter is illuminated decorative wall/pole mounted fixtures. Some fixtures do not work and others are difficult to find parts. Replace with equal type inoperative wall/pole mounted lighting fixtures.

CCTV cameras are installed around the building perimeter providing full coverage.

Exterior loud speaker is not provided and it is not required.

RECOMMENDATIONS

- Replace Plexiglas window – hazed and not energy efficient
- Replace built up roofing on addition – beyond service life and failing
- Repair terrazzo tile - cracked

- Repair and re-point granite steps at front entrance.
- Repair inoperative plumbing fixtures throughout the building.
- Replace or repair steam boiler to allow humidification control.
- Replace insulation on chilled water systems with water resistant / vapor barrier insulation to eliminate condensation and prevent water damage to piping, equipment, and building.
- Install new air filters, clean ducts, and rebalance building air flow.
- Recommission building controls and repair damaged instrumentation.
- Provide new fire alarm system.
- Replace clock and bell system with wireless, battery operated, clock system
- Provide CCTV system to the interior of the school.
- Obtain the service of a Professional Engineer to prepare a combine study of fire pump electrical code requirements and generator loading capacity to determine if it is possible to connect the fire pump to the generator.
- Replace with equal type inoperative wall/pole mounted lighting fixtures.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 2 / Tm 3
Status:	Accepted by SDP	Team:	Tm 3
Site ID:	S202001		

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.

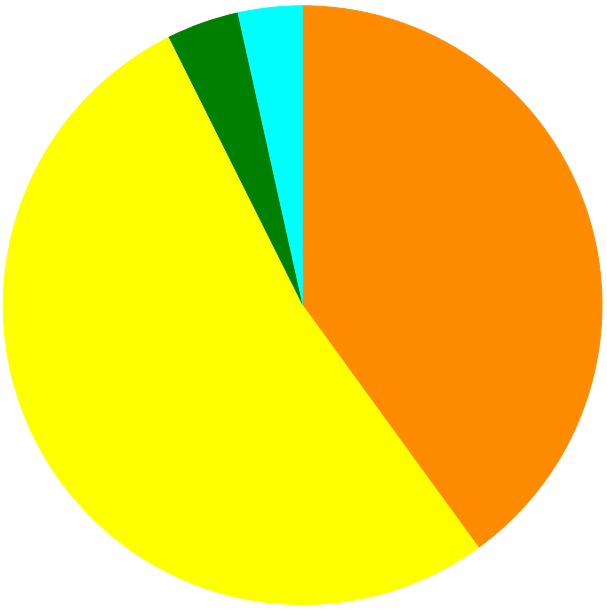
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	82.00 %	0.00 %	$0.00
A20 - Basement Construction	82.00 %	0.00 %	$0.00
B10 - Superstructure	82.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	70.79 %	5.14 %	$706,460.18
B30 - Roofing	109.48 %	46.15 %	$1,036,789.53
C10 - Interior Construction	75.50 %	0.00 %	$0.00
C20 - Stairs	71.62 %	0.00 %	$0.00
C30 - Interior Finishes	52.44 %	0.26 %	$23,981.42
D10 - Conveying	48.57 %	0.00 %	$0.00
D20 - Plumbing	52.45 %	0.11 %	$3,973.70
D30 - HVAC	39.67 %	0.99 %	$206,710.04
D40 - Fire Protection	48.57 %	0.00 %	$0.00
D50 - Electrical	29.68 %	8.52 %	$1,036,201.05
E10 - Equipment	48.57 %	0.00 %	$0.00
E20 - Furnishings	55.00 %	0.00 %	$0.00
G20 - Site Improvements	48.34 %	0.74 %	$7,860.25
G40 - Site Electrical Utilities	0.00 %	4.55 %	$20,621.01
Totals:	**59.79 %**	**2.98 %**	**$3,042,597.18**

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)
B202001;CAPA	166,630	2.99	$0.00	$1,209,086.72	$1,601,328.29	$97,776.99	$105,923.92
G202001;Grounds	78,000	1.87	$0.00	$7,860.25	$0.00	$20,621.01	$0.00
Total:		**2.98**	**$0.00**	**$1,216,946.97**	**$1,601,328.29**	**$118,398.00**	**$105,923.92**

Deficiencies By Priority



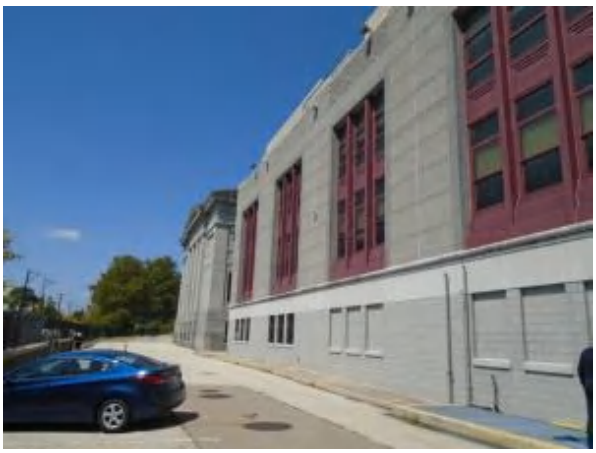
Budget Estimate Total: $3,042,597.18

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:	CAPA
Gross Area (SF):	166,630
Year Built:	1878
Last Renovation:	1997
Replacement Value:	$100,697,529
Repair Cost:	$3,014,115.92
Total FCI:	2.99 %
Total RSLI:	60.18 %



Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B202001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S202001		

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	82.00 %	0.00 %	$0.00
A20 - Basement Construction	82.00 %	0.00 %	$0.00
B10 - Superstructure	82.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	70.79 %	5.14 %	$706,460.18
B30 - Roofing	109.48 %	46.15 %	$1,036,789.53
C10 - Interior Construction	75.50 %	0.00 %	$0.00
C20 - Stairs	71.62 %	0.00 %	$0.00
C30 - Interior Finishes	52.44 %	0.26 %	$23,981.42
D10 - Conveying	48.57 %	0.00 %	$0.00
D20 - Plumbing	52.45 %	0.11 %	$3,973.70
D30 - HVAC	39.67 %	0.99 %	$206,710.04
D40 - Fire Protection	48.57 %	0.00 %	$0.00
D50 - Electrical	29.68 %	8.52 %	$1,036,201.05
E10 - Equipment	48.57 %	0.00 %	$0.00
E20 - Furnishings	55.00 %	0.00 %	$0.00
Totals:	**60.18 %**	**2.99 %**	**$3,014,115.92**

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 $
A1010	Standard Foundations	$31.89	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$5,313,831
A1030	Slab on Grade	$6.04	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$1,006,445
A2010	Basement Excavation	$5.09	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$848,147
A2020	Basement Walls	$11.58	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$1,929,575
B1010	Floor Construction	$97.37	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$16,224,763
B1020	Roof Construction	$16.42	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$2,736,065
B2010	Exterior Walls	$49.56	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$8,258,183
B2020	Exterior Windows	$31.56	S.F.	166,630	40	1997	2037		55.00 %	13.43 %	22		$706,460.18	$5,258,843
B2030	Exterior Doors	$1.34	S.F.	166,630	25	1997	2022		28.00 %	0.00 %	7			$223,284
B3010105	Built-Up	$43.61	S.F.	51,128	20	1997	2017	2037	110.00 %	46.50 %	22		$1,036,789.53	$2,229,692
B3020	Roof Openings	$0.10	S.F.	166,630	30	1997	2027		40.00 %	0.00 %	12			$16,663
C1010	Partitions	$24.63	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$4,104,097
C1020	Interior Doors	$4.40	S.F.	166,630	40	1997	2037		55.00 %	0.00 %	22			$733,172
C1030	Fittings	$3.41	S.F.	166,630	40	1997	2037		55.00 %	0.00 %	22			$568,208
C2010	Stair Construction	$1.37	S.F.	166,630	100	1997	2097		82.00 %	0.00 %	82			$228,283
C2020	Stair Finishes	$0.45	S.F.	166,630	30	1997	2027		40.00 %	0.00 %	12			$74,984
C3010230	Paint & Covering	$17.97	S.F.	166,630	10	2013	2023		80.00 %	0.00 %	8			$2,994,341
C3010232	Wall Tile	$0.56	S.F.	166,630	30	1997	2027		40.00 %	0.00 %	12			$93,313

Site Assessment Report - B202001;CAPA

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3020411	Carpet	$8.54	S.F.	16,663	10	2013	2023		80.00 %	0.00 %	8			$142,302
C3020412	Terrazzo & Tile	$88.36	S.F.	8,332	50	1997	2047		64.00 %	3.26 %	32		$23,981.42	$736,216
C3020413	Vinyl Flooring	$11.33	S.F.	103,311	20	1997	2017	2027	60.00 %	0.00 %	12			$1,170,514
C3020414	Wood Flooring	$26.07	S.F.	4,999	25	1997	2022		28.00 %	0.00 %	7			$130,324
C3020415	Concrete Floor Finishes	$1.14	S.F.	33,326	50	1997	2047		64.00 %	0.00 %	32			$37,992
C3030	Ceiling Finishes	$24.54	S.F.	166,630	25	1997	2022		28.00 %	0.00 %	7			$4,089,100
D1010	Elevators and Lifts	$1.34	S.F.	166,630	35	1997	2032		48.57 %	0.00 %	17			$223,284
D2010	Plumbing Fixtures	$15.26	S.F.	166,630	35	1997	2032	2032	48.57 %	0.16 %	17		$3,973.70	$2,542,774
D2020	Domestic Water Distribution	$1.90	S.F.	166,630	25	1997	2022	2027	48.00 %	0.00 %	12			$316,597
D2030	Sanitary Waste	$2.61	S.F.	166,630	30	1997	2027	2035	66.67 %	0.00 %	20			$434,904
D2040	Rain Water Drainage	$2.15	S.F.	166,630	30	1997	2027	2035	66.67 %	0.00 %	20			$358,255
D3020	Heat Generating Systems	$21.07	S.F.	166,630	35	1999	2034		54.29 %	1.25 %	19		$43,714.94	$3,510,894
D3030	Cooling Generating Systems	$27.63	S.F.	166,630	30	1997	2027		40.00 %	0.00 %	12			$4,603,987
D3040	Distribution Systems	$48.53	S.F.	166,630	25	1997	2022		28.00 %	0.09 %	7		$6,982.83	$8,086,554
D3050	Terminal & Package Units	$13.09	S.F.	166,630	20	1997	2017	2022	35.00 %	0.00 %	7			$2,181,187
D3060	Controls & Instrumentation	$15.24	S.F.	166,630	20	1997	2017	2027	60.00 %	6.14 %	12		$156,012.27	$2,539,441
D4010	Sprinklers	$7.94	S.F.	166,630	35	1997	2032		48.57 %	0.00 %	17			$1,323,042
D4020	Standpipes	$1.14	S.F.	166,630	35	1997	2032		48.57 %	0.00 %	17			$189,958
D5010	Electrical Service/Distribution	$12.05	S.F.	166,630	30	1997	2027		40.00 %	0.00 %	12			$2,007,892
D5020	Lighting and Branch Wiring	$43.07	S.F.	166,630	20	1997	2017	2020	25.00 %	0.00 %	5			$7,176,754
D5030	Communications and Security	$16.13	S.F.	166,630	15	1997	2012	2020	33.33 %	37.99 %	5		$1,021,048.71	$2,687,742
D5090	Other Electrical Systems	$1.76	S.F.	166,630	30	1997	2027		40.00 %	5.17 %	12		$15,152.34	$293,269
E1020	Institutional Equipment	$4.92	S.F.	166,630	35	1997	2032		48.57 %	0.00 %	17			$819,820
E1090	Other Equipment	$11.35	S.F.	166,630	35	1997	2032		48.57 %	0.00 %	17			$1,891,251
E2010	Fixed Furnishings	$2.17	S.F.	166,630	40	1997	2037		55.00 %	0.00 %	22			$361,587
								Total	**60.18 %**	**2.99 %**			**$3,014,115.92**	**$100,697,529**

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: 97% - Paint & Covering
3% - Wall Tile (ceramic)

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

Note: 10% - Carpet
5% - Terrazzo & Tile
62% - Vinyl Flooring
3% - Wood Flooring
20% - Concrete Floor Finishes

System: D5010 - Electrical Service/Distribution

Note: Step down transformers 480V-120/208V
(1) 500KVA
(1) 225KVA
(2) 150KVA
(1) 112.5KVA
(2) 75KVA
(1) 30KVA
(1)45KVA power conditioner

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:	**$3,014,116**	**$0**	**$0**	**$0**	**$0**	**$12,579,220**	**$0**	**$19,901,195**	**$4,370,746**	**$0**	**$0**	**$39,865,277**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A10 - Foundations**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
*** A20 - Basement Construction**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$706,460	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$706,460**
B2030 - Exterior Doors	$0	$0	$0	$0	$0	$0	$0	$302,073	$0	$0	$0	**$302,073**
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	$1,036,790	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,036,790**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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**

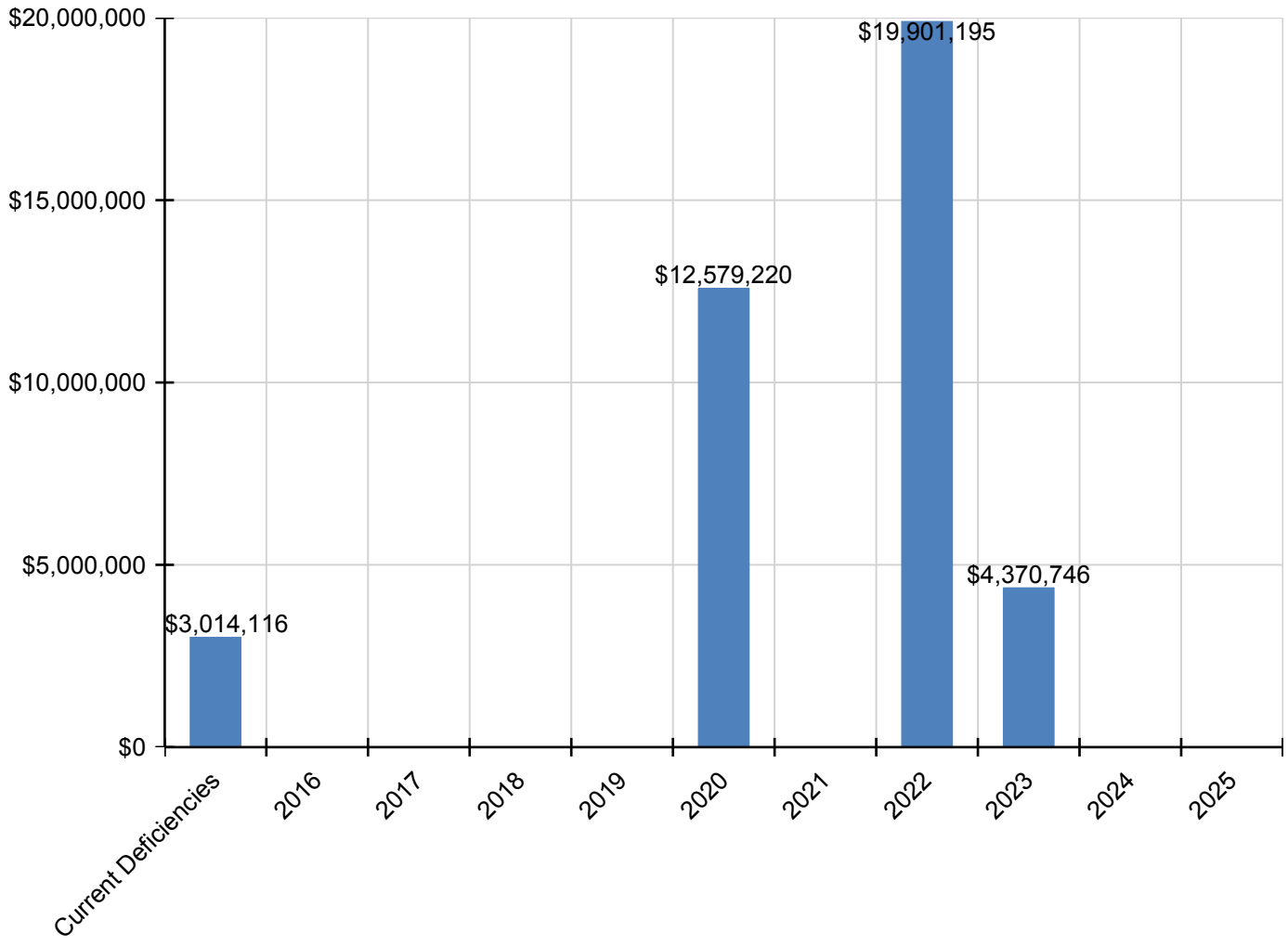
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2020 - Stair Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$0	$0	$0	$0	$0	$0	$0	$0	$4,172,456	$0	$0	**$4,172,456**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$198,290	$0	$0	**$198,290**
C3020412 - Terrazzo & Tile	$23,981	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$23,981**
C3020413 - Vinyl Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$176,310	$0	$0	$0	**$176,310**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$0	$0	$0	$0	$0	$0	$0	$5,531,985	$0	$0	$0	**$5,531,985**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$3,974	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,974**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$43,715	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$43,715**
D3030 - Cooling Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3040 - Distribution Systems	$6,983	$0	$0	$0	$0	$0	$0	$10,939,985	$0	$0	$0	**$10,946,968**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$2,950,843	$0	$0	$0	**$2,950,843**
D3060 - Controls & Instrumentation	$156,012	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$156,012**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5020 - Lighting and Branch Wiring	$0	$0	$0	$0	$0	$9,151,808	$0	$0	$0	$0	$0	**$9,151,808**

D5030 - Communications and Security	$1,021,049	$0	$0	$0	$0	$3,427,412	$0	$0	$0	$0	$0	**$4,448,461**
D5090 - Other Electrical Systems	$15,152	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$15,152**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

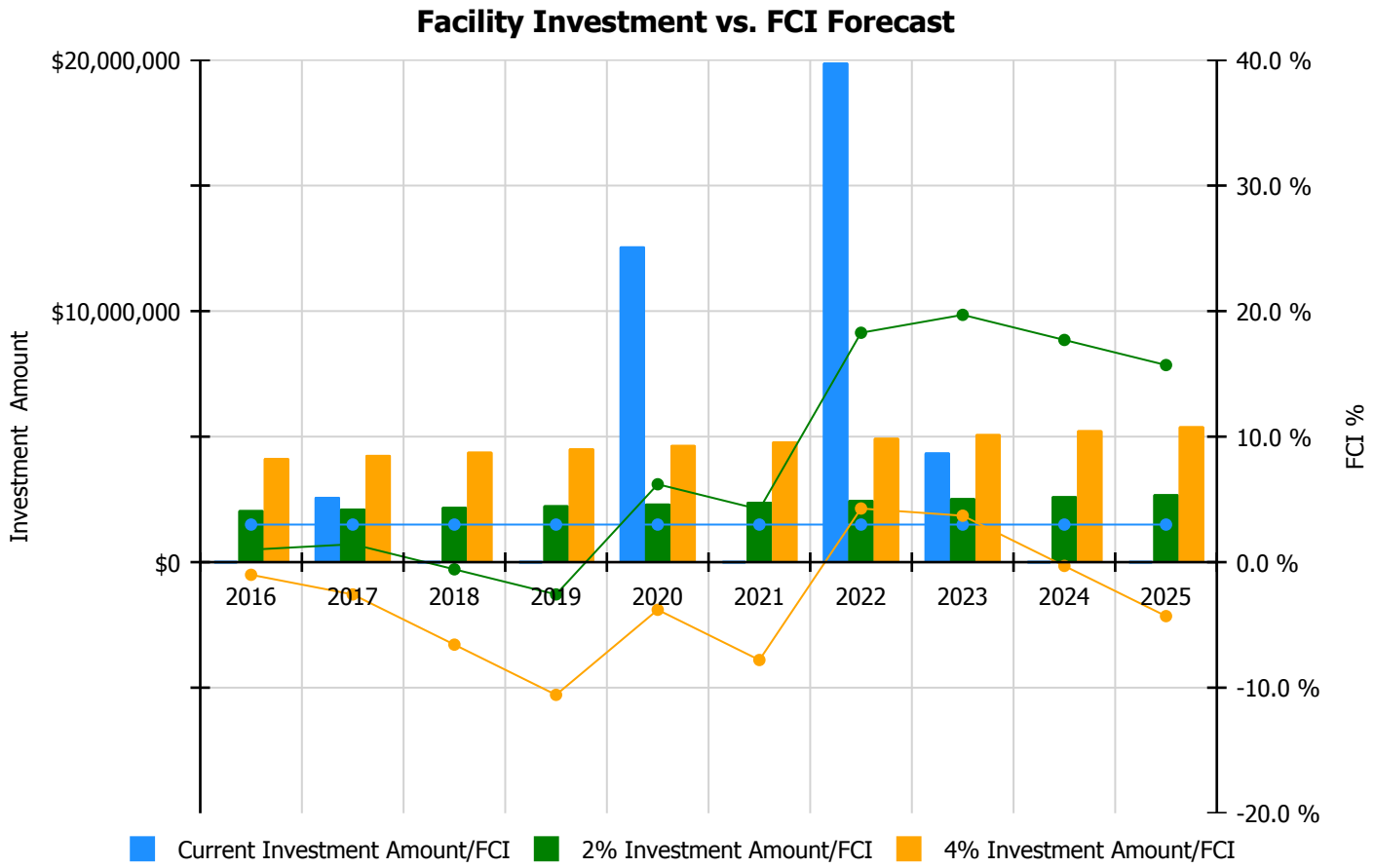
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

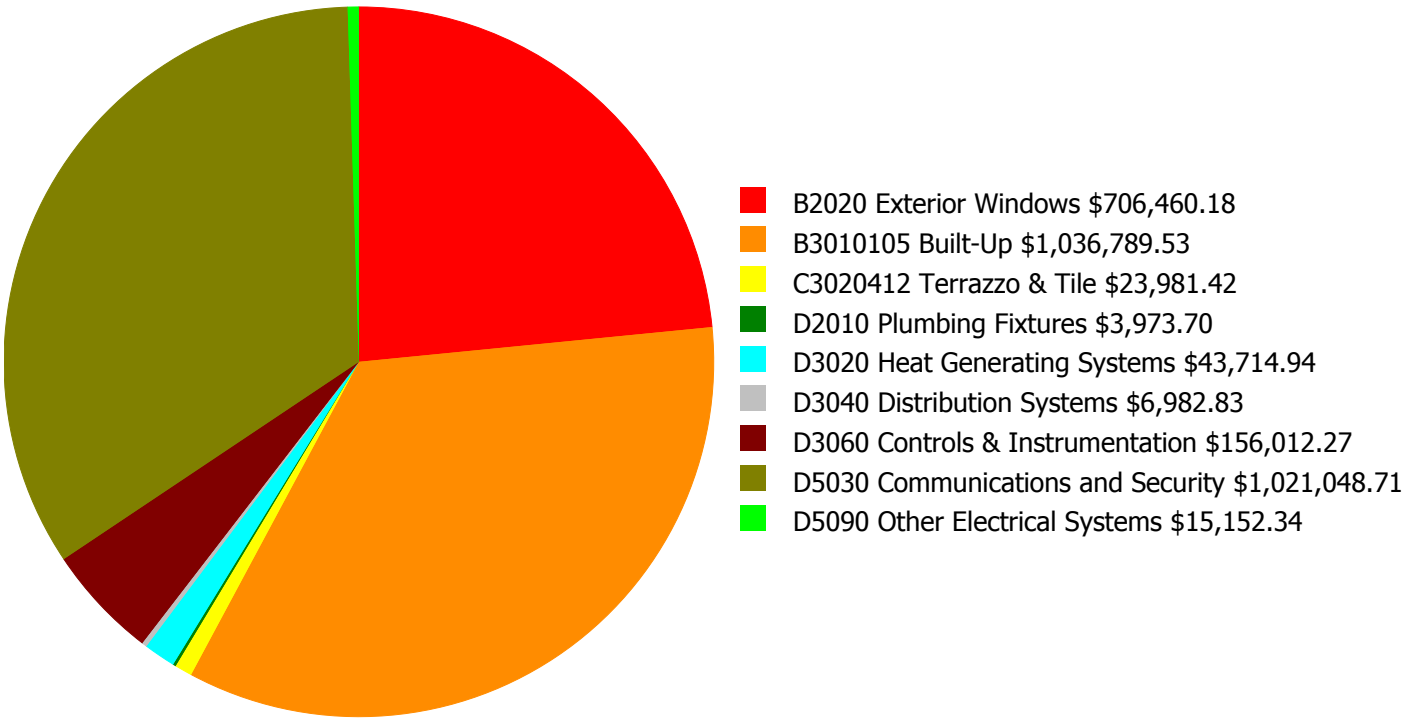
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 2.99%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$2,074,369.00	0.99 %	$4,148,738.00	-1.01 %
2017	$2,602,028	$2,136,600.00	1.43 %	$4,273,200.00	-2.57 %
2018	$0	$2,200,698.00	-0.57 %	$4,401,396.00	-6.57 %
2019	$0	$2,266,719.00	-2.57 %	$4,533,438.00	-10.57 %
2020	$12,579,220	$2,334,721.00	6.20 %	$4,669,441.00	-3.80 %
2021	$0	$2,404,762.00	4.20 %	$4,809,525.00	-7.80 %
2022	$19,901,195	$2,476,905.00	18.27 %	$4,953,810.00	4.27 %
2023	$4,370,746	$2,551,212.00	19.70 %	$5,102,425.00	3.70 %
2024	$0	$2,627,749.00	17.70 %	$5,255,497.00	-0.30 %
2025	$0	$2,706,581.00	15.70 %	$5,413,162.00	-4.30 %
Total:	**$39,453,189**	**$23,780,316.00**		**$47,560,632.00**	

Deficiency Summary by System

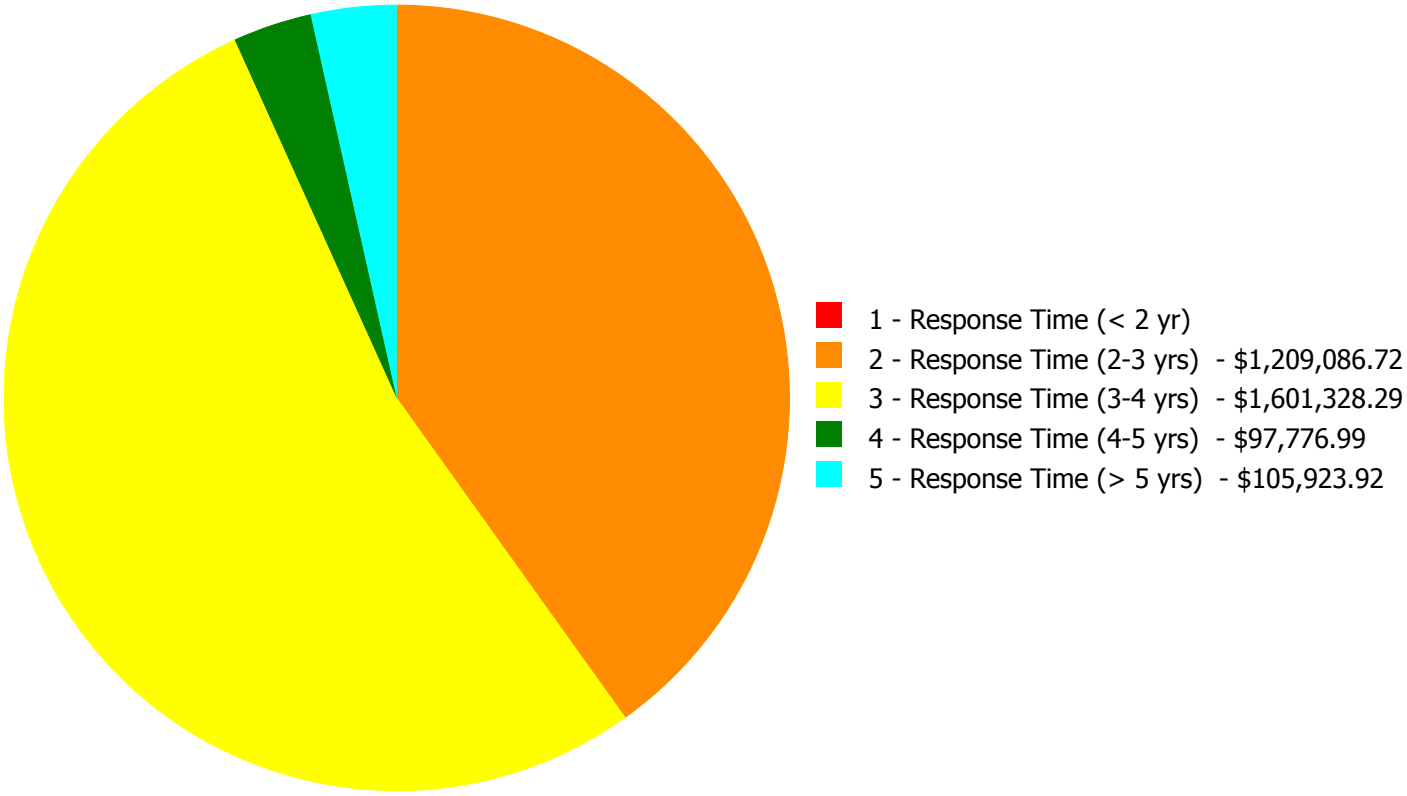
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $3,014,115.92

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: $3,014,115.92

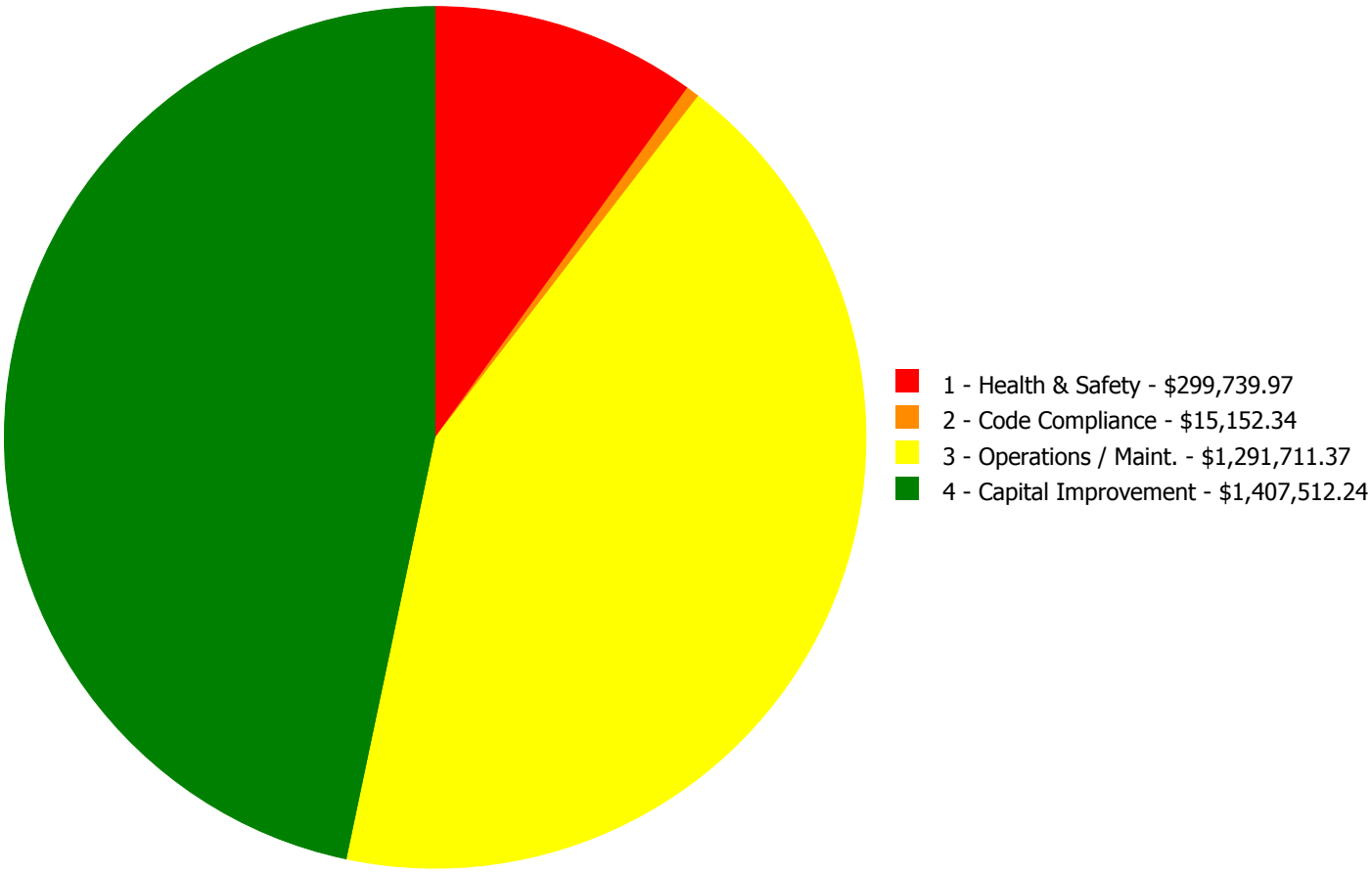
Deficiency By Priority Investment Table

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
B2020	Exterior Windows	$0.00	$0.00	$706,460.18	$0.00	$0.00	$706,460.18
B3010105	Built-Up	$0.00	$1,036,789.53	$0.00	$0.00	$0.00	$1,036,789.53
C3020412	Terrazzo & Tile	$0.00	$23,981.42	$0.00	$0.00	$0.00	$23,981.42
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$3,973.70	$0.00	$3,973.70
D3020	Heat Generating Systems	$0.00	$0.00	$0.00	$43,714.94	$0.00	$43,714.94
D3040	Distribution Systems	$0.00	$6,982.83	$0.00	$0.00	$0.00	$6,982.83
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$50,088.35	$105,923.92	$156,012.27
D5030	Communications and Security	$0.00	$126,180.60	$894,868.11	$0.00	$0.00	$1,021,048.71
D5090	Other Electrical Systems	$0.00	$15,152.34	$0.00	$0.00	$0.00	$15,152.34
	Total:	$0.00	$1,209,086.72	$1,601,328.29	$97,776.99	$105,923.92	$3,014,115.92

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: $3,014,115.92

Deficiency Details by Priority

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

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

System: B3010105 - Built-Up

Location: Addition roof
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and Replace Built Up Roof
Qty: 30,600.00
Unit of Measure: S.F.
Estimate: $1,036,789.53
Assessor Name: Ben Nixon
Date Created: 10/22/2015

Notes: Replace built up roofing on addition – beyond service life and failing

System: C3020412 - Terrazzo & Tile

Location: Grand lobby
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 2 - Response Time (2-3 yrs)
Correction: Remove and replace terazzo or tile flooring - pick the appropriate material
Qty: 200.00
Unit of Measure: S.F.
Estimate: $23,981.42
Assessor Name: Ben Nixon
Date Created: 10/22/2015

Notes: Repair terrazzo tile - cracked

System: D3040 - Distribution Systems

Location: Entire building

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: L.F.

Estimate: $6,982.83

Assessor Name: Ben Nixon

Date Created: 09/02/2015

Notes: Replace insulation on chilled water systems with water resistant / vapor barrier insulation to eliminate condensation and prevent water damage to piping, equipment, and building.

System: D5030 - Communications and Security

Location: Entire Building

Distress: Obsolete

Category: 3 - Operations / Maint.

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

Correction: Add/Replace Clock System or Components

Qty: 88.00

Unit of Measure: Ea.

Estimate: $126,180.60

Assessor Name: Ben Nixon

Date Created: 10/15/2015

Notes: Replace clock and bell system with wireless, battery operated, clock system

System: D5090 - Other Electrical Systems

This deficiency has no image.

Location: sub basement

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Add Emergency/Exit Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $15,152.34

Assessor Name: Eduardo Zambrano

Date Created: 10/15/2015

Notes: The emergency feeder of the fire pump is not connected to the emergency generator. Obtain the service of a Professional Engineer to prepare a combine study of fire pump electrical code requirements and generator loading capacity to determine if it is possible to connect the fire pump to the generator.

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

System: B2020 - Exterior Windows

Location: Addition
Distress: Energy Efficiency
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Remove and replace double slider windows
Qty: 140.00
Unit of Measure: Ea.
Estimate: $706,460.18
Assessor Name: Ben Nixon
Date Created: 10/22/2015

Notes: Replace Plexiglas window – hazed and not energy efficient

System: D5030 - Communications and Security

Location: Entire Building
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace fire alarm system
Qty: 1.00
Unit of Measure: S.F.
Estimate: $701,052.06
Assessor Name: Ben Nixon
Date Created: 10/15/2015

Notes: Provide new fire alarm system.

System: D5030 - Communications and Security

Location: Entire Building

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add/Replace Video Surveillance System

Qty: 50.00

Unit of Measure: Ea.

Estimate: $193,816.05

Assessor Name: Ben Nixon

Date Created: 10/15/2015

Notes: Provide CCTV system to the interior of the school.

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

System: D2010 - Plumbing Fixtures

Location: Bathrooms
Distress: Maintenance Required
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace lavatory faucet
Qty: 15.00
Unit of Measure: Ea.
Estimate: $3,973.70
Assessor Name: Ben Nixon
Date Created: 09/02/2015

Notes: Repair inoperative plumbing fixtures throughout the building.

System: D3020 - Heat Generating Systems

Location: Attic mechanical room
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Repair boiler
Qty: 1.00
Unit of Measure: Ea.
Estimate: $43,714.94
Assessor Name: James Sullivan
Date Created: 09/02/2015

Notes: Repair steam boiler to allow humidification control.

System: D3060 - Controls & Instrumentation

Location: Entire building

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace temperature, pressure gauges (enter estimate)

Qty: 20.00

Unit of Measure: Ea.

Estimate: $50,088.35

Assessor Name: Ben Nixon

Date Created: 09/02/2015

Notes: Recommission building controls and repair damaged instrumentation.

Priority 5 - Response Time (> 5 yrs):

System: D3060 - Controls & Instrumentation

Location: Entire building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Recommission DDC Building Management System

Qty: 90,000.00

Unit of Measure: S.F.

Estimate: $105,923.92

Assessor Name: James Sullivan

Date Created: 09/02/2015

Notes: Install new air filters, clean ducts, and rebalance building air flow.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Electric traction freight elevators, base unit, standard finish, 4000 lb, 200 fpm, 4 stop	2.00	Ea.	Penthouse	Dover	Traflomatic IV			35	1997	2032	$164,636.00	$362,199.20
D2020 Domestic Water Distribution	Pump, pressure booster system, variable speed, base, controls, starter, duplex, 100' head, 400 GPM, 7-1/2 H.P., 4" discharge	1.00	Ea.	Basement mechanical room					25	1997	2022	$51,870.00	$57,057.00
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 2044 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	Attic mechanical room					35	1999	2034	$62,552.00	$137,614.40
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 2040 MBH, includes burners, controls and insulated jacket, packaged	1.00	Ea.	Attic mechanical room					35	1997	2032	$43,116.20	$47,427.82
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, induced air, double flow, vertical, gear drive, 297 ton, includes standard controls, excludes pumps and piping	2.00	TonAC	Roof top outdoors					30	1997	2027	$134.01	$294.82
D3030 Cooling Generating Systems	Water chiller, centrifugal liquid chiller, packaged unit, water cooled, 200 ton, includes standard controls, excludes water tower	2.00	Ea.	Rooftop chiller room					30	1997	2027	$116,622.00	$256,568.40
D3040 Distribution Systems	Air-handling unit, built-up, horizontal/vertical, constant volume, single zone, 34,000 CFM, with cooling/heating coil section, filters, mixing box	2.00	Ea.	Attic mechanical room					25	1997	2022	$89,512.50	$196,927.50
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 15 H.P., to 1000 GPM, 5" size	2.00	Ea.	Attic mechanical room					25	1997	2022	$21,432.00	$47,150.40
D3040 Distribution Systems	Pump, circulating, cast iron, base mounted, coupling guard, bronze impeller, flanged joints, 20 H.P., to 1350 GPM, 6" size	6.00	Ea.	Attic mechanical room					25	1997	2022	$23,598.00	$155,746.80
D4010 Sprinklers	Fire pumps, electric, 1000 GPM, 150 psi, 142 HP, 3550 RPM, 5" pump, including controller, fittings and relief valve	1.00	Ea.	Basement mechanical room					35	1997	2032	$38,724.70	$42,597.17
D5010 Electrical Service/Distribution	Motor control center, starters, class 1, type B, combination MCP, FVNR, with control XFMR, size 2, 25 HP, 18" high, incl starters & structures	4.00	Ea.	Penthouse/ Mezzanine					30	1997	2027	$3,073.95	$13,525.38
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, with ground fault, 277/480 V, 1600 amp, incl CT compartment, excl CT's or PT's	1.00	Ea.	subbasement	Sqaure D	QED Power Style Switchboard			30	1997	2027	$35,024.40	$38,526.84
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	subbasement	Generac				30	1997	2027	$50,797.80	$55,877.58
												Total:	**$1,411,513.31**

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):	78,000
Year Built:	1878
Last Renovation:	1997
Replacement Value:	$1,519,872
Repair Cost:	$28,481.26
Total FCI:	1.87 %
Total RSLI:	33.92 %

Description:

Attributes:

General Attributes:

Bldg ID:	S202001	Site ID:	S202001

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	48.34 %	0.74 %	$7,860.25
G40 - Site Electrical Utilities	0.00 %	4.55 %	$20,621.01
Totals:	**33.92 %**	**1.87 %**	**$28,481.26**

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.	5,600	30	1997	2027		40.00 %	0.00 %	12			$64,512
G2020	Parking Lots	$8.50	S.F.	26,000	30	1997	2027		40.00 %	0.00 %	12			$221,000
G2030	Pedestrian Paving	$12.30	S.F.	27,000	40	1997	2037		55.00 %	2.37 %	22		$7,860.25	$332,100
G2040	Site Development	$4.36	S.F.	78,000	25	1997	2022		28.00 %	0.00 %	7			$340,080
G2050	Landscaping & Irrigation	$4.36	S.F.	25,000	15	1997	2012	2032	113.33 %	0.00 %	17			$109,000
G4020	Site Lighting	$4.84	S.F.	78,000	30				0.00 %	5.46 %			$20,621.01	$377,520
G4030	Site Communications & Security	$0.97	S.F.	78,000	30				0.00 %	0.00 %				$75,660
								Total	**33.92 %**	**1.87 %**			**$28,481.26**	**$1,519,872**

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.

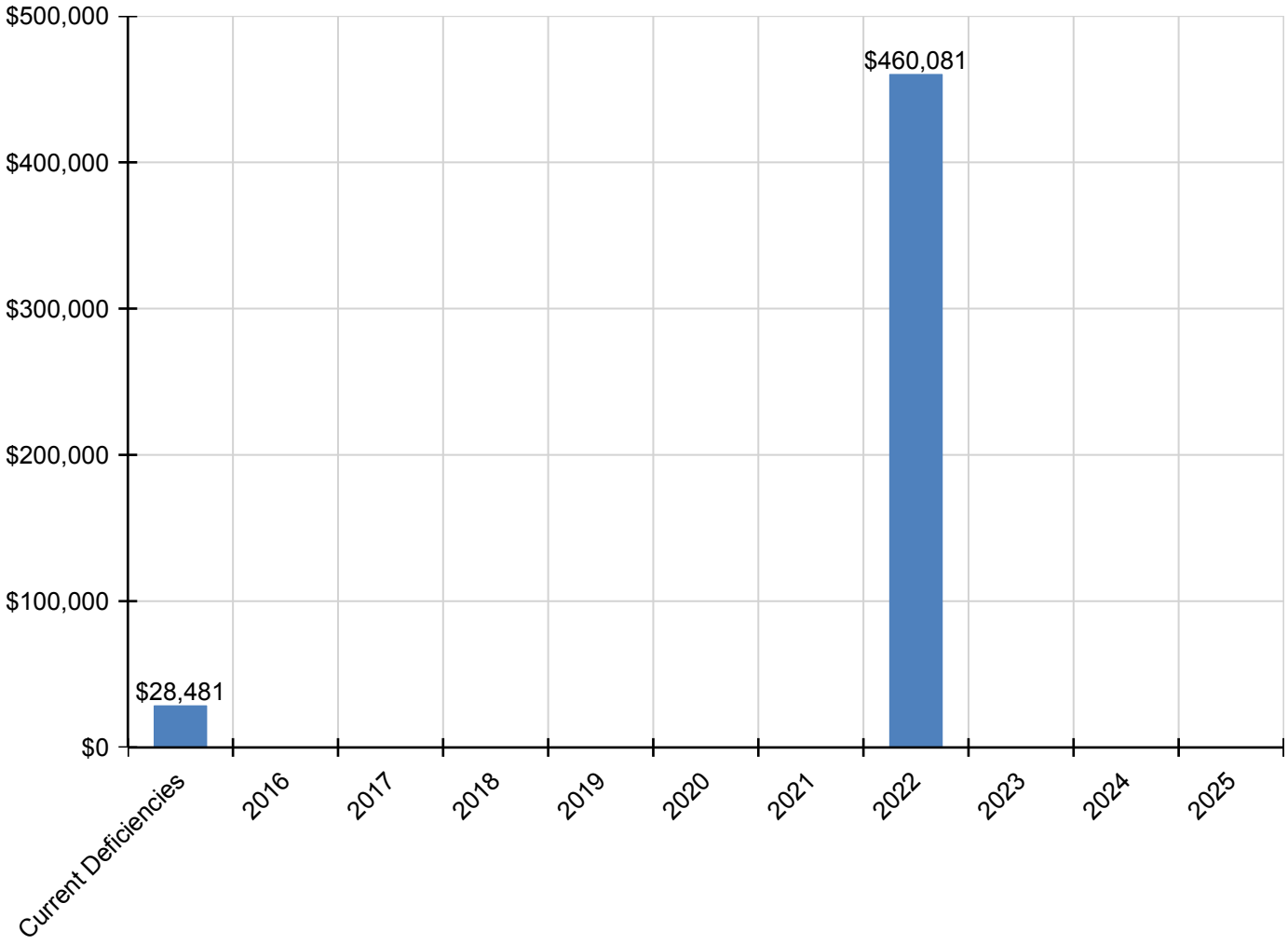
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$28,481**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$460,081**	**$0**	**$0**	**$0**	**$488,562**
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	$7,860	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$7,860**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$460,081	$0	$0	$0	**$460,081**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$20,621	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$20,621**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

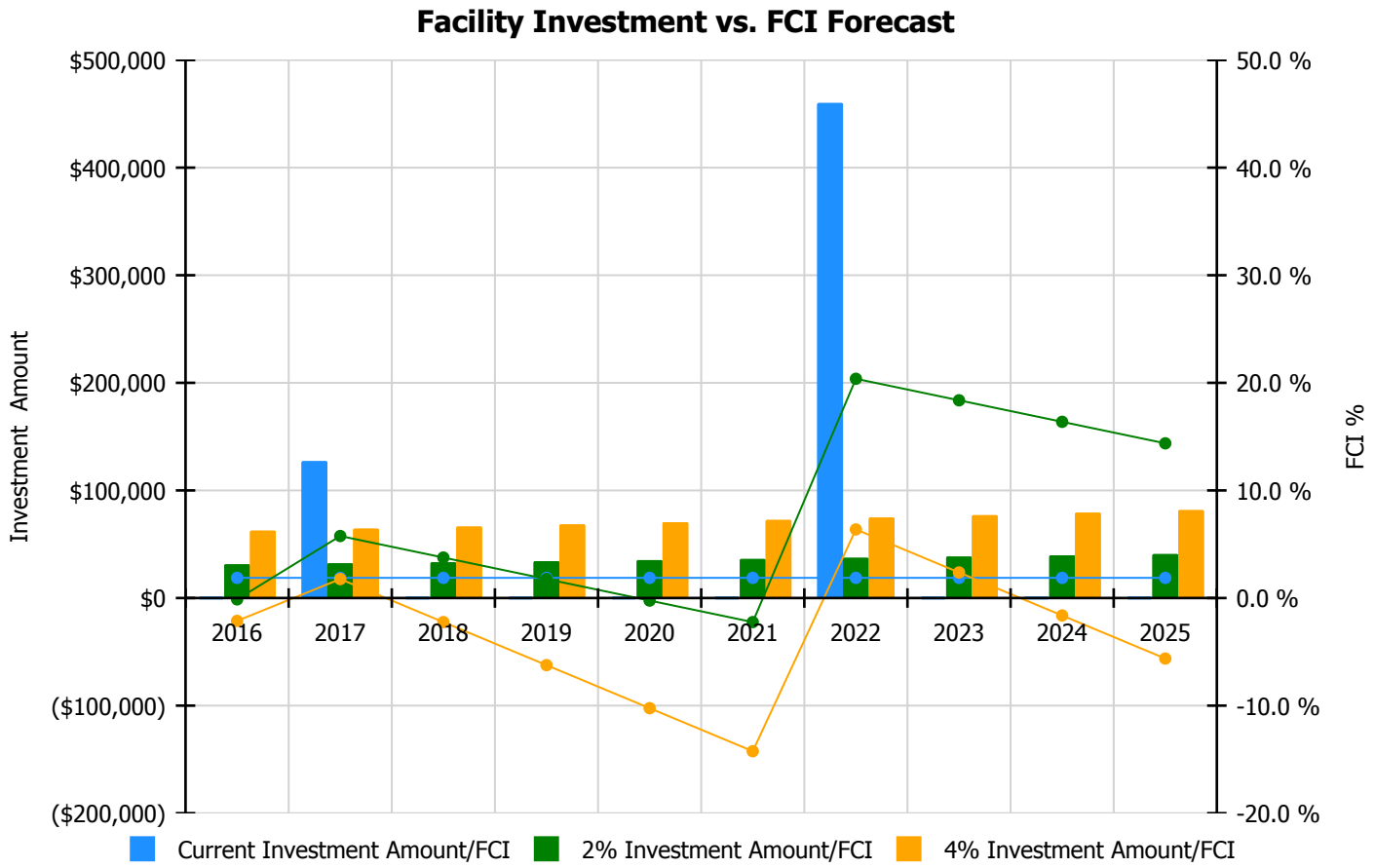
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

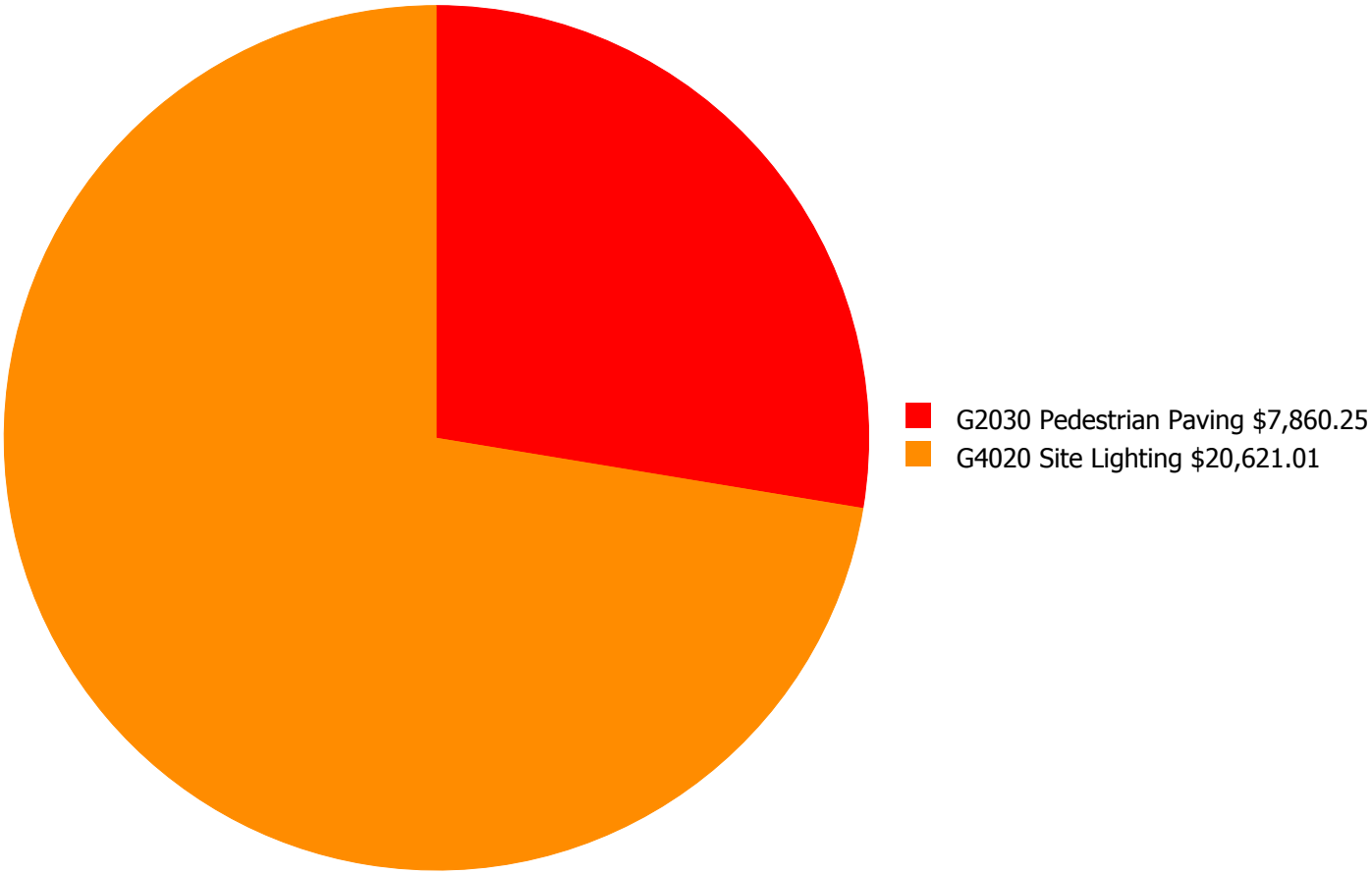
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 1.87%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$31,309.00	-0.13 %	$62,619.00	-2.13 %
2017	$127,202	$32,249.00	5.76 %	$64,497.00	1.76 %
2018	$0	$33,216.00	3.76 %	$66,432.00	-2.24 %
2019	$0	$34,213.00	1.76 %	$68,425.00	-6.24 %
2020	$0	$35,239.00	-0.24 %	$70,478.00	-10.24 %
2021	$0	$36,296.00	-2.24 %	$72,592.00	-14.24 %
2022	$460,081	$37,385.00	20.38 %	$74,770.00	6.38 %
2023	$0	$38,507.00	18.38 %	$77,013.00	2.38 %
2024	$0	$39,662.00	16.38 %	$79,324.00	-1.62 %
2025	$0	$40,852.00	14.38 %	$81,703.00	-5.62 %
Total:	**$587,283**	**$358,928.00**		**$717,853.00**	

Deficiency Summary by System

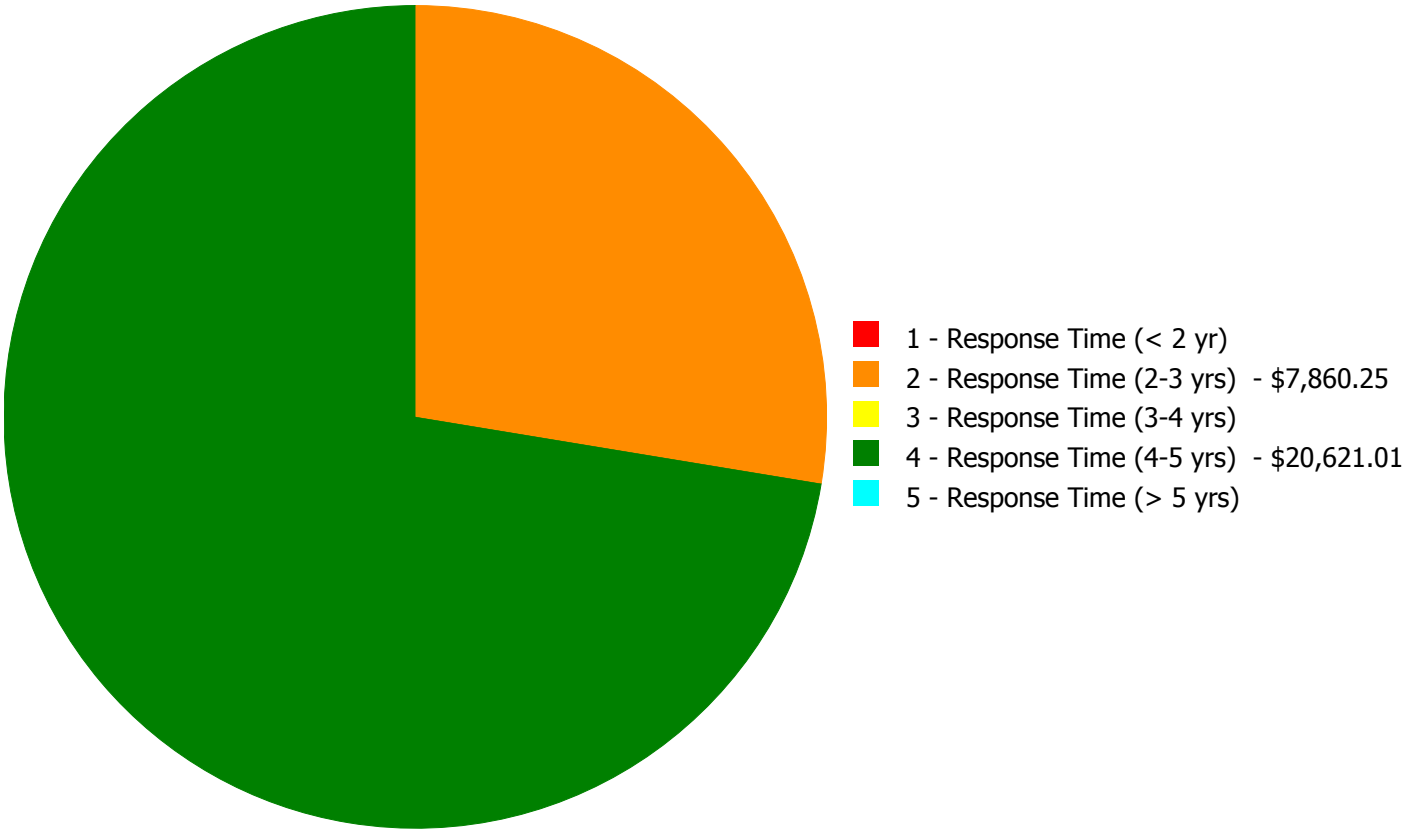
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $28,481.26

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: $28,481.26

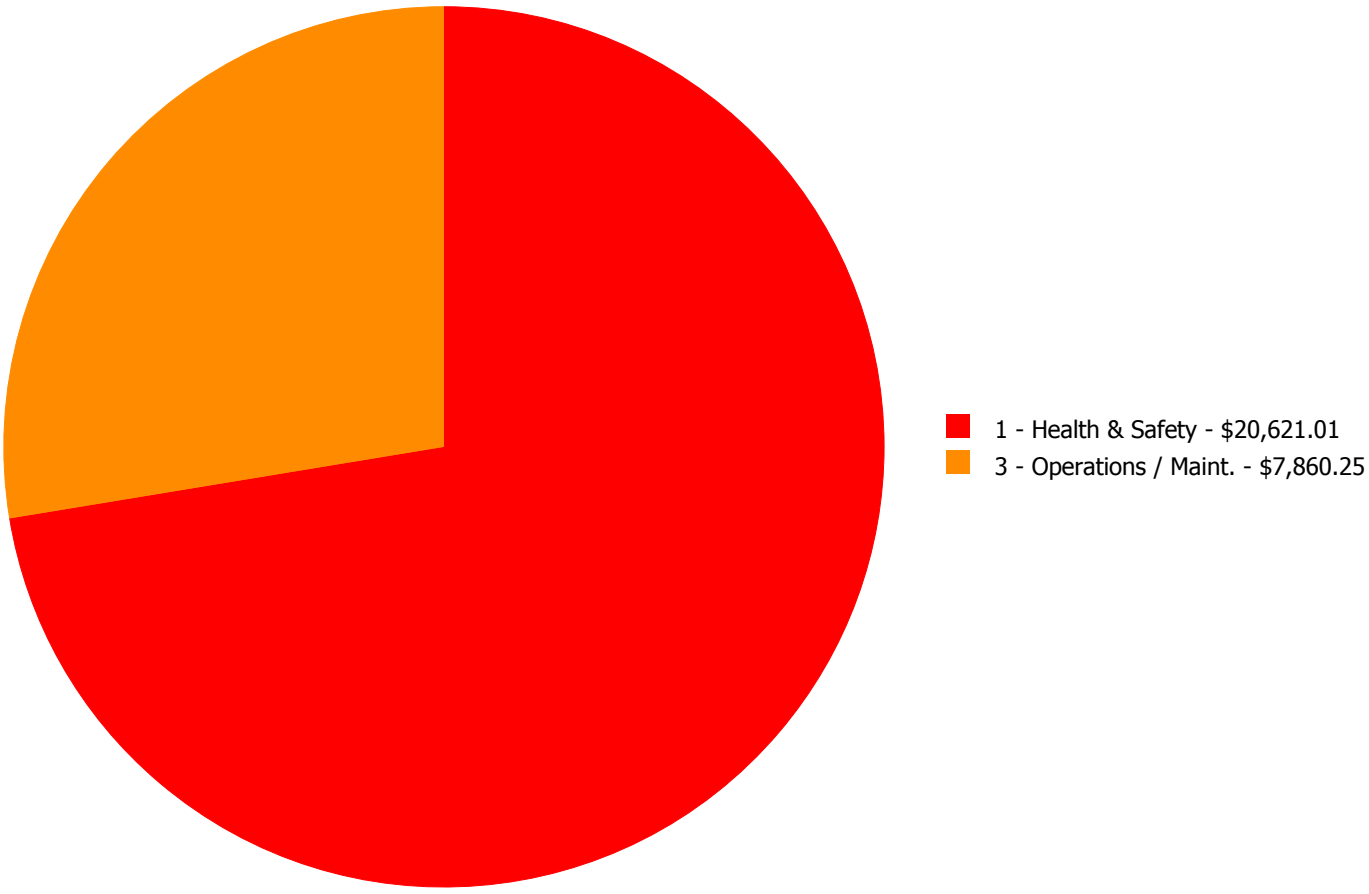
Deficiency By Priority Investment Table

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	$7,860.25	$0.00	$0.00	$0.00	$7,860.25
G4020	Site Lighting	$0.00	$0.00	$0.00	$20,621.01	$0.00	$20,621.01
	Total:	$0.00	$7,860.25	$0.00	$20,621.01	$0.00	$28,481.26

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: $28,481.26

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: G202001;Grounds

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 450.00

Unit of Measure: S.F.

Estimate: $7,860.25

Assessor Name: Ben Nixon

Date Created: 10/22/2015

Notes: Repair and re-point granite steps at front entrance

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

System: G4020 - Site Lighting

Location: Exterior

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Maintain Site Lighting Fixture

Qty: 20.00

Unit of Measure: Ea.

Estimate: $20,621.01

Assessor Name: Craig Anding

Date Created: 10/15/2015

Notes: Replace with equal type inoperative wall/pole mounted lighting fixtures.

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